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BOMBYLIIDAE (DIPTERA)

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With 5 Text-figures

AS the result of the Expedition 215 specimens of Bombyliidae have been kindly submitted to me for determination. Altogether 38 species are represented of which 17 new species and 4 new varieties are described below. As I am revising the genera and species of the South African Bombyliidae in a paper to be published shortly, all these known species and the new ones described here for the first time will be more comprehensively dealt with in conjunction with other material from other parts of southern Africa.

My thanks are due to Mr C. J. Swierstra, the Director of the Transvaal Museum, for kindly entrusting this valuable collection to my care.

Fam. **BOMBYLIIDAE**

BOMBYLIIDAE HOMOEOPHTHALMAE

Subfam. **BOMBYLIINAE**

Gen. **Bombylius** Linn.

2 ♂♂, *B. vansoni* n.sp.

Black; integument of body above, anteriorly below on propleurae and venter with a dark bluish submetallic sheen; legs shining black; hair on body and spines on legs velvety black; the hairs towards apex of abdomen from about segment 4 with whitish apices, only sparsely so on segment 4; a spot of scale-like hairs at base of basal comb of wings, five rounded spots of dense, scale-like hairs along mid-dorsal line of abdomen above (one each on segments 2-6 on their apical halves) and laterally below on each side four contiguous spots of denser scale-like hairs in a row on segments 2-5 (thus forming an elongate band), golden yellow or fulvous; palps blackish brown; eyes purplish

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black; pulvilli pallid; wings with the basal parts up to basal cross-vein of fourth posterior cell and more or less in anal and axillary cells infuscated with dark blackish brown, darker towards the base, the apical halves of anal and axillary cells and apical half of costal cell being only slightly infuscated, very nearly hyaline, with the alula duller, more lamp black, with the translucent spot near apex of second basal cell and beyond base of discoidal cell slightly dull bluish white, with the veins very dark brown, the second longitudinal vein being more brown and the basal parts of the rest of the veins much darker, with the rest of the wings hyaline; halteres dark brown, with the edges of apical cup pallid inside. *Head* with the narrow inner margins of the eyes above contiguous at a point just before ocellar tubercle, then gradually diverging to a point about as far forwards from anterior ocellus as length of ocellar tubercle, from where the margins diverge more rapidly; frons with depressed hairs, on each side along margins of eyes, projecting anteriorly as tufts at bases of antennae; face bare medially and the hairs laterally not too dense; antennae with joint 3 about twice as long as 1 and 2 combined, compressed laterally in basal half, broadest basally, thence gradually narrowed to near apex, the apical third being still less narrowed, nearly parallel and slender, with the style short and slender, with joint 2 longer than broad; proboscis about $4\frac{1}{2}$ mm. long, straight; palps with the hairs short. *Thorax* with the anterior part above convex, the apical part being very nearly perpendicularly declivous (as in *analis* F.), with the hair dense, short and furry as in *analis*, slightly less dense and shorter on disc, but leaving no bare part, with numerous chaetae in front of wing bases, of which a few are longer than the others and at least two are very long; mesopleuron with numerous bristles; wings with the second longitudinal vein straight, but less deeply sinuate at end than in *fulvonotatus* Wied. and *analis* F., with base of second submarginal cell much shorter than in the above-mentioned species, with the first posterior cell comparatively more obtuse apically, with the discal cross-vein scarcely beyond middle of discoidal cell in type, at about middle in paratype, with the apical cross-vein of discoidal cell about as long as discal cross-vein and much longer than in *fulvonotatus* and *analis*, with the third posterior cell comparatively much narrower, the apex being much narrower than apex of fourth posterior cell, with the basal vein of second posterior cell meeting base of second submarginal cell nearer fork of third longitudinal vein and not at about middle as in *fulvonotatus*, with the basal comb black; metapleural tuft black. *Abdomen* with the hair denser apically, becoming longer and sparser and more bristle-like towards apex and the sides apically, especially on hind margins of segments, dense below on venter. *Legs* with the depressed scales on femora and tibiae black and shining; front femora, apart from the slender hairs, with four to seven short spines on lower outer surfaces and two to four on the inner surfaces below; middle femora with numerous spines below, more or less in two rows, the outer with about nine to ten long and short ones beginning near base and an inner row with about eight to nine shorter spines beginning at about middle; hind femora with numerous spines below from near base to apex, more or less also arranged in two rows; tarsi with the pulvilli shorter than the claws.

Length: about 10 mm.

Length of wing: about $10-10\frac{1}{2}$ mm.

Gemsbok Pan, 23. iv-5. v. 30 (Type); Kuke Pan, 21-30. iii. 30.

The species obviously belongs to the *analis* section, yet it differs in having the eyes in the ♂ very nearly touching at a point in front of ocellar tubercle and the margins of the eyes from thence not parallel. It is related

to *analis* F. and *fulvonotatus* Wied., from both of which it differs, apart from the differences in wing venation already mentioned, in not having the eyes contiguous above and in having the black basal infuscation on the wings more extensive and not sharply demarcated along bases of second basal and anal cells. From *analis* it differs in having fulvous spots on the abdomen and no white tuft of hair at apex; the front femora have short spines, etc. From *fulvonotatus* it differs in being smaller, in having fulvous spots laterally on abdomen below, a fulvous spot at base of wing comb, etc.

B. eurhinatus Bezzi (*Ann. S. Afr. Mus.* XVIII, 16) var.n. *bechuanus*.

A ♂ specimen, from Kasane in Bechuanaland, does not differ much from the typical Namaqualand forms, except that the dark brown infuscation on the wings is less diffuse, more perceptibly demarcated, the basal half of marginal cell and first submarginal cell being almost hyaline and the infuscations on the cross-veins less diffused; spines on hind femora below more numerous; the erect hair is also slightly less golden, more pale yellowish white above and the apex of abdomen is also more white.

This specimen probably only represents a northern variety, which I refer to a new variety *bechuanus*.

Kasane, 25-28. vii. 30.

Gen. *Systoechus* Lw.

9 ♂♂, 16 ♀♀, *S. bechuanus* n.sp.

Body black; posterior aspect of ocellar tubercle, often the upper apical part of first antennal joints, the apical part of third antennal joints pale reddish to obscure reddish; face in ♀ in front of antennae more dark brownish and not black; scutellum, sides of abdominal segments 2-5 in ♂ broadly and to a certain extent the hind margins towards mid-line on each side and the hind margins of the ventral segments in ♂ very broadly, or the entire venter, reddish or reddish brown; meso- and metapleural regions often infused with reddish or reddish brown above the middle and hind coxae; the comparatively short pubescence above pelt-like and more or less very pale yellowish white or sericeous to yellowish sericeous, being more yellowish or even whitish sericeous in different lights, the thorax above with three narrow whitish sericeous bands and, in ♀, these separate three broadish deeper yellowish and more golden or orange bands, with the sides of thorax above wings and pleural regions more whitish sericeous, with a tuft of hair and bristles on posterior calli even more whitish; hair on head below, in front of front coxae, that just below wings on mesopleurae and above middle coxae white; hair on head very pale yellowish white, the bristles on ocellar tubercle and sides of frons in ♀ being dark brownish to blackish, more yellowish brown in ♂, with the bristles on first antennal joints yellowish white and the shorter ones on joint 2 black, with blackish bristles also intermixed on face; hair on abdomen above in ♂ very pale sericeous white to pale yellowish sericeous and even silvery in certain lights, the bristles on sides of segments 2 and 3 often dark and the rest of bristles whitish; hair on abdomen in ♀ more distinctly yellowish, only those on the sides, in certain lights, whitish sericeous, with the transverse bristles yellowish to whitish; venter with the hair and transverse bristles on segments 1-3 and along extreme sides of the rest whitish sericeous in ♂, but with those on segment 4 to apex pale yellowish brown or ochreous, in ♀ the ochreous patch is less extensive, the bristles here even darker and more blackish and with orange pubescence surrounding the genital aperture; wings with the base and anterior two-thirds, extending obliquely from end of first longitudinal vein across

discal cross-vein and base of fourth posterior cell to extreme base of axillary cell, brownish or reddish brown, the infuscation along third and fourth longitudinal veins and along vein between second basal and anal cells being more distinct, with the basal half of first posterior cell and the second basal cell not being very dark, with distinct and darker infuscations on discal cross-vein, basal cross-vein of fourth posterior cell and just in front of discal vein, with the rest of wing tinged slightly greyish hyaline, with the basal comb black in front and pale yellowish white behind, with the veins dark brownish red, more reddish towards base and along first longitudinal vein, with the squamae subopaquely brownish, having almost white fringes; halteres pale brownish to reddish, with yellowish to yellowish white knobs; legs very dark brownish black to black, the lower surfaces of the femora and basal halves of the tibiae often showing through the dark scaling, more reddish or dark reddish brown, with the tarsi black and the apical halves of the claws black, the pulvilli being yellowish. *Head* with the interocular space in ♂ as broad as ocellar tubercle, quite three times as broad as tubercle in ♀ or about twice as broad as in ♂; frons with the central furrow feeble but more evident basally in ♂ and, in ♀, only indicated in transverse furrow; antennae with joint 1 slightly shorter in ♂, about twice as long as 2 in ♀ or slightly more, distinctly less in ♂, with joint 3 often slightly yellow-scaled above, longer than 1 and 2 combined, relatively more slender in ♂, constricted at base, broad in basal half and broader in ♀, broadest before middle, more gradually tapering apically in ♂, the apical slender part being longer in ♂, with the upper part in ♀, from about the middle, more rapidly sloping to apex than in ♂, with the terminal style slender, rod-like and straight; proboscis about 9–10 mm. long. *Thorax* with the pubescence short and dense and, in ♂, having a more "shorn off" appearance; wings comparatively longer and more powerful in ♀. *Abdomen* with the hair and bristles longer in ♀, more dense and pelt-like in ♂, with the bristles very prominent and longer laterally in ♀; dorsal interruption of bristles very narrow in both sexes and the dorsal ones in ♂ very short and inconspicuous. *Legs* with one to three, or without any, small spines below on front femora; middle ones with three to five spines below in apical half; hind ones with a row of very numerous spines below, those near base more or less alternating as long and short ones; claws sharply curved downwards apically.

