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THE MYDAIDAE (DIPTERA) OF  
SOUTHERN AFRICA

By  
A. J. HESSE



Cape Town      Kaapstad

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# THE MYDAIDAE (DIPTERA) OF SOUTHERN AFRICA

By

A. J. HESSE

*South African Museum, Cape Town*

(With 2 plates, 26 figures and 2 maps)

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## INTRODUCTION

Before 1924 our knowledge of the Mydaid fauna of South Africa was limited by the few species described by Wiedemann (1828 and 1830), Macquart (1838) and Gerstaecker (1868). In 1924<sup>b</sup> Bezzi, however, published a revision of the South African representatives of the family, based mainly on material in the South African Museum. Notwithstanding previous attempts at a revision of the entire family, as represented in both the Old and New Worlds, by authors such as Wiedemann (1831), Westwood (1841) and Gerstaecker (1868), Bezzi's contribution from South Africa alone, despite its shortcomings, must be considered as a pioneering effort indispensable to any future revision of the entire family, a project which, because of the paucity of material in the various museums, was believed by Séguy (1928) to be still '*difficile sinon impossible*'. In his paper Bezzi dealt with 7 genera, of which no less than 4 are new, and 30 species of which he described 16 as new.

Since 1924 two other authors, Brunetti (1929) and Bequaert (1938, 1959 and 1963), especially the latter, have added some more species from Rhodesia, South West Africa and South Africa to the list from southern Africa which, together with a species each described by Sack (1935), Séguy (1929) and Stuckenberg (1955), now stands at 48 species belonging to 10 genera.

Since 1924 the Mydaid material in the South African Museum, thanks

to organized collecting by various members of its staff, has been considerably augmented and this, together with the rich and interesting material of other museums and institutions in southern Africa, has increased the number of species occurring in this part of Africa to such an extent that it can no longer be maintained that Mydaiidae are poorly represented in this part of the world.

This rich material from all these various sources has enabled me to attempt a revision of our local forms in which some changes, different interpretations of genera and species and many new forms are described, all of which I hope will be a contribution to our taxonomic knowledge of these interesting Diptera and be at least of geographical significance if ever a more serious attempt be made by some more competent author to revise the Mydaiidae of the whole world.

At present about 30 genera of Mydaiidae in the world are known and a little more than 200 species have been described. In this memoir 22 genera (12 new), 2 new subgenera and 156 species (108 new) from southern Africa alone are dealt with, numbers which imply that this sub-region of Africa is remarkably rich in Mydaiidae. These figures however are not to be taken as an indication of the existence of a special paradise for this family at the tip of the African continent, but rather as an indirect compliment to the collecting abilities of Museum personnel in a small section of this part of the world. If similar organized collecting of these insects were to be conducted in all parts of southern Africa, in other parts of Africa and in other parts of the world Mydaiidae in collections would not be so rare as at present, and South Africa would have to give up its present claim as the geographical home of a very large percentage of these insects.

#### DEFINITION OF THE FAMILY

Representatives of this dipterous family, which shows affinities with the Asilidae, are very easily recognized by the shape of the head in which the frons is excavated and the eyes are dichoptic in both sexes; by the presence of a single ocellus; by the four-segmented antennae of which the last or fourth segment (club) is either elongated and thickened, or markedly inflated, tumid, globular, or pyriform and usually ending in a small crater-like protuberance or tubercle of variable size on the terminal dorsal aspect and surrounded below by a modified sensory area of variable extent; by the complicated and characteristic venation in the wings in which the longitudinal veins, unlike those in any other Diptera, except the Apioceridae and Nemestrinidae, are all directed and bent forwards towards the apex of the wings, even the fourth vein ending at or before the apex.

These few characters in combination at once distinguish them from all other Diptera, but other distinguishing features are: the usually tumidly prominent or protuberant middle part (clypeus) of the face; the presence of a very peculiar callosity or smooth protuberance (so-called 'bulla'), of unknown function, on each side across hind margin of the second abdominal tergite; the presence of a row, or half a circlet, of spines or bristles on a sclerite (oviscape)



on each side of the last modified and usually centrally carinate or keeled perpendicular tergite in the females; the characteristic hypopygial structures of the males, so well described and figured by Bequaert (1938) and as illustrated by the figures in this memoir; the thickened or incrassate hind femora (in a very large number of species), armed below with backwardly-directed stoutish spines, usually in two or four rows; and by the relatively poor development of the vestiture, sometimes almost bare body and entire absence of distinct bristles.

The complicated venation in the wings, apart from the costal vein or anterior margin and the subcostal vein, usually consists of a long second vein ( $R_1$ ) ending near apex of wing and which in its apical part receives all or most of the other veins ( $R_2$ ,  $R_4$ ,  $R_5$ ,  $M_1$ ), all bent forwards towards it ( $R_3$  constituting an appendix). The endings of the last two ( $R_5$  and  $M_1$  (or  $M_1 + 2$ )) either in apical part or beyond apex of second vein sometimes constitute generic differences, though not always reliable. The hind border of the wings up to the anal vein is in most genera without any transverse veins or veins connecting the system to the hind margin.

The series of cells enclosed by the various veins are usually: the costal, marginal, first submarginal, second submarginal, sometimes a third submarginal, long first basal, second basal, anal, discoidal (in middle), first posterior, so-called third posterior and the axillary lobe.

For the elucidation of the wing venation of Mydaidae the reader is referred to Séguy (1928: 135 and 136), Hennig (1954: 337-340, figs 175-177) and to Bequaert (1961a: 6 and 7).

Most of the species of Mydaidae are fairly large, elongated insects, resembling asilid- or conopid- or some syrphid-diptera and scoliid- or vespido-hymenoptera. Among the mydaids are the largest Diptera in the world, but these occur in South America, where the giant among Diptera is *Mydas heros*, which may reach a length of 55 mm (or  $2\frac{1}{4}$  inches). The largest South African species is *Afroleptomydas omeri*, of which some females may reach a length of 29 mm.

#### HABITS AND BIOLOGY

Adults of the Mydaidae, presumably mainly species of *Mydas* in the New World, are stated to be carnivorous by some authors, while others maintain that they visit flowers. In all my experience, as well as that of other collectors in South Africa, these insects have never been observed to hunt, catch or prey upon other insects as the asilids do. Quite a few species of the genus *Afroleptomydas* and some species of *Cephalocera* have however been caught on flowers, presumably imbibing nectar.

In South Africa individual flies are invariably found resting on the ground or sand in open spaces between bushes, very frequently in paths made by animals or man. A sandy environment is more frequently the favoured habitat. A large number of species appear to occur along the coastal belt, consisting of

sand dunes and dune flora.

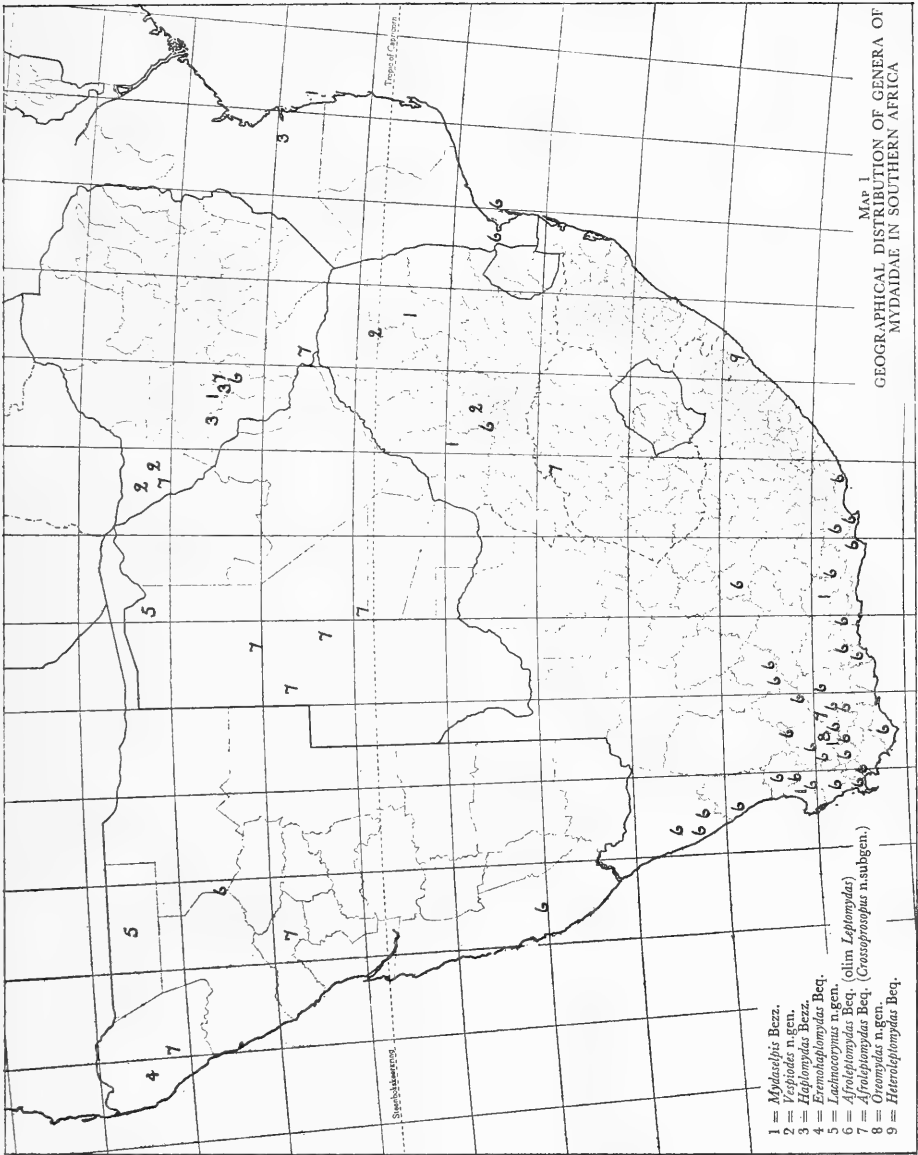
Mydaiids have a characteristic rapid gliding flight reminiscent of partridges, flying up and disappearing as quickly and as mysteriously within a limited field of observation. They usually rest with the wings open or partially open. They are by no means common, even in localities where they are known to occur. Much walking to and fro over a large area and keen observation are necessary to discover representatives; an entire day's collecting will reward the collector with only a few specimens.

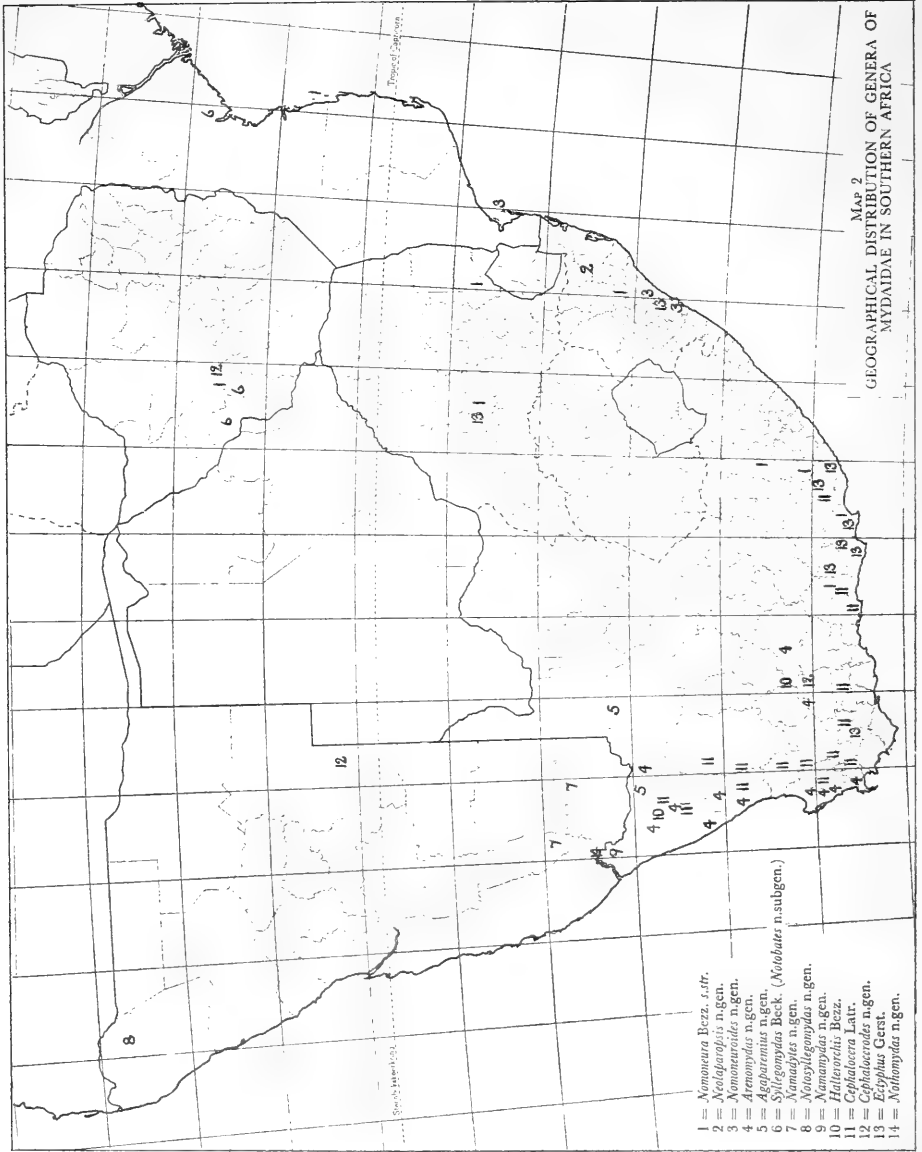
*Seasonal occurrence:* Species of Mydaiidae are also strictly seasonal in their appearance, flying about only during their appointed season, being entirely absent at any other time of the year. Different species may be captured at different times almost throughout the year, though most species, in the Cape Province at least, occur from September to January. Some forms, however, are only to be seen during July and August.

*Distribution in southern Africa:* Mydaiidae in southern Africa appear to be remarkably restricted as species or varieties in their distribution. Any one species appears not to be widely distributed as in the case of other sand-frequenting Diptera, such as the Asilidae and Bombyliidae. This relatively restricted occurrence has caused some wrong identification of species. Species occurring in the Cape Peninsula are replaced either by distinct varietal forms or by related, but entirely different, species 50 miles either to the east or to the west along the sandy coastal belt. Along the western coastal region species, occurring more to the south, are different from those occurring in Namaqualand and farther north. Moving eastwards along the southern coastal region the collector meets with a different species, or series of species, almost every 50 miles.

In the valleys or around towns in the more inland mountainous parts different montane forms are to be found. Beyond the mountainous belt in the Koup Karoo, Little Karoo and Great Karoo species occur which, even if related to southern coastal or Namaqualand forms, are entirely different and also differ as species respectively in these different types of Karoo, even though the general semi-arid environment may have much in common. Species of the eastern Cape do not occur in the western Cape and those occurring in the far eastern Cape often differ from those met with in Natal and Zululand. Forms occurring in South West Africa differ entirely from species inhabiting the various provinces of the Republic, Mozambique, Rhodesia and east Africa.

Not only is this geographical restriction applicable to species, but also to most of the genera (see maps 1 and 2). Some genera occur only in the eastern Cape, Natal and south-eastern Africa whereas other closely related genera are to be found only along the western coastal region, in the western Cape, Namaqualand and South West Africa. The genus *Ectyphus* (map 2), for instance, occurs mainly in the wooded parts of the south-eastern transitional Karoo, the forested parts of the eastern Cape and into Natal. The genera *Heteroleptomys* Beq., *Nomoneura* Bezz. s.str., *Neolaparopsis* n.gen., *Haplomydas* Bezz. and *Nomo-*





*neurooides* n.gen. are all south-east African in their distribution.

Species of *Mydaselphis* Bezz. occur in the south-western coastal region, the Koup and Little Karoo up to the north-western Transvaal, whereas the species of the very nearly related *Vespiodes* n.gen. inhabit the subtropical parts of northern Transvaal, Rhodesia and central Africa. The genus *Cephalocera* Latr. and the new genus *Arenomydas* are only represented in the south-western and western Cape, western Karoo and Namaqualand and not to the east of about longitude 23. *Namamydas* n.gen. is only represented by a species from the north-western Cape, and so is the new genus *Nothomydas*.

The genera *Eremohaplomydas* Beq., *Lachnocorynus* n.gen., *Namadytes* n.gen. and *Notosyllegomydas* n.gen. appear to occur only in South West Africa. The new genus *Cephalocerodes* is remarkable in that its more typical representatives occur in Rhodesia and in a part of South West Africa bordering Botswana (Bechuanaland), but an aberrant form of it is found in the Koup Karoo.

The most widely distributed genus is *Afroleptomydas* Beq. (olim *Leptomydas* of authors) of which species appear to occur all over southern Africa, but even it is represented by typical forms and aberrant forms (the latter belonging to the new subgenus *Crossoprotopus*). The more typical species appear to occur mainly along the southern and south-eastern coastal regions whereas the slightly aberrant representatives of the new subgenus occur more inland in the Karoo, Botswana (Bechuanaland), the Kalahari and into Rhodesia.

The north African *Syllegomydas* Beck. is not represented in South Africa, but in Rhodesia it is represented by a new subgenus *Notobates*.

*Life History:* As regards life histories of representatives of this family, the development of not a single South African species is known. Life histories, or certain stages of these, of a few North and South American species of *Mydas* are known. In these cases it is stated that the larvae occur in decaying wood and in some cases are said to be predaceous upon coleopterous larvae (Malloch, 1917) and also on the pupae of certain Lepidoptera (Johnson, 1926). Séguy (1928) gives descriptions of the little that is known: of the egg, larva and pupal stage, as well as a general résumé of what is known of the biology and habits of the family, also based mostly on species of *Mydas*.

As in the case of the Asilidae, and also other insects, with circlets of spines at the apex of the abdomen of the females and where the egg-laying habits are better known, this armature at the end of the abdomen of most genera of Mydidae, however, suggests scooping or digging operations in loose soil or sand for oviposition, indicating the biology of a type of larva which lives and develops in soil or sand like the larvae of Asilidae, or which parasitizes the subterranean larvae or pupae of other kinds of insects. Members of the South African Museum staff have in fact witnessed such digging operations carried out by females of the species *Cephalocera longirostris*.

With the exception of species of *Mydaselphis* and *Vespiodes* the representatives of all other known genera in southern Africa have this circlet of spines at the

end of the abdomen, an adaptive structure which suggests a different type of biology from that of genera lacking distinct spines as in the case of the two South African ones mentioned above and foreign genera such as *Mydas*. Not before we know more of the biology of the genera armed with spines on the oviscape is it possible to generalize for the family as a whole.

#### CLASSIFICATION OF MYDAIDAE

The taxonomic identity of Mydaid genera, as defined in literature, appears to be very confusing and great vagueness and uncertainty exist as regards the limits of any one genus. Some authors based their diagnosis of the various genera mainly on wing-venation. Others supplemented their definitions by concentrating on the presence or absence, or relative length, of the proboscis, the form of the antennal clubs and the nature of the vestiture.

As the hypopygial structures of the males appear to be superficially uniform in the various species of the large genera, such as *Mydas*, *Afroleptomydas* and *Cephalocera*, these structures have not been used in the systematics of genera as they deserve to be. Bequaert, in his various publications, more particularly in those of 1961a (8-15) and 1962 (1-68), is however the only author who paid special attention to the genitalia of the males, especially the structure and nature of the aedeagus, as a basis for the definition and separation of genera and groups of genera. This procedure is also adopted in this revision.

The characters used as distinguishing features in the separation of the various South African genera are, in order of importance:

(a) The shape, form and structure of the aedeagal apparatus in the males together with secondary modification of other supplementary hypopygial structures (the nomenclature used is based on that of Bequaert).

(b) To a much lesser extent the shape, form and nature of the vertical carina on the last genital segment (tergite) in the females, the presence or absence of a row of spines on the sclerite (oviscape) on each side below this terminal tergite and to a certain extent also the size of the anal lobe.

(c) Venational characters as evidenced by the apical ending of the posterior vein of the so-called first posterior cell (e.g. whether the latter cell is closed apically on the second vein ( $R_1$ ), or opens on this latter vein or on the costal margin itself, or appears stalked apically as it ends against the forwardly-directed apical part or end of the second vein).

(d) Other venational characters, such as the junction of the base of the posterior vein of the so-called third posterior cell with either the apical transverse vein of the second basal cell or that of the anal cell, and presence or absence of a transverse connecting vein between the third posterior cell and hind margin of the wings.

(e) Nature of the vestiture and the presence or absence of hairs on the metanotum, mesopleuron and pteropleuron.

(f) Shape and length of the antennae, especially of segment 3 and the club.

(g) Shape, length, vestigial nature or absence of the proboscis.

(h) Nature, form and structure of the hind legs, especially the femora.

(i) Microsculpture, sculpture or puncturation on the thorax, metanotum and abdomen.

*Grouping of the genera:* For the grouping of the various genera into special sections based on similarity of the aedeagal apparatus and wing-venation Bequaert (1961a: 16 and 17) suggested the establishment of two large divisions or subfamilies, the Heteromydinae and Orthomydinae, subdividing the latter into two subsections Orthomydinae oligoneurinae and Orthomydinae polyneurinae. Subsequently in 1963: 1, to conform to rules of taxonomy, he substituted the subfamily names of Mydinae (= Orthomydinae oligoneurinae), Diochlistinae (= Orthomydinae polyneurinae) and Syllegomydinae (= Heteromydinae).

These suggested major divisions of Bequaert are to be recommended as very suitable and convenient for the grouping of all the known genera of Mydidae.

According to Bequaert all the known genera with the aedeagus in the ♂♂ double (divided into two phallic tubes), with only two submarginal cells in the wings of which the second opens on the second vein ( $R_1$ ) and without a cross-vein to hind margin or border of the wings are to be referred to the subfamily Syllegomydinae.

To his subfamily Mydinae belong all genera in which the aedeagus of the ♂♂ is single (with only one or a single median phallic tube) and with the normal second submarginal cell either also opening on second vein ( $R_1$ ) as in the Syllegomydinae, but in which case there is however present a cross-vein in hind border of the wings, or the second submarginal cell opening, or partially opening, on costal vein and the wings in this case without a cross-vein in hind border.

To his remaining subfamily Diochlistinae are to be referred all genera which, though also in possession of a single aedeagus in the ♂♂, have in addition three submarginal cells in the wings of which the second constitutes an apically-stalked enclosed cell between the first and third submarginal cells.

In the geographical subregion dealt with in this revision all the known genera, except the anomalous genus *Ectyphus* Gerst., belong to the large subfamily Syllegomydinae. As the genus *Ectyphus* has a single aedeagus it is referable to the Mydinae, but it apparently occupies an anomalous position within this latter subfamily on account of a wing venation which is very similar to that found in the Syllegomydinae. In this respect it is also different from the other genera of the Mydinae, such as *Perissocerus* Gerst. and *Rhopalia* Macq., in which the second submarginal cell opens on the costal vein and not on the second vein. The presence of a cross-vein in hind border of its wings however differentiates it from the Syllegomydinae.

For purposes of convenience the African genera belonging to the large subfamily Syllegomydinae are subdivided into the following new tribes in this revision:

(a) **Syllegomydaini** n.tribe which includes the following genera and subgenera: *Haplomydas* Bezz., *Eremohaplomydas* Beq., *Lachnocyornus* n.gen., *Afroleptomydas* Beq., *Afroleptomydas* (*Crossoprosopus* n.subgen.), *Oreomydas* n.gen., *Heteroleptomydas* Beq., *Nomoneura* Bezz., *Neolaparopsis* n.gen., *Nomoneuroides* n.gen., *Arenomydas* n.gen., *Agaparemius* n.gen., *Syllegomydas* (*Notobates* n.subgen.), *Namadytes* n.gen., *Notosyllegomydas* n.gen., *Namamydas* n.gen., *Halterorchis* Bezz. and *Nothomydas* n.gen.

(b) **Mydaselpini** n.tribe to accommodate *Mydaselpis* Bezz., *Vespiodes* n.gen. and the remarkable genus *Afromydas* Beq. from Somaliland.

(c) **Cephalocerini** n.tribe to which the genera *Cephalocera* Latr. and the new genus *Cephalocerodes* are referred.

The characters which distinguish and differentiate the various subfamilies, new tribes, genera and subgenera are summarized in the descriptive key which follows:

DESCRIPTIVE KEY TO THE SUBFAMILIES, TRIBES, GENERA AND SUBGENERA OF THE  
KNOWN AFRICAN MYDAIDAE

1. (a) Aedeagus in ♂♂ double, divided either from base or distally into two distinct and separate phallic or aedeagal tubes; wings with only 2 submarginal cells of which the normal second opens on second vein ( $R_1$ ) and without any posterior cross-vein in hind border 2 (Subfam. Syllegomydinae Beq.)
- (b) Aedeagus in ♂♂ single, ending in a single phallic tube or gonopore; wings either with 3 submarginal cells of which the normal second forms an apically-stalked enclosed cell between the first and third or, if with only 2 submarginal cells, the second opens on costal margin or on second vein, but in latter case with a posterior cross-vein in hind border 25
2. (a) Wings with the posterior vein of third posterior cell originating from apical cross-vein of second basal cell, the former cell thus tending to be much narrowed basally; sternite 9 in ♂♂ usually more inflated or conically tumid or more deeply hollowed out scoop-like above, with a more prong- or spine-like, backwardly projecting process on each side dorsally; aedeagal apparatus of ♂♂ various, but usually not in form of two long, curved, stethoscope-like, phallic tubes arising in front of a shield-like basal sclerite; proboscis, if well developed, usually thicker, stouter, with broadish labella . . . . . 3
- (b) Wings with posterior vein of third posterior cell originating from distal part of the cubital or anterior vein of anal cell and not from apical cross-vein of second basal cell, the third posterior cell thus much broadened basally; sternite 9 in ♂♂ more dorso-ventrally flattened, more shovel-like or navicular, with a more flattened, inwardly-curved process, sometimes broadened apically and hollowed out spoon-like on inner aspect, aedeagal apparatus of ♂♂ in form of two long or very long, inwardly-curved, stethoscope-like, phallic tubes, arising in front of a medial, basal, shield-like or quadrate sclerite; proboscis, even if reduced or short, usually thin and slender, sometimes very long, with much smaller terminal labella . . . . . 24 (Cephalocerini n.tribe)
3. (a) Phallic tubes of aedeagus in known ♂♂ thick, stoutish, shortish, and with a conspicuous funnel-like gonopore; sternite 9 in known ♂♂ usually more navicular or scoop-like, hollowed out dorsally or posteriorly much compressed, or posteriorly broadly indented, rarely conical; oviscape in known ♀♀ with a few or a row of much thinner, more bristle-like spines, or only with a row of bristly hairs; terminal segments in ♀♀ narrowed, protruding beyond tergite 8; tibiae with the hairs markedly short, usually stiffish, or sometimes spine-like and situated on more distinct granules, especially on hind ones below, and with the spicules, at least on hind ones, below reduced or small; abdomen usually distinctly more pedunculate or subpedunculate, more distinctly or markedly narrowed waist-like near middle or between segments 2 and 4, usually very densely



- punctured or sculptured, either very coarsely or finely so; species usually more vespid- or conopid-like . . . . . 4 (*Mydaselpini* n.tribe)
- (b) Phallic tubes in known ♂♂ differently shaped, either more slender, longer and more pointed, or curved and horn-like, or very long and slender or, if not long, very short and sessile, and usually with an inconspicuous and small gonopore, or with the pore only conspicuous at end of very long tubes; sternite 9 in known ♂♂ usually distinctly more tumidly conical or inflated or laterally compressed in apical part, rarely navicular or much dorso-ventrally flattened scoop-like and, if broadly indented apically, other characters do not differ; oviscapae in known ♀♀ with a row of very distinct, conspicuous, broadish, stoutish, flattened spines on each side; terminal segments in ♀♀ more truncately or obliquely under tergite 8, composed of an upper, centrally-carinate, perpendicular sclerite and a spine-bearing oviscapae-sclerite on each side below it; tibiae with relatively longer, finer, usually less spine-like hairs, usually not situated on granules (or these are scarcely perceptible), and with the spicules, especially on hind ones, usually longer, sometimes more numerous; abdomen not markedly narrowed waist-like, and, if slightly narrowed between segments 2 and 3 (or 4), usually not coarsely or very densely punctured or sculptured and, if punctured, other characters conform; species usually more asilid- or scoliid- or apid-like . . . . . 6 (*Syllegomydai* n.tribe)
4. (a) Aedeagal apparatus in ♂♂ without a distinct epimere in front of the two phallic tubes; sternite 9 in ♂♂ more roundly convex broadish, scoop-like, in side view more rounded posteriorly, not or only slightly indented medially, not deeply so, its processes more slender, with shorter and sparser hairs below; oviscapae in ♀♀ with a row of longer, stouter bristles; abdomen stouter, distinctly more coarsely and densely punctured, pitted, or rugulose punctured above; tergite 1 more coarsely punctured across middle discally, and with fairly long, dense, mane-like hairs across sides basally and middle discally, usually without, or with less, conspicuous silvery or greyish white bloom on sides basally and on metapleurae, metasternal parts and hind coxae; clypeus smaller, less convex, more sloping straight down; hind femora less clavately thickened, their base less slender; hind tibiae with short, but distinct, spicules along inner face and near apex, especially in ♀♀ . . . . . *Mydaselpis* Bezz.
- (b) Aedeagal apparatus in ♂♂ either with a single more distinct epimere, or more conspicuous process or tongue-shaped lobe, or with a double epimere; sternite 9 in ♂♂ either narrowed, laterally compressed posteriorly, in side view more vertically or sharply truncate apically, or sometimes more conical and posteriorly distinctly more deeply indented in middle, its processes stouter and broader, or shorter, with longer and denser hairs below; oviscapae in ♀♀ with a row of finer, more hair-like bristles or bristly hairs, or with very few of them bristle-like; abdomen more slender, sometimes distinctly more pedunculately narrowed and waist-like at segments 2 and 3, either with dense or sparse, much finer, or very fine aciculate, setiferous puncturation; tergite 1 only finely, more sparsely punctured, sometimes transversely grooved or striated on sides and basally, with only fine or much shorter, not densely mane-like, hairs on sides (if with longish ones, these not separated mane-like on sides basally), usually with dense, conspicuous, silvery whitish tomentum on sides basally and sometimes also on metapleural, metasternal and hind coxal parts; clypeus usually longer, more bulging or convexly prominent; hind femora usually more clavate, their base more slender, often with more conspicuous transverse, node-like annulation; hind tibiae without any or with only very much smaller spicules along inner face or apically, even in ♀♀ . . . 5
5. (a) Epimere of aedeagal apparatus in ♂♂ single, in form of a spine-like, lobe-like, or tongue-shaped process in front of and dorsal to the two phallic tubes; sternite 9 in ♂♂ less indented posteriorly above; terminal abdominal segments in ♀♀ more sharply tapering and with a row of hair-like bristles or with only a few such bristles on apical section of oviscapae; abdomen distinctly more pedunculate, narrowed waist-like at segments 2 and 3; tergite 1 more usually transversely grooved or striated on sides and basally; mesonotal part of thorax above finely hairy, without triangular, less sculptured, bare or tomented areas anteriorly submedially and basally; pleural, especially mesopleural, metapleural and hypopleural parts, if not tomented, bare and without distinct hairs . . . . . *Vespiodes* n.gen.  
 (= *Leptomtydas* Sack nec Gerst.)  
 (= *Mydaselpis* Beq. nec Bezz.)