Length of body: about 14–16 mm.

Length of wing: about 16–17 mm.

Kaotwe, 8–12. iv. 30 (Types); Gemsbok Pan, 23. iv–5. v. 30.

This species is one of the largest representatives of *Systoechus* and is also among the largest members of the Ethiopian Bombyliidae. According to Bezzi's keys and descriptions in *Trans. ent. Soc. Lond.* 1911, pp. 605, 608, and on pp. 63 and 64 in *The Bombyliidae of the Ethiopian Region*, this species is very near *robustus* Bezzi, if not merely a variety of it. As the description of this latter species is, however, vague and contradictory, I am unable to decide on this point without seeing the types or labelled specimens. In the original description, Bezzi states that bristles are wanting on the abdomen and after emphasizing this character on p. 64 in *The Bombyliidae of the Ethiopian Region*, he, however, contradicts himself again lower down by stating that there are yellow bristles on the sides of the abdomen in the ♂. From his description, however, this species seems to differ in having the second basal cell of wing and basal half of first posterior cell not so darkly infuscated (see Fig. 5, p. 64, *loc. cit.*), by having black or dark legs and distinct transverse rows of bristles on abdomen of both sexes, etc. Superficially it also resembles *scabirostris* Bezzi, from which it differs in having the eyes more narrowly

separated in the ♂, no coarse spinules and transverse wrinkles on labium of proboscis, no orange pubescence on propleurae, blackish legs and black spines, more sickle-shaped claws and much longer pulvilli, etc.

8 ♂♂, 15 ♀♀, *S. kalaharicus* n.sp.

Body black; extreme apices of third antennal joints often paler or pallid; an indistinct spot on ocellar tubercle, face in front of antennae and often infusions on the pleurae, obscure red or reddish; scutellum and, in ♂, the hind margins of abdominal segments above, interrupted on segments 2-4 or 5, the sides of segments 2-5 broadly, almost the entire venter and genital segment reddish to brownish red; legs yellowish brown, the apical halves of hind tibiae and tarsi and last three or four joints of the other tarsi darkened, dark brownish to black and the apical halves of claws also black; general pubescence above pelt-like, velvety yellowish brown, that on thorax in ♂ paler, that on abdomen above in ♂ with a paler, pale yellowish to whitish sericeous sheen in certain lights, that on sides in basal half of abdomen deep reddish brown or rufous; hair on frons and face yellowish, the bristles in ♂ yellowish but more brownish on face in front and more brownish or blackish brown in ♀; macrochaetae in front of wings, bristles on scutellum and across hind margins of abdomen, especially laterally on segments 1-4, reddish brown to dark brownish, those discally in both sexes being slightly paler; pubescence on thorax above in ♀ with a tendency to show three broadish brownish bands; sides of thorax in front of wings with the bristles and hairs yellowish brown in ♂ and deeper brownish in ♀; hair on head below and above front and middle coxae whitish or pale yellowish white; tuft of hair on posterior calli, metapleural tuft and fringe of long ones on squamae pale yellowish white, almost sericeous white in certain lights; venter with yellowish brown hair medially near base, with almost pure white sericeous pubescence laterally in basal half, the apical half more ochreous or velvety brown and the bristles in ♀ brown to very dark brownish black towards apex; wings infuscated, darker coffee-brown or reddish brown in anterior half, extending more or less from near apex of marginal cell obliquely across basal halves of first submarginal and first posterior cells, base of discoidal cell, basal cross-vein of fourth posterior cell to base of anal cell and alula, this infuscation however merges imperceptibly, more so in ♀, into the more smoky or slightly mauvishly tinged posterior translucent half, with the infuscations along the main longitudinal veins in anterior darker part more distinct, with the basal comb black and with pale yellowish scaling behind it, with the veins dark brownish and the first longitudinal one and basal parts of the others more reddish, with the squamae opaquely brownish; halteres brownish, with paler and often yellowish white knobs. *Head* with the interocular space in ♂ as broad as ocellar tubercle, a little more than twice as broad in ♀, about three, or very slightly more, times as broad as tubercle; antennae with joint 1 about twice as long as 2, with joint 3 longer than 1 and 2 combined, about $1\frac{1}{2}$ times, or often less, as long, often slightly pubescent above, not or only very slightly constricted at base, more or less equally thickened in basal half, slightly more so in ♀ and, in some specimens, broadest near base, the apical half more slender in ♀ and in both sexes slightly directed upwards, with the style small, short and slender; proboscis straight, about 5-6 mm. long, with the minute spinules below not visible. *Abdomen* with the hair and bristles longer and slightly less dense in ♀ and bristles on venter also stouter and longer in ♀. *Legs* without any long hairs towards base of femora, but with pale yellowish sericeous scaling; front femora unarmed or rarely with one or two small spines below; middle ones

with three to four spines in front and one to three behind in ♂ and three to six and one to three respectively in ♀; hind ones with about ten to sixteen, longer and shorter, spines below on the outside and about one to four on the inner side.

Length of body: about 8-13 mm.

Length of wing: about 10-13 mm.

Damara Pan, 15-21. iv. 30 (Types); Kaotwe, 8-12. iv. 30.

This species is easily recognised by its yellowish brown or velvety brown pubescence and infuscated wings.

1 ♂, 12 ♀♀, *S. eremophilus* n.sp.

Body black; scutellum and sides of abdominal segments in ♂, genital segment in ♂ and often the apical part of last sternite in ♀ reddish; legs yellowish, with the bases of femora, especially the front ones, often slightly blackened, with the apical parts of hind tibiae, the front surfaces of the front ones, the entire hind tarsi and apical parts of the others more brownish, becoming blackish apically like the apical halves of claws; pubescence dull brassy yellowish or dull yellowish white, with a slightly paler and more whitish sheen in certain lights on sides of abdomen and towards apex, especially in ♂, often, however, with a more dull golden or very pale dull brassy sheen in ♀ on body above; hair on body below paler and with a slightly more whitish sheen across pleurae above coxae, the head below being distinctly whitish and venter laterally duller yellowish white; bristly hairs on ocellar tubercle, sides of frons, those intermixed in mystax and those on antennal joints 1 in ♂ black; macrochaetae and bristles on thorax and scutellum pale yellowish white to whitish; transverse rows of bristles on abdomen above entirely black in ♂, with the lateral ones on segments 2-4 and towards apex above in ♀ black and those more discally towards base above yellowish, those on venter yellowish basally and more brownish to blackish apically; wings hyaline, with the extreme base, alula, costal and first basal cells more or less subopaquely yellowish to yellowish white, the blackish costal vein and brownish first longitudinal vein enhancing this infuscation, with the veins dark brownish, paler towards the base, with the basal comb black and the scaling behind it pale yellowish white, the squamae opaquely pale yellowish or brownish and with a pale yellowish white fringe; halteres yellowish, with whitish knobs. *Head* with the interocular space in ♂, at narrowest part, only slightly narrower than tubercle, about three times as broad as tubercle in ♀; frons with the central furrow in ♂ distinctly visible in basal half; antennae with joint 1 comparatively longer in ♀, joint 3 slightly obscurely pilose above, with joint 3 (excepting terminal joints) about as long as 1 and 2 combined, thickened in basal half, broadest just before base, with the apical slender part slightly thicker in ♀; proboscis about 5-7 mm. long. *Abdomen* with the transverse bristles distinctly longer than the hair in ♀, scarcely or not in ♂, with the pubescence and bristles on abdomen in ♂, however, apparently denser. *Legs* without any apical spines above on front and middle femora; front ones unarmed below; middle ones with about two to four spines in front in apical lower aspect and usually one to two on posterior lower aspect; hind ones with about six to twelve spines on outer side below and two to seven smaller ones on inner side below, more or less in apical aspect; claws rather rapidly curved downwards apically.

Length of body: about 8-12 mm.

Length of wing: about $8\frac{1}{2}$ - $11\frac{1}{2}$ mm.

Kaotwe, 8-12. iv. 30.

This species is recognised by the hyaline wings, dull yellowish or greyish yellow, even, dull and pale brassy pubescence and transverse rows of stout black bristles on the abdomen.

Gen. *Eurycarenum* Lw.

10 ♂♂, 15 ♀♀, *E. cingulatus* n.sp.