- (b) Epimere of aedeagal apparatus in ♂ double, in form of two sharply pointed prongs in front of and dorsal to the two phallic tubes; sternite 9 in ♂ deeply indented posteriorly above; terminal abdominal segments in ♀ less pointed and with a row of bristly hairs across apical section of oviscape; abdomen less pedunculate, less narrowed waist-like at segments 2 and 3; tergite 1 apparently not transversely striated on sides; mesonotal part above without, or with less distinct, hairs, with two submedial, anterior, triangular, and two basal triangular, less sculptured, tomented areas; pleurae, especially hinder part of mesopleuron, pteropleuron, metapleuron and hypopleuron, with some distinct hairs . . . . . *Afromydas* Beq. (ex descr.)  
(from Somaliland)
6. (a) Hind tibiae somewhat or distinctly compressed, longitudinally strongly carinate or ridged below, ending apically below in a conspicuous, prominent, tooth- or spine-like process in both sexes or in at least the ♂♂; hind femora either markedly thickened, incrassate, spindle-shaped, or distinctly strongly clavately thickened, with two rows of spines below and also with some in a row, or some apically, external to the normal two rows; proboscis either almost wanting, vestigial, or usually very short, confined to buccal cavity, and in latter case with large, fleshy, elongate labella, usually longer than basal part; bullae more linear along extreme hind margin, or narrow and more obliquely situated; lateral lobes of tergite 9 in ♂♂ sometimes strongly chitinized apically and armed there with a pad of distinct denticles, or sometimes with distinct setiferous granules along margins apically below . . . . . 7
- (b) Hind tibiae more cylindrical, either non-carinate below, feebly so, or only slightly so in basal half, without any distinct or strong apical process or prong below, at most with only a slight, insignificant prominence below; hind femora, even if much thickened, as in some ♂♂, usually more clavately so and usually with only two rows, or sometimes even only one, of spines below and, if with some scattered spines apically on outer side, these do not constitute a distinct row and the other characters conform; proboscis usually longer or very long and, if short and confined to buccal cavity or if vestigial, the labella are not fleshy and hind leg-characters do not differ; bullae, if present, usually broader, more ovate, bean-shaped or rounded, or occupying much of hind border; lateral lobes of tergite 9 in ♂♂ more lappet-like, not armed with denticles or setiferous granules apically . . . . . 9
7. (a) Frons and face very much narrower, the interocular space on vertex very much less than twice width of eye; vertex sunk in at middle; antennal clubs more elongate, more bottle-shaped, with much larger terminal, crater-like tubercle; proboscis, though reduced and short, still only a little shorter than buccal cavity; wings not pedunculate basally, the alula much broader, more lobe-like; hind femora markedly incrassate, more subspindle-shaped, especially in ♂♂; lateral lobes of tergite 9 in ♂♂ more broadened, more truncate or subtruncate apically and armed there with a pad of coarser denticles; processes of sternite 9 in ♂♂ more rod- or prong-like, narrowed apically  
*Haplomydas* Bezz.  
(= *Heleomydas* Séguéy)  
(= *Rhopalia* Brun. nec Macq.)
- (b) Frons and face markedly broad, the interocular space on vertex markedly broad, quite or very little less than width of eye; vertex straighter, not distinctly sunk in; antennal clubs either more subglobularly pyriform, subglobular, or berry-shaped, with much shorter, or even small, crater-like terminal tubercle; proboscis wanting, or very rudimentary, confined to base of buccal cavity; wings distinctly more narrowed or pedunculate basally, the alula much reduced, or only narrowly lobe-like; hind femora more clavately thickened, with a longer narrow basal part; lateral lobes of tergite 9 in ♂♂ more narrowed, or more roundly pointed apically, with fewer, less distinct denticles apically, or with inconspicuous setiferous granules only; processes, not prong-like, more dorso-ventrally depressed, or flattened, strap-like, upcurved and more broadened apically . . . . . 8
8. (a) Antennae much shorter, very much shorter than thorax, segment 3 markedly short, shorter than 1 and 2 combined, the club without conspicuous, fine, dense pubescence, even in ♂♂; proboscis wanting or very vestigial; wings with the apex of first posterior

cell markedly broadened, the sides markedly divergent apically, and anal cell broader, its apical stalk not reaching hind margin; vestiture poorly developed in both sexes, sparse or short even on head; hind legs relatively shorter, the hind femora distinctly shorter, with much shorter slender base and only a little more than a fourth their length longer than shortened hind tibiae; processes of sternite 9 in ♂♂ very much reduced, small, lappet-like; basal part of aedeagal apparatus broad, lobe-like

*Eremohaplomydas* Beq. (ex descr.)

- (b) Antennae much longer, slightly longer, or scarcely shorter, than thorax, segment 3 elongate, much longer than 1 and 2 combined, more annulated, the club appearing hairy, with a conspicuous coating of very dense, fine pubescence, more conspicuous in ♂♂; proboscis short, rudimentary, but still perceptible; wings with apex of first posterior cell less broadened, the sides of cell more subparallel, and anal cell narrower, its apical stalk reaching hind margin; vestiture, especially in ♂♂, distinctly longer, denser, very dense and long on head, base of abdomen and on legs, a little shorter in ♀♀; hind legs markedly elongate relative to front and middle ones, the hind femora distinctly much longer, with their base longer, more slender, the femora themselves very much more than a fourth (nearer half) their length longer than the markedly shortened hind tibiae; processes of sternite 9 in ♂♂ strongly developed, in form of long, upcurved, flattened and apically-broadened and rounded structures; basal part of aedeagal apparatus more slender, rod-like . . . . . *Lachnocorynus* n.gen.
9. (a) Proboscis shorter, less than 3 mm long, sometimes very short, rudimentary or vestigial, thicker and stouter; antennae longer, the clubs usually much shorter than rest of segments combined and, if sometimes subequal in length to or even slightly longer than, proboscis is very short or rudimentary; tergite 2, if depressed transversely, either so across its extreme base or much nearer base; abdomen in known ♂♂ with 9 segments, tergites 8 and 9 and sternite 8 being distinctly discernible; lateral lobes of tergite 9 usually in form of triangular flaps, not modified as part of copulatory apparatus; anal lobes, even if reduced, usually broadish, not markedly narrowed at base . . . . . 10
- (b) Proboscis longer, quite 3 mm long, thin and slender; antennae markedly short, the clubs subequal in length to or slightly longer than the rest of segments combined; tergite 2 deeply transversely depressed some distance away from base; abdomen in ♂ with only 7 visible segments, tergites 8 and 9 and sternite 8 not externally visible, hidden or absent, and only lateral lobes of tergite 9 projecting from under tergite 7 as arched, flattened, strap-like structures, modified as part of copulatory apparatus, broadened basally and truncate apically and curving down apically on each side to inner sides of processes of sternite 9; anal lobes markedly narrowed or pedunculate basally, more isosceles triangle-shaped . . . . . *Nothomydas* n.gen.
10. (a) Aedeagal apparatus in known ♂♂ appearing three-pronged, composed of a stoutish basal part, ending in a medial dorsal process, rod, or plate (epimere) and below it an aedeagal or phallic tube on each side; central carina or keel on apical, perpendicular, genital segment above the two sclerites (oviscape) bearing the spines in ♀♀ usually longer, more keel-like, the lower margins of this segment on each side of keel usually straighter, not or scarcely making an angle or sharp angle at apex of keel and, if short and arched, these hind margins are in a straight line; disc of thorax, if with bare streaks, then usually with 4, the middle ones constituting a streak divided by a narrow central streak of hairs or pale tomentum; postvertical spines usually more distinct, stouter and, if absent, other characters conform . . . . . 11
- (b) Aedeagal apparatus in known ♂♂ not three-pronged as above, but composed either of a single tubular basal part ending apically in a dorsal and ventral part, or of three distinct and separate elements, or of a central dorsal epimere and two aedeagal (phallic) tubes usually divergent apically, or of only a dorsal epimere and below it a single aedeagal ventral process which is forked apically, the forks (phallic tubes) of which curve outwards apically or sometimes even downwards on each side; central carina or keel on last perpendicular genital segment in known ♀♀ either shorter, more arched or bow-shaped, or very short and arched, the hind margins of this keeled segment on each side of keel more often making a distinct angle of variable degree at apex of keel; disc of thorax, if with bare streaks, then usually with only 3 broadish ones, the middle one not

- distinctly divided; postvertical spines not distinct, weaker, not clearly differentiated, or absent .. .. . 17
11. (a) Proboscis more developed, of variable length, more often long or projecting beyond buccal cavity and, if short, at least not rudimentary or vestigial; antennae longer or longish, rarely very short or with segment 3 short; wings usually broader basally, rarely with the axillary lobe and alula narrowish, either hyaline or infuscated to a variable extent; apex of first posterior cell either open on costal margin or subtending angularly on it, or occasionally very shortly stalked .. .. . 12
- (b) Proboscis much reduced, rudimentary, vestigial, sometimes perceptible only as a scale, confined to extreme base of buccal cavity; antennae shorter, usually relatively short, with segment 3 often short or much shorter than club; wings sometimes tending to be narrower basally, the axillary lobe and alula tending to be narrowish, more usually hyaline or, if darkened, much less so; apex of first posterior cell more consistently shortly stalked, more rarely angularly opening, or angularly subtending, on costal margin and, if distinctly narrowly open on costal margin, proboscis is vestigial .. 19
12. (a) Metanotum distinctly hairy or at least with some hairs, even if only on sides, and pteropleuron and at least hind border of mesopleuron always with some hairs, more often very hairy; apex of first posterior cell in wings consistently broadly open to a variable extent on costal margin; hind border of wings, opposite posterior cells, at least as broad as these cells or broader; sternite 9 in ♂♂ usually distinctly more tumidly conical or rounded apically, its processes usually longer, more slender, narrower, more sharply pointed and, if not, metanotum with some hairs .. .. . 13
- (b) Metanotum entirely bare, without any distinct hairs, and pteropleuron and mesopleuron sometimes also bare, or pteropleuron is bare and the hairs on rest of pleurae very sparse and shortish; apex of first posterior cell not distinctly open, being narrowed and subtending more angularly on costal margin, or even distinctly very shortly stalked on costal margin; hind border of wings, opposite posterior cells, distinctly much narrower than these cells; sternite 9 in known ♂♂ not very conical, either more dorsoventrally depressed, more navicular, more flattened, its processes usually stouter, broader, more hollowed out below, more bluntly rounded apically and, if not, metanotum is entirely bare .. .. . 15
13. (a) Fronto-facial space much broader, the interocular space on vertex distinctly broader, or much broader, than that on head below, the inner margins of eyes not, or only slightly, converging towards vertex, the latter less sunk in; antennae much longer, with apical sensory area of clubs usually larger, more oblique; vestiture distinctly more developed, longer and denser, the hairs on metanotum long and dense and also with much or dense ones on mesopleuron posteriorly and on pteropleuron; thorax on sides without a conspicuous, broadish whitish-tomented streak and, if tomented, also with dense hairs; anal lobes in ♂♂ larger, broader, more rounded apically; sternite 9 in ♂♂ more conical or conically produced, its processes longer, more slender, more sharply pointed apically; central dorsal epimere of aedeagus usually longer, more shoe-horn-shaped, hollowed or grooved below; phallic tubes proportionally longer, less divergent; oviscape in ♀♀ on each side more elongate, narrower, less lobe-like and opening between them below very broad, lodging larger anal lobes .. .. . 14
- (b) Fronto-facial space markedly narrow, the interocular space on vertex scarcely, or not much, broader than that on head below, the inner margins of eyes markedly converging towards vertex, the latter more deeply sunk in; antennae markedly short, with apical sensory area of clubs much smaller, more reduced, more terminal, appearing more truncately sunk in; vestiture very poorly developed, the body markedly bare, the metanotum with only a few shortish hairs on sides and with only a few very short, or without any, hairs on mesopleuron posteriorly and on pteropleuron; thorax on sides with a very conspicuous, broadish streak of whitish tomentum showing under sparse and very short hairs; anal lobes of ♂ much smaller, markedly narrowish, pointed apically; sternite 9 in ♂ more rounded, its processes relatively broader, shorter, more rounded apically; epimere shorter, more bluntly rounded, not distinctly or deeply grooved below; phallic tubes proportionately shorter, more divergent; oviscape in ♀ on each side broader, more

lobe-like and opening below them much smaller, narrower, lodging much smaller anal lobes . . . . . *Oreomydas* n.gen.  
(= *Leptomydas* Bezz. in part, nec Gerst.)

14. (a) Hairs on head in front more uniformly distributed, appearing more untidy and unkempt, not arranged in definite tiers or transverse fringes with distinct transverse bare spaces between them; head in front usually slightly broader, the interocular space on vertex rarely not distinctly much broader than that on head below, especially in ♂♂; vertex less deeply sunk in; pleurae not so extensively, or at least not always, dulled by greyish tomentum; apex of first posterior cell in wings always relatively broadly open on coastal margin; hind margins of tergites and sternites not all always whitish or yellowish; spines on hind femora below variable in colour; spicules on hind tibiae below not situated on distinct small tubercles or granules; processes of sternite 9 in ♂♂, if sharply pointed, not consistently bent downwards apically . . . . . *Afroleptomydas* Beq.  
(= *Leptomydas* of authors, nec Gerst.)
- (b) Hairs on head in front characteristically arranged in tiers or transverse, awning-like fringes, with bare and usually shining transverse spaces between them as follows: hairs on vertex, then smooth space across ocellus, then an awning-like, downwardly-directed, fringe-like tuft on each side above antennae, then another hairless transverse space below antennae and across upper part of clypeus, then another awning-like, downwardly-directed fringe across middle and lower parts of clypeus; head in front slightly narrower or even distinctly much narrower, the interocular space on vertex tending to be only a little broader than that on head below; vertex in ♂♂ rather deeply sunk in; pleurae invariably dulled by fine greyish tomentum; apex of first posterior cell tending to open more narrowly on costal margin, or to subtend angularly on it, or even to be very shortly stalked; hind margins of all the tergites and sternites, except in some cases the first, ring-like whitish or yellowish; spines on hind femora below usually very pale, more pallid, whitish or pale yellowish whitish; spicules on hind tibiae usually situated on distinct small tubercles; processes of sternite 9 in ♂♂ usually more sharply pointed and slightly bent down apically . . . . . *Crossoprosopus* n.subgen. of *Afroleptomydas* Beq.
15. (a) Fronto-facial region markedly broad, the interocular space on vertex distinctly very much broader than interocular space below, quite as 10:7; thorax relatively narrower and longer, not much broader than interocular space on vertex; abdomen more distinctly constricted between segments 2 and 3, and also narrowed between 3 and 4; lobes of tergite 9 in known ♂ broader, more rounded, more rugulose; phallic tubes of aedeagal apparatus longer, subparallel, more widely separated at their base, and central dorsal epimere broader, flatter, more squarely truncate apically  
*Heteroleptomydas* Beq. (♂ only) (ex descr.)
- (b) Fronto-facial region narrower or markedly narrower, the interocular space on vertex narrower, or consistently markedly narrower, only about as broad as, or scarcely broader than, space on head below and, if much broader, the proportions are as 10:7+; thorax relatively broader and shorter, sometimes more quadrate or subquadrate, very much broader than interocular space on vertex; abdomen either more cylindrical, equally broad and, if slightly narrowed between segments 2 and 3, not also narrowed between 3 and 4; lobes of tergite 9 in known ♂♂ narrower, smaller, more triangular even if rounded apically and, even if punctured, not rugulose; phallic tubes relatively shorter, more divergent, closer together and more fused at base and dorsal epimere narrower, more shoe-horn-shaped, or more rounded apically . . . . . 16
16. (a) Occipital part behind eyes more convex; interocular space on vertex proportionally much narrower and only a little, or not much, broader than space below; antennae stouter, thicker, segment 1 longer, much longer than broad and usually with some hairs, and segment 3 stouter, rod-like; thorax more elongate, not distinctly sculptured vermicellately rugulose; abdomen more conical or cylindrical, not constricted between segments 2 and 3, not, or only sparsely, punctured if at all, and tergite 1 longer, usually depressed discally; opening below and between oviscape on each side in ♀♀ broader, and anal lobes usually larger, more prominent; legs distinctly more slender, longer, the hind femora proportionally longer, less obviously clavately thickened and their spines below on smaller tubercles; tarsi proportionally longer, basal segment of hind ones

elongate, much longer than claw-segment; vestiture (in ♀♀ at least) with slightly longer hairs on thorax above, base of abdomen and last two or three segments

*Nomoneura* Bezz. (emended sense)

- (b) Occipital part behind eyes markedly flattened; interocular space on vertex proportionally broader, much broader than space below; antennae more slender, segment 1 markedly short, only about as broad as long, and without hairs, segment 3 slender at base, gradually thickening apically; thorax markedly short, quadrate or subquadrate and vermicellately rugulose above; abdomen distinctly slightly constricted between segments 2 and 3, rather coarsely and densely punctured above and below, and tergite 1 proportionally shorter, transversely convex, not depressed medially; opening below and between oviscape in ♀♀ narrower, with smaller, less prominent anal lobes; legs proportionally shorter, stouter, the hind femora shorter, relatively stouter, more distinctly clavately thickened, their spines below on more prominent tubercules; tarsi proportionally shorter, basal segment of hind ones short, only a little or scarcely longer than claw-segment; vestiture in ♀♀ even more poorly developed, shorter and sparser on thorax, base of abdomen and on last two to three segments . . . . *Neolaparopsis* n.gen. (♀ only)
17. (a) Hind margin of mesopleuron usually with some hairs; apex of first posterior cell in wings either very shortly stalked or scarcely so, sometimes subtending sharply or angularly on costal margin, or sometimes even narrowly open; hind margins of tergites or some of them, in ♂♂ especially, usually more distinctly yellowish or whitish; body usually more extensively shining, the thorax above usually more dull leathery; aedeagus in ♂♂ ending in three separate elements; a dorsally-situated, central, stilet-like epimere and two ventrally-situated, stilet-like, phallic tubes, each ending apically in a segment-like part beyond the gonopore; anal lobes of ♀♀ distinctly or markedly larger, broader, more lobe- or lappet-like . . . . . *Nomoneuroides* n.gen.
- (b) Entire mesopleuron bare; apex of first posterior cell distinctly, even if only shortly, consistently stalked, not opening on costal margin; hind margins of tergites, even in ♂♂, usually not whitish or yellowish, at most sometimes reddish; body usually distinctly less shining, the thorax above rarely not dulled by conspicuous, rugulose sculpture; aedeagus in ♂♂ ending in two processes: a dorsal (anterior) process (epimere) and a ventral (posterior) apically-forked or bifid aedeagal process, the apical forks (phallic tubes) of which sometimes curve outwards or sometimes backwards, upwards and outwards on each side like the horns of some antelope; anal lobes in known ♀♀ smaller, of normal size . . . . . 18
18. (a) Vestiture on head, body and legs poorly developed, shorter, less dense, not villose; thorax above invariably dull, usually due to dense, conspicuous, rugulose sculpture, and integument of scutellum, metanotum and entire pleurae dull; wings usually distinctly more darkly, or very darkly, infused or infuscated in both sexes; hind tibiae with more numerous and usually stouter spicules; interocular space on vertex usually distinctly, or much, broader than space on head below and, if as broad or scarcely broader, vestiture is short and body mainly dull; ventral (or posterior) aedeagal process in ♂♂ only forked apically, the forks (phallic tubes) not curving backwards (or downwards) antelope-horn-like . . . . . *Arenomydas* n.gen.  
(= *Nomoneura* Bezz. in part)
- (b) Vestiture on head, body and legs markedly dense, long and villose; thorax above, even under the hairs, shining, not rugulosely sculptured, and scutellum, metanotum and entire pleurae smooth, highly polished, brilliantly shining; wings, in ♂♂ at least, more extensively hyaline, only slightly or feebly tinted along costal border to near apex; hind tibiae with much fewer and shorter spicules, more confined to apical part and with few apical spurs; interocular space on vertex as broad as, or scarcely broader than, space on head below; ventral (or posterior) aedeagal process in ♂♂ with the forks (phallic tubes) curving slightly backwards, outwards and upwards antelope-horn-like  
*Agaperemius* n.gen. (♂ only)
19. (a) Antennae longer or very much longer, nearly or about as long as, or even slightly longer than, width of thorax anteriorly, segment 3 distinctly more elongate, distinctly much longer than 1 and 2 combined, the clubs more elongate-pyriform, either subequal in length or much shorter than rest of segments combined; wings broader, not subparallel-

sided, less pedunculate basally, the axillary lobe not subparallel-sided and alula broader, more lobe-like; base of second submarginal cell usually with an appendix; first posterior cell broader, its posterior vein broadly curving outwards to apex; front and middle femora without bristle-like spines and spines on hind ones below in two rows which are closer together; hind femora, even in ♀♀, distinctly more thickened; hairs on head and body normally thin, not obviously ctenate; abdomen, even in ♀♀, without a striking colour pattern .. .. . 20

- (b) Antennae markedly short, considerably shorter than width of thorax anteriorly, segment 3 proportionally markedly short, not much longer than, or subequal in length to, 1 and 2 combined, the clubs much inflated, berry-like or shortly pyriform, as long as, or longer than, rest of segments combined; wings markedly narrow, subparallel-sided, more pedunculate basally, the axillary lobe relatively narrower, subparallel-sided and alula less developed; base of second submarginal cell with or without an appendix; first posterior cell narrow, more subparallel-sided, its posterior vein not very broadly curving outwards to apex which is not distinctly stalked; front and middle femora with a row of bristles or bristle-like spines on each side below and hind femora below with either a single or with two widely spaced rows of bristle-like spines; hind femora not thickened; hairs on head and body stiffer, more obviously granular or ctenate; abdomen, in ♀♀ at least, with a peculiar pattern of a row of segmental crescentic or  $\square$ -shaped pale marks on each side discally above .. .. . *Halterorchis* Bezz. (♀♀ only)

20. (a) Metanotum with some hairs, even if only on sides; disc of thorax usually with 4 bare streaks, the two middle ones formed from a central one which is divided by a narrow central streak of greyish tomentum or hairs, and with the more lateral ones extending farther forwards, and with the hairs, if present, distributed in 5 streaks, including those on sides; apex of first posterior cell in wings variable, either narrowly, but distinctly, opening on costal margin, or subtending angularly on it, or very shortly stalked; pulvilli of tarsi in ♀♀, if reduced, not very vestigial or wanting; aedeagus in known ♂♂ three-pronged, ending in a central dorsal process (epimere) and below it a phallic tube on each side .. .. . 21

- (b) Metanotum entirely bare and dull, without any distinct hairs; disc of thorax with either only 3 bare streaks of which the lateral submedial ones occupy only basal half and the medial one is undivided, or these streaks are replaced by dull, finer granulation, and any hairs, if present, arranged in only 4 streaks; apex of first posterior cell with a distinct and consistent short stalk; pulvilli in known ♀♀ vestigial; aedeagus in ♂♂ not typically three-pronged, either in form of a basal part or stem crowned with 3 finger-like lobes (two phallic tubules and a central epimere), or a triquetrous structure composed of two continuous, parallel, ventral, phallic tubes attached to a medial dorsal part (epimere) 23

21. (a) Pulvilli in known ♀♀ not much reduced or shortened; hind femora less thickened, especially in ♀♀, with more slender, or even bristle-like, spines below; hind tarsi normally long, much more than half length of hind tibiae; antennae relatively longer, segment 3 proportionally longer, usually distinctly longer than club, the latter more elongate, narrower, less thickened beyond middle; interocular space on vertex in both sexes relatively narrower, very much less than twice distance from vertex to antennae, the inner margins of eyes more convergent above antennae; central keel on last perpendicular genital segment in ♀♀ longer, less arched, nearly or quite as long as half length of lower margin of this segment; bullae larger, even if smaller in ♀♀ than in ♂♂; vestiture slightly longer and denser, even in known ♀♀, that on tergites 1 and 2 also longish; basal margin of axillary lobe more broadly arcuately rounded; aedeagus in ♂♂ appearing three-pronged .. .. . 22

- (b) Pulvilli in ♀♀ reduced or shortened, only about reaching, or not extending beyond, middle of claws; hind femora, even in ♀♀, slightly more thickened, with relatively stouter, or normally stout, spines below; hind tarsi relatively shortish, about or only a little more than half length of hind tibiae; antennae relatively shorter, segment 3 proportionally shorter, usually only about as long as, or much shorter than, club, the latter distinctly more elongate-pyriform, more broadly dilated beyond middle; interocular space on vertex distinctly broader, nearly or only a little less than twice distance between vertex and antennae, the inner margins of eyes subparallel or slightly less converging

towards vertex; central keel on last perpendicular genital segment in ♀♀ distinctly shorter, more arched, distinctly shorter than half length of lower margin of this segment; bullae, in ♀♀ at least, reduced in size or minute; vestiture in ♀♀ distinctly less developed much shorter, less dense, and that on tergites 1 and 2 very short; base of axillary lobe broader, more subtruncately rounded . . . . . *Namadytes* n.gen. (♀♀ only)

22. (a) Antennae proportionally shorter, segment 3 shorter, the club tending to be more dilated or pyriform, with smaller, more terminal, more sunk in, sensory area; proboscis vestigial, minutely knob-like; buccal cavity smaller, shallower; hind femora slightly more thickened, with slightly stouter, less bristle-like spines below; tibiae and tarsi with shorter spicules; right and left hind margins of last perpendicular sclerite in ♀♀ together forming a less acute angle, the opening below them thus larger, and anal lobes larger, broader, more triangular; central dorsal epimere in ♂♂ proportionally larger; vestiture relatively less dense and shorter, less shaggy, and sparser and shorter on metanotum, that on thorax above arranged more indistinctly in streaks, the broad central bare streak with more numerous scattered hairs, and bare streaks only distinctly delimited submedially on sides, and with denser hairs along mesopleuron posteriorly; hairs on legs relatively sparser, shorter, and with fewer and shorter ones along inner side of hind tibiae  
*Syllegomydas* Beck. (ex descr.) (from north Africa)
- (b) Antennae proportionally longer, segment 3 also proportionally longer, the club more elongate, less dilated or pyriform, with much larger, less terminal, apical, sensory area; proboscis, though rudimentary, still perceptible and with short stem and labella; buccal cavity deeper, larger; hind femora scarcely, but more clavately, thickened, with distinctly feebler, more bristle-like spines below; tibiae and tarsi with longer spicules; right and left hind margins of last perpendicular sclerite in ♀♀ together forming a more acute triangle, with much smaller opening below and between them, and anal lobes much smaller; central dorsal epimere in ♂♂ much shorter; vestiture distinctly much denser, longer, more shaggy, even in ♀♀, and denser and longer on metanotum, that on thorax above arranged more distinctly in 5 streaks, the broad central bare streak with only very few or sparser hairs along middle, and the bare streaks distinctly more delimited, and with fewer and sparser hairs on mesopleuron posteriorly; hairs on legs much denser and longer, and with more numerous and longer ones along inner side of hind tibiae . . . . . *Notobates* n.subgen. of *Syllegomydas* Beck.
23. (a) Aedeagus in ♂♂ in form of a short basal part bearing 3 finger-like lobes (two phallic tubules and a central apophysis (or epimere) apically; lateral lobes of tergite 9 larger, more lobe-like; processes of sternite 9 shorter; facial part of head markedly broad, the interocular space below buccal cavity markedly broad, even slightly broader than across vertex; dorsum of thorax finely granular or striate; vestiture on head, body and legs sparse, much shorter, almost wanting on thorax above and very sparse on head in front; sternites 6 and 7 in ♂♂ not depressed or hollowed; wings tinted or very slightly infuscated . . . . . *Notosyllegomydas* n.gen.  
(= *Syllegomydas* Beq. nec Becker)
- (b) Aedeagus in ♂ in form of a single triquetrous structure, composed of two, contiguous, parallel, ventral, aedeagal tubes attached to a medial, dorsal rod (epimere); lateral lobes of tergite 9 much shorter, less lobe-like; processes of sternite 9 longer, in side view not bent down in apical part; facial part of head narrower, very broad across vertex, markedly narrow below buccal cavity; dorsum of thorax dull, though not finely granular or striate; vestiture on head, body and legs long and dense, very dense on head, and dense and longish on thorax above, especially on sides; sternites 6 and 7 in known ♂ hollowed or depressed; wings entirely hyaline in ♂ . . . . . *Namamydas* n.gen. (♂ only)
24. (a) Proboscis very long, slender, extending very far beyond head; antennae long or very long, very much longer than width of thorax in front of wings, segment 3 considerably longer than 1 and 2 combined, the club usually elongate or elongate-pyriform; vestiture on head, body and legs, though very dense in comparison with some other genera, distinctly shorter, less dense, not so brush-like on head, thorax, base of abdomen and legs; thorax above, and especially metanotum, more coarsely, or rugulosely, sculptured; base of second submarginal cell in wings more truncate, invariably with an appendix; spines on hind femora below begin before middle or nearer base; hind tibiae slightly,



often distinctly, carinate below; processes of sternite 9 in ♂♂ shorter, broader, curved more inwards and downwards, their slightly broadened, spoon-shaped, apical part nearly touch along midline .. .. . *Cephalocera* Latr.

- (b) Proboscis either very much shorter, confined to buccal cavity, or not extending much beyond latter, or it is rudimentary; antennae markedly short, distinctly shorter than width of thorax in front of wings, segment 3 proportionally very short, subequal in length to, or scarcely longer than, 1 and 2 combined, and club longer than 3, ovate or ovate-pyriform; vestiture on head, body and legs markedly dense, longer, more shaggy, villose, very dense and conspicuously brush-like on head, hiding antennae, very dense, long and bottle-brush-like on legs, especially hind femora; thorax above, and especially metanotum, smoother, more shining, or only very microscopically sculptured; base of second submarginal cell less truncate, more obtusangular, without or with scarcely a vestige of an appendix; spines on hind femora below usually beginning beyond middle; hind tibiae non-carinate below; processes of sternite 9 in ♂♂ longer, more slender, only curved finger-like, their slightly inward-curving apices much farther apart

*Cephalocerodes* n.gen. (♂♂ only)  
(=*Cephalocera* Beq. nec Latr.)

25. (a) Wings with only 2 submarginal cells of which the second opens either on costal margin or on second vein, and with or without a posterior cross-vein in hind border of wings  
26 (Subfam. Mydainae Beq.)
- (b) Wings with 3 submarginal cells of which the second is in form of an enclosed and apically-stalked cell between first and third, and with or without a posterior cross-vein in hind border .. .. . Subfam. Diochlistinae Beq. (non-African)
26. (a) Second submarginal cell in wings opening on second vein and with an appendix at base; hind border of wings with a distinct cross-vein; antennae with segment 3 elongate, much longer than combined length of 1 and 2; hind tibiae somewhat or distinctly compressed, longitudinally strongly carinate below, ending apically below in a conspicuous, prominent, tooth-like or spine-like process in ♂♂; hind femora markedly thickened, incrassate, especially in ♂♂, usually with more than two, usually four, rows of spines below, even if outer ones are represented by only a few apically; hind trochanters with 1 or 2 distinct spines below; space between eyes on head below relatively narrow; clypeus very broad, flat-nosed-like, its sides either touching or very near to inner margins of eyes; processes of sternite 9 in ♂♂ with a palp-like appendage below; aedeagus in ♂♂ tubular, ending apically in a cowl-like or inverted cup-like cap; terminal part of oviscape in ♀♀ usually withdrawn into segment 7 .. .. . *Ectyphus* Gerst.
- (b) Second submarginal cell opening directly on costal margin and without an appendix at base; hind border of wings without a cross-vein; antennae with segment 3 short or very short, shorter than combined length of 1 and 2; hind tibiae and rest of characters enumerated above not present .. .. . 27
27. (a) Antennae shorter, with the club normally inflated or dilated, not constricted at middle and not appearing malformed or deformed *Rhopalia* Macq. (ex descr.) (from Egypt)
- (b) Antennae longer, with the club enlarged, constricted at middle, its basal part broadened or extending lobe-like laterally, or with lobe-like extensions, thus appearing deformed or malformed .. .. . *Perissocerus* Gerst. (ex descr.) (from north Africa)

## DESCRIPTIONS

### Subfamily Syllegomydinae Beq.

*Syllegomydinae* Bequaert, 1963: 3.

*Heteromydinae* Bequaert, 1961a: 16.

As stated in the introduction and in the key to the genera, representatives of this subfamily are characterized by having a double aedeagus in the ♂♂, composed of two distinct and separate phallic or aedeagal tubes or tubules. Other supplementary characters, which will also enable ♀♀ to be correctly

assigned, are the presence of only 2 submarginal cells in the wings, of which the normal second one opens on the second vein, and the hind border of the wings has no posterior cross-vein.

For purposes of convenient classification this family may be subdivided into three distinct tribes, the Mydaselpini, the Syllegomydaini and the Cephalocerini, for grouping the genera belonging to it.

#### **Mydaselpini** n.tribe

This new tribe is erected to contain two genera from southern and tropical Africa and another remarkable genus from Somaliland, and is characterized by the shape of the abdomen which is pedunculate or subpedunculate, distinctly or even markedly narrowed waist-like near middle between segments 2 and 4; the presence of markedly dense and conspicuous puncturation or coarse sculpture, or at least with rather dense, fine, setiferous puncturation on abdomen above; by the rather shortish or markedly short, stiff, or spine-like hairs on tibiae which are situated on distinct granules, more evident and coarser on hind ones, especially below; by the reduction of the spicules on tibiae, especially the hind ones; by the two rather conspicuous, broadish, sometimes rather widely separated, phallic tubes in the ♂♂, ending in rather broadish, funnel-shaped gonopores, the basal part of the aedeagus being sometimes vase-shaped; and by the terminal or genital segments of the ♀♀ which are narrowed, protruding beyond tergite 8, the oviscape being armed with a few or a row of bristly spines or bristles on each side and not with stoutish, flattened spines as in the genera of the other two tribes. Representatives of these three genera have a marked resemblance to conopid-flies or to wasps of the family Vespidae.

#### Genus MYDASELPIS Bezz.

*Mydaselpis* Bezzi, 1924b: 218. Bequaert (in part), 1940: 4. Bequaert (in part), 1951: 1.

This genus was originally described by Bezzi from two South African species, represented by two specimens, a ♂ and a ♀ of each respectively. Apart from the unique ♂ type specimen of *Mydaselpis peringueyi* there are in the collections before me a new variety of the latter and two other undescribed species of which the as yet undescribed ♀♀ of the genus are also represented. The genus was redefined by Bequaert in 1940, in which supplementary description he also described and figured (fig. 2a and b) the hypopygial structures of *Mydaselpis peringueyi*. Bequaert was at that time however dealing with a series of Central and West African species which he also referred to the genus *Mydaselpis*, but which, as I am showing farther on, do not strictly belong to the latter but to another very closely related new genus. Bequaert's supplementary generic description is therefore more applicable to this new genus than to *Mydaselpis s.str.*

The true or typical genus *Mydaselpis*, as based not only on the type-species *peringueyi* and *variolosus* Bezz. but also on a distinct variety of the former and two other new species described below, is characterized and differs from all other South African genera in the following respects:

*Body* usually vespiform, usually contrastingly or brightly coloured; abdomen distinctly narrowed waist-like to a variable degree near middle or between segments 2 and 4, usually more so in ♂♂ than in ♀♀, and in the latter relatively bulkier than in ♂♂.

*Integument* above on thorax and abdomen usually relatively coarsely sculptured, or punctured, that of thorax above usually vermicellately rugulose, coarser along sides and along two submedial streaks; that of abdomen above either very coarsely punctured, rugulose punctured, densely punctured, or with at least some of the segments punctured; tergite 1 usually transversely ridged and punctured across middle; pleurae usually dull and bare, not so smooth and shining as in some other genera; venter less coarsely punctured than dorsum, but more distinctly so than in other genera.

*Vestiture*, even in ♂♂, relatively poorly developed, only the hairs on head, tergite 1 (across transverse ridge and anteriorly basally on sides) and on coxae distinct, but relatively shorter than in many other genera; hairs on thorax above short, decumbent, relatively sparse, usually arranged in streaks; hairs on rest of abdomen usually short and located in the punctures, only those on genital segments longer, more conspicuous; pleurae entirely bare, except for a few sparse shortish ones on metapleural prominence in front of halteres and across hinder metasternal part; metanotum entirely bare; hairs on legs, even tibiae, relatively short, minute, stiffish and spine-like, not too dense, and usually situated on small granules, more evident on hind ones below.

*Head* with the interocular space on vertex relatively narrow, not or scarcely wider than interocular space below, usually subequal in width to it, with the inner margins of eyes converging above and below, being widest apart more or less at level of antennae; antennae usually shorter than thorax (excluding scutellum), with segment 3 usually elongate, either a little longer or a little shorter than club, the latter elongate, usually thickened from before or just beyond middle; clypeal part of face prominent, deeply excavated along its sides; proboscis well developed, stoutish, usually shorter than vertical length of an eye, its labella relatively large, horny, often punctured; palps minute, vestigial; postvertical spines present.

*Wings* rather longish, characteristically infuscated, the anterior costal region usually tinted more yellowish, the anterior half of wings up to apex of first posterior cell, along apical vein of discoidal cell and anterior upper vein of discoidal cell and also including second basal cell usually darker, with the hinder half less darkly tinted or sometimes much clearer and usually with a clear streak along middle of discoidal cell, and hinder half or more of first posterior cell also clear; outer or posterior vein of first posterior cell joining or continuous with costal margin at apex or near apex of costal cell (or second vein), the first posterior cell thus narrowly open or subtending on anterior margin as in *Afroleptomydas*; base of third vein produced basally as a distinct stump of variable length; base of second submarginal cell consistently with a relatively long stump; hind border of wings usually narrow, narrower than posterior cells.

*Legs* with the hind femora slightly, but distinctly, thickened, usually more clavate, more so in ♂♂, armed below with two rows of backwardly-projecting spines from just before or just beyond middle, each spine on rather a prominent tubercle; hind tibiae rather straight, not carinate below, but often appearing granular below, without an apical process below and, apart from apical spicules, with relatively few or reduced spicules and these short and only along inner lower face, especially in ♀♀.

*Genital part of abdomen* in ♀♀ (cf. pl. 1 fig. 1) narrowed, pointed, the terminal segments protruding beyond tergite 8; tergite 9 usually longitudinally carinate above; oviscapae without stoutish flattened spines as in other genera, but with a few, or a row of, bristles or bristle-like spines on each side.

*Hypopygium* of ♂♂ (cf. pl. 1 fig. 2) with the aedeagus in form of a tubular structure ending in two parallel phallic tubes, ending in funnel-like gonopores, without any distinct dorsal or anterior, central process or epimere; sternite 9 scoop-like, convex, dilated, not covered by sternite 8, its prong or process on each side in form of a backwardly projecting, slightly dorso-ventrally, flattened, apically blunt, rod-like process, hollowed out basally below, carinately raised keel-like in basal part above, the apex of this keel appearing in side view as a dentate prominence, and the apical ventral half or part with shortish hairs.

The known species from southern Africa may be separated as follows:

1. (a) Wings more uniformly or extensively darkly infuscated, either in anterior half or in greater part; abdomen above with larger, coarser, or very coarse setiferous puncturation, the decumbent hairs in these therefore less dense and shorter; head in front with less conspicuous pale or greyish tomentum on sides along eye-margins and in facial depressions, and tomentum on hinder part of metapleurae, metasternal parts and hind coxae appearing darker, less conspicuously greyish whitish; abdominal tergites 2 and 3 sometimes reddish to a variable extent, but 4 and 5 usually entirely dark or at least not reddish discally . . . . . 2
- (b) Wings bicolourously infuscated (pattern of vespid *Belonogaster*) the anterior half up to bases of second submarginal and first posterior cells and apex of marginal cell yellowish and only an apical infusion from apical cross-vein of discoidal cell to apex, including apical part of first posterior cell, dark blackish brownish; abdomen above with much finer, much denser, setiferous puncturation, with much denser and slightly longer decumbent hairs; head in front with more evident and conspicuous, denser, greyish whitish or greyish yellowish tomentum on sides and in facial depressions, and tomentum on hinder metapleural part, metasternal part and hind coxae appearing more conspicuously greyish whitish; tergites and sternites 2 and 3 yellowish, and apical discal halves of 4 and 5 with triangular reddish infusions . . . . . ♀ *mimeticus* n.sp.
2. (a) Thorax above mainly black, the reddish, if extensive, only on sides and base; scutellum mainly black or with only hind border reddish; pleurae mainly black, at most with only pteropleuron and metapleural part in front of halteres reddish; hind margins of at least tergites 2-4 yellowish or yellowish reddish; bullae darker or blackish; wings usually darkly infuscated only in anterior half and, if almost entirely dark, thorax and pleurae mainly black; all the coxae not mainly yellowish or reddish; proboscis longer, usually more than 2 mm . . . . . 3
- (b) Thorax above not black, either reddish or brownish, blackened only along middle to near scutellum; scutellum entirely reddish or brownish; pleurae not mainly dark, almost entirely reddish or with more extensive reddish or brownish; hind margins of only tergites 2 and 3 narrowly yellowish; bullae small, reddish or light coloured; wings entirely infuscated, only some streaks in middle cells and narrow hind border greyish

- hyaline and, if darker in anterior half, thorax not mainly black; coxae mainly reddish or pale coloured; proboscis usually shorter, not more than 2 mm . . . . . 5
3. (a) Wings less uniformly infuscated, the clearer, less tinted or paler tinted hinder half more contrasting with the darker yellowish brownish or dark brownish anterior half, the clearer middle streak in discoidal cell broader, more distinct; thorax above with the anterior reddish infusion on inner side of humeral tubercle larger, more extensive, and sides and base with more reddish to a variable extent; metanotum more extensively reddish on sides anteriorly; pteropleuron and metapleurae in front of halteres more extensively reddish; tergites 2 and 3 mainly reddish or with at least more extensive red and tergites 6 and 7 more extensively reddish discally; setiferous puncturation on abdomen above on the whole less coarse, apparently denser; sericeous whitish hairs across tergite 1 distinctly longer, denser . . . . . 4
- (b) Wings distinctly more uniformly dark yellowish brownish, the hinder half only a little less dark than dark anterior half, distinctly less contrasting, the clear middle streak in discoidal cell narrower, more linear or less distinct; thorax above with the anterior reddish spot much reduced or small, the sides up to postalar calli and base entirely dark; metanotum entirely black or with only a small reddish submedial basal spot on each side; pteropleuron and metapleurae mainly black, only obscurely reddish along sutures; tergites 2 and 3 entirely black and tergite 6 only reddish apically on disc; setiferous puncturation on abdomen above distinctly coarser, slightly less dense; sericeous whitish hairs across tergite 1 distinctly shorter, sparser . . . . . ♂ ♀ *karoensis* n.sp.
4. (a) Slightly smaller form, about 16·25 mm, with abdominal tergites 2 and 3 entirely or more extensively yellowish reddish and 4 and 5 more dark reddish brownish; puncturation on abdomen slightly less dense; reddish spot around humeral tubercle not extending far back on sides of thorax; pteropleuron only reddish in upper half; darker anterior half of wings more yellowish brownish and veins in it more yellowish reddish; hind legs entirely yellowish like the others . . . . . ♂ *peringueyi* Bezz. s.str.
- (b) Larger form, about 20–21 mm, with tergites 2 and 3 less extensively reddish, either darkened discally or on sides and 4 and 5 black; puncturation on abdomen relatively denser; reddish infusion around humeral tubercle extending farther posteriorly on side or even (♀) occupying entire sides; pteropleuron and metapleural part anterior to halteres entirely and conspicuously reddish; darker anterior half of wings darker, more dark brownish or blackish brown and veins in it also darker; front and middle femora darkened above near base and hind ones distinctly darkened subapically on inner or both inner and outer sides . . . . . ♂ ♀ *peringueyi* var. *hesperus* n.
5. (a) Abdomen entirely shining black, only terminal segments reddish; venter darker, also blackish; thorax and pleurae mainly reddish; wings entirely infuscated, only some streaks in middle of cells and narrow hind border greyish hyaline; antennae slightly longer, segment 3 about 4–5 times combined length of 1 and 2  
♀ *variolosus* Bezz. (ex descr.)
- (b) Abdomen mainly orange-brown, with a transverse black band over junction of tergites 2 and 3 and 3 and 4, with basal parts of 5–7 broadly blackish; venter orange brownish, the hind margins of sternites 1–4 yellowish; thorax and pleurae mainly orange brownish; wings yellowish brownish in anterior half, rest pale yellowish grey; antennae slightly shorter, segment 3 only about 3 times combined length of 1 and 2  
♂ *ignicornis* (Brun.) (ex descr.)

*Mydaselphis peringueyi* Bezz.

*Mydaselphis peringueyi* Bezzi, 1924b: 220. Bequaert (in part), 1940: 5–7, fig. 2a and b.

This species is still represented in the South African Museum by only the unique ♂ type specimen from Hex River on which Bezzi erected the genus and which he described in some detail. In view of both its generic and specific importance its chief characters may again be more accurately summarized here as follows:

*Body* with the head, thorax, scutellum, metanotum, first abdominal segment and sternites 4-7 mainly dark or black; the following parts light reddish to yellowish reddish: clypeus, proboscis below, pronotal and propleural parts, humeral tubercles and area surrounding them on their inner sides, postalar calli, narrow base of thorax above, sides of metanotum anteriorly, area below wing-bases including upper part of pteropleuron and parts of metapleurae, suture between sterno- and hypopleurae, abdominal segments 2 and 3 (excepting smallish black bullae and extreme lateral margins of tergites 2 and 3), tergites 6 and 7 discally (more extensive on 7), apical part of sternite 1, sternites 2 and 3, last sternite and hypopygial structures, lower faces of front coxae, and the middle and hind coxae; abdominal segments 4 and 5 and sides of tergites 6 and 7, like sternites 4-7, dark reddish brownish or blackish brown; hind margin of tergite 1 dark reddish, those of 2-6 smooth, ring-like, yellowish; hind margins of sternites 2-7 also yellowish; legs yellowish, the spines below hind femora yellowish reddish.

*Integument* of middle part of frons shining; that of disc of thorax above dull, rugulose; pleurae dull; tergite 1 transversely ridged and coarsely punctured; rest of abdomen above, except ring-like hind margins and across bases, coarsely and fairly densely punctured; sternites 6 and 7 covered with separated setiferous punctures.

*Vestiture* with longish pale sericeous yellowish hairs on head in front, more or less arranged in transverse tiers, on vertex, sides of antennal insertions and on sides of clypeus; hairs on head below deeper yellowish; fine, short, depressed hairs in streaks on disc of thorax yellowish; decumbent longish hairs across base laterally and middle of tergite 1 also very pale sericeous yellowish, appearing almost whitish in certain lights; very fine short hairs in puncturation on rest of abdomen sericeous; longer hairs on hypopygial structures yellowish; short and relatively sparse ones on coxae and legs also pale sericeous yellowish, those on femora and tibiae situated on minute granules; sides of face and a broadish streak on occiput behind eyes with silvery whitish bloom.

*Head* with the antennae beyond segment 2 in the specimen missing, but segment 1 about  $2\frac{1}{3}$  times length of 2; clypeus very slightly raised ridge-like along the centre; proboscis a little shorter than vertical length of an eye; palps minute.

*Wings* characteristically infuscated, the costal part, including upper basal half of marginal cell and bases of first and second basal cells, tinted pale yellowish; middle parts, including second basal cell and basal part of first posterior cell up to level of apex of discoidal cell and to a certain extent base of third posterior cell, darker, more yellowish brownish or brownish, leaving more than hinder half of first posterior cell, middle part of discoidal cell, hind border of wings, greater part of anal cell, entire axillary lobe and alula clear or hyaline, and greater part of third posterior cell very faintly tinted; veins yellowish in costal part, darker in more darkly tinted parts; second submarginal cell narrowed apically, there narrower than first submarginal; apex of discoidal cell

shortly stalked; apical stalk of anal cell shortish, not much longer than that of discoidal cell; halteres yellowish.

*Legs* with the hind femora slightly clavately thickened, armed below with a double row of backwardly-directed spines on prominent tubercles from a little beyond middle, preceded by 1 or 2 shortish spines before middle; hind tibiae with the setiferous granules below more prominent; basal segment of hind tarsi relatively shortish, not longer than claw-segment (excluding claws).

*Hypopygium* as shown in text-figures 2a and b by Bequaert (1940: 5).

Length of body: about 16·25 mm

Length of wing: about 12 mm

*Distribution*: Western Cape: Hex River (December 1882).

*Mydaselphis peringueyi* var. *hesperus* n.

Two ♂♂ and a ♀ of a fairly large dark form from the coastal region of the south-western Cape and superficially resembling wasps represent a distinct dark coastal variety of *peringueyi*. This variety, apart from being much larger, differs from the typical form in the following respects:

*Body* in ♂ with the dark parts even darker, more black, and abdominal segments 2 and 3 above also distinctly darkened, not light reddish; tergites 4 and 5 and sides of 6 and 7 more black than dark reddish brownish; reddish parts on abdomen deeper reddish; hind margins of tergites similarly yellowish; red inner side of humeral tubercles slightly more extensive, extending farther backwards on sides of thorax; entire pteropleuron and metapleural part in front of halteres reddish and not only upper part; metasternal part on each side with more reddish; antennae orange yellowish, only articulation between segment 3 and club darkened; body in ♀ very similarly coloured to that of ♂, but reddish across base of thorax broader, tergites 2 and 3 (which are less constricted) more extensively reddish and tergites 6 and 7 also more extensively reddish than in ♂, less blackish on sides of 6 and only extreme sides of 7 being black; sternites 3–6 in ♀ black and 7 infused with much reddish; last tergite and sternite and genitalia reddish; hind margins of tergites 2–4 in ♀ yellowish, 5–7 more reddish and only those of sternites 2 and 3 yellowish whitish, broader than in ♂; legs in both sexes mainly yellowish as in *peringueyi*, but front femora darkened in middle to a variable extent in both sexes and hind ones in ♂ (to a lesser extent in ♀) darkened along inner apical half and near apex on outer side, leaving apical part yellowish.

*Integument* in ♂ very similar to that of typical form though slightly more rugulose punctured on dark tergites, but in ♀ the puncturation on abdomen is slightly denser and coarser, especially on black tergites 4 and 5 where it is even more rugulose.

*Vestiture* in ♂ very similar and similarly coloured to that of typical form though hairs on head and base of abdomen more whitish; hairs of ♀ on head in front much shorter, especially on sides of clypeus where those nearer bare middle streak are fulvous or golden reddish and those laterally more whitish;

short hairs on tergites and sternites 6 and 7 in ♀ more yellowish like longer ones on last segments and genitalia.

*Head* with the antennae slightly longer than thorax (excluding scutellum); segment 1 about 2–2¼ times length of 1; segment 3 longer than club, its apical third or a little more slightly thickened; club elongate, thickened rim-like from just beyond middle and there with a circlet of fine dark hairs, narrowed basally, but at extreme base again narrowed bottle-neck-like, obliquely subtruncate at apex, ending in a truncated transversely situated prominence; clypeus slightly grooved medially above, not slightly ridged as in typical form; proboscis proportionally longer than in typical form, but also shorter than vertical length of an eye, the labella sharply pointed.

*Wings* in both sexes with a pattern similar to that of *peringueyi s.str.*, but the dark part distinctly darker, more blackish brown and in ♀ middle part of first submarginal cell less tinted or clearer (not evident in the ♂ nor in the typical ♂); veins in dark parts darker; second submarginal cell in both sexes, though also narrowed apically, not narrower than first submarginal; knobs of halteres darker in both sexes, more brownish.

*Legs* as in the typical form, but basal segment of hind tarsi apparently a little longer, slightly longer than claw-segment (excluding claws).

*Terminal part* of abdomen in ♀ (pl. 1 fig. 1) narrowed and pointed, the genitalia exerted; genital segment (9) medially carinately keeled and also laterally with an oblong membranous window-like area; oviscape with a row of slender, bristle-like spines on each side, these spines scarcely distinguishable from bristles.

*Hypopygium* of ♂ like that of typical ♂, but lobes of tergite 9 more obtusangular apically and the prongs of sternite 9 (ventral view) slightly broader.

Length of body: about 20–21 mm (abdomen curved down)

Length of wing: about 17–19.5 mm

*Distribution*: South-western Cape: Leipoldtville (S.A. Museum, November 1956) (♂ holotype, ♀ allotype and 1 ♂ paratype).

#### *Mydaselpis karoensis* n.sp.

A ♂ and a ♀ from the southern Karoo in the collections before me represent a species which is very near *peringueyi* and especially the variety *hesperus*. Superficially they are almost indistinguishable from the latter, but they differ in certain distinct features and cannot be considered as still another variety. They agree and differ from the variety *hesperus* in the following respects:

*Body* with the abdomen stouter, especially in ♀, less constricted at tergites 2 and 3, also mainly black; antennae also pale orange yellowish; the following parts reddish: clypeus, greater part of proboscis, humeral tubercle, a small spot on thorax anteriorly on inner side of tubercles (very much smaller and less extensive than in var. *hesperus*), postalar calli (but not across base of thorax), propleural tubercle to a very much lesser extent, area below wing-bases along upper margin of pteropleuron and sutures (not entire pteropleuron, metapleuron



and upper part of metasternum as in *hesperus*), an apical discal spot on tergite 6, greater part of tergite 7 above, more extensive in ♀, and entire genital segments in both sexes (tergites 2 and 3 being entirely dark in both sexes, or only very dark piceous reddish on sides in ♂, not contrastingly reddish as in *hesperus*); hind margins of tergites 2-6 in ♂ and 2-4 in ♀ also ring-like yellowish, but distinctly narrower, less conspicuous, and those of 5 and 6 in ♂ slightly more reddish yellowish; venter much darker, even basally, and hind margins of sternites more obscurely yellowish, and those of 2 and 3 in ♀ not so conspicuous as in ♀ of *hesperus*; legs in both sexes also mainly pale yellowish, but the front femora slightly darkened near base below, not darkened ring-like as in *hesperus*, and hind femora scarcely or less extensively darkened apically, only slightly so on inner side.

*Integument* of disc of thorax relatively more coarsely rugulose, especially along sides and the two submedial streaks; puncturation on abdomen above distinctly coarser and slightly less dense, the individual punctures larger and towards apex distinctly less dense, more separated; puncturation on venter coarser, but sparser.

*Vestiture* with the hairs on head in front relatively shorter, more so in ♀, similarly coloured in ♂, but in ♀ shortish tufts on sides of antennal insertions orange fulvous, not whitish, and short ones on sides of clypeus also mainly orange fulvous; sericeous whitish hairs across middle of tergite 1 distinctly shorter and sparser in both sexes; hairs on metasternum and middle and hind coxae fulvous reddish, not sericeous whitish or yellowish as in *hesperus*.

*Head* with the antennae very similar, also distinctly shorter than thorax (excluding scutellum); segment 1 about  $2-2\frac{1}{4}$  times length of 2; segment 3 also a little longer than club; latter however thickened from about middle, not beyond middle; proboscis relatively longer, as 75:71, but also shorter than vertical length of an eye.

*Wings* with a similar type of pattern but appearing much darker, even more so in ♀, the hinder half distinctly more infuscated, the alula, anal and axillary and third posterior cells and hind border distinctly uniformly tinted brownish, not so clear as in var. *hesperus*, though a streak in middle of discoidal cell and more than hinder half of first posterior cell are also clear as in latter; veins as in *hesperus*, but fuscous borders in darkened middle parts in ♀ darker, more intense.

*Legs* similar.

*Genital segments* of ♀ with apical part of last sternite relatively narrower, slightly depressed medially; oviscapae similar.

*Hypopygium* of ♂ (pl. 1 fig. 2) with the lobes of tergite 9 distinctly more acute apically; prongs of sternite 9 slightly longer, relatively broader towards their bases in ventral view.

Types of this species in the Transvaal Museum.

Length of body: about 22-24.5 mm

Length of wing: about 17-21.5 mm

*Distribution*: Southern Karoo: Willowmore (Dr. Brauns, January 1922) (♂ holotype); Georgida near and south-west of Willowmore in Little Karoo (Dr. Brauns, January 1927) (♀ allotype).

*Mydaselpis mimeticus* n.sp.

A somewhat damaged ♀ specimen in the Transvaal Museum represents a very interesting species which has a very remarkable superficial resemblance to species of the vespid-genus *Belonogaster*, such as *B. junceus* and *B. lateritius*. The significance of the marked resemblance of this mydaid to *Belonogaster*, as well as that of other members of the genus to eumenine vespids and of other *Mydaselpini* to conopid- and some syrphid-flies, is unknown and suggests either mimetic resemblance or some unknown biological factor common to these mydaids and their models. The species is characterized as follows:

*Body* mainly black and pale yellowish reddish; the following parts pale yellowish reddish: antennae, clypeus (except dark central line), greater part of proboscis, humeral tubercles, an extensive infusion around latter, extending a little posteriorly on sides of thorax and submedially on disc, sides of thorax from wing-bases, postalar calli broadly, base of thorax, greater part of scutellum, sides of metanotum, propleural part, extreme hind margin of mesopleuron, area below wing-bases and pteropleuron, sutures, metapleural part below halteres, sides posteriorly of tergite 1, tergites 2 and 3 (except for basal discal black spot on 2 and dark extreme sides of 2 and 3), central discal patches on hinder halves of 4 and 5 (extending down sides apically), greater discal part of 6 (extending down to sides apically), entire tergites 7 and 8 (more reddish), sternites 1-3, base and middle part of 4, apical part of 6, entire 7 and more than apical half of 8, genitalia, prosternum, coxae and legs (except for some slight darkening along inner and outer faces of hind femora in apical halves); hind margin of tergite 1 narrowly reddish; base of 3 reddish brownish; hind margins of tergites 2-4 yellowish whitish, broader on sides; hind margins of 5-7 more reddish; those of sternites 2-4 conspicuously yellowish whitish and 5 and 6 more narrowly and obscurely yellowish; bullae blackish brown.

*Integument* of middle part of frons, base of tergite 1 and exposed bases of others shining; that of disc of thorax vermicellately rugulose, coarser so on sides and along the two submedial streaks; that of metanotum dull velvety black where not reddish; that of pleurae dull; integument across middle of tergite 1 punctured, but not very coarsely; that of rest of abdomen above with dense, aciculate, setiferous, not very coarse, puncturation on tergites 2-5, somewhat sparser and shallower on 6 and 7 and almost wanting on 8; extreme sides or tergites 3-7 intramarginally with the usual rows of crater-like punctures or pits; sides of sternites 5-7 also with some rows of pit-like punctures; rest of venter with fine, sparse, setiferous puncturation, much sparser on sternite 8.