Superficially this species is very near *laticeps* Lw. with which it may be easily confused if the transverse bands of white scaling and hairs have been rubbed off. Compared with *laticeps*, it differs in having the base of scutellum usually more extensively darkened, in having more constantly dark or blackish legs, even the tibiae being more constantly blackish; abdomen above with a complete transverse band of white scaling and hairs across middle of segment 2, a complete one across base of 3 (much broadened laterally), a complete band across apical margin of 4 which is not broadly interrupted medially but is also broadened laterally and a complete band occupying the entire sixth segment, with some of the transverse bristles, as in *laticeps*, on sides of segments 3 and 4 pallid like those on sides of 1, with the transverse bristles on 2-3 in ♀ comparatively shorter than in *laticeps* and in ♂ distinctly shorter, being scarcely longer than the hairs and also much shorter than in ♀, with a distinct and complete transverse band of white scaling and hairs on the sixth ventral segment and, to a great extent also, on 7 in the ♀, which in the ♂ is usually represented by some white intermixed hairs only on segment 6, without any constant white central band above on segments 3 or 4-6 as in *laticeps*, but often with a distinct spot medially on 4 and a very evanescent one on 5 in some specimens; head with the interocular space in ♂, at narrowest part, often slightly broader and almost subequal to width of front ocellus, with usually three or four stout bristles on each side of frons in ♀ and also with a tendency for pubescence on frons of both sexes to be paler, more whitish and less extensively golden, with joint 2 of the antennae distinctly more elongate, almost subequal to 1, with 1 and 2 combined also comparatively and distinctly longer than in *laticeps*, usually without one or two prominent and longer bristles above on joint 3 in ♀ and rarely present in ♂, with the proboscis about 5 mm. long; wings with a tendency for the first posterior cell to be less acutely pointed apically; legs with six to nine small spines, mostly irregularly arranged, on front femora above and more or less two to four small ones below, with seven to thirteen irregularly arranged spines on middle femora above, of which one in apical outer aspect may be stouter and longer, and from three to five long and short ones below, with a row of about eight to eleven separated spines above in apical half of hind femora of which one is usually long and well developed at apex and with about fourteen to twenty long and short spines below in more or less two irregular rows.

Length of body: about 11½-12½ mm.

Length of wing: about 10-12 mm.

Bechuanaland: Damara Pan, 15-21. iv. 30 (Types); Kaotwe, 8-12. iv. 30; Gemsbok Pan, 23. iv-5. v. 30; Southern Rhodesia: Sawmills (Stevenson, iv. 23).

This species is easily recognized and distinguishable from all other known species of this genus by the presence of four, more or less, constant and complete bands of white scaling and hair on the abdomen above, giving it a distinct resemblance to some members of *Anthophora* bees. It may, however, be confused with *melanurus* Bezzi (pp. 80, 81, *The Bombyliidae of the Ethiopian Region*, Fig. 6) from Zanzibar. According to the description, however,

melanurus differs from the above in having only three white transverse bands on the abdomen above, of which that on segment 4 is broadly interrupted medially, and also in having no white band on segment 6, the entire apical part being black-haired.

The ♂ specimens from Sawmills appear to be transitional between *cingulatus* s.str. and *laticeps* in that they agree with the former in having four complete bands of white pubescence on abdomen and in the very slightly more separated eyes and paler more whitish haired frons. With *laticeps* they appear to agree in having a larger spot of white scaling and hair on segments 4 and 5 medially and in often having prominent stoutish bristles just before middle of third antennal joint.

Gen. *Sisyrophanus* Karsch.

2 ♀♀, *S. minor* Bezzi.

Gemsbok Pan, 23. iv-5. v. 30.

This species appears to be the only member of this genus which occurs farther down south; all the other known forms being found in Central and East Africa.

Gen. *Gonarthrus* Bezzi

2 ♂♂, *G. culiciformis* n.sp.

Body black; abdomen with the hind margins of segments laterally dull greyish white and body below with greyish white bloom; tibiae and tarsi very dark reddish brown, the hind ones being very slightly paler, the middle ones with two black-tipped, pallid, apical spurs below; bristly hairs on ocellar tubercle and row of separated fine ones along posterior margins of eyes very dark blackish brown; hair on antennal joints 1 and 2 above black; pubescence on body above and below entirely frosty white, comparatively sparse above and without any transverse black bristles on abdomen above; wings vitreous hyaline, iridescent, with the costal cell and base subopaquely whitish, the veins yellowish brown to brownish and the opaquely whitish squamae with pale yellowish margins; halteres pallid, the bases more brownish and the knobs dark blackish brown above and only slightly darkened below. *Head* with the mystax comparatively sparse; antennae with joint 3 comparatively broad, broadest just before middle, narrowed at extreme base and only very gradually narrowed apically, the apical part not being very slender; proboscis about 1-1½ mm. long, without any visible spinules below. *Legs* without any spines on middle femora below and with apparently only one spine towards apex on outer aspect on hind ones below.

Length of body: about 4-5 mm.

Length of wing: about 4 mm.

Kaotwe, 8-12. iv. 30.

This small species is recognized by its mosquito or gnat-like shape and tapering abdomen, the comparatively sparse and frosty white pubescence, etc.

3 ♂♂, 10 ♀♀, *G. kalaharicus* n.sp.

Black; tibiae luteous, yellowish to pale yellowish brown, the last two or three tarsal joints being black; pubescence, when viewed from above, pale brassy yellowish especially on abdomen above and, when viewed from side, that on front part of occiput, disc of thorax, scutellum and abdomen with a distinct pale yellowish to brassy yellowish tint and more so on scutellum and

abdomen; hair on body below and base of venter cretaceous white; depressed pubescence on base of thorax, scutellum and on abdomen above, in ♀ especially, very dense, pale brassy yellow and with a conspicuous brassy or golden sheen, thus giving the abdomen an added yellow appearance; bristly hairs on ocellar tubercle and along hind margins of eyes and on antennae above in ♂ blackish or black, those on tubercle, frons and on antennae above in ♀ yellowish to deep yellowish and hairs towards apex of antennal joint 1 below in both sexes tinted yellowish; mystax and beard below sericeous white like rest of hair below; transverse rows of bristles across hind margins of abdominal segments 2-6 in ♀ and 2-7 in ♂ black, with, however, only a few on 2 and 3 more or less confined to disc black, those on 5-7 being denser, longer, more conspicuous and also extending down laterally on extreme sides; last abdominal segment with predominantly straw-coloured yellowish to yellowish hair; venter without any black bristles on penultimate segment and one before it; spiny bristles on genital segment of ♀ yellow; wings vitreous hyaline, with the extreme base and costal cell subopaquely pale yellowish white, with the veins brownish to dark brownish, becoming yellow at base, with the squamal fringe whitish and squamal margin yellowish; halteres yellowish, with very pale lemon-yellow to almost whitish knobs in both sexes. *Head* with the coarser facets on more than the upper half of eyes in ♂ more or less well demarcated from finer facets on less than lower half; interocular space on vertex in ♀ very nearly three times as broad as ocellar tubercle; antennae with joint 3 very gradually tapering from broadest part near base, with the terminal style minute; proboscis about 2-2 $\frac{3}{4}$ mm. long, without any conspicuously visible spinules. *Legs* with dense whitish scaling on femora in ♂, but becoming slightly yellowish apically on the outer side in ♀; middle femora with one spine apically below; hind ones with about two to four spines (more often only two) towards apex on outer side below; middle tibiae with two black-tipped, long, pallid spines below apically.

Length of body: about 4 $\frac{1}{2}$ -9 mm.

Length of wing: about 4 $\frac{1}{2}$ -7 $\frac{1}{2}$ mm.

Kuke Pan, 21-30. iii. 30 (Holotype and ♂ and ♀ Paratypes); Kaotwe, 8-12. iv. 30 (Allotype and ♀ Paratypes); Damara Pan, 15-21. iv. 30.

This species is easily recognised by its luteous or pale yellowish tibiae and pale brassy yellowish appearance of abdomen above, especially in ♀♀, due to yellowish erect hairs and dense depressed brassy yellowish pubescence and also by the cretaceous white hairs and bloom on pectoral and pleural regions. From *leucophys* Bigot, it differs in having pale yellowish or luteous tibiae, paler yellow and less golden-yellow pubescence on body above, more distinct and striking cretaceous or chalky white bloom and pubescence below and without any transverse black bristles on last few ventral segments, less extensively yellowish hair on antennae below, etc. The species seems to be variable in size, the holotype and paratypes from Kuke Pan being much smaller than the ♀ paratypes from Kaotwe and Damara Pan.

1 ♂, 3 ♀♀, *G. kalaharicus* var.n. *venustus*.

These specimens from Bechuanaland constitute a distinct variety, differing from the typical form in having distinctly paler and more whitish pubescence on body above, shorter proboscis, only about 1-1 $\frac{1}{2}$ mm. long, and with much darker and even black tibiae in both sexes.

Length of body: about 6-6 $\frac{1}{2}$ mm.

Length of wing: about 5-5 $\frac{1}{2}$ mm.

Kaotwe, 8-12. iv. 30.

Subfam. USIINAE

(As defined by Bezzi for Ethiopian genera)

Gen. *Hyperusia* Bezzi1 ♂, *H. nivea* n.sp.