*Vestiture* with the hairs on vertex, sides of frons, sides of frons anteriorly and on sides of clypeus, dense and longish, yellowish whitish; hairs on head below more rufous; sides of frons and frons anteriorly, entire face and broadly on

occiput behind eyes covered with greyish tomentum; hairs on disc of thorax shortish, sparse and in streaks, yellowish whitish; metapleural part in front of halteres with only a few sparse, shortish, yellowish whitish hairs; dense, decumbent, longish hairs across base anteriorly and middle of tergite 1 gleaming sericeous yellowish or pale brassy yellowish; rest of shortish hairs in the puncturation on abdomen above, as well as sparser ones on venter, also gleaming sericeous yellowish; hairs on legs yellowish, fairly dense and longer on hind coxae, almost absent on transversely ringed basal half of hind femora, fairly dense, but short, on small granules in apical half, slightly denser and shorter and more yellowish on tibiae.

*Head* with the interocular space on vertex rather narrowish, but as in other known ♀♀ of this genus also about as broad as interocular space below; antennae shorter than thorax (excluding scutellum); segment 1 rather stoutish, about  $2\frac{1}{4}$  times length of 2; segment 3 shorter than club, a little less than a third of its apical part slightly thickened; club elongate, thickest beyond middle; proboscis stoutish, shorter than vertical length of an eye.

*Wings* rather longish, with a general pattern reminiscent of the wings of the vespids *Belonogaster junceus* and *B. lateritius*, tinted yellowish in costal half up to lower vein of first basal cell and also including second basal cell, but with the apical part from stump at base of second submarginal cell as well as apical part of marginal cell, more or less apical half of first submarginal cell, entire second submarginal cell, base and apex of first posterior cell and along apical vein of discoidal cell dark brownish, the rest of hinder half of wings clearer, more hyaline, except for some faint fuscous borders along apical vein of anal cell and basal parts of veins of third posterior cell; veins yellowish in yellow part and dark or blackish brown in brown part and in hinder half; apex of second submarginal cell rather broadish, broader than that of first submarginal, the stump at its base markedly long, apex of discoidal cell shortly stalked; halteres yellowish, upper apical part of knobs brownish.

*Legs* with the hind ones rather long, the hind femora slightly clavately thickened, more than their basal halves transversely, but obliquely, ridged or noded, each ridge finely striate in appearance on dorsal part of femora, the apical half of hind femora finely transversely wrinkled, these femora armed below from about middle with a double row of yellowish reddish spines; basal segment of hind tarsi subequal in length to claw-segment (excluding claws); hind claws more gradually curved down apically than in *karooensis*.

*Genital segments* as in other ♀♀ of this genus.

Length of body: about 23 mm (tip of abdomen normally curved down)

Length of wing: about 21 mm

*Distribution*: Western Transvaal: Rustenburg (A. Capener, December 1947).

*Mydaselpis variolosus* Bezz.*Mydaselpis variolosus* Bezzi, 1924b: 221.

This species, which Bezzi described from a single ♀ specimen from Shiluvane in the Transvaal and which he retained in his own collection, is not represented in any of the collections before me. From the description it ought to be easily recognizable and appears to be a *Mydaselpis s.str.* Its main differentiating characters appear to be the almost entirely reddish thorax and pleurae, blackened only along the middle above to near scutellum; the entirely reddish scutellum; the almost entirely black abdomen, with only the terminal segments reddish, and hind margins of tergites 2 and 3 narrowly yellowish; the reddish bullae; the deep (? coarse) puncturation of abdomen above; the rather extensively infuscated wings, with only streaks in some cells and the narrow clearer or greyish hyaline hind border; the rather shortish proboscis, not quite 2 mm long; and the reddish coxae and yellowish legs.

Length of body: about 15 mm

Length of wing: about 9 mm

*Distribution*: north-eastern Transvaal: Shiluvane.*Mydaselpis ignicornis* (Brun.) n.comb.*Mydas ignicornis* Brunetti, 1929: 8.

This species which Brunetti described under the genus *Mydas* from a single ♂ specimen from Bulawayo in Rhodesia is not represented in any of the collections before me. From his description it is however evident that the species should be transferred to *Mydaselpis* with which genus it appears to agree more than with the other related new genus *Vespiodes* described below. Neither can it belong to the genus *Afroleptomydas* (*Leptomydas*) as it was believed to be in comparisons made for Bequaert (1961a) in a footnote (p. 10).

From the description its main differentiating characters appear to be its almost entire orange brownish thorax above, only darkened centrally above; its similarly coloured pleurae and scutellum, with only the sternopleuron, lower part of mesopleuron and the hypopleuron black; its mainly orange brownish abdomen which has transverse black bands over junctions of tergites 2 and 3 and 3 and 4, narrow yellowish hind margins across 2 and 3 and black basal parts to 5-7; its orange brownish venter of which the hind margins of sternites 1-4 are narrowly vividly yellowish; and wings which are yellowish brownish in anterior half, darker brown in first basal cell to apex of wing, and paler more pale yellowish grey in hinder half, but with the anal and discoidal cells nearly clear.

It appears to be nearest to *variolosus* Bezz. described from the north-eastern Transvaal and also not represented in the collections. The latter also has the greater part of the thorax, scutellum and pleurae pale coloured, but has, according to the description almost entirely infuscated wings, an entirely shining black abdomen with only the terminal segments reddish, coarser puncturation

on abdomen, and slightly longer antennae. The possibility that these two species may prove to be identical is however not excluded.

#### VESPIODES n.gen.

*Leptomydas* Sack (*nec* Gerstaecker), 1935: 503. (n.syn.)

*Mydaselphis* Bequaert (*nec* Bezzi) in part, 1940: 7-24. Bequaert (*nec* Bezzi) in part, 1951: 1-20. (n.syn.)

In 1935 Sack described a peculiar mydaid from the north-eastern Transvaal under the name of *Leptomydas conopeus* which has a remarkable resemblance to a conopid-fly. As the description was based on a single ♂ specimen in the Transvaal Museum it was not accessible to Bequaert, but in 1940 (p. 4) and 1951 (p. 20) he correctly surmised that it did not belong to the genus *Leptomydas* (i.e. *Afroleptomydas*) and he then provisionally referred it to *Mydaselphis* Bezz. under which latter genus he also described five other species, *leopolditertii*, *katangensis*, *goldingi*, *rhodesiensis* and *pattersoni* from the Congo, north-eastern Rhodesia and west Africa. From a ♂ specimen of *Leptomydas conopeus* Sack very kindly compared with the unique type specimen of Sack by Dr. Van Son, as well as from the descriptions, illustrations and plates of Bequaert in the two publications cited above, and also from representatives of at least three other undescribed species, belonging to the same genus, in the National Museum of Rhodesia and kindly submitted by the late Dr. Arnold, it is quite evident that all these species belong to a genus which is distinct from the typical *Mydaselphis* Bezz. of which the type-species is in the South African Museum and of which other typical representatives are described above.

As all these various species have a superficial resemblance to wasps the name *Vespiodes* is proposed for the new genus to accommodate them. They however have an even closer resemblance to other wasp-imitating Diptera, such as representatives of the Conopidae and certain Syrphidae. In fact their resemblance to species of the syrphid-genus *Ceroides* is very striking and remarkable.

Representatives of this new genus differ from those of *Mydaselphis* in the following respects:

*Body* with the abdomen more slender, distinctly less stout, even more pedunculate, much more and more conspicuously narrowed waist-like at segments 2 and 3, appearing more clavate or wasp-like, the club-like thickened hinder part more spindle-shaped, tapering more posteriorly, being broadest across junction of segments 5 and 6 and in many species tergites 2 and 3 with yellowish on sides or entirely yellowish.

*Integument* of head and thorax similar, that of thorax above also vermicellately rugulose, coarser on sides and along two submedial streaks; pleurae and metanotum also dull; integument of abdomen however different, that across middle of first segment and across extreme base of same segment on sides not coarsely punctured, either only finely punctured or more usually transversely striate or grooved; rest of abdomen above not densely and coarsely punctured or pitted, but only covered with very much finer, sparse or dense,

setiferous puncturation.

*Vestiture* with the hairs slightly less developed, the longer ones on head slightly shorter and less dense; hairs across middle of first abdominal segment and across extreme base on its sides usually much shorter, sparser, or almost absent and, if longish and dense, not so decumbent and not separated on sides by a broad hairless streak as in *Mydaselpis*; greyish whitish tomentum or bloom more consistently and more conspicuously present across lateral basal part of abdominal segment 1, hinder parts of metapleural and metasternal parts and along outer face of hind coxae; hairs on legs as fine, but relatively sparser.

*Head* with the vertex distinctly much more deeply sunk in in middle; clypeus more convex, slightly larger and in side view more tumid or bulging, not so sloping straight down as in *Mydaselpis*; buccal cavity relatively shorter; antennae very similar; proboscis similar; palps also minute; postvertical spines absent or not distinctly differentiated as in *Mydaselpis*.

*Wings* as in *Mydaselpis*; venation similar, but with a greater tendency for a distinct vein-like longitudinal fold along middle of first submarginal cell imitating the spurious vein of the syrphid *Ceroides*; infuscation in wings more often more extensive, occupying most of wings, sometimes leaving clear streaks only in cells in hinder half or along hind border and, if clear in hinder half, the hinder half or more of first posterior cell not clear or clearer and, if with a clear area, this is only along middle or in basal part (the apical part to a variable extent entirely infuscated).

*Legs* similar, but hind ones relatively shorter, the hind femora also slightly thickened, but distinctly more clavate, their base being relatively more slender, usually with slight transverse node-like ridges and in the species before me with two short, parallel, raised, granular ridges or rows of granules on outer lower aspect near base, but also armed below with a double row of spines; hind tibiae also with granules below, without any or with much smaller spicules along inner face or near apex, even in ♀♀.

*Terminal segments* in ♀♀ with tergite 9 also raised keel-like medially above; oviscape with a row of much finer, shorter and feebler bristles.

*Hypopygium* of known ♂♂ (cf. pl. 1 fig. 7) with the last or ninth sternite not roundly convex and scoop-like, but narrowed posteriorly, somewhat laterally compressed and vertically sharply truncate apically or merely conical, its prongs stouter, shorter, with a sharper dentate process or tooth above near base and with much denser and longer hairs below as well as on sides apically of sternite 9; aedeagal apparatus also in form of a tubular structure, sometimes vase-shaped, ending apically in two smaller phallic tubes, each with a funnel-shaped gonopore; an epimere, which is absent in *Mydaselpis*, is however present to a variable degree in the form of a distinct, often prominent, conspicuous or longish unpaired dorsal process, lobe or spine.

The type-species of this new genus is *Vespiodes conopeus* (Sack).

The three known species from southern Africa may be separated as follows:

1. (a) Greater part of vertex, frons, head in front or sometimes even entire head reddish, reddish brownish or brownish; entire or greater part of pteropleuron and entire metasternal part mainly dark or black; anterior part of thorax above not extensively reddish, the reddish confined to a smaller area on inner side of humeral tubercles; hind margins of tergites 2-4 and of corresponding sternites either darker or more reddish or the yellowish confined to extreme sides; tergites 2 and 3 usually black above medially and pale yellowish or yellowish whitish on sides to a variable extent; hairs on head in front, in ♀♀ at least, much shorter, sparser, and not dense on clypeus, those on thorax above in both sexes present in 4 streaks and hairs on tergites 1 and 2 very short and sparse in both sexes; metanotum bare, not silvery pubescent; tergite 1 mainly transversely striate or grooved; wings either almost entirely uniformly infuscated or, if with hinder half clearer, first posterior cell is entirely infuscated or tinted . . . . . 2
- (b) Vertex, entire frons and sides of face black; greater part or entire pteropleuron and metasternal part in front of hind coxae reddish; anterior part of thorax, excepting only a narrow central black streak, reddish; hind margins of tergites 2-4 and of corresponding sternites conspicuously yellowish whitish; greater part of tergite 2 above and basally on sides, entire 3 above and an infusion on sides of 4 and 5 yellowish reddish or reddish, without a continuous black medial streak on 2 and 3; hairs on head in front, including clypeus, denser, longer, those on thorax above denser, interrupted only along middle above, and hairs on tergites 1 and 2 in ♀ and 1-3 in ♂ long, fairly dense; metanotum with distinct, fine, silvery pubescence on sides; tergite 1 both basally on sides and across its hinder half less distinctly or coarsely transversely grooved, in ♀ only punctured, not transversely grooved; wings dark brownish in anterior half and clear or clearer in hinder half including basal two-thirds of first posterior cell in both sexes  
♂ ♀ *cerioidiformis* n.sp.
2. (a) Wings infuscated brownish in anterior half up to apex of discoidal cell and including first posterior cell and to a fainter extent second basal cell and a little beyond its apex and lower part of discoidal cell opposite apical cross-vein of second basal cell, the rest of wing clearer; scutellum and greater middle discal part of metanotum extensively black; entire sides of tergites 2 and 3 pale yellowish; integument of rest of abdomen paler steel bluish, with slightly less dense setiferous puncturation on tergites 4-5; head in front more brownish . . . . . ♂ *conopeus* (Sack)
- (b) Wings entirely and relatively uniformly infuscated, dark blackish brownish throughout, only narrow hind border and to a certain extent middle of cells slightly less tinted; scutellum and entire metanotum, except narrow medial black line, reddish; entire sides of only tergite 2 (excepting dark extreme sides) and base laterally of 3 pale yellowish; integument of rest of abdomen obscurely darker bluish, with distinctly denser setiferous puncturation on tergites 4-5; head in front paler, more reddish or yellowish reddish 3
3. (a) Antennae relatively shorter, the apical thickened part of segment 3 and basal half of club not distinctly darkened; reddish infusion around humeral tubercles slightly more extensive, extending posteriorly on extreme sides for a little distance; abdomen slightly more distinctly bluish, the puncturation on tergite 3 relatively sparser and that on 4-6, though dense, distinctly less so especially on sides; wings relatively shorter, broader, the base up to cross-vein in costal cell more yellowish and parts of veins there also yellowish; legs with the apical part of hind femora much paler, pale reddish yellowish, the apical part of tibiae paler and tarsi also paler; last sternite more truncate, scarcely narrowed apically, not turned up scoop-like . . . . . ♀ *ruficeps* n.sp.
- (b) Antennae distinctly longer, the apical part of segment 3 and basal half of relatively longer club darkened; reddish infusion around humeral tubercles less extensive, not on sides of thorax behind tubercles; abdomen more darkly and obscurely bluish, puncturation on tergite 3 relatively denser, that on 4-6 distinctly much denser, and also on sides; wings longer, the base and veins there dark like rest; legs with more than apical halves of hind femora, including apical parts of tibiae, appearing darker, due to darker hairs, and tarsi also darker brownish; last sternite narrowed apically, turned up scoop-like  
♀ *nyasae* n.sp.

*Vespiodes conopeus* (Sack) n.comb.

*Leptomydas conopeus* Sack, 1935: 503, fig. 1. Bequaert, 1940: 4.

This species was described by Sack from a unique ♂ specimen in the Transvaal Museum and was given the name of *conopeus* because as the author states it could easily be mistaken for a conopid-fly. Dr. Van Son of the Transvaal Museum has very kindly loaned another ♂ specimen of the same species to me which he has compared with the ♂ holotype. From both the description of the type and this other specimen it is quite evident that this species has a great resemblance to representatives of Conopidae, but it has an even more striking resemblance to species of the genus *Cerioides* of the family Syrphidae. The chief distinguishing features of the ♂♂ of this species are as follows:

*Body* mainly dark, but entire head, including clypeal part, excepting only black eyes and black shining medial basal ridge, reddish brownish to toffee-brownish; antennae also reddish brownish; proboscis blackish brown; humeral tubercles and a spot on inner side of them, apex of postalar calli, spot on sides of scutellum and sometimes a faint one medially, sides of metanotum, propleural part, area below wing-bases, and suture above middle coxae yellowish reddish; sides of tergites 2 and 3 broadly, and base on sides of 4, very pale yellowish to very pale reddish yellowish, the dorsum discally of 2 and 3 being blackish brownish; tergites 4-7 with distinct steel bluish reflections; hypopygial structures yellowish reddish to almost orange yellowish, sternite 8 however more violaceous brownish; venter yellowish basally on sternites 1-3, but darkened, more brownish medially, sternite 4 dark blackish brownish and rest of venter dark and with steel bluish reflections; hind margins of tergites 1-5 dark reddish brownish, but yellowish on sides of 2 and 3 and extreme sides of 4; bullae light reddish; hind margin of sternite 7 dirty yellowish; legs pale yellowish reddish, the inner and outer parts of front coxae, inner, lower and upper parts of hind coxae darker, more dark brownish, the bases of hind femora and dorsally to near middle very pale yellowish whitish, the rest of hind femora dark castaneous brownish or blackish brown, but a little less than apical third paler, more yellowish reddish; hind tibiae sometimes also darkened on outer side to a variable extent.

*Integument* of frons and clypeus shining; that of thorax above dull, vermicellately rugulose, more or less coarser on sides and along two submedial streaks; postalar calli and scutellum also more or less shining; metanotum dull; pleurae mainly dull; tergite 1 on sides basally and discally across middle transversely grooved or wrinkled and with only sparse punctures, mainly shining discally; tergites 2 and 3 with sparse, setiferous punctures, also more or less shining; tergites 4-6 with much denser, fine, aciculate, setiferous puncturation, less dense in basal two-thirds of 4 and sides of others; tergite 7 with sparse, setiferous puncturation; sides of 5-7 with three or four intramarginal rows of crater-like punctures; sternites 4-7 also fairly densely, finely punctured, less so submedially on sides, but extreme sides of 5-7 intramarginally also with coarser, pit-like punctures, and more or less basal half of sternite 4 almost



smooth, with fewer punctures; sternite 8 with some scattered, setiferous punctures.

*Vestiture* with the hairs on head in front the longest, snow whitish; those below more brownish; short, decumbent, relatively sparse hairs in streaks on thorax above also whitish; hairs on propleural part brownish; pleurae bare, with only a few sparse, short, whitish ones on metapleural part and some longer whitish ones on metasternum; metanotum bare; abdomen above with relatively sparse, scattered, shortish, whitish hairs on tergite 1 and its sides basally; those on rest of abdomen shortish, decumbent and located in the punctures, as dense as puncturation, slightly pale fulvous brownish on tergites 4 and 5, more sericeous yellowish on 6 and 7; hairs on venter as on dorsum, but mainly pale fulvous brownish; those on genitalia longer, denser, fulvous brownish below, darker brownish below prongs of sternite 9, paler fulvous to more sericeous yellowish on upper structures; hairs on legs poorly developed, short, not very dense, mainly fulvous, those below tarsi denser, darker; spines and spicules on legs yellowish reddish to reddish; fine tomentum or dense, greyish whitish bloom present behind eyes in occiput, on posterior metasternal and metapleural parts, very densely and conspicuously on basal lateral parts of tergite 1 and front face of hind coxae.

*Head* with the antennae subequal in length to thorax; segment 1 about  $2-2\frac{1}{3}$  times length of 2; segment 3 elongate, longer than club; clypeus convex, rather large, prominent; proboscis rather stoutish, subequal in length to or a little shorter than vertical length of an eye, shorter than antennae; palps distinct, but minute.

*Wings* with a characteristic pattern, infuscated brownish in anterior costal part, including first basal cell, except its extreme base, and extending apically where it is broadened to include apical vein of discoidal cell and entire first posterior cell, leaving the hinder part of wings clearer, more faintly yellowish or more hyaline except for a clear streak through middle of discoidal cell, a more or less clear anal cell, and a slight brownish infusion along lower half of second basal cell extending slightly beyond its apical vein into discoidal cell and posterior cells; veins brownish; apex of first posterior cell subtending angularly on costal margin; apex of discoidal cell shortly stalked; halteres brownish.

*Legs* with the hind femora distinctly clavately thickened, their basal halves slightly transversely ridged node-like, armed below in more or less apical half with a double row of backwardly-directed spines on tubercles; hind tibiae slightly curved downwards before apex, covered below with small, setiferous granules.

*Hypopygium* as shown in pl. 1 fig. 7 and as more roughly illustrated by Sack (504, fig. 1); lobes of tergite 9 bluntly rounded apically; sternite 9 compressed apically, its posterior part sharply vertical or truncated, its lateral prong on each side with a distinct, dentate process or tooth dorsally slightly beyond middle, the prong bluntly lobe-like in dorsal view, directed inwards and fairly long-

haired below, and with longish hairs apically also on sides of sternite 9, especially below; aedeagal apparatus in form of a stoutish, conical, upwardly-directed basal part, ending apically in two short phallic tubes, the apex of each with a funnel-like gonopore, and almost at right angles to aedeagus and a little below bases of phallic tubes on dorsal side an unpaired epimere in form of a slightly dorso-ventrally flattened, tongue-shaped lobe, which is entirely absent in *Mydaselphis*, but present in varying degrees in other species of the new genus *Vespiodes* (e.g. *leopolditertii* Bequaert, 1940: 15, figs 10 a and b).

Length of body: about 18 mm (to apex of markedly curved down abdomen)

Length of wing: about 16 mm

*Distribution*: Northern Transvaal: 40 miles west of Louis Trichardt (November 1932) (holotype); Pienaars River, north of Pretoria (Swierstra, 1906) (second ♂ specimen).

#### *Vespiodes ruficeps* n.sp.

An interesting dark-winged Rhodesian species unfortunately represented in the collections before me by a solitary ♀ specimen only. It shows some resemblance to the ♂ of *Vespiodes conopeus* (Sack), but obviously belongs to an entirely different species which is characterized as follows:

*Body* mainly dark or black, with the following parts yellowish reddish to reddish: entire head excepting black eyes and black central ocellar ridge in basal half of frons, antennae, humeral tubercles and an infusion around them extending on sides of thorax for a little distance, an infusion on sides of thorax above wing-bases, postalar calli, entire scutellum, almost entire metanotum except for a dark central streak, propleural part, hinder part of mesopleuron, area below wing-bases, anterior margin of pteropleuron, sutural part between sterno- and hypopleura, area below bases of halteres, narrow hind margin of tergite 7 discally, tergite and sternite 8, and genitalia; proboscis dark, reddish below; sides of tergite 2 broadly and base of 3 very pale yellowish whitish, the central dorsal discal part of 2 and most of 3 however very dark blackish brownish; hind margins of tergites 1-3 and bases discally of 2-4 reddish brownish; bullae yellowish reddish; extreme sides of tergites 2 and 8 narrowly blackish; venter mainly very dark, blackish brownish in middle parts, sternites 1 and 2, and to a darker extent 3, brownish, and sternite 7 very dark piceous or blackish red; legs yellowish reddish, the front and hind coxae blackish brownish, the front femora darkened above towards base, the hind ones very pale yellowish whitish in more or less basal half (especially on inner part) then very dark blackish brownish, but with apical third or more (more on inner aspect) reddish; hind tibiae, except reddish base, mainly dark reddish brownish on outer side and paler, more reddish on inner side.

*Integument* of head in front more or less shining; thorax above vermicellately rugulose; abdomen with tergite 1 transversely grooved across middle on sides and sides basally, very sparsely punctured above; tergites 2 and 3 sparsely

punctured above, almost smooth on sides, slightly more densely across intrapical part; tergites 4-6 fairly densely (slightly more dense than in *conopeus*) covered with aciculate, setiferous punctures, slightly less so on sides; tergite 7 with much sparser, setiferous puncturation; tergite 8 mainly smooth; tergites 4-7 with the usual intramarginal rows of coarse punctures on sides; integument of 4-7 with slight, dark bluish reflections in certain lights; venter correspondingly punctured, but less dense than above, and sternites 4-7 also with slight bluish reflections.

*Vestiture* with the shortish hairs on head in front whitish, almost absent from disc of clypeus; hairs on head below brownish; occiput with a broadish streak of silvery bloom behind eyes; hairs on disc of thorax sparse, short, whitish, in 4 streaks; sparse hairs on propleural part brownish and very short ones along posterior margin of metasternal part whitish; vestiture on tergite 1 in form of very dense, silvery greyish bloom across its base and especially on sides basally, continued on to metasternal part and hind coxae as in other species of this genus, the hairs on tergite 1 very short and sparse as the punctures, sericeous yellowish; rest of fine, decumbent hairs on abdomen above dark, more brownish on tergites 4 and 5, paler, more sericeous yellowish on 6 to 8; hairs on genitalia more brownish, slightly longer; those on venter fulvous brownish; hairs on legs very short and sparse on femora, denser on tibiae, fulvous brownish, darker on dark parts of femora, the dense, fine brush below front tibiae dark or blackish, and dense hairs or spinules below tarsi also dark; spines and spicules on legs dark reddish.

*Head* with the antennae longer than thorax (excluding scutellum); segment 1 thickened, quite  $2\frac{1}{3}$  times length of 2; segment 3 long, apically slightly thickened, much longer than club, also longer than latter plus articulating part; club with very short constricted basal part; proboscis much longer than vertical length of an eye; clypeus rather convex, prominent; palps minute, but distinct.

*Wings*, unlike those of *conopeus*, uniformly infuscated dark brownish, with slight mauvish reflections, only the narrow hind border and broadened hinder part of axillary cell and alula less tinted or clearer, and middle parts of first and second submarginal cells and first posterior cell also slightly less dark; veins dark brownish, but basal parts of 1 and 2 up to cross-vein yellowish reddish; venational characters as described for the genus and *conopeus*; halteres dark brownish.

*Legs* with the hind femora clavately thickened, armed below in apical half with a double row of spines; basal segment of hind tarsi subequal in length to claw segment.

*Genital segments* with hind margin of oviscape in side view straight to apex of tergite 9, the oviscape itself with a row of fine, shortish, bristly hairs of which only 2 or 3 in lower basal part are longish and bristle-like; sternite 9 subtruncate, not narrowed and turned up scoop-like.

From a single ♀ in the National Museum of Rhodesia.

Length of body: about 17·5 mm

Length of wing: about 14·5 mm

*Distribution*: Rhodesia: Matetsi (R. Stevenson, 28th October 1934).

This species appears to be very near *rhodesiensis* (Bequaert 1951: 8) which also has entirely infuscated wings and yellowish whitish on sides of tergites 2 and 3, but, according to the description, it may be distinguished from the latter by its reddish and not brownish head, the slightly dark bluish reflections of abdomen, the presence of much shorter, finer, bristly hairs on oviscape (not 6 longish bristle-like ones) and the different sculpture on sides basally of metanotum which is not composed of a granular elongate area, but of a more rugulose one.

*Vespiodes nyasae* n.sp.

Another entirely dark-winged form which may almost be considered as only a distinct variety of *ruficeps*, but as the unique ♀ specimen before me differs in slight, but important, details it is provisionally considered as a separate species which differs from the ♀ *ruficeps* as follows:

*Body*, though with a very similar pattern of reddish and on the same parts, with the reddish around humeral tubercles less extensive, not present on sides of thorax behind the tubercle; black on extreme sides of tergite 2 more extensive; abdomen with less distinct dark bluish reflections, the puncturation on tergite 3 relatively denser and that on 4-6 distinctly much denser and also down on sides (which in *ruficeps* is distinctly sparser); hind femora with more than apical halves, including apical parts, distinctly darker, more castaneous brownish; apical parts of tibiae also appearing darker, due to darker hairs, the hind ones not visibly paler along inner sides; tarsi also darker.

*Vestiture* with the fine hairs on tergites 4-6 not only distinctly denser, due to denser, setiferous puncturation, but slightly longer and darker fulvous brownish; hairs on venter also denser and dark fulvous brownish; those on legs, especially on apical parts of tibiae and tarsi, darker to almost blackish.

*Head* with the antennae proportionally distinctly much longer as 27:22, segment 3 and club being proportionally much longer, the apical segment-like thickened part of 3 and basal half of club darkened; proboscis also relatively longer, as 17:15.

*Wings* relatively slightly longer, also entirely infuscated very dark blackish brown; veins also dark, but 1 and 2 basally not pale reddish yellowish up to cross-vein as in *ruficeps*.

*Genital segments*, in side view, with hind margin of oviscape less straight, distinctly incurved to apex above of tergite 9, the oviscape itself with a row of longer bristly hairs on each side; anal lobes darkened, not reddish yellowish, with darker hairs; sternite 8 turned up and narrowed scoop-like apically under oviscape.

From a ♀ in the National Museum of Rhodesia.

Length of body: about 23 mm

Length of wing: about 18 mm

*Distribution:* Malawi (Nyasaland): Salima Bay, Lake Nyasa (5th November 1943).

This species also shows similar differences in regard to *rhodesiensis* (Bequaert) as *ruficeps*, but in addition it differs in the apically turned up scoop-like last sternite.

*Vespiodes cerioidiformis* n.sp.

A more hairy species, represented by a ♂ in the Transvaal Museum and a ♀ in the collections of the National Museum of Rhodesia, differs from all the other known species of this genus in some important characters which relegate it to a special group. This species, especially the ♀, resembles species of the syrphid-genus *Cerioides* even more than other species of this genus. It is characterized as follows:

*Body* with the middle part of abdomen more slender in ♂, mainly black, including most of head, except clypeus; the following parts yellowish reddish or reddish: antennae (excepting dark articulation between segment 3 and club and the slightly less dark apical part of segment 3 and in ♂ basal half of club), clypeus, proboscis below, humeral tubercles and more or less broad anterior part of thorax (excepting only a narrow black central streak), postalar calli, narrow base of thorax, entire or greater part of scutellum, narrow anterior part on each side of black metanotum, propleural part, area below wing-bases, entire pteropleuron, suture down to middle coxae, part just below halteres, metasternal part in front of hind coxae, base transversely, especially on sides, of tergite 2, more or less hinder half discally and sides apically of 2, greater part of 3, base especially on sides of 4, large, roundish, ill-defined, spot-like infusions on sides of tergites 4 and 5 (more distinct in ♀), terminal segments in both sexes, greater medial parts of sternites 2 and 3, base of 4, greater part of 5, greater part of legs (except hind ones) and all coxae and trochanters; sides of tergites 2 and 3 (narrower in ♀) and corresponding sternites, as well as those of tergites 4 and 5 and a transverse, intramarginal, apical line discally on 3, very dark or blackish; sides of tergite 2 infused with reddish brownish in parts not occupied by yellowish reddish; abdomen also with the narrow base discally and narrow hind margin of tergite 1 dark reddish, hind margins of 2 and 3 and narrowly of 4, as well as hind margins of corresponding sternites, conspicuously yellowish whitish, the bullae smallish, wine red, and hind margin of tergite 5 dull reddish brownish and a central streak on 7 in ♀ reddish; hind margins of sternites 5-7 dull dark reddish brownish; basal half of hind femora very pale yellowish whitish, the rest of the surface reddish brown, darker on inner apical part, and almost basal halves of hind tibiae above and on outer sides yellowish whitish, the rest of these tibiae yellowish brownish or reddish brownish.

*Integument* of greater part of frons, middle part of clypeus and proboscis below more or less shining; integument of thorax above vermicellately rugulose, the extreme sides more shining, less sculptured, the two submedial streaks slightly more coarsely sculptured, especially anteriorly, and with a fine, central,

carinate line, especially in ♀; integument of tergite 1 shining discally in basal half or part, with sparse, fine, setiferous punctures, coarser more aciculate or 'nadelrissig' puncturation across apical part (the tergite, unlike in other species of this genus, distinctly less transversely convex across middle and with only feeble, not coarsely conspicuous, transverse wrinkles on sides and sides basally); rest of abdomen above smooth across bases of tergites 2 and 3, rest of these tergites relatively sparsely aciculate punctured, denser in ♂, tergite 4 with denser, coarser, aciculate, setiferous puncturation and 5 and 6 duller, with much denser, aciculate, setiferous puncturation which on 7 is slightly less dense, but denser and shallower than on 4; sternites 5-7 with shallower and sparser, setiferous puncturation than above, and 1-4 smooth, more shining, with only very fine, sparse, setiferous punctures.

*Vestiture* with greyish whitish or silvery bloom on extreme sides of frons, sides of face, very broadly behind eyes, along extreme sides of thorax, on most of metanotum (but on sides of latter in form of distinct, dense, short, silvery pubescence), on hinder part of sternopleuron, on hypopleural and metapleural parts, on sides basally of tergite 1 and very densely on outer face of hind coxae; hairs more developed, even in ♀, than in most other species, long and fairly dense on head in front, snow whitish, those on head below more yellowish; short hairs on thorax above also snow whitish, denser in ♂, distinctly denser than in the other species, longish on extreme sides, not arranged in 4 streaks as in other species, but uniformly covering disc, except for a bare streak along middle; sparse, longish hairs on propleural part yellowish and sparse ones on metapleurae in front of halteres, as well as shortish ones on metasternal part, whitish; hairs on tergite 1, unlike in other species, longish, fairly dense, silvery whitish, denser in ♂, and dense, longish ones also on sides of tergite 2 and even silvery ones on sides of 3 in ♀ and 3 and 4 in ♂, longer and denser than in other known species; fine, short, decumbent ones in the dense aciculate punctures on rest of abdomen also silvery whitish; hairs on venter also whitish, longer on sternites 2-4; those on genital segments slightly longer, more yellowish, but sparse and shorter ones on tergite and sternite 8 in ♀, more whitish; hairs on legs not much denser and longer than in other species, mainly whitish, the brush-like ones on inner sides of front tibiae yellowish; spinules below tarsi more fulvous brownish.

*Head* with the antennae longer than thorax (excluding scutellum); segment 1 shortish, thickened, about  $2\frac{1}{3}$  times length of 2; segment 3 elongate, longer than club, but slightly shorter than club plus articulation; club thickened from about middle; proboscis longer than vertical length of an eye, the upper apical part of labella not coarsely punctured as in the preceding species.

*Wings* with a pattern resembling that of *conopeus*, but differing in that the dark brownish infuscated anterior part (mainly along course of veins) does not extend down apical vein of discoidal cell, leaving greater part of first posterior cell, except its apical part, clear; costal cell and hinder half in ♂ entirely clear, in ♀ hinder middle part of wings tinted faintly, more yellowish, but leaving a clear

middle streak in discoidal cell, the entire alula, greater part of anal cell, entire axillary lobe and hind border also clearer; veins dark brownish; halteres yellowish, slightly more dirty yellowish on knobs above.

*Legs* with the hind femora relatively less thickened than in preceding three species, but slightly thicker in ♂ than in ♀, their basal halves slightly transversely ridged node-like, armed below in apical half with about 8 or 9 brownish spines in a double row and before these in basal half with 2 separated, unpaired ones.

*Genital segments* in ♀ with the hind margin of oviscape in profile arcuately rounded, intramarginally with a row of fine, shortish, pale bristles of which 2 in the ventral aspect are darker, longer and stouter; last sternite truncate apically.

*Hypopygium* of ♂ with the lobes of tergite 9 slightly more pointed apically than in *conopeus*; sternite 9 conically narrowed apically, not vertically truncate as in *conopeus*, and with much shorter and sparser hairs, its process or prong on each side more slender, the apical half distinctly more slender, longer, more cylindrical, with a broader tooth above near base, and with much shorter hairs below; phallic tubes of aedeagus distinctly longer and more divergent than in *conopeus*.

From a ♂ and a ♀ (♂ holotype in the Transvaal Museum and ♀ allotype in the National Museum of Rhodesia).

Length of body: about 19·5–21·5 mm

Length of wing: about 16 mm

*Distribution*: Transvaal: Salt Pan in the Pretoria district (G. van Son, 22nd September 1942) (♂ holotype). Rhodesia: Matetsi (R. Stevenson, 14th September 1934) (♀ allotype).

#### Genus AFROMYDAS Beq.

*Afromydas* Bequaert, 1961a: 11, 12, 13, and 14, fig. 10. Bequaert, 1963: 50, figs 6/5, 11 and 12.

This remarkable genus from Somaliland which Bequaert described more fully in 1963 does not occur in southern Africa, but according to the description of the type-species *guichardi* it shows some affinities with the new genus *Vespiodes* and should also be placed in the new tribe Mydaselpini.

According to the description and text-figures it appears to differ from *Vespiodes* in the presence of a double or forked epimere in front of the two phallic tubes of the ♂; the less pedunculate or waist-like narrowed part of the abdomen; the less posteriorly acuminate abdomen in ♀; the presence of a row of bristly hairs across apical part of the basal part of the oviscape and not across apical part as in ♀♀ of *Vespiodes*: the presence of anterior, submedial, triangular, and basal triangular, unsculptured areas on mesonotal part of thorax; absence of distinct, discal hairs on thorax above; and the presence of more hairs (apart from tomentum), on pleurae, especially on hinder part of mesopleuron, the pteropleuron, metapleuron and hypopleuron.

#### *Syllegomydai* n.tribe

This is a composite tribe established provisionally to accommodate most of the genera of southern Africa and from other parts of Africa which cannot be

accommodated in the other two tribes, the Mydaselpini and Cephalocerini. It is composed of a heterogeneous assemblage of genera and, as at present constituted, includes all those African genera with characters which differ from those characterizing the latter two tribes. They appear to share the following differentiating characters:

Sternite 9 in known ♂♂ usually distinctly tumidly conical or inflated, or laterally compressed in apical part, rarely navicular or much dorso-ventrally depressed or scoop-like, rarely much or broadly indented at middle apically; phallic tubes of aedeagus usually more slender, longer, more pointed, or curved and horn-like, or very long and slender and, if short or sessile, usually not stoutish and without a large gonopore; oviscape in ♀♀ always with a row of conspicuous, broadish, stoutish, flattened spines on each side; abdomen not markedly narrowed waist-like and, if narrowed between segments 2 and 3 (or 4), usually not coarsely or very densely punctured; and tibiae with relatively longer, finer, usually less spine-like hairs, these usually not situated on distinct granules, and with the spicules, especially on hind ones, usually longer, sometimes more numerous.

#### Genus HAPLOMYDAS Bezz.

*Haplomydas* Bezzi, 1924b: 199. Bequaert, 1959: 356. Bequaert, 1963: 4.

*Rhopalia* Brunetti (*nec* Macquart), 1929: 7.

*Heleomydas* Séguy, 1929: 110. Séguy, 1930: 654, fig. 3.

This genus which Bezzi based on a single ♀ type specimen from Rhodesia in the South African Museum, is the centre of some confusion in literature. It was not recognized by Brunetti who in 1929 described a representative of it, also a ♀ specimen and from Rhodesia, as *Rhopalia flavomarginata*. The true genus *Rhopalia* of Macquart is apparently a north African one which has not been recorded from Africa south of the equator. Brunetti's description of the antennae, body characters and especially the incrassate hind femora, with four rows of spines below, as characterizing his ♀ specimen, supports the contention, also maintained by Bequaert (1961a: 10, footnote, and 1963: 10), that his species is a representative of *Haplomydas* of which the ♀ type-species shows the same characters. About the same time Séguy in 1929 described a representative of the as yet undescribed ♂ of *Haplomydas* from Portuguese East Africa as *Heleomydas lesnei* and which he figured in a subsequent publication in 1930 (fig. 3). From this illustration it is quite evident that *Heleomydas*, as was also maintained by Bequaert (1963: 5), is synonymous with the ♂ of *Haplomydas* which, though not described till then, was represented together with the ♀ in some collections. This generic synonymy was already indicated by Bequaert in 1959.

The genus *Haplomydas* shares certain characters with the Mydaine genus *Ectyphus* Gerst. rather than with *Afroleptomydas* Beq. (= *Leptomydas* of southern Africa) with which Bezzi compared the ♀. Excepting only the former genus, it differs from all other known South African genera in the following combination of characters:



*Head* with the proboscis much reduced, but with the labella, relative to this reduction, rather well developed, armed with minute spinules; postvertical spines not in a single row on each side, but in a clump.

*Wings* with the second submarginal cell basally without an appendix; first posterior cell very broadly open apically on costal margin, the cell itself rather broad; first basal cell rather narrow; third posterior cell with its lower vein markedly curved up apically, the apex of the cell thus more rounded.

*Abdomen* with the bullae situated linearly across hind margin, not easily distinguishable; oviscape in ♀♀ reduced in size, exerted, the vertical, central carina on last genital tergite, so evident in most other genera, also much reduced.

*Hypopygium* of ♂ (see Bequaert 1961a: 6, figs 6, 8, and 11, fig. 9, and 1963: 6, fig. 1A) remarkable in that the lateral lobes of tergite 9 are markedly developed, large, chitinized apically and there armed with a pad of denticles or short spines; sternite 9 not prominent or bulbular or cone-like, its lateral prong or process on each side upcurved, slightly convergent apically; aedeagus, as figured by Bequaert (1961a: 11, fig. 9), in form of a bluntly rounded tubular process, provided apically on posterior aspect with two outwardly directed, slightly curved, horn-shaped, phallic tubes.

*Legs* with the hind femora markedly or relatively enormously thickened or incrassate in both sexes, armed below with four rows of spines; membranous face of hind coxae rather markedly large and oval; hind tibiae curved, somewhat attenuated apically, without spicules in both sexes, longitudinally carinate below, ending apically in a sharp, spine-like process below in both sexes; tarsi markedly short, the basal segment of hind ones not or scarcely longer than second.

*Vestiture* on body on the whole poorly developed, the metanotum, pteropleuron and rest of pleurae, except metapleural part in front of halteres and hind margin of mesopleuron, bare.

From *Ectyphus*, which also has some of these characters, it may at once be distinguished by the entirely different type of aedeagus, the absence of a cross-vein in hind border of wings, much narrower and more normally shaped clypeus, absence of spines on hind trochanters, apically narrowed tibiae, absence of spicules on hind tibiae, much shorter tarsal segments, etc.

The only known representative of this genus is the type-species *Haplomydas crassipes* of Bezzi.

#### *Haplomydas crassipes* Bezz.

*Haplomydas crassipes* Bezz, 1924b: 200. Bequaert, 1959: 356. Bequaert, 1961a: 10. Bequaert, 1963: 5, fig. 1.

*Rhopalia flavomarginata* Brunetti, 1929: 7.

*Heleomydas lesnei* Séguéy, 1929: 110. Séguéy, 1930: 654, fig. 3.

Since 1924 the South African Museum has acquired a ♂ specimen of this genus and species and the late Dr. Arnold of the National Museum of Rhodesia

has also very kindly lent me a series of ♂♂ and ♀♀ present in their collections. As there is no question about the conspecificity of the ♂♂ and ♀♀, despite the dichroism and variability of the species, this material enables me to supplement the detailed redescription of the species given by Bequaert (1963: 5, fig. 1) and to add comments on other ♀♀. Supplementing Bezzi's, Séguy's and Bequaert's descriptions the chief distinguishing characters of this rather variable species are:

*Body* elongate, the ♀ resembling a masarid wasp; thorax rather short and quadrate; abdomen elongate and cylindrical in ♂; clypeus yellowish or pale yellowish brownish to brownish in ♀, ochreous or orange yellowish in ♂; antennae yellowish, the apices of segment 3 and club usually darkened or black; humeral tubercles, pteropleural parts, sometimes base of thorax, broad hind margins of tergites and sternites and base of tergite 2 in ♀, hind coxae, bases of hind femora and front and middle femora, tibiae and all the tarsi very pale or lemon yellowish to even pallid in both sexes; sides of thorax, postalar calli and two submedial streaks on thorax above, base of thorax to a variable extent, hind border of scutellum or entire scutellum in ♀, infusions to a variable extent on sides of metanotum (or even entire metanotum) and discal parts to a variable extent or even entire surface above (or a medial streak) on tergites 1-5 or 6 in ♀ also yellowish to yellowish reddish; abdomen in ♂ strikingly pale orange yellowish discally above on tergites 1-6, very pale yellowish whitish on sides and across hind margins of tergites and on venter, with transverse, blackish brown spots on sides basally of tergites 1-7 (becoming larger and duller on 5-7) and with transverse dark or black spots across bases of sternites 2 and 3 and very narrowly across extreme bases of others; extreme base on sides of tergite 1, metapleural part above hind coxae and large outer anterior membranous face of hind coxae rather contrastingly yellowish whitish in both sexes; cavities on each side of scutellum, base of anterior spiracle, sternopleural and anterior lower hypopleural parts and area below halteres strikingly or conspicuously shining black; anterior and middle coxae, and sometimes anterior pleural parts, more brownish; last two abdominal segments in ♀ more brownish than black and hypopygium of ♂ mainly yellowish; narrow marginal bullae shining and yellowish whitish in both sexes; spines on hind femora below blackish brown or black and inner and lower faces of these femora also darkened to a variable extent.

*Integument* of thorax above and metanotum dull, due to a fine rugulose microsculpture; that of abdomen in ♀ shining, sparsely punctured, especially on sides above, but last two segments transversely rugulose; integument of abdomen in ♂ dull discally, sub-shining on sides, especially tergites 1-4 where it is also somewhat sparsely punctured; black parts of pleurae mentioned above conspicuously shining.

*Vestiture* with the hairs on head, body and legs entirely very pale or whitish in ♂, slightly longer in ♂, also mainly whitish in ♀, but those on last two abdominal segments slightly more sericeous yellowish; hairs on head usually more snow whitish, those on clypeus in ♂ rather long; head behind vertex, frons and

face rather broadly covered on each side with white tomentum; white tomentum also present on sides of thorax and as two submedial discal streaks on the yellowish-coloured streaks which unite posteriorly on each side, forming a striking pattern of 4 whitish streaks separating 3 broad black ones; conspicuous whitish tomentum also present on scutellum, metanotum, anterior pleural part, upper part of hypopleuron, the yellowish-coloured metapleural and coxal parts in both sexes.

*Head* with antennal segment 1 about twice length of 2; club longer than segment 3.

*Wings* distinctly, though faintly, tinted yellowish to pale yellowish brownish, more so in ♂; veins yellowish brownish to reddish; first posterior cell rather broad, broadly opening apically; third posterior cell also markedly broad, broader than discoidal cell, ending in either a point at acute apex of latter or often very shortly stalked apically; halteres pallid.

*Hypopygium* of ♂ as described under genus and as figured by Bequaert (1961, No. 19: 6, figs 6 and 11, fig. 9 and 1963: 6, fig. 1A).

From 7 ♂♂ and 8 ♀♀ in the National Museum of Rhodesia and the South African Museum (original ♀ type in the South African Museum).

Length of body: about 9–14 mm

Length of wing: about 7.5–12 mm

*Distribution*: Rhodesia: Bulawayo (Tucker, May 1917) (♀ holotype and type-species); Balla Balla (April); Khami Ruins (April); Ovi River, Matopos (May). Portuguese East Africa: Mapai (May), and according to Séguy: Nova Choupanga near Chemba (May) and Inhacoro (May).

#### Genus EREMOHAPLOMYDAS Beq.

*Eremohaplomydas* Bequaert, 1959: 357–363, figs 1–5.

There are no representatives of this interesting South West African genus in the collections before me, but judging from the notes on the genus and the comprehensive description and text-figures of the type-species *Eremohaplomydas desertorum*, this genus, as its name implies and as Bequaert also maintains, comes very near the genus *Haplomydas* of Bezzi.

According to the description it differs from the latter mainly in having a markedly broad head, with a frontal and facial region which is considerably broader, the interocular space on vertex being even a little more than twice width of an eye whereas in *Haplomydas* this space is considerably less than twice width of an eye; in its remarkably short antennae of which segment 3 is very short, only about subequal in length to segment 1 and 2 combined and of which the club is more globularly pyriform, with more reduced and less projecting terminal tubercle; in having no proboscis at all; in its distinctly more pedunculate wings in which the alula is vestigial or almost absent, the base of axillary lobe much narrower, not lobe-like as in *Haplomydas*, the very short apical stalk of anal cell which does not reach the hind margin and the apically markedly broad first posterior cell; in having the lateral lobes of tergite 9 in the ♂ more

pointed and rounded, armed with smaller denticles or granules, not narrowed and obliquely truncate apically with a terminal pad of coarser denticles as in ♂ of *Haplomydas*; and in having the lateral process on each side of sternite 9 in ♂ shorter, more lobe-like and divergent, not long, finger-like, converging and apically upcurving as in *Haplomydas*.

The type-species *Eremohaplomydas desertorum* was described from the Kaokoveld in South West Africa.

It appears that, as in the case of some other genera of Mydidae dealt with in this memoir, the genus *Eremohaplomydas* is still another western homologue or South West African representative of an east or south-east African genus, namely *Haplomydas*.

#### LACHNOCORYNUS n.gen.

This new genus belongs to the same generic group as *Haplomydas* and *Eremohaplomydas* in which the second submarginal cell in the wings is without an appendix at base, the hind tibiae are somewhat laterally compressed, carinate below and produced apically below into a spiniform process or tooth, the antennae are relatively shortish, with shortish third segment and globular or berry-shaped antennal clubs, and the proboscis is short, much reduced or even vestigial.

To a lesser extent it is also related to the two genera *Rhopalia* Macq. and *Halterorchis* Bezz. which have a similar wing-pattern, shortish proboscis, and to a certain extent shortish antennae.

This new genus agrees with and differs from *Haplomydas* and especially *Eremohaplomydas* in the following respects:

*Body* on the whole considerably shorter, smaller, the abdomen rather slender, more sexually dichroic, differently coloured in the two sexes, the ♀ being paler or with paler markings on head, thorax and abdomen.

*Head* (cf. pl. 1, fig. 4) with the interocular space on vertex markedly broad as in *Eremohaplomydas*, much broader than in *Haplomydas*, also as in the case of former not sunk in centrally; interocular space on head below also relatively broad and, though slightly or much narrower than on vertex, still much broader than in other genera; eyes correspondingly smallish and narrowish, much narrower (frontal view) relative to facial width than in *Eremohaplomydas*, slightly narrower in ♀ than in ♂; oblique frontal depressions, especially in ♀, much shallower than in *Haplomydas* and other genera; clypeus as in *Eremohaplomydas*, though more globularly convex, especially in ♂, and very much narrower than facial width; proboscis small, very short, though less vestigial than in *Eremohaplomydas*, but much shorter than in *Haplomydas*; palps distinct, more so in ♀, a little shorter than proboscis; antennae with segments 1 and 2 cylindrical, 1 being longer than 2, segment 3 longer than 1 and 2 combined, relatively much longer than in *Eremohaplomydas*, more like that of *Haplomydas*, distinctly thickened segment-like apically and rest superficially with distinct ring-like annulations, with the clubs much dilated, globular, subglobular, or berry-shaped, more so

and relatively larger than in ♂, as long as or slightly longer than segment 3 in ♂, but in known ♀ very slightly shorter, ending apically in a small crater-like tubercle, rather larger in ♀, the entire surface of clubs in ♂♂ very densely covered with fine, erect, conspicuous pubescence, giving them a soft downy appearance, this pubescence finer, sparser and less evident or conspicuous in ♀, and in both sexes without any visible or conspicuous sensory area; a few post-vertical spines present, more evident in ♀.

*Thorax* much narrower than head, relatively shortish, not very convex, its integument above discally finely vermicellately rugulose along a broad, central and two submedial streaks; pleurae not very deep or broad.

*Wings* rather narrowish, with venation similar to the other two genera, but first posterior cell distinctly less broadly opening on front margin, the cell much more parallel-sided; second submarginal cell, as in the other two genera, without an appendix, its shape more like that of *Haplomydas*; first basal cell markedly narrow as in *Eremohaplomydas*; anal cell markedly narrow as in latter, but narrower than second basal cell, its apical stalk reaching hind margin; third posterior cell less roundly dilated apically; alula slightly more developed than in latter genus, but considerably smaller than in *Haplomydas*.

*Abdomen* with the bullae small or minute, tending to be situated more obliquely; abdomen in ♀ attenuated posteriorly, tergite 8 longitudinally depressed dorsally; oviscape of ♀ with only a few spines, about 5 on a side.

*Hypopygium* of ♂♂ as shown in pl. 1 fig. 5, resembling that of *Eremohaplomydas*, but the dorso-ventrally flattened process on each side of the scoop-like sternite 9 strongly developed, very much longer, elongate, strap-like or lobe-like, rounded apically, curving up hook-like on each side up to level of dorsum, their basal part ending in a laterally-compressed or flattened basal lobe posterior to base of aedeagus; latter very much narrower than in *Eremohaplomydas*, more tubular, ending in two gonopores in its apex; pointed apices of lateral lobes of tergite 9 without distinct denticles or a pad of denticles.

*Legs* with the front and middle ones relatively short; hind ones markedly elongate, their femora distinctly thickened, but distinctly more clavately so than in either of the other two genera, the base being more slender and longer so, armed below with a double row of spines from just before middle as well as with 2 or 3 spines near apex on outer side; hind tibiae markedly short, relatively much shorter than in the other two genera, somewhat compressed, slightly curved, distinctly carinate below, produced apically below into a spine-like process.

*Vestiture* much denser and longer than in *Eremohaplomydas*, with the hairs in ♂♂ very dense and long on head, slightly shorter but also longish on sides of thorax and along two submedial streaks above, entirely wanting on metanotum, longish also on metapleural part in front of halteres, dense and long on tergites 1 and 2, and fairly dense and longish on legs; hairs in known ♀ much shorter, less dense, and less dense than on corresponding sites in ♂♂; fine, pale or whitish tomentum densely present on head, rendering almost entire head dull,

also extensively present on pleurae, especially in ♀, and in ♀ also along less sculptured streaks on thorax above, present also on metanotum; much dull and blackish tomentum present on abdomen above in ♂♂.

From *Rhopalia* Macq. it appears to differ, according to descriptions of latter, by the more reduced proboscis, the more clavately-thickened hind femora, and the apically-spined hind tibiae.

From *Halterorchis* Bezz. it may at once be distinguished by the more clavately-thickened and distinctly spined hind femora, compressed and apically-spined hind tibiae, much narrower first basal and anal cells, and much finer, less granular vestiture.

The type-species of this genus is *Lachnocorynus chobeensis* n.sp. The two known species of this new genus may be separated as follows:

- (a) Legs relatively more slender, the tibiae in both sexes darker, not paler than femora; hind margins of tergites 2-6 in ♂ and 2-4 in ♀ whitish; thorax above more finely rugulose; hairs in ♂ slightly shorter on body and legs, duller or darker, more greyish on hinder part of vertex, on clypeus, head below, thorax above and base of abdomen (those on head, thorax and base of abdomen in ♀ entirely whitish); wings much shorter, the first basal and anal cells distinctly narrower in both sexes; antennae shorter, segment 3 in ♂ more slender, slightly shorter, and globular club smaller, with slightly shorter pubescence; lateral lobes of tergite 9 in ♂ shorter, blunter apically; process of sternite 9 in ♂ relatively broader, shorter; (♀ with greater part of head, except dark central frontal part, humeral tubercles, sides of thorax, two submedial discal streaks on thorax, metanotum, greater part of pleurae, streak on sides of tergites 2-5 or 6 and under-surfaces of femora pale yellowish brownish, the abdomen above more dark brownish, the antennal clubs smaller, more berry-shaped, yellowish, with finer and sparser pubescence) . . . . . ♂ ♀ *chobeensis* n.sp.
- (b) Legs in ♂ relatively slightly stouter, the outer faces of front and middle tibiae paler, more yellowish; hind margins of all the tergites whitish; thorax above slightly more coarsely rugulose; hairs slightly longer, especially on legs, those on vertex, clypeus, head below, thorax above, and base of abdomen distinctly whiter, more snow whitish; wings much longer, the first basal and anal cells distinctly broader; antennae distinctly longer, segment 3 relatively stouter, slightly longer, and spherical club larger, with slightly longer pubescence; lobes of tergite 9 slightly longer, distinctly more sharply pointed apically; process of sternite 9 relatively narrower, more slender, longer; (♀ unknown) . . . . . ♂ *kochi* n.sp.

### *Lachnocorynus chobeensis* n.sp.

This type-species is characterized as follows:

*Body* in ♂ mainly dark or blackish; clypeus (especially in a streak on sides of latter), pleurae and abdomen more dark piceous brownish, the spots under anterior and posterior thoracic spiracles more shining black; venter more yellowish brownish up to end of sternite 6; hind margins of tergites 2-5 and discally on 6 whitish; legs dark piceous brownish, the tarsi paler, more yellowish brownish and knees yellowish.

*Body* in ♀ mainly pale yellowish brownish or pale yellowish reddish; vertex, segment 3 of antennae and greater part of abdomen above more brownish or reddish brownish; central part of frons, three broadish streaks (middle one broadest) on thorax above, cavities on sides of scutellum, spots below anterior and posterior thoracic spiracles blackish; antennal clubs yellowish; clypeus, humeral tubercles, pale streaks on thorax above, and extreme base on sides of

tergite 1 more pale yellowish reddish; a streak on sides of abdomen from base of tergites 2-5 or 6 more yellowish; hind margins of tergites 1-4 whitish; venter pale yellowish brownish up to end of sternite 4, then more reddish brownish; legs pale yellowish brownish, the femora, especially hind ones, more brownish above, and tarsi more yellowish, the knees pale yellowish as in ♂.

*Integument* of head, except for black shining central frontal part, mainly dull in both sexes, due to greyish whitish or whitish tomentum; integument of thorax above vermicellately rugulose, mainly along three broadish streaks (middle one broadest); rest of thorax above, scutellum, metanotum, pleurae mainly dull, due to greyish tomentum; abdomen of ♂ shining only on sides of tergites 1-3, the rest dull blackish above; in ♀ more, though feebly, shining above, with very fine, areolar microsculpture, the last two segments transversely finely striate, and with some scattered punctures on tergites 3-5 above, the extreme sides of 2-5 in ♀ also with rows of dense punctures, only evident on sides of 6 in ♂; extreme sides of venter in ♀ also with fine puncturation as well as some larger, scattered punctures; hind femora in both sexes more shining than rest.

*Vestiture* long and dense in ♂ and very dense on head, shorter in ♀; hairs on head in ♂ mainly blackish brown, those on hinder part of vertex, clypeus and head below however greyish whitish and those on thorax, pleurae, tergites 1 and 2 and on legs also greyish; sparse, minute, decumbent ones on abdomen in ♂ greyish yellowish, slightly longer and denser on last two segments and hypopygium; hairs on entire head, thorax and tergite 1 in ♀ whitish, those on last two abdominal segments and on legs very faintly tinted yellowish or greyish yellowish; venter in both sexes almost bare, except apically.

*Head* (cf. pl. 1 fig. 4) with the antennae in ♂ slightly longer than thorax (excluding scutellum), in ♀ a little shorter, segment 1 cylindrical, only a little longer than 2 in ♂, in ♀ quite  $1\frac{2}{3}$  times length of 2; segment 3 with a ring-like pedestal, stoutish, slightly longer in ♂ than in ♀, in ♂ a little shorter (below) or about as long (above) as club, in ♀ a little longer than club, in both with ring-like annulations, its apical part broadened segment-like; club in ♂ almost spherical, slightly longer than broad, its broadest part about as broad as clypeus, very densely and finely covered with rather conspicuous, greyish, erect pubescence; club in ♀ more berry-shaped, quite a third longer than broad, with finer, less dense pubescence, ending apically in a crater-like tubercle, slightly smaller in ♂, and without a conspicuous sensory area; proboscis rudimentary, in both sexes about subequal in length to antennal segment 1.

*Wings* hyaline in ♂, very faintly tinted greyish yellowish in ♀, especially in anterior half; veins yellowish brownish; halteres yellowish.

*Legs* with the hind femora about equally clavately thickened in both sexes, their slender base somewhat annulated, armed below with a double row of slender, brownish spines from just before middle and also with a few minute ones apically on outer side; hind tibiae curved, markedly shortened, their length to that of femora being 7:12 (♂) and 8:13 (♀); basal segment of hind tarsi shorter than claw-segment.

*Genital segments* in ♀ with the last tergite emarginate apically on each side, the middle part smooth and shining, pointed apically; last sternite arcuately rounded apically; oviscape medially carinate, the carina more elevated and prominent basally, with only about 5 spines on a side.

*Hypopygium* of ♂ as shown in pl. 1 fig. 5, with the apically slightly broadened process on each side of sternite 9 pale yellowish or pallid.

From 1 ♂ holotype and 1 ♀ allotype in the Transvaal Museum.

Length of body: about 9 mm

Length of wing: about 6·4–6·84 mm

*Distribution*: Northern Botswana (Bechuanaland): Kabulabula, Chobe River (Vernay-Lang Kalahari Expedition, 11th–24th July 1930) (♂ holotype and ♀ allotype).

*Lachnocorynus kochi* n.sp.