Entire body, including the antennae, black; tibiae and tarsi pale ochreous yellow, only the last one or two tarsal joints blackish brown and apices of claws black; pubescence with the erect hairs on head, body above and below, on front femora below, predominantly on middle femora, entirely on hind femora and tibiae, as well as the fine depressed pubescence on abdomen, denser above towards apex and sparse on venter, silvery white, with the hairs on front femora above and on sides above, on upper front part of middle femora and some bristly ones on outer upper parts of hind tibiae dark or blackish; wings almost hyaline, only very indistinctly and faintly tinged milky whitish, practically only the costal cell, base, basal half of first posterior cell and to a certain extent the second basal cell being more distinctly subopaquely milky whitish, the veins pale yellowish, the costal and first longitudinal veins more conspicuously yellowish, the anal cell comparatively widely open on hind border, the discal cross-vein much beyond middle, at least at apical fourth, of discoidal cell, with the axillary lobe broad, lobe-like and not markedly subrectangularly rounded posteriorly, with the whitish opaque squamae fringed with white hairs; halteres pale yellowish brown, with white knobs, distinctly darkened below. *Head* with the eyes on vertex separated by ocellar tubercle, the space a little broader than the tubercle; frons without a central furrow, only slightly depressed medially in front of tubercle; eyes with the coarser upper facets distinctly marked off from finer ones in about the lower half; antennae with joint 1 a little more than twice as long as 2, with joint 3 nearly three times as long as 1 and 2 combined, slender at base, broadened apically, broadest at about apical third, slightly hollowed or depressed on inner side in apical half; proboscis about 3 mm. long, becoming stouter basally and with sparse spinules below; palps about 1 mm. long, not visibly broadened apically. *Legs* with at least three long bristle-like hairs apically above on last tarsal joints as in *Corsomyza*.

Length of body: about $5\frac{2}{3}$ mm.Length of wing: about $5\frac{1}{2}$ mm.

Kaotwe, 8-12. iv. 30.

Recognized by its black antennae, silvery white pubescence, almost hyaline wings, the comparatively widely open anal cell, as in *minor*, etc. *H. minor* Bezzi, however, has yellowish red third antennal joints and predominantly dark or blackish hair on head below and on legs.

Subfam. PHTHIRIINAE

(As defined by Loew and Bezzi)

Gen. *Geron* Meig.1 ♀, *G. bechuanus* n.sp.

Black; edge of metapleural plate, sides of abdominal segment 1 and sides and hind margins below of the other segments and the ventral lobes on segment 8 rather conspicuously yellowish; legs comparatively stout for a *Geron*, with the middle and hind femora entirely ochreous yellowish, the upper surfaces of front tibiae, the entire middle and hind tibiae and bases of tarsi also ochreous yellowish; pubescence short, but comparatively dense for a ♀, very dense on abdomen, also dense on front part of pleurae and on coxae,

that on body above with a distinct sericeous yellow sheen, even distinctly subgolden on occiput, base of thorax and base of abdomen above, that on body below more silvery whitish, with the finer, hair-like scaling above denser than in other species and conspicuously dense on base of thorax and especially abdomen, very deep golden, and on abdomen more concentrated across hind margins as bands, the scaling on frons and sides of face dense and brilliantly silvery white, that on face almost entirely composed of scales, the scaling on body below broader, silvery whitish and dense on front part of pleurae, on coxae and legs and very dense on venter; wings greyish hyaline, with a distinct, subopaque milky whitish tint in costal cell and basal part, the veins dark brownish in apical half, becoming more yellowish towards base, the discal cross-vein much beyond middle of discoidal cell, with the second submarginal cell broader apically than long and with its upper vein much bent upwards at end, the squamae opaquely whitish and white fringed; halteres with very pale yellowish knobs. *Head* with the interocular space on vertex about twice as broad as tubercle; antennae with joint 1 rather stoutish, about three times as long as 2; proboscis about 4 mm. long. Body on the whole rather bulky for a *Geron*.

Length of body: about 7 mm.

Length of wing: about 8 mm.

Metsimaklaba, 7-12. iii. 30.

This ♀ is characterised by the comparatively dense pubescence, remarkably dense scaling on abdomen, markedly stoutish legs and the compact, somewhat bulky, body.

Subfam. SYSTROPINAE

Gen. *Systropus* Wied.

2 ♂♂, 1 ♀, *S. crudelis* Westwd.

Damara Pan, 15-21. iv. 30.

Subfam. TOXOPHORINAE

Gen. *Toxophora* Meig.

2 ♂♂, *T. diploptera* Speis.

Damara Pan, 15-21. iv. 30; Gemsbok Pan, 23. iv.-5. v. 30.

This species, which is widely distributed in South Africa, has been referred to *diploptera* Speis. by Bezzi in all his papers dealing with South African Bombyliidae. As there is some doubt about the identity of this species and even of other Ethiopian forms, I also provisionally refer this species to *diploptera*, but will deal with it, in conjunction with the other South African forms, more fully in my forthcoming revision.

BOMBYLIIDAE TOMOPHTHALMAE

Subfam. LOMATIINAE

Gen. *Lomatia* Meig.

1 ♂, 1 ♀, *L. mitis* Lw.

As the ♀ specimen agrees very well with Loew's description of this species (p. 209, *Dipt. Faun. Südafr.* 1860, 1), I think there is no doubt that this species, first described from South-West Africa, has now again been collected by the

Expedition. As the ♂ is still undescribed, I am appending a redescription of the species:

Black; pubescence with the hair on frons, antennae and face in ♂, that on ocellar tubercle, predominantly on antennae below in ♀, that across extreme anterior margin of collar region in ♂, that in tuft-like patches on sides of abdominal segments 4-6 in ♀, a few across hind margin of tergite 8 in ♂ and on sides of tergite 7 in ♀, as well as the spines and spicules on the legs, black, with the hair on sides of frons, some on antennae below and on face in ♀, those very densely on sides of abdomen and sparsely above on scutellum and abdomen above and below in ♂ and on sides of thorax, on pleurae, sides of basal part of abdomen and sparsely on venter in ♀, whitish, those in ♂ longer and whiter, more straw-coloured whitish in ♀, with the hairs on thorax above and on mesopleuron in ♂ yellowish, the tuft in front of wing bases being even slightly orange-yellowish and denser, the hair on pleurae in ♂ also yellowish, with the fine and very sparse hair-like scaling on body of ♂ above straw-coloured yellowish, with the denser scaling on abdomen in ♀ brassy yellowish, denser on tergite 1, becoming paler and more whitish and also denser on sides across hind margins of segments, with the pubescence on venter in both sexes very sparse, the macrochaetae in front of wings dark or blackish, with the sparse hairs on femora below in both sexes pale, but with some dark hairs on front coxae in ♂; wings vitreous hyaline, only the base, alula and costal cell sub-opaquely yellowish, the extreme base of wing black, the veins very dark brownish, with the discal cross-vein at less than apical third of discoidal cell, the discoidal cell itself narrow, the axillary lobe narrow, with the base of vein between submarginal cells not very sharply bent at right angles, with the squamae opaquely dirty whitish, black or dark margined and fringed with white hairs; halteres brownish, even the knobs brownish above and pale below. *Head* with the eyes in ♂ narrowly separated above by a space about as broad as front ocellus and subequal in length to length of tubercle, with the space in ♀ about twice as broad as tubercle; vertex and frons in ♀ shining, the latter gradually broadening anteriorly, more rapidly in ♂; antennae with joint 3 a little more than $1\frac{1}{2}$ times as long as 1 and 2 combined, shaped as in *tenera* Lw., broadest at base (from side), narrowed to apex, the slender part being long and the lower margin more rapidly narrowed, with the terminal element short; proboscis about 1 mm. long.

Length of body: about $5\frac{1}{2}$ -6 mm.

Length of wing: about $5\frac{1}{2}$ -6 mm.

Metsimaklaba, 7-12. iii. 30.

This species is nearest to *tenera* Lw. but differs in having entirely white hair on abdomen in ♂, pale hairs on abdomen above in ♀, narrower cells on wings in both sexes and with the lower lobe-like thickening of antennal joint 3 less prominently produced.

1 ♂, *L. albata* n.sp.

Body, including legs, black; pubescence on frons in front, on antennae below and face, on thorax above, mesopleuron, on pleurae, scutellum, densely on sides of abdomen, sparsely above and on venter and that on coxae silvery whitish, with the hairs on ocellar tubercle, basal half of frons and sparsely down sides of frons, a few across extreme anterior margin of thorax above and some across hind margin of last tergite dark or blackish, with the scaling on femora and tibiae silvery whitish; wings glassy hyaline, iridescent, with the alula, base and costal cell subopaquely yellowish, the veins very dark blackish brown,

with the discal cross-vein on at least apical fourth of discoidal cell, with the axillary lobe slightly broader than in *mitis*, with the squamae opaquely whitish, pale margined and fringed with white hairs; halteres pale yellowish brown, with pale ivory yellowish or whitish knobs above and below. *Head* with the eyes above narrowly separated by a space about as broad as front ocellus and shorter than the tubercle; frons with much pubescence in apical depression; antennae with joint 1 about twice as long as 2, slightly barrel-shaped and thicker than 2, with 3 (terminal element included) about or nearly $1\frac{1}{2}$ times as long as 1 and 2 combined, the base very broad and from there rapidly narrowed, more rapidly along lower margin, the apical part very slender and the lower part of broad base more lobately produced than in *mitis* and the slender apical part much more slender than in *tenera*; proboscis slender, about 1 mm. long.