A unique slightly damaged ♂ specimen in the Transvaal Museum obtained in Ovamboland by Dr. C. Koch of the same institution, after whom the species is named, appears to be very near *chobeensis*. Unfortunately the hind legs of the specimen are missing. It differs from the ♂ of the latter species, apart from being slightly larger, in the following respects:

*Body* stouter, the thorax more robust and abdomen also stouter, less cylindrical, similarly coloured, if not slightly blacker; clypeus more dark reddish brownish; front and middle legs relatively stouter, their tibiae however distinctly paler, yellowish on anterior and inner faces, the tarsi also more yellowish; hind margins of tergites 1–7 and even that of 8 (obscurely) all distinctly and conspicuously whitish, not only 2–6 as in *chobeensis*; hind margins of sternites 2–5 more conspicuously whitish or pallid.

*Integument* with similar tomentum, but thorax above distinctly more coarsely vermicellately rugulose.

*Vestiture* slightly longer and denser, mainly very dark blackish brownish on head, but paler hairs on vertex, clypeus, head below and on thorax above even whiter, more snow whitish; those on legs distinctly longer, denser, appearing whiter like the hairs on pleurae and base of abdomen; fine, short, decumbent ones on abdomen above more greyish whitish or less yellowish, slightly denser, but relatively shorter on abdomen posteriorly.

*Head* much broader, the interocular space on head below proportionally much broader; antennae relatively longer though also longer than thorax, segment 3 however longer and stouter, about as long as club; the latter also berry-shaped or subglobular, but larger, its outer basal rim distinctly projecting over apex of segment 3, its entire surface with a dense coat of slightly longer, fine, erect, greyish pubescence.

*Wings*, relative to body, much longer, relatively broader, also entirely hyaline; first basal and anal cells distinctly much broader; knobs of halteres darker.

*Hypopygium* with the lateral lobes of tergite 9 relatively longer, their apices distinctly more produced and pointed; lateral processes of sternite 9 longer,



more slender, their apical parts, relative to slender part, slightly more broadened; aedeagus concealed in unique specimen and cannot be studied without damaging the specimen.

Length of body: about 10 mm

Length of wing: about 8.2 mm

*Distribution*: South West Africa: Oshikango in Ovamboland (Koch, July 1948).

#### Genus AFROLEPTOMYDAS Beq.

*Afroleptomydas* Bequaert, 1961a: 12. Bequaert, 1961b: 14. Bequaert, 1963: 14.

*Midax* Wiedemann (in part), 1828, 1: 242, 243. Wiedemann (in part), 1829: 15, 49, pl. 54, figs 15, 16 and 17.

*Mydas* Wiedemann (*nec* Fabricius), 1819, 3: 19. Wiedemann, 1821, 1: 117 and 118.

*Cephalocera* Westwood (in part), 1841, 1: 55. Walker (in part), 1854: 374 and 375. Gerstaecker (in part), 1868: 78 and 79.

*Leptomydas* Gerstaecker (in part), 1868: 81. Bezzi, 1924b: 201. Stuckenberg, 1955: 243. Bequaert, 1959: 367.

This genus was erected by Bequaert in 1961 to accommodate all those South African species which Bezzi in 1924 transferred from other mydaid genera, *Mydas* and *Cephalocera*, and assembled under Gerstaecker's genus *Leptomydas*. It was found that all these species differed from the Palaearctic type-species *Leptomydas lusitanicus*, and the other Palaearctic forms described under *Leptomydas*, in certain distinct generic characters, of which the most important is the presence of two phallic tubes in the aedeagal apparatus of the ♂♂ instead of a single one only. This generic difference in itself is rightly considered by Bequaert to be of sufficient taxonomic importance to warrant the transference of this newly erected genus *Afroleptomydas* and the old Palaearctic genus *Leptomydas* to even separate subfamilies, the Syllegomydinae and Mydinae respectively.

This genus is typically South African and is remarkably rich in species and, unlike other mydaid genera in southern Africa, is not restricted to certain or definite geographical regions, but occurs all over southern Africa, though there is a tendency for certain groups of species, having certain group or sectional characters in common, to be more or less distributed in definite regions.

The generic definition given by Bezzi for his *Leptomydas* is on the whole reliably diagnostic, but the acquisition of a large number of new species, not known to Bezzi, necessitates a new assessment of its more important distinguishing generic characters. The following combination of characters distinguishes it from other South African genera:

*Body* usually elongate; the abdomen, especially in ♂♂, long and cylindrical, not pedunculate.

*Integument* of the middle part of frons, clypeus and head below usually shining; that of rest of body, thorax above, pleurae, metanotum and abdomen above sometimes also shining; that of thorax above often dull, either leathery, or with fine acicular setiferous puncturation, or with setiferous granules, or

with fine areolar microsculpture, never coarsely rugulose, often with streaks of greyish whitish tomentum; metanotum either shining, or dull, never coarsely sculptured; pleurae either mainly shining, or with the anterior and upper part shining, or entirely dulled by greyish or greyish whitish tomentum; abdomen above either shining, smooth, or with fine setiferous puncturation, or with fine, transverse, rugulose sculpture, or with 'nadelrissig' acicular puncturation, or dulled to a variable extent by greyish whitish tomentum, replaced discally or discally basally on tergites by dark or black tomentum, sometimes, especially in ♀♀, with transverse striation, and in ♀♀ invariably with rather coarse, transverse striae or wrinkles on last few segments; integument of legs, especially femora, either shining, or dull, or sometimes slightly transversely annulated; integument of entire body in a few species with slight bluish or violaceous reflections.

*Vestiture* on the whole well developed, with the hairs on head, sides of thorax, pleurae, metanotum, base of abdomen, and sometimes on legs, fairly dense and long, sometimes almost villose; hairs on thorax above often in longitudinal streaks, separated by barish or bare streaks; hairs on metanotum invariably present, distinct, or even longish, and pteropleuron and hind margin or hinder part of mesopleuron always with some hairs; tomentum usually greyish whitish, invariably present on non-shining parts of head, often in five streaks on thorax above, on metanotum, either entirely on pleurae or to a variable extent on the non-shining parts, and often densely on abdomen above, especially in ♂♂, where the pale tomentum is replaced discally or basally on the tergites by dark or blackish tomentum, giving the abdomen a characteristic pattern, resembling that on the tail of a cat or lemur.

*Head* with postvertical spines usually present, more evident in ♀♀; interocular space on vertex usually distinctly broader or much broader than interocular space just behind or across hind margin of buccal cavity on head below, the inner margins of eyes usually more convergent below level of antennae than above; vertex not very deeply sunk in in middle; antennae variable in length, sometimes stoutish, with segment 3 usually longer than club, the latter variable in shape, either inflated, pyriform, subpyriform or elongate-pyriform, its apical sensory area usually large, conically narrowed to terminal tubercular prominence, not truncate or appearing sunk in; proboscis not rudimentary, vestigial or absent, either moderately long, or sometimes rather shortish and shorter than vertical length of eyes, never very long and slender and, if longish, the labella is ovate and broadish.

*Wings* usually well developed, either hyaline or infuscated to a variable degree, especially in ♀♀, chiefly characterized by the venation of which the outer or posterior vein of the first posterior cell joins the costal margin directly, or is continuous with the latter margin some distinct distance away from the apex of the costal cell, the apex of the first posterior cell thus consistently ending free, or opening to a variable extent (usually broadly) directly on costal margin just beyond apex of the costal cell, there being no indication of even a short

stalk between it and costal margin as in some other genera; second submarginal cell invariably with an appendix of variable length; alula usually distinct or well developed; hind border of wing usually broadish and without a posterior cross-vein.

*Legs* with the hind femora either only slightly or much thickened in both sexes, usually less so in ♀♀ and, if very much thickened and incrassate, they are usually more clavately so, armed below with only two rows of spines; hind tibiae usually cylindrical, non-carinate, or only very feebly carinate in basal half below, without any apical prominence or spine below; inner claw of hind tarsi tending to be very slightly smaller than outer one in some species.

*Genital segments* in ♀♀ truncately and obliquely under tergite 8, composed of an upper, centrally-carinate, perpendicular sclerite, and a transversely-situated, elongate, sub-spindle-shaped, oviscape-sclerite on each side below it, bearing a row or half circlet of stoutish, broadish, flattened spines; opening below last perpendicular tergite broad, triangular, and containing large lobes.

*Hypopygium* of ♂♂ (cf. text-figs 1, 5) markedly uniform throughout; lobes of tergite 9 usually produced posteriorly to some extent, their posterior angles either somewhat bluntly rounded, or sharply angularly pointed, or even prolonged to a variable extent; sternite 9 more or less tumidly conical or inflated, or laterally compressed in apical part, often transversely wrinkled or grooved basally below and often longitudinally so towards apex on sides, their processes rather long, in side view usually S-curved to a variable extent, usually narrowed apically, the apical part usually more slender, directed upwards to a variable extent, apically either sharp or bluntly pointed, in dorsal view usually hollowed out or grooved longitudinally along inner side, and in ventral view hollowed out and with hairs of variable density hanging down; aedeagal apparatus very characteristic, consistently and uniformly three-pronged, composed of a slightly longer, dorsal, medial, shoe-horn-shaped process (epimere) and a ventral, more slender, phallic tube on each side.

At present this genus contains 76 known species from southern Africa which may be assigned to two more or less well-marked-off groups and at least one distinct subgenus.

The type-species of this genus, designated by Bequaert, is *Leptomidas paganus* Gerst.

The known South African species may be separated by the following descriptive key:

1. (a) Hairs on head not arranged in distinct tiers or awning-like fringes, separated by bare and shining, transverse spaces; individual hairs usually not stiffish or stoutish, not markedly ctenate, and those along streaks on thorax usually not markedly decumbent; vertex, even in ♂♂, not markedly depressed in middle; hind margins of tergites from 2 not, or rarely, all whitish or yellowish, the hinder ones more often dark, at least discally; spines on hind femora below not consistently pallid or very pale; hind tibiae with the spicules below not situated on distinct granules and usually with some longish hairs along inner or lower sides; first posterior cell in wings usually widely, or more broadly, open on costal margin .. .. . 2

- (b) Hairs on head in front arranged characteristically in tiers or awning-like fringes, separated by bare and shining transverse spaces as follows: hairs or tufts on vertex, then a smooth space across ocellus, followed by an awning-like, downwardly-directed fringe or tuft on each side just above antennae, then another smooth space below antennae and across basal part or half of clypeus, followed once more by an awning-like, downwardly-directed fringe across middle or near apical part of clypeus, leaving the genal depressions hairless; individual hairs rather stiffish, stoutish, more markedly ctenate, and those along streaks on thorax above usually markedly decumbent; vertex, especially in ♂♂, usually markedly depressed in middle; hind margins of all the tergites from 2 usually fairly broadly and conspicuously whitish or yellowish; spines on hind femora below usually consistently very pale or pallid; hind tibiae with the spicules along outer and inner aspect situated on more distinct granules and without any longish hairs; first posterior cell tending to open more narrowly, sometimes subtending angularly, or even sessile, on costal margin . . . . . 97 (♂♂) 108 (♀♀) (*Crossoprosopus* n.subgen.)
2. (a) Thorax above without distinct and conspicuous, delimited, longitudinal, bare streaks between the hairs, the latter usually longer and denser, appearing more extensive; abdomen above, even in ♂♂, shining or more extensively shining or subshining, rarely with dark or dull discal patches of tomentum on some of the tergites basally, usually without rings of dull, dark, or greyish whitish, tomentum; pleurae more extensively shining, without any, or with less extensive, greyish whitish tomentum; hind femora more consistently distinctly thickened, or even sometimes markedly incrassate . . . . . 3 (♂♂) 26 (♀♀) (*westermanni* group)
- (b) Thorax above with distinct and conspicuous, delimited, longitudinal, bare streaks between the hairs, the latter usually shorter, less dense, more definitely in streaks and usually with a narrow, central, line-like streak of hairs; integument of abdomen above in ♂♂, and sometimes in ♀♀ also, either not or not much shining, usually with discal patches or rings of either dull, dark or black, or greyish whitish tomentum, or even mainly or entirely dull; pleurae less extensively shining, with more extensive, or even entirely covered with, greyish whitish tomentum to a variable extent; hind femora usually less thickened, or not, or scarcely, thickened 39 (♂♂) 69 (♀♀) (*humeralis* group)
3. (a) Tergites with pale hind margins of which the discal part is darker, either reddish brownish or dark, and the sides whitish, yellowish whitish, or yellowish; abdomen tending to be stoutish or, relative to rest of body, shortish, thick, more conspicuously tapering posteriorly; hind femora more conspicuously thickened, more markedly incrassate, or more spindle or spindle-shaped; species usually more plump . . . . . 4
- (b) Tergites with the pale hind margins entirely whitish, yellowish whitish, or yellowish both discally and laterally, ring-like; abdomen usually narrower, more slender, cylindrical, relatively longer, more gradually tapering posteriorly; hind femora less incrassate, more clavately thickened, usually relatively longer; species more slender and elongate . . . . . 7
4. (a) More asilid-like forms; body, especially abdomen, more tapering posteriorly; integument of thorax above with finer setiferous granulation, and that of abdomen posteriorly with sparser, or much sparser, aciculate puncturation; proboscis longer, usually more than 3 mm long, the labella relatively smaller, more bluntly pointed or rounded apically, less conspicuously spinulate; hairs on head, the yellowish or yellowish brownish ones on thorax above and base of abdomen, though long and dense, relatively less villose, slightly shorter, and those on abdomen above, from tergite 3 to apex, paler, more yellowish or sericeous yellowish; hind margins of tergites 2-7 on sides whitish or yellowish, though 6 and 7 sometimes obscure; lobes of tergite 9 more acute, more produced apically; apex or apical part of processes of sternite 9 less curved upwards, yellowish or pale-haired below . . . . . 5
- (b) More bee-like forms; body, especially abdomen, stouter, plumper, markedly broad, even to apex; integument of thorax above with coarser, setiferous granulation, and that of abdomen posteriorly, as on rest of abdomen, with denser aciculate puncturation; proboscis on the whole shorter, usually not longer than 3 mm, its labella relatively larger, broader, more sharply pointed, more conspicuously spinulate; hairs on head and yellowish ones on thorax and base of abdomen relatively denser, longer, more villose, and those on rest of abdomen above from tergite 3 to apex and also below much darker or

blackish; hind margins of only tergites 2-3 (or 5) whitish on sides; lobes of tergite 9 shorter, broader, usually blunter and less produced; apical part of processes of sternite 9 more curved upwards, dark-haired below . . . . . 6

5. (a) Slightly larger, about 13.5-18 mm; humeral tubercles, hinder part of metapleurae, metasternal part, sides basally or sides of tergite 1, and to a variable extent sides and posterior lateral corners of rest of tergites paler or more extensively yellowish; venter and genitalia paler yellowish or yellowish brownish; legs, including hind femora, paler or more extensively yellowish or yellowish reddish; integument of abdomen above with denser, finer, setiferous, aciculate puncturation; longish hairs on vertex or frons, thorax, pleurae, tergites 1 and 2, the shorter ones on abdomen, longer ones on venter and those on legs mainly yellowish, reddish yellowish to orange yellowish; wings tinted more yellowish brownish, the veins in anterior half more yellowish or paler yellowish reddish; lobes of tergite 9 less sharply pointed or produced; processes of sternite 9, in side view, more gradually narrowed, in dorsal view broader, more bluntly rounded apically; epimere of aedeagal apparatus shorter relative to phallic tubes ♂ *rufithorax* (Wied.)
- (b) Slightly smaller, darker, about 11.5-13.5 mm; humeral tubercles, metapleural and metasternal parts and sides basally of tergite 1 darker, dark reddish brownish to almost black, and sides of abdomen dark blackish brown or black; venter and genitalia darker yellowish brownish or dark brownish; legs darker, upper face of femora and hind ones extensively, hinder part and latero-apical part of hind tibiae and claw-segment of tarsi much darkened, brownish to blackish brown; integument of abdomen shining, with much sparser, setiferous, aciculate puncturation; hairs on vertex or frons, thorax above, pleurae, tergites 1 and 2, coxae and femora more yellowish brownish, greyish brownish to dark brownish, even appearing more blackish on sides at base of abdomen, the sparser ones on rest of abdomen more sericeous; wings tinted much darker, more smoky brownish to blackish brownish, the veins darker; lobes of tergite 9 distinctly more angularly pointed and produced apically; processes of sternite 9, in side view, more rapidly narrowed, in dorsal view narrower, more pointed apically; epimere longer relative to phallic tubes . . . . . ♂ *boothi* n.sp.
6. (a) Abdomen yellowish or yellowish brownish on sides and on venter; hind margins of tergites 2-5 whitish on sides; bullae orange or yellowish reddish; pleurae more pale castaneous brownish; legs with the coxae more castaneous, the femora less extensively darkened above; thorax above with finer setiferous granules; hairs on vertex, thorax above, pleurae and base of abdomen yellowish; dark hairs on rest of abdomen and venter distinctly much longer; hairs on legs very much longer and denser, mainly yellowish, those on hind femora long and villose; wings more faintly, relatively slightly, tinted yellowish in middle parts; antennae shorter than thorax, segment 3 proportionally shorter; hypopygium pale yellowish brownish; sternite 9 longer, its processes distinctly longer, relatively broader . . . . . ♂ *westermanni* (Wied.)
- (b) Abdomen entirely dark or black above and venter also darker; hind margins of only tergites 2-3 whitish on sides; bullae black; pleurae more blackish; legs with the coxae very dark or black, the femora more extensively darkened above; thorax above with coarser setiferous granules; hairs on head above, frons, thorax, pleurae and base of abdomen deeper, more orange, yellowish; dark hairs on rest of abdomen and venter distinctly very much shorter; hairs on legs very much shorter, mainly dark, without any long, villose ones on hind femora, and those on coxae dark; wings distinctly tinted darker, more smoky brownish, more extensively so, even on alula, axillary lobe and hind border; antennae longer than thorax, segment 3 proportionally longer; hypopygium entirely dark; sternite 9 much shorter, its processes comparatively shorter, narrower, with shorter, slender apical part . . . . . ♂ *apiformis* n.sp.
7. (a) Thorax above, and sometimes also vertex or even frons, with either greyish yellowish, or buff-coloured, or yellowish, yellowish fulvous, or orange fulvous hairs, its integument in most species dull, only occasionally shining . . . . . 8
- (b) Thorax above, like rest of body above, with entirely white or snow whitish hairs, its integument above in most species shining, only occasionally dull . . . . . 20
8. (a) Vestiture on head and body, including metanotum, pleurae, coxae and femora predominantly very deep yellowish, fulvous yellowish, fulvous orange or fulvous reddish, and

- whitish hairs, if present, more or less confined to face, head below, head behind, base of abdomen, base of venter and sometimes to a variable extent on posterior metapleural and metasternal parts; antennal clubs entirely or mainly orange or orange reddish; hind margins of tergites broadly and conspicuously ochreous to orange yellowish or at least with some orange yellowish, usually much broadened on sides; legs usually well developed, stoutish and long, especially hind ones, entirely or mainly reddish yellowish or pale reddish, the hind femora being not, or less extensively, darkened above . . . 9
- (b) Vestiture on head above, thorax above, and sometimes on abdomen above, usually much paler buff-coloured, paler yellowish or more greyish yellowish and, if deeper yellowish or fulvous on head, thorax and even abdomen, that on face, head below and behind, metanotum, greater part or entire pleurae, entire or greater part of venter (at least basal half), entire or greater part of coxae, entire or greater part of femora (or at least basal half of hind ones) whitish and contrasting with yellowish ones on thorax above; clubs mainly or entirely dark or at least with much dark and less orange reddish; hind margins of tergites usually more narrowly yellowish whitish to whitish; legs usually less stoutish, comparatively shorter, paler yellowish or yellowish brownish or with the femora, at least hind ones, more extensively darkened above to a variable extent . . . 10
9. (a) Slightly larger species, about 22–29 mm; abdomen above duller from tergite 3; sides of clypeus, humeral tubercles, sides of thorax broadly, extreme sides of metanotum, pteropleuron, metapleurae and metasternum reddish or yellowish reddish; sides of hinder parts of tergites less extensively yellowish, sometimes only the hind margins so; proboscis comparatively stouter, shorter, only about 3·08–3·92 mm; hairs slightly less dense, long ones on tergite 1 and sides of 2 and to a certain extent 3 snow whitish, and short ones on rest of abdomen much sparser; hairs on legs, especially hind femora, distinctly less dense, shorter, with fewer longish ones; hind femora not darkened, but front ones more darkened above; wings more faintly tinged yellowish brownish, more evident in middle parts; processes of sternite 9, in side view, more S-curved, more rapidly narrowed, more curved upwards apically and blunter . . . . . ♂ *omeri* (Stuck.)
- (b) Slightly smaller form, about 19–21 mm; entire abdomen shining; clypeus dark, humeral tubercles yellowish, sides of thorax black, metanotum entirely black, pteropleuron more obscurely, or not, reddish; hairs of hinder parts, or hinder half, of tergites, apart from hind margins, more broadly and more consistently yellowish; proboscis more slender, longer, about 3·52–4·28 mm; hairs distinctly denser, long ones on tergite 1, sides of 2 and 3 fulvous reddish like rest of hairs on abdomen, and shorter ones on abdomen distinctly very much shorter; hairs on legs, especially on hind femora, distinctly much denser, with numerous and denser longish ones; hind femora darkened to a variable extent along inner face, and front ones not or scarcely darkened above; wings more darkly, conspicuously, more uniformly and extensively tinted yellowish brownish; processes of sternite 9, in side view, less S-curved, more gradually narrowed apically, less curved up and more sharply pointed apically . . . . . ♂ *rufihirtus* n.sp.
10. (a) Hind tibiae distinctly more villose-haired, with distinctly very much denser and longer hairs along inner and lower faces, appearing more bottle-brush-like; basal segment of hind tarsi also with some longish hairs below; processes of sternite 9, in side view, not or scarcely S-curved, their apical part not, or only very slightly, curved upwards and from a posterior view not, or scarcely, twisted propeller-blade-like . . . . . 11
- (b) Hind tibiae not villose-haired, with distinctly less dense, sparser, relatively fewer, long hairs, mainly along inner face, not appearing bottle-brush-like and, if very dense and long on inner side, not so below; basal segment of hind tarsi with only short dense hairs below; processes of sternite 9, in side view, distinctly more S-curved, their apical part more conspicuously curved upwards and from a posterior view distinctly and markedly twisted propeller-blade-like . . . . . 13
11. (a) Integument of thorax above shining through the hairs; bullae orange yellowish or orange brownish, farther apart discally; legs shorter, either paler, more pale yellowish brownish, or hind femora more extensively yellowish below, with more numerous, stouter and shorter spines below on more distinct granules, and hind tibiae with shorter spicules and spurs; interocular space on vertex narrower, about, or scarcely more than, distance across front plus one eye at level of antennae; labella of proboscis more bluntly

pointed apically; hairs on pleurae and sides of tergites 1 and 2 distinctly more whitish than buff-coloured ones on thorax above; hairs on rest of abdomen above shorter, much denser; wings relatively shorter, more subspindle-shaped, more sharply pointed apically, either tinted faintly yellowish or smoky brownish in middle parts; processes of sternite 9, in side view, very slightly upcurved apically, more rapidly broadened above towards base . . . . . 12

- (b) Integument of thorax above dull; bullae dark blackish brownish, larger and closer together; legs longer, more slender, mainly blackish brown, the hind femora scarcely paler below, with only a few longish, more slender spines below (more widely spaced or absent in middle), and hind tibiae with longer, more slender, almost bristle-like, spicules and spurs; interocular space markedly broad, considerably more than half distance across front plus one eye; labella sharply pointed; hairs on pleurae, sides of tergites 1 and 2, and even legs, more or less similarly greyish yellowish or buff-coloured as those on thorax; hairs on rest of abdomen above slightly longer, distinctly sparser; wings longer, less pointed apically, more extensively tinted yellowish brownish; processes of sternite 9, in side view, straighter, less rapidly broadened above towards base

♂ *zinni* n.sp.

12. (a) Legs paler, more yellowish brownish, the tibiae also paler; abdomen above more dark reddish brownish or purplish brownish; venter paler, pale yellowish; wings more faintly tinted yellowish in middle parts, the veins paler; hairs on hind legs entirely yellowish

♂ *lanipes* (Bezz.) (typical)

- (b) Legs darker, the hind femora above more extensively so, and all the tibiae darker; abdomen above darker, more purplish dark brownish to almost blackish; venter dark, not much paler than abdomen above; wings more darkly tinted smoky brownish in middle parts, the veins darker; hairs along lower part of hind tibiae, and to a certain extent on apical half of hind femora, darker, more brownish or blackish brownish

♂ *lanipes* (Bezz.) (colour var. of)

13. (a) Antennal club distinctly shorter, in side view appearing more subspindle-shaped pyriform, more rapidly narrowed from broadest part to base, its sensory area proportionally much longer, occupying almost apical half below, and neck-like basal constriction much shorter; clypeus less prominent, in side view less prominently projecting; proboscis on the whole relatively shorter, usually shorter than 3·8 mm; wings more hyaline or clearer, or with only a slightly yellowish subopacity; phallic tubes more sharply pointed apically, the apical gonopore minute, scarcely perceptible . . . . . 14

- (b) Antennal club distinctly longer, in side view more elongate-pyriform, distinctly more gradually narrowed towards base, its sensory area proportionally smaller and narrower, occupying distinctly much less than apical half below, and the neck-like basal constriction distinctly longer, more evident; clypeus in side view more prominently projecting; proboscis relatively longer, about 3·5–4·2 mm; wings more distinctly tinted, even if only faintly yellowish, yellowish brownish to brownish; phallic tubes blunter, the apical, funnel-like gonopore usually more evident . . . . . 18

14. (a) Humeral tubercles, metapleural and metasternal parts, extensive sides of tergites 1 and 2, sides of rest of tergites to a variable extent, hind coxae, and sometimes to a variable extent the others, yellowish, yellowish ochreous or pale yellowish brownish; bullae orange yellowish or in part orange reddish (if dark, sides of abdomen more extensively yellowish); venter either entirely, or more extensively, yellowish; femora either entirely, or more extensively, yellowish, the hind ones less extensively darkened above; wings more often with a very faint, but distinct, yellowish or milky whitish subopacity and the veins much paler . . . . . 15

- (b) Humeral tubercles, metapleural and metasternal parts, entire sides of abdomen (or sometimes excepting only sides of tergites 1 and 2 or sides of others to a variable extent), entire or greater part of hind coxae entirely dark or black; bullae very dark or black; venter entirely dark or with less extensive yellowish, not entirely or very extensively yellowish; femora, even front and middle ones, more extensively darkened above, the hind ones usually more extensively darkened, or sometimes almost entirely dark; wings more clear hyaline, without a distinct subopacity, and the veins, especially in hinder half, darker . . . . . 17

15. (a) Hairs on head, body and legs distinctly denser and much longer, sometimes more woolly or villose, those on femora long and dense, sometimes villose, those on thorax above paler yellowish or more greyish or buff yellowish, and underlying integument duller; hairs on metapleural part in front of halteres and on coxae entirely snow whitish; bullae with more orange or orange brownish; hind femora more extensively darkened above in apical halves or more, and front and middle ones sometimes also slightly darkened above; wings with a slight, but distinct, whitish subopacity; sternite 9 more conically pointed apically, its processes, in side view, more deeply S-curved, with a relatively shorter slender apical part . . . . . 16
- (b) Hairs on head, body and legs distinctly less dense and shorter, those on femora mainly short, with only a few longish ones on hind femora, those on thorax above deeper yellowish, the integument more subshining; hairs on metapleural part in front of halteres and towards apices of coxae more yellowish or fulvous; bullae entirely dark or black; femora entirely pale yellowish brownish, only with a dark streak along inner apical halves of hind ones; wings clearer, without any subopacity; sternite 9 more broadly subtruncately rounded apically, its processes, in side view, only very slightly S-curved, becoming more gradually slender and for a longer distance . . . . . ♂ *occidentalis* n.sp.
16. (a) Hairs on head, body and legs distinctly shorter, less dense, not appearing woolly or villose, the shorter ones on tergites 4-7 distinctly shorter, less dense, those on legs, including tibiae, not markedly dense, villose and long; front and middle femora sometimes slightly darkened above, and hind ones more extensively so and to a variable extent also on inner and outer apical parts; bullae entirely orange yellowish to orange brownish; hind margins of tergites slightly more narrowly whitish or yellowish whitish, their basal border, even posteriorly less evidently orange yellowish; veins, even in hinder and apical parts of wings, usually pale, more yellowish; processes of sternite 9, in side view, slightly less obviously S-curved, more gradually narrowed, relatively longer, with longer slender part, relatively narrower in dorsal view, with shorter and sparser hairs below; sternite 9 itself narrower, more conically narrowed and more bluntly rounded apically . . . . . ♂ *fasciatus* (Wied.) (= *nivosus* Bezzi, nec Gerstaecker)
- (b) Hairs on these parts distinctly much denser, longer, more woolly or villose in appearance, the shorter ones on tergites 4-7 distinctly denser and relatively longer, those on legs, including tibiae, markedly long and dense; legs more extensively yellowish, the hind femora less extensively darkened along inner upper aspect; bullae orange yellowish or brownish only across hinder half; hind margins of tergites slightly more broadly yellowish whitish or whitish, more distinctly bordered basally with orange, especially across 5-7; veins in hinder and apical parts of wings distinctly darker; processes of sternite 9, in side view, distinctly more S-curved, more rapidly narrowed, the slender part relatively shorter, broader in dorsal view, and with longer and denser hairs below; sternite 9 itself broader, more rapidly narrowed and pointed apically . . . . . ♂ *villosus* n.sp.
17. (a) Sides of abdomen, usually from tergite 2, yellowish to a variable extent especially in apical half of tergites, or with an intramarginal yellowish streak, especially posteriorly; hind margins of tergites 2-7 more broadly yellowish whitish; venter more or less yellowish basally, the apical parts of posterior sternites also yellowish; front and middle femora only darkened above and hind ones only so on upper and inner sides and on outer upper apical part or half; interocular space on vertex distinctly very much broader than length of antennal club; clubs orange yellowish in middle and equally and continuously narrowed from broadest part to base; proboscis longer, at least, or more than, 3 mm; integument of thorax above dull; hairs on thorax above, on abdomen above and especially hind femora longer and denser, those on hind femora being almost villose; processes of sternite 9, in side view, less S-curved, less curved up apically, in dorsal view broader and blunter apically . . . . . ♂ *anthophilus* n.sp.
- (b) Entire abdomen dark or black, without any yellowish on sides; hind margins of tergites 2-7 more narrowly pallid or whitish (the greyish whitish tomentum across these rings more evident); venter mainly dark; femora, even front and middle ones, more extensively darkened, dark castaneous brownish, and hind ones, excepting only the yellowish base, mainly dark castaneous brownish; interocular space on vertex rather narrowish, subequal in width to, or scarcely wider than, length of club; clubs entirely dark, at



first more rapidly narrowed and then only very gradually to base; proboscis shorter, only about 2.6 mm; integument of thorax above distinctly more shining under the hairs; hairs on thorax above and abdomen above distinctly shorter, the former paler more greyish yellowish, and hairs on femora, especially hind ones, distinctly shorter, less dense and with very much fewer longish ones; processes of sternite 9, in side view, more S-curved, more rapidly narrowed above from base to the more upcurved apical part, in dorsal view narrower and more sharply pointed apically ♂ *nitidusculus* n.sp.