Length of body: about 5 mm.

Length of wing: about $5\frac{1}{2}$ mm.

Damara Pan, 15-21. iv. 30.

Easily distinguished from *tenera* Lw. by its entirely white-haired abdomen, narrower cells on the wings and distinctly more slender apical part of antennal joint 3. From *mitis* Lw. it differs in having entirely white pubescence on thorax in ♂, distinctly narrower and more slender body and distinctly more slender apical part of antennal joint 3.

Subfam. ANTHRACINAE

Gen. *Anthrax* Scop.

2 ♂♂, *A. spectabilis* Lw.

Metsimaklaba, 7-12. iii. 30; Maun, 18. v-7. vi. 30.

1 ♀, *A. intermedius* n.sp.

Black; hind margins of abdominal segments on sides and hind margins of venter yellowish brown; legs with the tibiae and basal parts of tarsi brownish; pubescence with the short stiffish hairs on vertex, frons, those on antennae, face, on disc of thorax, the longer intermixed ones on sides in front of wing bases, the macrochaetae, bristles on posterior calli, on scutellum, the shortish hairs on abdomen above, the longer ones on sides of abdomen and towards its apex and the spines and spicules on legs black, with the denser hairs on collar region, sides of thorax, those on sides above wings, those on pleural regions, on coxae, sparsely on tergite 1 above and densely on sides of this segment, white, those on venter also predominantly whitish, with the short, dense hairs surrounding occipital cavity dull brownish, with the flattened scaling on frons, behind eyes, that on disc of thorax and the slightly broader and denser ones on abdomen above white, with that on abdomen more or less arranged transversely, the scales towards base slightly narrower and with intermixed yellowish scales across segment 2, along the mid-dorsal line and also transversely across the other tergites, with the scaling on venter dense and predominantly whitish, with the scaling on femora also silvery whitish; wings infuscated brownish in costal part, in costal cell, basal half of marginal cell, first basal cell and base, the greater part of second basal cell being hyaline, only the very extreme base of anal cell slightly tinged, with a darker spot on discal cross-vein and cross-vein of second longitudinal vein, a darkish spot on apical cross-vein of second basal cell and a faint one at base of third posterior cell, with the rest (greater part) of wing greyish hyaline, the veins very dark brownish, with the discal cross-vein distinctly before middle of

discoidal cell, with the recurrent veinlet at base of second longitudinal vein not very long and without any recurrent veinlet at base of vein between sub-marginal cells, with the squamae predominantly opaquely whitish and fringed with white hairs; halteres pale yellowish brown, only the apical part above and the lower side of knobs being almost white. *Head* with the interocular space on vertex at narrowest part about three times as broad as tubercle; frons gradually diverging apically; antennae with joint 1 only a little longer than joint 2, much broader than 2, with 2 distinctly narrower than 3, with 3 (terminal elements excluded) subequal in length to 1 and 2 combined, with the apical half of 3 rapidly narrowed from the broad base, with the terminal style or joint subequal in length to joint 3 and slightly broadened at about middle; proboscis only about 1 mm. long. *Legs* with about five spines on outer lower aspect of hind femora, with three or four irregularly arranged ones apically on outer side and a few apically on inner side.

Length of body: about 7 mm.

Length of wing: about 8 mm.

Kuke Pan, 21-30. iii. 30.

This species is easily recognised by its wings which are only infuscated along anterior border, the black hair on frons and face and the absence of dense or conspicuous tufts of hair on sides of abdomen. Structurally it appears to be intermediate between *Anthrax* Scop. s.str. and the genus or subgenus *Spongostylum* Macq. (as defined by Bezzi). From the known South African species of *Anthrax* it differs by the distinctly more narrowly infuscated wings. From species of *Spongostylum* it differs in having the discal cross-vein before the middle of discoidal cell, the longer terminal element of joint 3, with joint 3 also broader basally than joint 2, by the absence of conspicuous tufts of dense hairs on sides of abdomen and fewer spines on hind femora.

4 ♂♂, 4 ♀♀, *A. (Spongostylum) mixtus* Lw.

N'Kate, Makarikari, 6-23. viii. 30; Nata River, Makarikari, 24-27. viii. 30; Kaotwe, 8-12. iv. 30; Tsotsorogo Pan, 17. vi-9. vii. 30; Totome, 28. viii. 30.

I am provisionally placing these specimens in the above species, which Loew originally described from South-West Africa. Bezzi maintained that *mixtus* was a synonym of *incisurale* Macq., described from South Africa. All the known South African species of *Spongostylum* will be dealt with in my forthcoming revision. There is a suspicion that some of them may prove to be only forms or varieties.

Subfam. EXOPROSOPINAE

Gen. *Hemipenthes* Lw.

2 ♀♀, *H. lugens* Lw.

Kaotwe, 8-12. iv. 30; Damara Pan, 15-21. iv. 30.

1 ♀, *H. (Thyridanthrax) ternarius* Bezzi.

Damara Pan, 15-21. iv. 30.

Gen. *Exoprosopa* Meig.

1 ♀, *E. (Litorrhynchus) dentifera* Bezzi.

N'Kate, Makarikari, 6-23. viii. 30.

1 ♂, 1 ♀, *E. (Litorrhynchus) maura* Thb.

Metsimaklaba, 7-12. iii. 30.

5 ♂♂, 5 ♀♀, *E. (Litorrhynchus) nyasae* Ric.

Damara Pan, 15-21. iv. 30; Gemsbok Pan, 23. iv-5. v. 30; Kaotwe, 8-12. iv. 30.

1 ♂, *E. (Litorrhynchus) nyasae* var.

Gemsbok Pan, 23. iv-5. v. 30.

This variety of *nyasae*, which is also represented from South-West Africa in the South African Museum, appears to differ from the typical form only in having the extreme apical part of the marginal cell hyaline instead of infuscated and the extreme base of second submarginal cell is also not infuscated to the same extent as in *nyasae* s.str. This variety thus appears to constitute a sort of bridging form between *tollini* Lw. and *nyasae* Ric.

3 ♂♂, 3 ♀♀, *E. (Litorrhynchus) bechuana* n.sp.

Black; antennal joints 1 and 2, greater part of frons and face, palps, posterior calli on thorax, greater part of scutellum in both sexes, sides of tergites 1-3 very broadly and the broad sides of 4-7 in ♂ and sometimes broad sides of 2 and 3 in ♀ and narrow hind margins of all the tergites above in both sexes, more distinct however and becoming broader apically in ♂, practically the

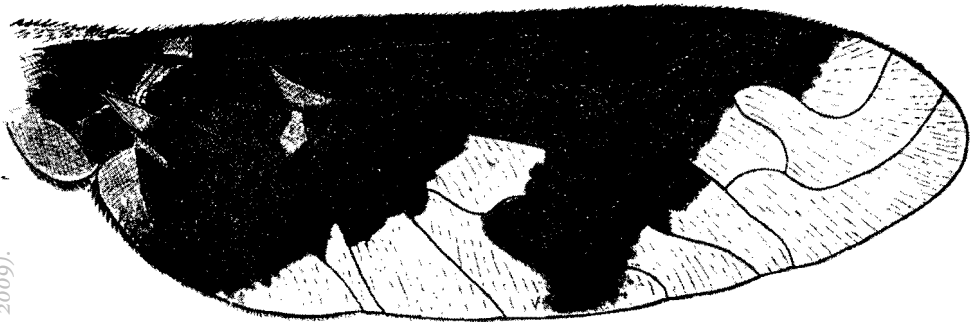


Fig. 1. *Exoprosopa bechuana* n.sp. *

entire venter in ♂ and very broad hind margins and sides in ♀, reddish yellow to yellowish brown, with the frons and face however much darkened (on vertex, transversely at about the middle, along sides and on each side of face), especially in ♀; pleurae with much brownish or yellowish brown in both sexes; coxae and legs pale yellowish brown, the spines and spicules very dark, blackish brown to black; pubescence with the hairs on vertex, frons, antennae and face, the short fine ones on disc of thorax, the longer ones towards front and base, on humeral part and sides of thorax, the macrochaetal bristles, numerous bristles on mesopleuron, some on pteropleuron, numerous ones in upper part of metapleural tuft, hairs and bristles on scutellum, the fine and short setae on abdomen above, the dense and longer hairs on sides of segment 2 to apex, the sparse longish ones on venter, the bristly hairs on lower parts of prosternal calli and the hairs on the coxae, black, with the longish hair in collar region and intermixed ones on mesopleuron, propleurae, pteropleuron, in metapleural tuft and even on coxae, yellowish, with the hair on sides of tergite 1 white, with greyish white scaling on thorax and white scaling on scutellum, a dense patch of cretaceous white, flattened scaling on each side of tergite 3, some on each side of 1 and also on last two or three tergites, with

* The clear or more hyaline parts of this and all the other figures are not so distinctly shaded as appear in these half-tone reproductions (Author).

the rest of the scaling on abdomen above composed of greyish or dirty whitish ones, intermixed with dark or blackish ones especially in ♂, with mostly pale to whitish scaling on venter, with very sparse, more hair-like, brassy ones on pleural parts, those on legs broader and greyish whitish, showing oleaceous gleams; wings with the dark blackish brown infuscated and hyaline parts as shown in Fig. 1, the middle band being rather narrow and narrower than in most other species in this category, with the veins dark brown, the base of axillary lobe and the alula, as well as transverse band across bases of basal cells, opaquely yellowish, with the squamae opaquely yellowish brown and fringed with pale yellowish white scales nearer base and darker, more brownish ones towards alula; halteres brownish to dark brownish, with brownish knobs. *Head* with the interocular space on vertex at narrowest part about four times as broad as tubercle in both sexes; frons with an indication of a slight transverse depression across middle; antennae with joint 1 about three times as long as 2, with 3 short, subequal to, or even slightly shorter than 1, with 3 (from side) ampullar or flask-shaped, rapidly narrowed from broad base, the basal part slightly depressed on inner side below, with the terminal elements slender and straight, at least twice as long as joint 3, ending in a very short, slightly upwardly directed, style; proboscis about 3 mm. long. *Legs* with about six to seven spines on outer lower aspect and three on inner aspect on middle femora and with about eight to twelve spines on outer lower part on hind ones.

Length of body: about 9–10½ mm.

Length of wing: about 11–12 mm.

Damara Pan, 15–21. iv. 30 (Holotype); Gomodimo, 1–5. iv. 30 (Allotype); Kaotwe, 8–12. iv. 30; Gemsbok Pan, 23. iv–5. v. 30.

Superficially the infuscation on the wings resembles that of *argyrolepsis* Bezzi, but the middle band is even narrower and the apical hyaline part of marginal cell is broader.

1 ♂, 3 ♀♀, *E. (Acrodisca) spoliata* Bezzi.

Northern Transvaal: Messina, 5. ix. 30.

2 ♀♀, *E. (Acrodisca) zonata* n.sp.

Black; antennal joints 1 and 2, sides of face opposite antennae, lower parts of face, hind part of scutellum, narrow hind margins of tergites, broader apically, and also the slightly broader ventral hind margins, yellowish brown; antennal joints 3 and infusions along sutures on pleurae dark brownish; legs with the femora black, but the tibiae, apices of front and middle femora and the tarsi brownish; pubescence with the short hairs on vertex, frons, antennae, face, the sparse ones on disc of thorax, stouter ones and macrochaetae in front of wing bases and on posterior calli, those on scutellum, the hairs on sides of abdomen from tergite 2 to apex and those on coxae, as well as spines and spicules on legs, black, with the dense collar hairs, mesopleural tuft, propleural hairs, the finer and very sparse ones on pleurae, those in metapleural tuft and the dense hairs on sides of tergite 2 creamy, those in metapleural tuft more frosty white in certain lights, with the sparse hairs on venter whitish, with the scaling on frons whitish, that on disc of thorax greyish white or dirty whitish, that on scutellum also dull whitish, that on abdomen above denser and broader, composed of a broadish dense band of cretaceous white scales transversely across basal parts of tergites 2 and 3 and to a lesser extent and more faintly across the other tergites, where the scaling is also duller, more greyish and intermixed with dark brownish scales, which are also evident and paler brown on sides of tergites, with the very sparse scaling on pleurae whitish, that on

venter also whitish and transversely disposed, with that on legs composed of intermixed dark and dull greyish scaling, the latter appearing whiter in certain lights; wings (Fig. 2) with the costal half dark brownish and the posterior part and apex greyish hyaline, the infuscation extending from basal third of axillary lobe, across basal half of anal cell, basal half of discoidal cell, basal half of first submarginal cell to first longitudinal vein and costal margin just opposite base of marginal cross-vein, with the costal cell, base and first basal cell slightly more reddish brown and with a faint cloudiness in basal half of first posterior cell, with a greyish translucent spot near apex of second basal cell, spot-like darker infuscations on basal cross-vein of fourth posterior cell, at base of third posterior cell, at bases of first posterior cell and first submarginal cell, on stump at base of second posterior cell at the apex of discoidal cell, on basal cross-vein of third submarginal cell or apex of first submarginal cell, at base of second submarginal cell and near end of vein between second and third submarginal cells, with the veins dark brown, the upper one of anal cell more yellowish, with the first posterior cell narrowly open on hind border, with the discal cross-vein just before middle of discoidal cell, with the squamae opaquely pale yellowish brown and fringed with pale scales, which become slightly darker towards alula; halteres brownish and with brownish knobs.



Fig. 2. *Exoprosopa zonata* n.sp. (♀).

Head with the interocular space on vertex at narrowest part about three times as broad as ocellar tubercle; frons slightly depressed centrally at about middle; antennae with joint 1 a little less than $2\frac{1}{2}$ times as long as 2, with 3 slightly less than twice as long as 1 and 2 combined, gradually narrowed apically and more so on lower side, with the terminal element short; proboscis about $2-2\frac{1}{2}$ mm. long.

Length of body: about 8 mm.

Length of wing: about 8 mm.

Northern Transvaal: Messina, 5. ix. 30.

This species superficially resembles *polyspila* Bezzi (ex. descr.) but the wings are more distinctly dimidiate and with fewer spots in more hyaline part. From *spoliata* Bezzi it differs in the dimidiate wings, black body and the much darker legs.

6 ♀♀, *E. hirtipes* Lw. (as determined and defined by Bezzi).

Damara Pan, 15-21. iv. 30; Kaotwe, 8-12. iv. 30.

These specimens belong to a species which Bezzi has determined in all his papers as *hirtipes* Lw. I have no doubts whatever that this species is not *hirtipes* Lw. and I intend to establish its true specific position in my revision of the South African forms. A representative collection, including males, from all parts of South Africa will then be at my disposal.

1 ♀, *E. fastidiosa* Bezzi.

Damara Pan, 15-21. iv. 30.

2 ♂♂, 5 ♀♀, *E. pterosticha* n.sp.

Black; antennal joints 1 and 2, sides of face below antennae, buccal rims, greater part of scutellum, the sides broadly of tergites 2-4 and more narrowly the sides of the other tergites and even the hind margins discally of the apical tergites in ♂, the extreme sides of the tergites in ♀, practically the entire venter in ♂, the broad hind margins of sternites in ♀ and to a great extent the metapleural part in both sexes pale yellowish brown to reddish yellow; legs also pale yellowish brown, the coxae darker and the tarsi blackish or black; pubescence with the hairs on frons, face, antennae, the short ones on thorax above, the longer ones and macrochaetal bristles in front of wings, the bristles on posterior calli and stouter ones on scutellum, the short setae on abdomen above, the longer and denser hairs on sides of abdomen from tergite 2 to apex, the bristle-like hairs towards apices of coxae and the spines and spicules on legs black, with the short and dense hairs surrounding occipital cavity yellowish, those on frons and face sometimes intermixed with golden gleaming ones, with the long, dense and bristly hairs of collar, on mesopleuron, propleural



Fig. 3. *Exoprosopa pterosticha* n.sp. (♀).

part and in metapleural tuft creamy yellowish, those in metapleural tuft slightly more whitish, with the sparse hairs on lower part of mesopleuron, on pteropleuron and some fine longish ones across hind margin of scutellum sericeous yellowish, with the hair on sides of tergite 1 whitish to slightly creamy whitish, with some intermixed ones on sides at apex of abdomen in ♂ also sericeous yellowish, with the sparse, fine hairs on venter pale or sericeous yellowish, with the scaling on frons and face dirty whitish or greyish yellow, that behind eyes silvery whitish, that on thorax above finer anteriorly and dull yellowish, that towards hind margin of scutellum broader and more silvery whitish, that on abdomen above flattened, much denser, composed of chalky white ones, yellowish ones and some intermixed blackish ones, the chalky white ones arranged densely and transversely as bands across sides of base of tergite 2, completely across 3 and 6 and 7, with a patch of dense silvery white scaling on sternopleuron and with greyish or dirty yellowish grey scaling on legs, appearing whitish or yellowish in certain lights; wings with the dull blackish brown infuscations and hyaline parts as shown in Fig. 3 (♀), the middle band showing a tendency to be confluent with the basal infuscation in the fourth posterior cell in some specimens, with the veins brown to dark brown, with the discal cross-vein just before middle of discoidal cell, with the squamae

opaquely yellowish and fringed with frosty white scales; halteres pale yellowish brown, with almost white knobs. *Head* with the interocular space on vertex about three times as broad as ocellar tubercle; antennae with joint 1 about, or sometimes a little less than, three times as long as 2, with 3 (excluding terminal elements) about $1\frac{1}{2}$ times as long as basal joints together, gradually tapering apically, with the terminal elements slightly flattened, composed of an elongate basal part and a minute style, together about twice as long as joint 2; proboscis about $2\frac{1}{2}$ mm. long. *Legs* usually with two stoutish spines on apical outer aspect of middle femora and about four to eight smaller ones behind; hind femora with about five to eight spines below; front tibiae without spicules.

Length of body: about $8\frac{1}{2}$ –9 mm.

Length of wing: about 10–10 $\frac{1}{2}$ mm.

Damara Pan, 15–21. iv. 30 (Types); Kaotwe, 8–12. iv. 30; Gomodimo, 1–5. iv. 30.