18. (a) Antennae much shorter, segment 3 proportionally much shorter, about 1.72 mm long, and club less elongate; proboscis shorter, about 3.52 mm; venter paler, entirely or at least with much yellowish or yellowish brownish; femora more extensively yellowish brownish or reddish brownish, the front ones only slightly darkened above and hind ones more extensively yellowish below and on outer lower and basal parts; hind tibiae more slender, darkened along outer lower apical part; wings relatively narrower, more darkly tinted yellowish brownish; hairs on body, especially abdomen and hind femora, slightly less dense and relatively shorter; lobes of tergite 9 more acute apically; processes of sternite 9, in side view, more S-curved, the apical upcurved part shorter, in dorsal view distinctly more sharply pointed and narrower apically . . . . ♂ *gessi* n.sp.
- (b) Antennae longer, segment 3 proportionally longer, about 2.2–2.32 mm, and club distinctly more elongate; proboscis longer, more than 3.5 mm, reaching 4.2 mm; venter on the whole darker, either mainly dark or with less yellowish, even basally; femora with the front and middle ones either entirely dark or more broadly darkened above, and hind ones either mainly dark or with less yellowish below and basally; hind tibiae rather stoutish, entirely yellowish or pale yellowish reddish like the others; wings rather broadish, less darkly tinted yellowish or greyish yellowish; hairs on body, especially abdomen and hind femora, slightly longer and denser; lobes of tergite 9 usually blunter apically; processes of sternite 9, in side view, slightly less S-curved, with a slightly longer apical upcurved part, in dorsal view distinctly blunter and broader apically . . . . 19
19. (a) Hairs on vertex and thorax above paler yellowish, more greyish yellowish, buff-coloured to yellowish, those on pleurae entirely whitish and those on abdomen above from tergite 2 and on apical half of hind femora much paler, either more whitish or only feebly greyish yellowish, the hairs apparently slightly shorter; integument of pleurae more shining, with less greyish tomentum; femora, even front and middle ones, more extensively dark and the hind ones almost entirely so (excepting base and knees); tibiae very pale yellowish, with paler yellowish hairs; wings tinted more yellowish, the veins in anterior part paler yellowish; processes of sternite 9, in side view, proportionally longer, the apical part more curved upwards, in dorsal view slightly narrower  
♂ *flavitibialis* n.sp.
- (b) Hairs on vertex, thorax above, posterior mesopleural tuft, tuft above posterior thoracic spiracle, those discally on tergite 2, on rest of abdomen above, genital segment, to a variable extent on coxae below, on front and middle femora and on apical half of hind ones fulvous reddish, contrasting much with the white hairs on rest of pleurae, discal part of metanotum, tergite 1, sides of 2–4 and venter basally, and all these hairs slightly longer; bare part of pleurae duller, due to more extensive greyish whitish tomentum; front and middle femora only darkened along middle above, and hind ones extensively yellowish reddish below and basally; tibiae more yellowish reddish, with deeper yellowish, deep golden to fulvous orange hairs; wings slightly more greyish yellowish in middle parts, the veins in anterior part more yellowish reddish; processes of sternite 9, in side view, proportionally shorter, the apical part less curved upwards, in dorsal view slightly broader . . . . . ♂ *rutilus* n.sp.
20. (a) Larger, more elongate species, with longer, more slender, elongate abdomen, the hypopygium projecting more, with sternite 8 more exposed; interocular space on vertex relatively narrower, more sunk in at middle; legs longer, with longer, more slender tibiae, especially hind ones, the femora, especially front and middle ones, distinctly less extensively darkened above, and hind tibiae more extensively or entirely yellowish; apex of first posterior cell in wings more broadly open; dense and shortish hairs on abdomen above entirely whitish or snow whitish; humeral tubercles, metapleural and metasternal parts, sides or sides basally of tergite 1 and hind coxae, or their apical parts

- below, sometimes yellowish, orange yellowish, or yellowish reddish to a variable extent and, if not, other characters do not differ; lobes of tergite 9 larger, longer, more exposed, projecting more . . . . . 21
- (b) Smaller, shorter and stouter forms, with shorter and stouter abdomen, the hypopygium more retracted and sternite 8 only slightly exposed; interocular space on vertex relatively broader, less sunk in at middle; legs shorter, stouter, with relatively shorter and stouter tibiae, especially hind ones, the femora, especially front and middle ones, mainly dark, or more extensively dark above, and hind tibiae much darkened above or below in apical half; apex of first posterior cell more narrowed, either almost sessile, or more narrowly open; dense and shortish hairs on discal part of tergites 2 (or 3)–5 distinctly more fulvous yellowish, or golden, or fulvous brownish; humeral tubercles, entire pleurae, sides of tergite 1 and coxae entirely dark or black; lobes of tergite 9 smaller, shorter, less exposed, less projecting . . . . . 25
21. (a) Sides or greater part of clypeus yellowish or brownish; humeral tubercles, pteropleural, metapleural and metasternal parts extensively, broadish sides of tergite 1, hind coxae, entire or greater part of venter and hypopygium yellowish or pale yellowish brownish; femora more extensively yellowish, the front and middle ones either not, or not conspicuously, darkened above, and hind ones broadly yellowish basally and below; integument of thorax above less conspicuously shining under the hairs . . . . . 22
- (b) Clypeus either entirely dark or the sides much darker reddish brownish or blackish brownish; humeral tubercles either yellowish or dark, posterior pleural parts, sides of tergite 1 and almost entire or greater part of hind coxae dark or black or, if with yellowish, this is less extensive, the metasternal part and hinder lateral part of tergite 1 and almost entire hind coxae dark, and entire venter, or greater part of it, or basal parts of sternites, dark, and hypopygium either more brownish or mainly dark; femora either more extensively darkened above, with conspicuous dark streaks on front and middle ones above and hind ones more extensively dark above and, if not, pleural parts at least dark; integument of thorax above more conspicuously shining under the hairs . . . . . 23
22. (a) Integument of thorax above distinctly more shining; sides of clypeus paler, more yellowish; area around tubercles and sides of thorax yellowish reddish to a variable extent; bullae mainly or entirely dark blackish brown or black; whitish or yellowish whitish hind margins of tergites comparatively broader, more conspicuous, and band of greyish whitish tomentum in front of each broader, more evident; hind femora more extensively darkened above and on inner upper side and outer apical half; antennae relatively shorter, shorter than thorax; segment 3 slightly shorter, subequal in length to club; apex of lobes of tergite 9 blunter; processes of sternite 9 slightly more bluntly rounded apically . . . . . ♂ *patruelis* n.sp.
- (b) Integument of thorax above distinctly duller; clypeus, especially sides, more dark reddish; sides of thorax and area around humeral tubercles dark; bullae mainly orange brownish or reddish brownish across more than apical half; whitish or yellowish whitish hind margins of tergites narrower, less conspicuous, and band of greyish whitish tomentum in front of each narrow, obscure, or not perceptible; hind femora only darkened above, the outer sides more extensively yellowish up to near apex; antennae relatively longer, longer than thorax, segment 3 slightly longer, longer than club; apex of lobes of tergite 9 slightly produced, more sharply angular; processes of sternite 9 more sharply pointed . . . . . ♂ *capensis* n.sp.
23. (a) Humeral tubercles, entire pleurae and sides of tergite 1 entirely dark or black; hind femora distinctly more extensively yellowish, either extensively so below and basally or more broadly so below; hind tibiae, like the rest, entirely yellowish; claw-segment of tarsi not, or scarcely, darkened; antennal club distinctly shorter, much shorter than proportionally longer segment 3, more pyriform, broadest around middle below, the terminal prominence not so crater-like prominent; proboscis longer, at least 3 mm; hairs on thorax above and on abdomen slightly, but distinctly, denser; processes of sternite 9, in side view, more S-curved, more rapidly narrowed from base, and apical part more curved up, in dorsal view more pointed apically and more longitudinally depressed above . . . . . 24

- (b) Entire or hinder half of humeral tubercles, pteropleural, metapleural and upper posterior metapleural parts to a variable extent and sides basally of tergite 1 orange yellowish or yellowish; hind femora distinctly more extensively blackish above and along inner and outer apical three-quarters and, excepting base, only very narrowly yellowish below; hind tibiae darkened along outer apical part; claw-segment of tarsi distinctly darker or blackish; club distinctly longer, scarcely, or only a very little, shorter than the proportionally much shorter segment 3, more elongate-pyriform, in side view broadest much beyond middle below, its terminal prominence prominently projecting crater-like; proboscis relatively shorter, only about 2-2.76 mm; hairs on thorax above and on abdomen slightly, but distinctly, less dense; processes of sternite 9, in side view, distinctly less S-curved, more gradually narrowed from base, and apical part less curved up, in dorsal view blunter, more rounded apically and longitudinally less depressed above  
♂ *similimus* n.sp.
24. (a) Front and middle femora less intensely, or not much, darkened above, and hind femora less extensively darkened or blackened above and less so along outer apical half; hind coxae more reddened apically below; hind margins of tergites 2-5 distinctly whitish, those of 6 and 7 only obscurely so, or only on sides; venter with more yellowish; wings clear hyaline; hairs on abdomen above less dense; lobes of tergite 9 relatively shorter; processes of sternite 9 relatively shorter, in side view appearing less slender, more rapidly narrowed from base to apical third and only the latter more delimited and appearing slender, in dorsal view slightly more rapidly narrowed to apex  
♂ *nitidus* (Bezz.)
- (b) Front and middle femora conspicuously black above to near apex and hind ones more extensively darkened or blackened above, including outer upper and inner apical half; hind coxae mainly or entirely black; hind margins of tergites 2-7 whitish (if only 2-5 the hind femora are more extensively blackened); venter with distinctly less yellowish, sometimes mainly dark; wings more greyish hyaline, very faintly tinted brownish in middle parts, especially towards apex of first basal cell and base of first posterior cell; hairs on abdomen slightly denser; lobes of tergite 9 relatively longer; processes of sternite 9 distinctly longer, in side view appearing more slender, more gradually and continuously narrowed and from base to apical upcurved part, the latter not so delimited, in ventral view slightly more gradually narrowed to apex . . . . . ♂ *sorbens* n.sp.
25. (a) Head narrower, the interocular space on vertex narrower, much less than half width of head and eyes across antennae; antennae longer, longer than thorax, segment 3 proportionally much longer; proboscis slightly longer, about 3.2-3.6 mm; hind margins of tergites 2-7 more conspicuously and more broadly yellowish whitish, narrowly bordered across their basal margin with more distinct orange, and with a tendency for posterior medial discal parts in front of hind margins of tergites 2-4 to be more orange; bullae very dark reddish brownish or blackish brownish; legs comparatively longer, the front and middle femora more extensively yellowish brownish below, the tarsi longer, darker, and the hind femora with longer, more reddish brownish spines; hairs discally on tergites 2-5 tinted more golden or fulvous yellowish; hairs on venter posteriorly and on sides of tergites relatively longer; wings tinted brownish in middle parts, especially along veins; apex of first posterior cell not tending to be angularly sessile on costal margin; sternite 9 more conically narrowed from near base, its processes broader; aedeagal tubes slightly more divergent, and dorsal central epimere, relative to tubes, shorter  
♂ *lampronotus* n.sp.
- (b) Head distinctly broader, the interocular space markedly broader, scarcely much less than half width of head and eyes across antennae; antennae much shorter, shorter than thorax, segment 3 proportionally much shorter, proboscis shorter, not much more than 2.4 mm; hind margins of tergites 2-7 more narrowly whitish, without any distinct orange yellowish across their basal borders or discally; bullae orange yellowish or orange brownish; legs relatively shorter, the front and middle femora more darkened, less yellowish brownish below, only so in basal half, tarsi shorter, paler, paler yellowish brownish, the hind femora with comparatively shorter, pale yellowish reddish spines; hairs discally on tergites 3-5 more brownish fulvous; hairs on venter posteriorly and on sides of tergites relatively shorter; wings entirely glassy hyaline; apex of first posterior cell tending to subtend angularly on costal margin; sternite 9 conically narrowed, but

less rapidly so from near base, its processes narrower; phallic tubes less divergent and central dorsal epimere relatively longer, projecting more beyond tubes

♂ *pseudolanipes* Beq.

26. (a) Thorax above and usually also vertex, or even frons, with greyish yellowish, buff-coloured, yellowish, fulvous yellowish, orange yellowish to fulvous reddish hairs, its integument discally in most forms usually dull, not distinctly shining under the vestiture . . . . . 27
- (b) Thorax above, like rest of body above, with whitish or snow whitish hairs, its integument usually distinctly more shining, or even polished in appearance, under the hairs . . . . . 36
27. (a) Sides of thorax above, and sometimes area around humeral tubercles, reddish to a variable extent; metanotum distinctly, or more extensively, reddish on sides; pleurae usually also with more extensive reddish; sides of abdomen above more often with extensive yellowish, either on extreme sides or intramarginally, rarely entirely dark like disc above . . . . . 28
- (b) Sides of thorax above dark like rest of disc above; metanotum entirely dark or black, or with scarcely any reddish on sides; pleurae usually with less extensive reddish, or even mainly dark; sides of abdomen usually not yellowish or contrastingly paler than discally above, or only so near apex and, if with much yellow, sides of thorax and pleurae are dark . . . . . 32
28. (a) Hairs on metanotum, tergites 1 and 2, especially laterally, also deep fulvous yellowish or fulvous reddish like rest of hairs on vertex, head in front, pleurae, coxae and legs; hind tibiae without numerous, conspicuous longish hairs along inner side; hind margins of tergites 2-6 yellowish whitish or yellowish on sides and reddish brownish or dark discally; last two tergites mainly or almost entirely reddish or yellowish reddish  
♀ *rufithorax* (Wied.)
- (b) Hairs on metanotum, at least discally, and more particularly on tergites 1 and 2 distinctly paler, more whitish or snow whitish, contrasting with the more yellowish or rufous ones on thorax above; hind tibiae with more numerous and conspicuous, or even dense, longish hairs along inner side; hind margins of tergites 2-6 (or 7) either entirely whitish or yellowish whitish or reddish, not darker discally; last two tergites either paler, more yellowish (the penultimate one much darkened basally), or both are dark . . . . . 29
29. (a) Smaller species, usually less than 21 mm; hind margins of tergites 2-7 yellowish whitish or yellowish, and 7 and 8 yellowish or yellowish brownish to a variable extent; sides of tergites pale yellowish or yellowish brownish to a variable extent, even if only in hinder part of abdomen; venter either entirely pale, pale yellowish or pale yellowish brownish, or so in apical half; pteropleural, metapleural and metasternal parts and hind coxae paler, yellowish or pale yellowish brownish; hairs on metanotum either whitish like those on tergites 1 and 2, or at least paler than on thorax above, and those on clypeus, or on its lower sides, whitish or paler than on vertex and frons . . . . . 30
- (b) Larger species, about 21-29 mm; hind margins of tergites 2-6 yellowish, orange yellowish reddish, reddish brownish or reddish, and tergites 7 and 8 more reddish brownish or even dark reddish brownish in part; sides of tergites, except for reddish brownish sides of 1, dark like the very dark rest of abdomen above, and sides of posterior tergites at most dark reddish brownish; venter darker, more reddish brownish and sternites 6-8 sometimes even darker reddish brownish; pteropleural, metapleural and metasternal parts, as well as hind coxae, also darker, dark reddish brownish or very dark castaneous brownish; hairs on metanotum fulvous or fulvous reddish, on sides at least, like those on thorax above, pleurae, entire head above and in front, including clypeus, and only those on tergite 1, sides of 2 and base of venter whitish or snow whitish . . . . . ♀ *omeri* (Stuck.)
30. (a) Hind margins of tergites, especially discally, distinctly more narrowly yellowish whitish; bullae paler, orange or orange brownish, distinctly smaller, more widely separated above by a space very much more than their vertical length, quite or even slightly more than twice this length; extreme sides of tergites more conspicuously dark or blackish; antennae distinctly shorter, segment 3 proportionally shorter, shorter or much shorter than interocular space on vertex; wings tinted faintly subopaquely yellowish, the subopacity distinctly more evident; fine and short hairs on abdomen above, other than those on

tergites 1 and 2 and apically, shorter, sparser

♀ *fasciatus* (Wied.) and forms (= *rufithorax* Bezz. in part, *nec.* Wiedemann)

- (b) Hind margins of tergites distinctly more broadly yellowish whitish or yellowish; bullae much darker, very dark blackish brownish or black, vertically much longer, more narrowly separated above by a space only as long as, or much shorter than, their vertical length; extreme sides of tergites scarcely or not so conspicuously margined with dark or black, or only so along posterior tergites; antennae relatively longer, segment 3 proportionally longer, subequal in length to, or scarcely shorter than, interocular space; wings either more hyaline, less tinted yellowish or, if faintly so, the subopacity is distinctly less evident; hairs on middle parts of abdomen above relatively longer, denser and more evident . . . . . 31
31. (a) Sides of thorax more broadly yellowish reddish; hind margin or hind border of scutellum yellowish; propleural, mesopleural and sternopleural parts paler, more brownish, yellowish brownish to reddish brownish; sides of tergites more extensively paler or yellowish; venter also mainly or entirely paler, more yellowish; antennal segment 3 paler, more yellowish to yellowish reddish; hairs on vertex and thorax above paler yellowish; those on pleurae, tergites 1 and 2, short ones on middle parts of abdomen above, those on basal half of venter, on hind coxae and on femora more whitish or snow whitish; wings clearer, more greyish hyaline, or only faintly greyish yellowish  
♀ *flavivestris* (Bezz.)
- (b) Sides of thorax more narrowly reddish; entire scutellum dark or black; anterior lower parts of pleurae much darker, more dark castaneous brownish to blackish brown; sides of tergites 2-5 not much paler than dark abdomen above; venter also darker, more brownish to dark brownish; antennal segment 3 blackish brown to black; hairs on head above and thorax above more fulvous reddish; those on pleurae, discal parts of tergites 1 and 2 more creamy yellowish than whitish, the short ones on abdomen above, greater part of venter, coxae and on femora more yellowish or fulvous yellowish; wings distinctly tinted more yellowish brownish and more uniformly so . . . ♀ *rufihirtus* n.sp.
32. (a) Vestiture very much denser and longer, the hairs at base of abdomen, on coxae and femora, especially hind ones, markedly long and dense, villose, and hind tibiae with long and fairly dense ones along inner face; pleurae, sides of tergite 1 and greater part of, or entire, hind coxae much darker or blackish; venter mainly dark or black, only yellowish posteriorly to a variable extent, the hind margins of sternites conspicuously and very broadly yellowish, not darkened centrally; bullae much longer vertically, the space between them narrower; wings tinted slightly less yellowish, the apical stalk of anal cell very much shorter, shorter than apical width of second basal cell; labella of proboscis usually with much finer microsculpture and striae, and base of proboscis below with longish hairs (if not, other characters conform) . . . . . 33
- (b) Vestiture distinctly shorter and less dense, hairs at base of abdomen, on coxae and femora, even hind ones, much shorter, not villose and with much fewer longish ones, and hind tibiae with much fewer longish ones and these relatively shorter, not dense; metapleural and metasternal parts, sides basally of tergite 1 and greater part or entire hind coxae much paler, pale yellowish brownish or yellowish reddish, or even orange reddish; venter mainly or entirely yellowish or yellowish brownish, the hind margins of sternites more narrowly yellowish whitish and only so on extreme sides, the middle parts darker or not whitish; bullae distinctly shorter vertically, space between them much wider, more than their vertical length; wings distinctly tinted deeper yellowish, the apical stalk of anal cell relatively longer, slightly longer than apical width of second basal cell; labella of proboscis with slightly coarser striae and microsculpture, and base of proboscis without longish hairs below . . . . . ♀ *gessi* n.sp.
33. (a) Antennae relatively much longer, segment 3 proportionally longer and stouter, distinctly longer than interocular space on vertex, the club darker, also proportionally longer, more elongate, its broadest part in side view much beyond middle; sides of tergites 2 and 3 without a yellowish streak; venter less extensively yellowish, only so posteriorly, or even mainly dark; scutellum more shining; reversed hairs on last two or three abdominal segments distinctly longer and denser . . . . . 34

- (b) Antennae distinctly shorter, segment 3 proportionally shorter, more slender, distinctly shorter than, or scarcely subequal in length to, interocular space, the club mainly orange yellowish (sensory area dark), proportionally much shorter, in side view more spindle-shaped, broadest very near, or at about, its middle; sides of tergites 2 and 3 (or at least 3) with a yellowish streak as on 4 and 5 or 4-7; venter more extensively yellowish or pale yellowish brownish, even if only so in basal half; scutellum duller; reversed hairs on last two or three abdominal segments relatively shorter and distinctly sparser  
 ♀ *anthophilus* n.sp.
34. (a) Legs entirely or mainly yellowish, the front and middle femora with a scarcely perceptible darkening above, and hind ones with a faint darkish streak along the middle inner part; wings very faintly tinted yellowish in middle parts; bullae with their hind border narrowly reddish brownish; yellowish hind margins of tergites relatively broader, more conspicuously broadened on sides of 5-7; hairs on head and body slightly longer and denser, those on vertex and disc of thorax paler yellowish or greyish yellowish, and shortish ones on disc of tergite 2 and 3-6 more whitish; shortish, dense hairs on outer parts of femora, especially hind ones, and on tibiae paler yellowish or more yellowish whitish to creamy yellowish . . . . . 35
- (b) Legs not entirely yellowish, the upper surface of front and middle femora extensively blackish brownish or dark reddish brownish, and hind ones mainly dark reddish brownish, only a little more than basal third and apical part below almost orange yellowish, and the tibiae and tarsi very pale yellowish; wings slightly more intensely yellowish; bullae entirely shining black; more orange yellowish hind margins of tergites relatively narrower, less extensively broadened on sides of 5-7; hairs relatively less dense, shorter, those on vertex, sides of frons and on thorax above slightly deeper yellowish, more golden or fulvous, and shortish ones on disc of tergite 2 and on rest of abdomen above distinctly more golden or fulvous; shortish, dense ones on femora above, especially along upper and outer parts of hind ones, and on tibiae more golden or fulvous . . ♀ *flavitibialis* n.sp.
35. (a) Smaller species, less than 25 mm; hind margin of tergite 1 more obscure reddish and those of rest more narrowly yellowish; last tergite very dark reddish brownish; last sternite reddish brownish; spines on oviscape yellowish; proboscis relatively shorter, with some longish hairs basally below, its labella with finer striae and microsculpture; antennae relatively shorter, segment 3 proportionally shorter; hind femora without any dorso-lateral spines on outer face; hind tibiae with fewer spicules on outer and lower apical parts and fewer in the subapical circllet . . . . . ♀ *hirtipes* n.sp.
- (b) Larger species, about 25 mm; hind margin of tergite 1 dark and those of rest distinctly more broadly yellowish, more ring-like; last tergite more ochreous yellowish; last sternite more yellowish; spines on oviscape more brownish; proboscis slightly longer, about 4.52 mm, without longish hairs basally below, its labella with coarser striae and microsculpture; antennae relatively longer, segment 3 proportionally longer (1.2:1); hind femora with some spines on outer upper middle part; hind tibiae with more numerous and stouter spicules on outer lower part, and with more spicules in the subapical circllet . . . . . ♀ *gigantulus* n.sp.
36. (a) Larger, more slender, elongate species, about 14-19.5 mm; abdomen above, excepting yellowish whitish or yellowish hind margins of tergites 2-7, either entirely paler yellowish brownish or mainly dark or blackish, without contrasting pale discal colouration; bullae longer vertically, dark or black, closer together discally; legs relatively longer, mainly pale or more extensively yellowish or pale yellowish brownish; basal segment of hind tarsi distinctly longer than claw-segment; wings clearer hyaline, or only faintly tinted yellowish or greyish yellowish; proboscis shorter, only about, or less than, 3 mm; antennal club less pyriform, its sensory area more oblique; hairs on last three tergites and sternites relatively shorter, those on last two yellowish or fulvous or more whitish, and those on hind femora and tibiae distinctly shorter or with fewer long ones . . 37
- (b) Smaller, shorter, plumper species, only about 12.5-15 mm, with stouter abdomen; abdomen above, apart from the yellowish hind margins of tergites 2-6, extensively, broadly and characteristically ochreous yellowish to a variable extent on tergites 2-4 and more narrowly on 5; bullae more dark reddish brownish, vertically shorter, widely separated discally; upper surfaces of front and middle femora, more extensive upper

parts of hind ones, hind tibiae to a large extent and either all the tarsi above, or at least claw-segment, distinctly darkened, more brownish; basal segment of hind tarsi shorter than claw-segment; wings distinctly tinted darker, more brownish in middle parts, especially along veins; proboscis distinctly more slender, relatively longer, quite 3·2-3·6 mm; club more distinctly pyriform, its sensory area less oblique, more subtruncate; hairs on last three abdominal segments relatively longer, those on last tergite above distinctly fulvous and those on hind femora and tibiae distinctly longer, denser, with more numerous longish ones . . . . . ♀ *lampronotus* n.sp.

37. (a) Either mainly dark or pale species; thorax above either entirely pale or darkened and, if dark or darkened, without the humeral tubercles, sides and two submedial discal streaks very much paler or contrastingly paler than rest; hind margins of tergites more narrowly yellowish discally, and last two tergites either dark like rest or last tergite darker than rest; antennae distinctly longer, segment 3 proportionally longer, only a little shorter than interocular space on vertex, the club paler or orange yellowish, more subspindle-shaped, its apical sensory area very oblique, usually nearly reaching middle below; legs relatively shorter, all, including hind femora, mainly or entirely pale, pale yellowish or pale yellowish brownish; hairs longer, denser, those on thorax above distinctly much denser, and those on femora, especially hind ones, with distinctly more numerous longish ones basally and along inner side . . . . . 38
- (b) Not entirely dark or pale; thorax above dark, but with humeral tubercles pale yellowish, the area around latter, sides of thorax above, postalar calli, two narrowish, submedial, discal streaks (extending to beyond middle), hind margin of scutellum obscurely, extreme sides of metanotum, pteropleural, metapleural and metasternal parts and sides of tergite 1 yellowish reddish; hind margins of tergites distinctly more broadly yellowish, and last tergite, and obscurely also the penultimate one, reddish brownish; antennae relatively shorter, segment 3 proportionally shorter, much shorter than interocular space, the club darker, more dark reddish brownish more subpyriform, its sensory area less oblique; legs relatively longer, the front and middle femora more darkened above and hind ones brownish above and apically on inner and outer sides; hairs shorter, less dense, those on thorax above shorter, sparser, and those on femora shorter, with very much fewer longish ones ♀ *patruelis* n.sp. (= *paganus* Bezz. in part, nec Gerstaecker)
38. (a) Head and body darker or more blackish; wings, relative to body-length, relatively longer; proboscis more slender, with longer, more pointed labella  
♀ *nitidus* (Bezz.) and forms of it
- (b) Head and almost entire body paler, more pale yellowish brownish; wings, relative to body-length, distinctly shorter; proboscis relatively slightly shorter, stouter and with shorter, blunter labella . . . . . ♀ *nitens* Beq. (ex descr.)
39. (a) Abdomen above discally with some very dark, dark brownish, fulvous brownish or blackish hairs, even if only on the dark discal patches; hairs on disc of thorax very frequently yellowish greyish or brownish, or at least with some yellowish or dark ones on the discal streaks . . . . . 40
- (b) Abdomen above with all the hairs paler, very pale, either whitish or pale yellowish, even those on dark discal patches much paler or more yellowish, even if they appear dark in certain lights; hairs on disc of thorax very frequently entirely whitish and, if sometimes yellowish, those on abdomen above very pale or whitish . . . . . 52
40. (a) Hairs on legs, especially on femora and particularly on hind ones, distinctly very much shorter and sparser; hind margins of only tergites 2-4 (rarely 2-5, but sometimes sides of 5) distinctly whitish; antennal segment 3 either longer or very much longer than club . . . . . 41
- (b) Hairs on legs, especially on hind femora, distinctly very much longer and denser, usually with numerous, often conspicuous, longish ones as well; hind margins of tergites 2-5 or 2-7 whitish or yellowish whitish; antennal segment 3 either only slightly or scarcely, or as long as club . . . . . 44
41. (a) Antennae distinctly longer, longer or much longer than width of head across face, segment 3, relative to club, much longer; hind margins of tergites 2-4 (or sides only of 5) yellowish whitish; hairs on head and body relatively longer, those on vertex whitish;

- abdomen above darker, with more distinct basal discal patches, either with short whitish hairs across apical part of tergites or on sides; hind femora with distinctly much stouter spines on distinct tubercles below, and hind tibiae curved to a variable extent and with stouter, shorter and fewer spicules below, most of these in apical part; first posterior cell in wings broadly open apically . . . . . 42
- (b) Antennae distinctly much shorter, distinctly shorter than width of head across face, segment 3, relative to club, shorter, only a little longer than latter; hind margins of tergites 2-5 (3 the broadest) yellowish whitish; hairs on head and body relatively shorter, those on vertex more yellowish or brownish like the short ones discally on thorax; abdomen more brownish, without distinct darker basal discal patches, with all the shortish hairs brownish; hind femora with longer, feebler, more bristle-like spines on feebler tubercles below, and hind tibiae straight and with longer, more slender and more numerous spicules in two rows below; first posterior cell only subtending angularly, or scarcely open, apically on costal margin . . . . . ♂ *milnertonensis* Beq. (ex descr.)
42. (a) Integument of pleurae and especially abdomen above and bullae without any distinct or very perceptible fine reticulate or areolar microsculpture; hind femora less thickened, more slender; humeral tubercles paler, more yellowish or yellowish brownish, relatively smaller, less dilated; sides of tergites 1-3, or even some of the others, yellowish; transverse bands of greyish whitish tomentum across apical part of tergites more conspicuous, more delimited; hairs on submedial discal streaks on thorax longer, entirely whitish, without a streak of greyish tomentum under them; wings clearer, more hyaline or only very faintly greyish yellowish, their veins pale or more reddish; processes of sternite 9, in side view, straighter, not, scarcely, or only feebly, curved up apically, in dorsal view more sharply pointed; epimere of aedeagal apparatus more broadened apically . . . . . 43
- (b) Integument of pleurae and especially abdomen and bullae with distinct fine areolar or reticulate microsculpture; hind femora distinctly more thickened, more subspindle-shaped; humeral tubercles black, relatively larger, more convex or dilated; sides of only tergite 1 and base of 2 reddish brownish; transverse bands of greyish whitish tomentum across apical part of tergites not so conspicuously evident; hairs in two submedial discal streaks on thorax very short, with some yellowish ones discally and situated on more evident streaks of greyish tomentum; wings distinctly tinted more smoky brownish in middle parts, especially along veins, the latter darker or blackish; processes of sternite 9, in side view, slightly more S-curved, at first rapidly narrowed, with a more delimited slender upturned apical part; epimere relatively longer, more slender, less broadened to apex . . . . . ♂ *microreticulatus* n.sp.
43. (a) Antennae much shorter, more brownish, segment 3 distinctly shorter than interocular space on vertex, the club more pyriform, its basal part thicker; proboscis more slender; clypeus, humeral tubercles and to a variable extent sides of thorax above yellowish to yellowish reddish; sides of tergites 1-3 less broadly yellowish; bands of greyish whitish tomentum across hinder half or more of tergites 2-6 much broader, extending triangularly in middle discally into black basal parts (which appear forked apically); hairs on thorax above, pleurae, base of abdomen and hind coxae relatively longer, denser, and those on femora distinctly longer, denser, with some longish ones along inner side of hind ones; inner side of hind tibiae with conspicuous long hairs; fine hairs on tergites discally with more whitish or pale ones on apical half or part, especially on last two; hairs on apical part of venter paler, more yellowish or whitish; pleurae dulled by greyish whitish tomentum; wings with distinct, though faint, fuscous borders of cloudiness along veins in apical half, the veins darker; processes of sternite 9, in side view, much broader basally, more rapidly narrowed apically; lobes of tergite 9 relatively shorter, less angularly produced . . . . . ♂ *opacinctus* n.sp.
- (b) Antennae very much longer, more yellowish, more slender, segment 3 elongate, much longer than width of interocular space, the club more flask-shaped, its basal half narrower; proboscis stouter; clypeus and humeral tubercles darker, more reddish brownish and sides of thorax darker or dark; sides of tergites 1-3 more broadly or extensively yellowish; bands of greyish whitish tomentum occupying less than half of tergites 3-5, without any on 2, these bands not produced discally along middle; hairs on thorax, pleurae, base of abdomen and coxae relatively shorter, those on femora,



especially hind ones, markedly short and sparse, without any long ones below; inner side of hind tibiae without very long hairs; fine hairs on tergites discally with much fewer pale ones apically, those on last two mainly dark; hairs on apical part of venter dark; pleurae more shining; wings greyish hyaline, the veins paler, without even faint cloudiness; processes of sternite 9, in side view, narrower basally, more gradually narrowed apically, thus more slender; lobes of tergite 9 relatively longer, more angularly produced  
♂ *consanguineus* n.sp.