Superficially the infuscation on the wings of this species resembles that of *fastidiosa* Bezzi, but differs in being distinctly more extensive, the basal infuscated area leaving only about the apical third of axillary and anal cells hyaline and the middle band is slightly broader and reaches the hind border, thus occupying greater part of third and fourth posterior cells.

4 ♀♀, *E. semiculus* Wied.

Damara Pan, 15–21. iv. 30; Metsimaklaba, 7–12. iii. 30.

2 ♀♀, *E. semiculus* var.

Metsimaklaba, 7–12. iii. 30.

This variety is characterized by the entire or almost entire absence of a posteriorly directed band (the infuscation on wings, across apical part of discoidal cell and base of second posterior cell). In one specimen it is entirely absent, the wing almost like that of representatives of the *sigmoidea* series. In the other specimen it is still faintly represented as a slight infuscation just above apical part of discoidal cell and as an infuscation at base of second posterior cell.

3 ♂♂, *E. sigmoidea* Bezzi.

Damara Pan, 15–21. iv. 30.

4 ♂♂, 4 ♀♀, *E. scalaris* Bezzi.

N'Kate, Makarikari, 6–23. viii. 30; Nata River, Makarikari, 24–27. viii. 30.

The, as yet undescribed, ♀ of this species differs from the ♂ in not having conspicuous, dense, brilliant, silvery white scales on frons but only golden or brassy yellow ones, flanked on each side and above each antenna by only a small patch of silvery scaling, in having distinctly less red on sides of the abdomen, a more or less darker venter and only whitish scaling, not brilliantly glittering silvery ones, on last two tergites. More important, however, is the fact that in the wings of the ♀♀ there is more or less constantly present a posterior prolongation of the middle projection of the anterior infuscated part near apex of discoidal cell. This prolongation thus distinctly extends into the apical part of the discoidal cell as in *argentifrons* Macq. and *scaligera* Bezzi, from both of which *scalaris* may, however, be distinguished by the less extensively developed black hair on sides of abdomen and the shorter third antennal joint. There is also a tendency, in the ♀♀ of *scalaris* before me, to show a supernumerary cell at apex of discoidal cell.

1 ♀, *E. ceuthodonta* n.sp.

Body, including scutellum and abdomen, predominantly black, the pleural parts more blackish brown; inner parts of antennal joints 1 and 2, sides of face in buccal region castaneous brownish; legs with the femora blackened to slightly beyond middle, their apices, the tibiae and the basal parts of tarsi yellowish; pubescence with the short hairs on vertex, frons, antennae and face, the fine ones on disc of thorax, the macrochaetal bristles in front of wings, a few intermixed bristly hairs towards shoulders, the longer hairs towards base of thorax, the bristles on posterior calli, those on scutellum, the sparse setae on abdomen above, the short and not dense hairs on sides of abdomen, those on hind margins of last tergite and sternite, some intermixed bristly hairs on coxae and the spines and spicules on legs black, with the short hairs surrounding occipital cavity, the dense hairs of collar, those on sides of thorax, on mesopleuron, propleurae, in metapleural tuft, on tergite 1 and especially on its sides yellowish, that on tergite 1 slightly more creamy in certain lights, with the scaling on body above very dense, predominantly yellowish, that along eye margins slightly more whitish, that across hind margins of tergites deeper and more ochreous yellowish, that more broadly across basal parts of the tergites, especially on sides of 2-4, paler and more creamy whitish, with the sparse hairs and dense scaling on venter and legs also yellowish, that narrowly across hind margins of sternites paler; wings as shown in Fig. 4, infuscated yellowish

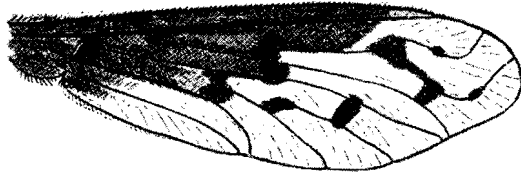


Fig. 4. *Exoprosopa ceuthodonta* n.sp.

brown in costal part, base and alula and greyish hyaline in apical and posterior parts but with blackish brown, spot-like infuscations on cross-veins as shown in figure, with the veins blackish brown, slightly paler towards base and in costal part, with the discal cross-vein before middle of discoidal cell, the discoidal cell narrow, truncated apically and its apical cross-vein straight, with the axillary lobe markedly narrow and elongate, the wings thus markedly narrowed basally, with the squamae opaquely yellowish white, having a blackish brown spot near margin towards lower lobe, fringed with slender creamy scaling; halteres yellowish brown, with almost whitish knobs. *Head* with the interocular space on vertex about three times as broad as ocellar tubercle; frons slightly medially depressed anteriorly; face comparatively short; antennae with joint 1 only about twice as long as 2, with 3 about $1\frac{1}{2}$ times as long as 1 and 2 combined, gradually narrowed apically, more rapidly to about middle on lower side, with the terminal elements together only a little shorter than joint 1, slightly flattened and the terminal style short; proboscis about 2 mm. long, more projecting than is usual for species in this category owing to the short face; palps on the whole rather short. *Legs* with distinct rows of spicules on front tibiae; middle femora with a stoutish spine in front and one behind towards apex; hind femora with about three to four spines on outer aspect below; claws with the basal tooth on middle and hind ones very small and scarcely visible.

Length of body: about $6\frac{1}{2}$ mm.

Length of wing: about 6 mm.

Gemsbok Pan, 23. iv-5. v. 30.

This species has some superficial resemblance to *capensis* Wied. but may at once be distinguished by the more hyaline posterior part of wings, the short and straight apical cross-vein of discoidal cell, the much narrower axillary lobe and anal cell, the shorter face, more projecting proboscis, more distinctly spinulated front tibiae and longer tarsi.

7 ♂♂, 12 ♀♀, *E. mira* n.sp.

Black; antennal joints 1 and 2, sides of face below antennae, lower part of face in buccal region, apical three-quarters of scutellum, hind margins of tergites, more broadly apically, sides broadly on tergites 2-4 and more so in ♂♂, very broad hind margins of sternites in ♂♂ and much narrower ones in ♀♀, the propleural sclerites, upper part of sternopleuron and to a great extent the metapleural parts, especially along sutures, and the coxae and legs yellowish brown or toffee brownish to brown, the apical halves of tarsi black, especially the front tarsi; pubescence with the hairs on vertex, frons, face, antennae and head below, the short recumbent hairs on disc of thorax, the longer ones just behind collar, on humeral angles, sides of thorax, the macro-



Fig. 5. *Exoprosopa mira* n.sp. (♀).

chaetae, bristles on mesopleuron, shorter hairs on sternopleuron, numerous bristly hairs in metapleural tuft, bristly hairs and bristles on scutellum and behind wings on thorax, a dense tuft of bristly hairs towards hind margin of tergite 1, the short setae on abdomen above, the denser and longer hairs on sides of tergites and towards apex, the hairs on venter, the bristly hairs on coxae and the spines and spicules on legs black, with the dense short hairs surrounding occipital region, the anterior longish hairs in collar region, on propleurae, intermixed ones on mesopleuron, pleurae and in metapleural tuft, densely on sides basally on tergite 1 and sparsely at base of venter, pale, those of collar more yellowish or straw-coloured and those on abdomen more distinctly whitish, with the scaling on head greyish to yellowish on vertex, frons and front, but more whitish behind eyes, that on disc of thorax glittering or gleaming silvery, that on scutellum broader and more chalky whitish, with the scaling on abdomen above dense and cretaceous or chalky white on sides of tergite 2 basally and more sparsely discally, dense on sides at base on tergite 3 and on entire last three tergites, more conspicuous in ♂ and with a tendency to be broken up into spot-like white patches, which are separated by patches of dark blackish brown scaling, with the scaling across hind margins of tergites dense and brownish to blackish brown, gleaming bronzy, the rest of the scaling on tergites smaller and composed of blackish, bronzy brownish

and dull whitish scales, intermixed and more or less irregularly patchy, with some slender, hair-like, purplish mauve or mauvish brown scales on mesopleuron, sternopleuron and on coxae, with the scaling on venter composed of whitish ones along middle and also in patches on sides and slightly bronzy yellowish scales elsewhere, with the dense scaling on legs predominantly brownish and having a greasy lustre; wings with dull black infuscation and spots and the vitreous hyaline parts as shown in Fig. 5 (♀), with the costal infuscation much less extensive in ♂♂, practically confined to costal cell, basal half of marginal cell and first basal cell, whereas in ♀♀ this infuscation also occupies greater part of marginal cell, basal part or half of first submarginal cell and base of first posterior cell, with the spots in hyaline part in ♂♂ also much smaller, and more especially are the very large confluent spots on apical cross-vein of second basal cell and at base of third posterior cell of ♀♀ much reduced, separate and not touching or confluent with the anterior infuscated area in ♂♂, with the clear area in second basal cell thus more extensive in ♂♂, with the veins very dark blackish brown in both sexes, with the first posterior cell closed and stalked apically, with the discal cross-vein much before middle of discoidal cell, with the squamae opaquely very dark brownish to blackish brown, fringed with brownish scales, which appear black in certain lights; halteres and their knobs dark velvety brown. *Head* with the interocular space on vertex at narrowest part about three times as broad as ocellar tubercle in both sexes; frons with a slight medial depression at about the middle; face not very long; antennae with joint 1 about three times as long as 2, with 3 (excluding terminal elements) slightly variable in length, subequal to joints 1 and 2 combined, often slightly longer and sometimes distinctly much longer and in ♀ slightly longer than in ♂, gradually narrowed apically, with the first terminal joint flattened, slightly broadened towards apex and with a distinct short terminal style, both together more than half as long as joint 3; proboscis about 2-3 mm. long, slightly projecting beyond face. *Legs* with the spicules on front tibiae very much reduced, vestigial or practically absent; middle femora with about four to seven spines on outer lower aspect and five to eight on inner side below; hind femora with about four to seven spines on outer aspect below and seven to eleven smaller ones on inner side below; basal tooth on middle and hind claws distinct.

Length of body: about 6-8 mm.

Length of wing: about $6\frac{1}{2}$ - $8\frac{1}{2}$ mm.

Damara Pan, 15-21. iv. 30 (Types); Kaotwe, 8-12. iv. 30.

This species is easily distinguished from other species by its dimidiate and spotted wings, the closed and stalked first posterior cell. From *cosmoptera* Bezzi, another species with dimidiate and spotted wings and closed first posterior cell, it differs in having fewer spots in the hyaline area. The species is also peculiar in that a certain amount of sexual dimorphism is shown in the less extensively infuscated wings and smaller spots in ♂♂ and also by the relatively shorter third antennal joints in ♂♂. One ♂ and two ♀♀ differ from the typical form in being distinctly larger and more bulky, about $9\frac{1}{2}$ -12 mm. long and with a wing length of about 10-12½ mm. and also in having, in ♀ at least, much longer third antennal joints, slightly longer first antennal joints and slightly more numerous spines on hind femora below. As these specimens do not differ structurally from the typical form, they may be considered as a slight variety.

1 ♀, *E. pleroxantha* n.sp.

Black; antennae also entirely black; upper edge of buccal cavity, greater part of scutellum, hind margins of abdominal tergites, more broadly towards apex, broad sides of tergites 2-4, practically entire last tergite and broad hind margins of sternites pale reddish yellow; lower parts of buccal rims ivory yellowish; palps pallid; legs with the coxae and femora black, the tibiae and basal parts of tarsi pale brownish or reddish yellow, the apical parts of tarsi blackish and the spines and spicules black; pubescence with the short hairs on vertex black, those on frons of intermixed black and sericeous yellowish ones, the yellowish ones more numerous towards antennae, the sparse, fine ones on face and longer ones on antennae below white, with a few black ones on antennae above, with the dense hair in collar region in middle yellow, those on humeral parts, on mesopleuron, propleural part, on pleurae, in metapleural tuft, sides of tergite 1, on base of venter and on coxae whitish, with the bristly hairs and macrochaetal bristles in front of wings, the whitish tipped bristles on posterior calli and on scutellum yellowish, with the sparse and very fine recumbent setae on abdomen above blackish, the longer hairs on sides of tergites whitish, having a sericeous yellowish or golden gleam in certain lights and with a few intermixed dark or blackish hairs, those towards apex more distinctly golden, with the sparse hairs on venter mostly whitish, with the scaling on body above very dense, that on vertex, frons, face and around eyes chalky white, that down occiput ochreous yellow, that on disc of thorax, scutellum and abdomen above deep ochreous yellow, with a band of conspicuous chalky white scales on each side of thorax and round hind margin of scutellum, forming a very conspicuous white stripe, with the scaling on sides of abdomen above more broadly on tergites 2-4 also chalky white, with the scaling on mesopleuron, sternopleuron, on coxae and a patch on extreme sides of tergite 1 very dense, conspicuous, gleaming or pearly, chalky white, those on venter also dense and white, with those on legs also conspicuous and white; wings greyish hyaline, with the alula, base and costal cell subopaquely yellow, a slight yellowish tinge even extending into costal part of marginal cell and into first basal cell, with the basal comb black but thickly overlain with deep ochreous yellow scaling, with the veins pale yellowish in basal half, becoming darker and more dark brownish towards apex, the apical cross-vein of second basal cell, the basal cross-vein of third posterior cell, the apical cross-vein of first basal cell, base of second longitudinal vein, the base of vein between first and second submarginal cells and basal cross-vein of third submarginal cell, however, conspicuously dark or black and with slight spot-like infusions along them, giving the wing a faint spotted appearance, with the discal cross-vein at about the middle of discoidal cell and the apical cross-vein of discoidal cell short and straight, with a short stump or appendage to vein separating discoidal and third posterior cells at base, with the squamae opaquely yellowish and fringed with pearly white scales; halteres yellow, with almost white knobs. *Head* with the interocular space on vertex about three times as broad as ocellar tubercle; antennae with joint 1 about three times as long as 2, with 3 (excluding terminal elements) about $1\frac{1}{2}$ times as long as 1 and 2 combined, tapering gradually to apex, with the basal joint of terminal elements elongate, slightly broadened apically and bearing the short terminal style, both together subequal in length to antennal joint 1; proboscis about $2\frac{1}{4}$ mm. long. *Legs* with about six small spines and one stoutish one on middle femora in front and about three apically behind; hind femora with about six to eight spines on lower outer aspect; front tibiae without spicules.

Length of body: about 12 mm.

Length of wing: about 12 mm.

Damara Pan, 15-21. iv. 30.

Easily recognized by its almost entirely hyaline wings, dense ochreous yellow scaling above and markedly dense chalky white scaling on body below.

1 ♂, *E. parvicellula* Bezzi.

Metsimaklaba, 7-12. iii. 30.

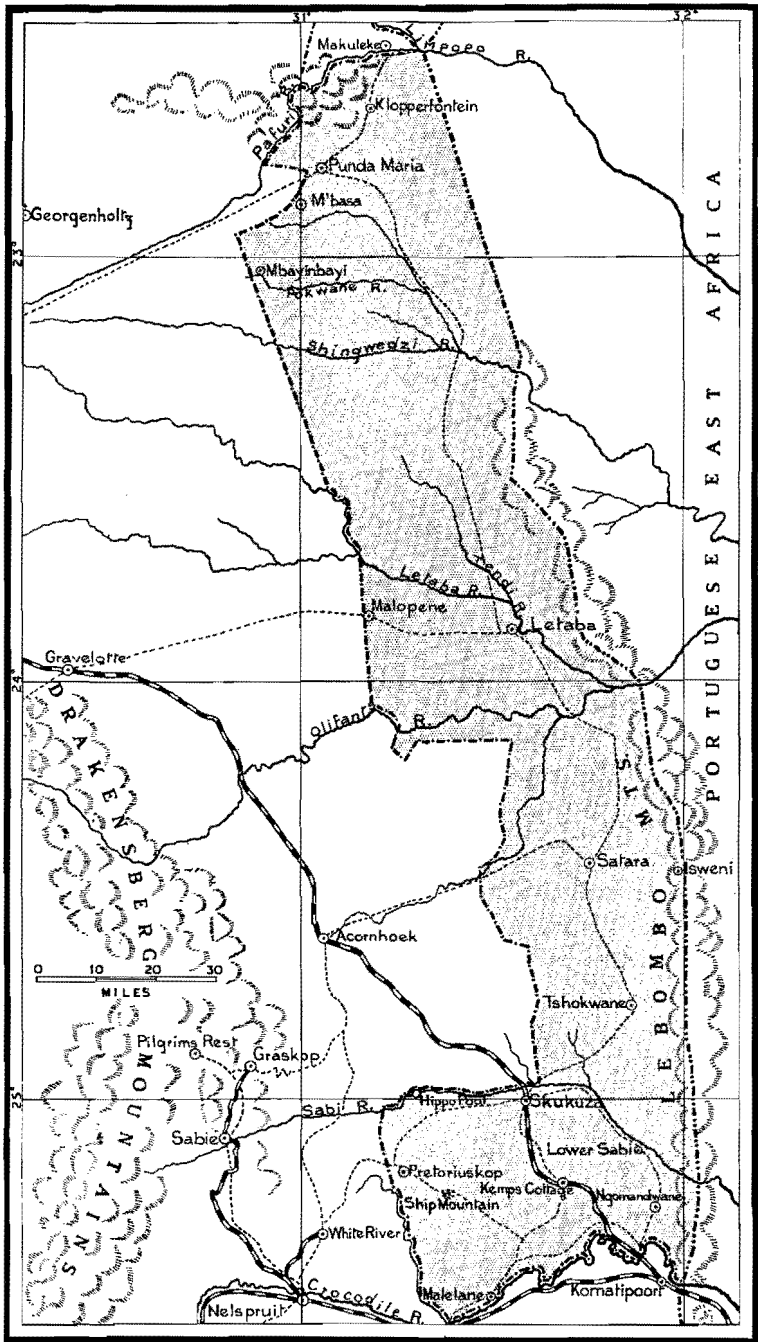
Gen. **Hyperalonia** Rond.

1 ♀, *H. vittata* Ric.

Nata River, Makarikari, 24-27. viii. 30.

APPENDIX

Two somewhat denuded ♀ specimens from "Metsimaklaba 7-12. iii. 30", belonging to a new genus in the Subfam. Bombyliinae and near the genus *Gonarthrus* Bezzi, will be described in detail in my forthcoming revision of the family in South Africa, when more specimens, including ♂♂, will be at my disposal.



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