44. (a) Proboscis shorter or much shorter, distinctly shorter than vertical length of eye, usually not more than, or much shorter than, 2 mm; tergites 1 and 2 not shining discally, usually with greyish whitish tomentum discally on 1 and extensively across apical part of 2, and usually with broader apical bands of greyish tomentum on rest; tergite 1 more evidently depressed medially discally; hairs on thorax above either shorter or sparser, and those on abdomen above slightly shorter . . . . . 45
- (b) Proboscis slightly longer, as long as, or distinctly longer than, vertical length of eye, usually more than 2 mm; tergites 1 and 2 more extensively shining, even on 2 and 3 discally, without greyish whitish tomentum or with such only very obscurely and narrowly across apical part of 2, and without, or scarcely any, greyish whitish bands of tomentum across apical parts of tergites and, if conspicuous, they are much narrower; tergite 1 not, or more shallowly, depressed discally; hairs on thorax above either longer or denser, and those on abdomen above relatively longer . . . . . 49
45. (a) Hairs along discal streaks on thorax above and either on entire discal part of abdomen above or more extensively on discal parts of tergites darker, either deeper yellowish, yellowish brownish, brownish or fulvous brownish; clypeus, relative to basal colour of head, paler, more yellowish; humeral tubercles, area around them, sides of thorax above and pleurae to a great extent paler, more pale yellowish brownish to yellowish brownish; sides of abdomen (tergites 1-3) to a variable extent more extensively pale yellowish brownish; bullae smaller, more widely separated by a space much wider than their vertical length; proboscis relatively shorter, usually less than 2 mm; spines and spicules on legs darker, more brownish or fulvous; processes of sternite 9, in side view, slightly less S-curved, longer, the apical part more slender; epimere of aedeagal apparatus proportionally longer and the phallic tubes appearing proportionally shorter . . . . . 46
- (b) Hairs along discal streaks on thorax above and on hinder part of tergites whitish or snow whitish; clypeus, if contrasting with basal colour of head, more brownish or reddish brownish; humeral tubercles either not contrasting with pale rest of thorax or, if paler than rest of thorax, then more yellowish, the sides of thorax not paler or only obscurely and narrowly dark reddish and pleurae, if very pale, the fine hairs on thorax are whitish; sides of base of abdomen (tergites 1-3) less extensively yellowish or yellowish brownish; bullae larger or much larger, darker, much closer together above; proboscis relatively longer, reaching 2 mm; spines and spicules on legs paler, pallid, or yellowish; processes of sternite 9, in side view, more S-curved, relatively shorter, the apical part more rapidly narrowed, less slender; epimere either proportionally much shorter, not extending a very long distance beyond phallic tubes (which appear shorter), or it is apically more rounded . . . . . 48
46. (a) Hairs on vertex, frons and clypeus snow whitish, and those on femora, especially hind ones, relatively longer, denser, more whitish; antennae distinctly shorter, only as long as, or shorter than, thorax, segment 3 proportionally shorter, very much shorter than interocular space on vertex, either shorter than club or subequal in length to it, and constricted base of latter very short; bullae yellowish brownish or reddish brownish; black, basal, discal patches on at least tergites 2-5 extending to beyond middle; legs shorter, the hind femora distinctly more thickened, more spindle-shaped . . . . . 47
- (b) Hairs on these parts distinctly more yellowish or yellowish brownish, and those on hind femora relatively shorter, more yellowish or yellowish brownish; antennae distinctly longer, slightly longer than thorax, segment 3 proportionally longer, scarcely, or only a little, shorter than interocular space, distinctly longer than club and constricted base of latter more evident, slightly longer; bullae blackish brown; black discal patches on tergites 2-6 extending to about middle or scarcely beyond; legs relatively longer, hind femora more clavately thickened, with a longer base . . . . . ♂ *inhacae* n.sp.

47. (a) Body darker, more blackish brown to black; antennae mainly dark or black, only apical half of clubs dark reddish or orange, segment 3 relatively longer, subequal in length to club; proboscis darker, only reddish brownish below; pleurae, coxae and legs darker brownish; sides of tergites 1-3 darker, more castaneous brownish; venter darker; hind margins of tergites 2-5 (or 6 obscurely) whitish; wings glassy hyaline, without very distinct subopacity, the veins very much darker; hairs along discal streaks on thorax above and short ones on abdomen above, also most of those on venter from sternite 5, darker or even blackish; spines and spicules on legs much darker; processes of sternite 9 relatively longer, in side view more gradually narrowed, more slender in apical half, slightly narrower in ventral view ♂ *paganus* (Gerst.) and forms of it (= *bezzianus* Beq.)
- (b) Body paler, more yellowish brownish to brownish; antennae mainly pale yellowish brownish, segment 3 proportionally shorter, slightly shorter than club; proboscis yellowish brownish; pleurae, coxae and legs paler, more yellowish brownish; sides of tergites 1-3, or even of the rest, pale yellowish brownish; venter paler, more yellowish brownish; hind margins of tergites 2-6 (or even 7) yellowish whitish; wings markedly subopaquely whitish, the veins pallid or yellowish; hairs along discal streaks on thorax above and short ones on abdomen above more yellowish brownish or cinnamon brownish and those on venter mainly greyish yellowish; spines and spicules on legs paler, more yellowish reddish or reddish; processes of sternite 9 relatively shorter, in side view more rapidly narrowed, less slender in apical half, in ventral view slightly broader  
♂ *pulverulentus* n.sp.
48. (a) Head and body darker, more blackish brownish to blackish, the thorax darker, with the humeral tubercles more contrasting and yellowish, and sides of thorax obscurely and narrowly dark reddish; disc of thorax not distinctly finely granular or finely transversely striate; hind margins of tergites 2-7 yellowish whitish; interocular space on vertex and fronto-facial part narrower; proboscis appearing relatively shorter, only about 2 mm long; fine hairs on outer face of femora and tibiae more whitish; epimere, relative to phallic tubes, shorter, only extending a little beyond their apex .. ♂ *griquaensis* n.sp.
- (b) Head and body much paler, more pale brownish to brownish, the thorax more brownish, the humeral tubercles not contrastingly paler than rest of surface; disc of thorax more finely granular and transversely striate; hind margins of only tergites 2-5 yellowish whitish; interocular space and fronto-facial width broader; proboscis relatively slightly longer, a little more than 2 mm; fine hairs on outer face of femora and tibiae tinted more brownish; epimere not appearing short relative to phallic tubes, its apex more rounded  
♂ *pseudoopacus* Beq. (ex descr.)
49. (a) Hairs on thorax above either mainly dark, fulvous brownish, or with those in discal streaks mainly brownish or fulvous brownish, those on legs, especially hind ones, relatively less dense and shorter; antennae relatively shorter, much shorter than thorax; bullae orange brownish or orange reddish; sides of tergites 1-3, or even sides of rest, more broadly, or more evidently, paler than dorsum; pleurae more castaneous brownish; legs on the whole darker, more brownish, the lower surface of femora not contrastingly yellowish; sternite 9 distinctly longer, more conically produced, its processes straighter, less S-curved .. .. . 50
- (b) Hairs along discal streaks on thorax above much paler, at most only slightly pale yellowish or sericeous yellowish, not contrasting much with the rest of the snow whitish hairs above, those on legs distinctly denser and longer; antennae relatively longer, distinctly longer than thorax; bullae much darker or blackish; sides of only tergites 1-3 or 1 and 2 narrowly paler or more yellowish, the rest dark like dorsum; pleurae blackish; legs appearing paler, only the femora above darkened or blackish, contrasting with the much paler, more yellowish lower surfaces; sternite 9 distinctly shorter, its free conical part much shorter, its processes distinctly more S-curved, curved more upwards apically .. .. . 51
50. (a) Smaller and less bulky species, less than 25 mm long; hairs on thorax brownish only in discal streaks, those on sides, pleurae, metanotum, base of abdomen and on coxae snow whitish; shortish dark ones on abdomen above less dense; those on legs distinctly longer, denser, more whitish; humeral tubercles, area around them and sides of thorax above paler, more yellowish brownish or reddish; bands of greyish white

tomentum across hind margins of tergites 3-6 much broader, more conspicuous; bullae larger; yellowish whitish hind margins of tergites narrower; wings distinctly tinted yellowish brownish in middle and apical parts, more so along veins; legs proportionally shorter, the hind femora more distinctly thickened, more subspindle-shaped; antennae relatively longer, more slender, segment 3 more slender, distinctly longer than club; processes of sternite 9 proportionally longer, their apical part, in side view, longer, more slender . . . . . ♂ *opacus* (Bezz.)

- (b) Much larger, more bulky species, reaching 25-26 mm; all the hairs on thorax above, metanotum, pleurae, tergite 1 and basal half of 2, on middle and hind coxae and to a large extent on legs, especially femora, dark or brownish; dark shortish ones on abdomen above distinctly denser; those on legs distinctly shorter, much sparser, with much fewer longish ones on inner side of hind femora; humeral tubercles darker, dark reddish or blackish and sides of thorax above much darker or blackish; bands of greyish tomentum across hind margins of tergites narrower, obscure, scarcely perceptible (entire abdomen appearing dark); bullae smaller, narrower; yellowish whitish hind margins of tergites relatively broader, more conspicuous and those across 2-4 bordered basally with more orange; wings entirely glassy hyaline, the dark veins without perceptible cloudiness; legs proportionally much longer, the hind femora proportionally less thickened and more clavate; antennae proportionally much shorter, stouter, segment 3 stouter, subequal in length to the more inflated club; processes of sternite 9 relatively shorter, broader, more rapidly narrowed apically, their apical part, in side view, distinctly much shorter, less slender

♂ *namaquensis* n.sp. (= *paganus* Bezz. in part, *nec* Gerstaecker)

51. (a) Hairs on thorax above, abdomen and especially hind legs distinctly sparser, slightly shorter; antennae distinctly longer, both segment 3 and club proportionally longer, the former stouter, quite as long as interocular space on vertex; hind femora slightly more thickened; hind tibiae more curved and spicules on tibiae, other than apical spurs, shorter, poorly developed; wings broader across axillary lobe, the latter relatively much broader, much broader than twice width of anal cell; lobes of tergite 9 less acuminate apically; processes of sternite 9 longer, in side view with a much longer upcurved slender apical part, in ventral view broader, more pointed apically

♂ *apricus* n.sp.

- (b) Hairs on these parts distinctly denser, slightly longer; antennae relatively shorter, segment 3 and club proportionally shorter, the former slightly more slender, slightly shorter than interocular space on vertex, the club relatively shorter, more subspindle-shaped; hind femora slightly less thickened; hind tibiae straighter and spicules on tibiae proportionally longer, more conspicuous; wings slightly narrower across axillary lobe, the latter narrower, not or scarcely more than twice width of anal cell; lobe of tergite 9 more sharply acuminate apically; processes of sternite 9 relatively shorter, in side view with a much shorter upcurved apical part which is less slender, in ventral view slightly narrower, more rounded at apex ♂ *anomalous* n.sp.

52. (a) Middle segments of abdomen (2-5 or 6) above and mainly also on sides conspicuously pale ochreous yellowish or orange yellowish to a variable extent; hind margins of all the tergites 1-7 yellowish whitish or yellowish; bullae smallish, dark reddish brownish, black-margined, widely separated; integument of entire abdomen more or less shining, without distinct dull whitish tomentum across apical parts of tergites; wings more distinctly and conspicuously yellowish brownish or brownish, especially along veins, in a broad band across middle, leaving the apical part beyond level of apex of third posterior cell and basal part before base of discoidal cell abruptly and contrastingly clear or hyaline milky whitish; shortish and fine hairs on abdomen above distinctly deeper, or more golden, yellowish; basal segment of hind tarsi markedly short, usually shorter than claw-segment . . . . . ♂ *suffusipennis* (Brun.)

- (b) Species with this combination of characters not present; the abdomen, if bicolorous above, not so to the same extensive extent; wings, if infuscated, not abruptly or truncately clear in apical part . . . . . 53

53. (a) Hairs on disc of thorax above and sometimes on sides and even on vertex distinctly tinted yellowish, greyish yellowish to fulvous; hind margins of tergites 2-6 yellowish

- whitish or whitish; sides of tergites 1-3 mainly dark like rest of abdomen, or only narrowly pale on extreme sides of 1; humeral tubercles as well as clypeus usually also dark; integument of abdomen above, including discal parts of tergites 2 or 1 and 2, markedly dull under the hairs; processes of sternite 9, in side view, more rapidly narrowed apically, the apical part distinctly less slender . . . . . 54
- (b) Hairs on thorax above, like those on its sides and on rest of head and body, entirely or mainly whitish or snow whitish; hind margins of only tergites 2-4 or 5 yellowish, yellowish whitish or whitish; sides of tergites 1-3, or sometimes even sides of rest, distinctly more broadly or more extensively pale or yellowish; humeral tubercles and clypeus usually paler, more yellowish and, if not, hairs on disc of thorax very pale; integument of tergites 1 and 2, and sometimes to a variable extent even base of some others, shining or sub-shining under the vestiture; processes of sternite 9, in side view, more slender in apical part . . . . . 56
54. (a) Legs, including tibiae, darker, entirely or mainly dark, the underside of femora and entire tibiae, if paler, at most dark reddish brownish; humeral tubercles more dark reddish brownish than black; proboscis shorter, usually less than 3 mm; bullae longer vertically, much closer together, space between them very much less than their vertical length; veins in wings usually darker, more brownish, the costal vein and others at base of wings usually darker, more brownish, the costal vein and others at base of wings more brownish; processes of sternite 9 relatively longer, in side view more S-curved, more rapidly narrowed towards apex, the upcurved apical part more slender, with denser hairs below, in dorsal or ventral view relatively narrower, more gradually narrowed apically; phallic tubes relatively longer, quite as long as width of processes of sternite 9 at about middle . . . . . ♂ *turneri* Beq. and forms of it
- (b) Legs with the apex of femora, base of hind ones and entire tibiae and tarsi much paler, more yellowish or pale yellowish reddish; humeral tubercles darker or black; proboscis slightly longer, usually more, or slightly more, than 3 mm; bullae shorter vertically, slightly wider apart, the space between them subequal in length to, or slightly longer than, their vertical length; veins in anterior half or part of wings much paler, more yellowish, the costal vein and others at base markedly yellowish; processes of sternite 9 relatively shorter, in side view broader, less S-curved, more rapidly narrowed, with a much shorter, or with scarcely any, slender apical part, with sparser hairs below, in dorsal view broader, more rapidly narrowed apically; phallic tubes shorter, much shorter than width of processes at about middle . . . . . 55
55. (a) Only base and apex of hind femora yellowish; whitish hind margins of tergites more distinctly or more broadly bordered across basal margin with yellowish or orange; genital segment less extensively yellowish; hairs on thorax above deeper, more fulvous, yellowish to deep fulvous, and those on pleurae also distinctly more fulvous than white; wings clearer hyaline; processes of sternite 9, in side view, relatively longer, less sharply pointed apically, in dorsal view more gradually narrowed and more bluntly rounded apically, the sternite itself broader, less laterally compressed in apical part, blunter . . . . . ♂ *flavigenualis* n.sp.
- (b) More than basal half and entire lower surface of hind femora yellowish reddish; relatively narrower whitish hind margins of tergites scarcely or not bordered across basal margin with orange; hypopygium more extensively yellowish reddish; hairs on thorax above greyish yellowish to creamy yellowish, and those on pleurae snow whitish like rest of hairs on body; wings very faintly, but distinctly, tinted yellowish and with a slightly more milky whitish subopacity; processes of sternite 9, in side view, relatively shorter, more rapidly narrowed, distinctly more sharply pointed, in ventral view also more rapidly narrowed and more pointed apically, the sternite itself relatively narrower, more laterally compressed in apical part . . . . . ♂ *koupiocolus* n.sp.
56. (a) Area around humeral tubercles and sides of thorax above distinctly and usually broadly paler, more yellowish, yellowish reddish or pale reddish . . . . . 57
- (b) Area around humeral tubercles and sides of thorax above dark or black, not paler than rest of thorax . . . . . 61
57. (a) Legs longer, the hind femora longer, much stouter, distinctly thickened, with more numerous, much shorter and blunter spines on more distinct and raised tubercular

prominences; hind tibiae more coarsely granular below; hairs on legs, especially femora, more particularly hind ones, distinctly very much shorter, sparser, without any long and dense ones; antennae stouter, longer, segment 3 proportionally stouter and longer (as 45:42 or 40 or 35), the club more elongate, more gradually thickened beyond middle; proboscis distinctly stouter, slightly longer, reaching 3.6 mm or more; wings more glassy hyaline, or with scarcely perceptible cloudiness along apical veins of first basal and discoidal cells and base of third posterior cell, and with all the veins darker; lobes of tergite 9 more produced apically; sternite 9 distinctly more constricted laterally in apical part, its processes, in ventral view, relatively broader, more rapidly narrowed apically, with denser, darker hairs below ♂ *psammophilus* n.sp.

- (b) Legs relatively shorter, more slender, the hind femora shorter, more slender, not, scarcely, or only very slightly, thickened, with distinctly much fewer, longer, more slender spines on feebler prominences; hind tibiae with much feebler granules below; hairs on legs, especially hind ones, distinctly very much longer, denser and with numerous longish ones; antennae more slender, relatively shorter, segment 3 more slender, shorter (as 35, 40, 42:45), the club relatively shorter, more subpyriform, more rapidly dilated beyond middle; proboscis distinctly more slender, relatively shorter, usually less than 3.6 mm; wings usually very faintly tinted greyish yellowish to faintly yellowish to a variable extent, with paler, more yellowish or yellowish brownish veins; lobes of tergite 9, even though angularly acute, not produced to a marked extent apically; sternite 9 not, or not distinctly, constricted on sides in apical projecting part, its processes relatively narrower, more gradually narrowed to apex, with sparser, whitish hairs below . . . . . 58
58. (a) Bullae brownish, yellowish brownish, ochreous, or yellowish reddish; sides of tergites 1 and 2 more broadly or more extensively yellowish; whitish or yellowish whitish hind margins of tergites 2-4 or 5 relatively broader; femora, especially hind ones, relatively paler below, more contrastingly paler or yellowish below, sometimes almost entirely pale; process of sternite 9, in side view, more distinctly S-curved, more rapidly narrowed, the upcurved apical part more rapidly slender and longer, and apical part of sternite itself more sharply conical . . . . . 59
- (b) Bullae darker, blackish or black; sides of tergites 1 and 2 less extensively and more narrowly yellowish; whitish hind margins of tergites 2-4 or 5 narrower; femora, especially hind ones, more extensively or more uniformly dark, not, or scarcely, or less extensively, pale below; processes of sternite 9, in side view, less S-curved, the lower margin straighter, more gradually narrowed, the distinctly less upcurved apical part relatively shorter, less rapidly slender and the sternite itself blunter, more bluntly subtruncate apically . . . . . 60
59. (a) Hind margins of tergites 2-4 (or sometimes 5) more narrowly whitish or yellowish whitish, not, or not distinctly, bordered basally with orange; bullae paler, more yellowish brownish or ochreous brownish, or pale reddish brownish; basal, discal patches on at least tergites 3-6 distinctly shorter, less extensive, reaching or scarcely extending beyond middle, leaving almost, or about, apical half covered with greyish whitish tomentum; sides of thorax above more narrowly or obscurely reddish; proboscis relatively longer, usually more than 3.2 mm; antennae relatively longer, segment 3 proportionally longer, longer than interocular space on vertex; short hairs on abdomen above distinctly denser, relatively longer; wings more often glassy hyaline; lobes of tergite 9 either somewhat angularly produced apically or tending to be so; processes of sternite 9 with relatively longer and denser hairs below  
♂ *humeralis* (Gerst.) (var. of)
- (b) Hind margins of tergites 2-5 more broadly whitish or yellowish whitish, relatively broadly, or at least more distinctly, bordered basally with orange yellowish; bullae darker reddish brownish; basal, discal, dark patches on at least tergites 3-6 distinctly longer, more extensive, extending to beyond middle, leaving a narrower apical part of greyish whitish tomentum; sides of thorax above more broadly and more conspicuously reddish or yellowish reddish; proboscis shorter, usually not more than 3.2 mm; antennae relatively shorter, segment 3 proportionally shorter, only about, or scarcely longer, or even slightly shorter than, width of interocular space; shortish

hairs on abdomen above sparser, relatively shorter; wings usually more distinctly tinted faintly yellowish; lobes of tergite 9 shorter, only angular and not produced apically; processes of sternite 9 with sparser and shorter hairs .. ♂ *braunsi* (Bezz.)

60. (a) Humeral tubercles more markedly pale yellowish and sides of thorax above distinctly more broadly yellowish or yellowish reddish; hind margins of only tergites 2-4 whitish; basal, discal, dark patches on tergites 3-6 at least less extensive, slightly shorter, only about reaching middle, and apical greyish whitish tomentum thus relatively broader; extreme sides of tergites 6 and 7 without a conspicuous, intra-marginal, impressed line, consisting of a row of impressed punctures; processes of sternite 9, in side view, slightly more S-curved, more rapidly narrowed, with a longer slender part .. ♂ *sobrinus* n.sp.
- (b) Humeral tubercles somewhat darkened, more brownish basally or more obscurely pale at base, and sides of thorax above distinctly more narrowly, or even obscurely, yellowish or reddish; hind margins of tergites 2-4 or 5 whitish, the latter sometimes only so on sides; basal, discal, dark patches on tergites 3-6 relatively more extensive, distinctly extending slightly beyond middle and apical greyish whitish tomentum thus relatively narrower; extreme sides of tergite 7, and sometimes also 6, usually with a conspicuous, intramarginal, impressed line, consisting of a straight row of impressed punctures; processes of sternite 9, in side view, slightly less S-curved, its lower margin straighter, more gradually narrowed, the apical slender part less upturned and relatively shorter .. .. . ♂ *marginipunctatus* n.sp.
61. (a) Clypeus either entirely pale, or yellowish, or more extensively yellowish, or reddish, on sides; humeral tubercles pale yellowish, or reddish brownish, or brownish; posterior part of metapleurae usually distinctly yellowish or pale; sides of tergites 1 and 2, and to a lesser extent streak-like along 3 or even 4, distinctly broadly, or more extensively, yellowish; legs more extensively yellowish or pale and, if femora are darkened above, at least with more extensive or contrasting yellowish below .. .. . 62
- (b) Clypeus either entirely dark or black and, if pale on sides, these darker, more brownish; humeral tubercles entirely very dark or black and, if brownish, hind femora extensively dark; pleurae either entirely dark or black or posterior part of metapleurae less extensively or contrastingly yellowish, more obscurely brownish or reddish brownish; sides of tergites 1 and 2 more narrowly pale or yellowish, or sometimes tending to be dark and, if contrastingly yellowish, other characters differ; legs, including tibiae, on the whole darker, the femora, especially hind ones, more extensively darkened above or even uniformly dark or brownish .. .. . 65
62. (a) Sides of tergite 1, posterior part only of metapleurae yellowish, the sides of tergites 2-5 or 6 yellowish almost only at extreme base, and humeral tubercles darker; femora more contrastingly darkened or blackened above; antennal club relatively more elongate, more cone-shaped, more gradually broadened from base, not or scarcely constricted just before middle; hairs on legs distinctly shorter, less dense, those on hind femora much shorter, with much fewer longish ones; wings with a more distinct, though very faint, brownish tint, the veins much darker; phallic tubes relatively much shorter, in side view much shorter than width across about middle (side view) of processes of sternite 9; epimere also relatively shorter, in ventral view distinctly broader; processes of sternite 9 relatively shorter, in side view more rapidly narrowed just beyond middle to a relatively long slender apical part, the sternite itself shorter, blunter apically; lobes of tergite 9 bluntly rounded apically .. ♂ *thorni* n.sp.
- (b) Sides of tergites 1 and 2 and an intramarginal streak along 3-5 or 6 more conspicuously yellowish or pale, the metapleural parts more extensively yellowish, and humeral tubercles usually paler, more yellowish; femora less contrastingly darkened above; clubs more pyriform, usually distinctly more narrowed and constricted just before middle, then rapidly broadened; hairs on legs distinctly longer and denser, those on hind femora distinctly longer, with more numerous longish ones; wings usually more glassy hyaline or only very faintly tinted more yellowish, the veins paler, more yellowish or yellowish brownish; phallic tubes distinctly longer, quite as long as, or longer than, width across about middle of processes (side view) of sternite 9; epimere distinctly narrower, relatively longer; processes of sternite 9 relatively longer, more

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63. (a) Body darker, more blackish brownish or black; legs usually with the femora more distinctly darkened above to a variable extent; fine hairs on darker, more shiny, basal, discal patches of tergites more whitish; veins in wings darker, more yellowish brownish to brownish; processes of sternite 9 relatively longer, in side view more slender, more gradually narrowed, with a longer slender apical part, the apical free part of the sternite itself slightly longer, projecting more . . . . . 64
- (b) Body much paler, the proboscis mainly pale yellowish brownish, the thorax above more dark castaneous brownish, the pleurae and abdomen more pale reddish brownish or pale yellowish brownish; legs, including femora, mainly or entirely yellowish; fine hairs on the more shiny, basal, discal patches on tergites more yellowish; veins in wings paler, more yellowish; processes of sternite 9 relatively shorter, in side view less slender, more rapidly narrowed, with a shorter slender apical part, the apical free part of the sternite itself relatively shorter, projecting less
- ♂ *rubellus* n.sp. (= ? *flaviostris* (Bezz.))
64. (a) Slightly larger and longer species, usually about 14–21.5 mm; antennae relatively longer, segment 3 proportionally longer, longer than width of interocular space on vertex; proboscis longer, usually more than 2.4 mm; bullae paler, more orange, orange brownish to yellowish reddish; fine hairs on tergites 4–7 distinctly longer, relatively denser; pleurae with slightly more extensive yellowish reddish; processes of sternite 9, in side view, slightly more S-curved or sinuous, slightly more rapidly narrowed above than below ♂ *humeralis* (Gerst.) and forms of it (= ♂ *nivosus* (Gerst.))
- (b) Slightly smaller and shorter species, about 13–16 mm; antennae relatively shorter, segment 3 proportionally shorter, a little, but distinctly, shorter than interocular space on vertex; proboscis shorter, about 2.4–2.6 mm; bullae much darker, dark reddish brownish to blackish brown; fine hairs on tergites 4–7 distinctly much shorter, sparser; pleurae with distinctly less extensive yellowish reddish; processes of sternite 9, in side view, relatively straighter, about equally and more gradually narrowed above and below . . . . . ♂ *rusticanus* n.sp.
65. (a) Antennae distinctly longer, segment 3 proportionally longer, about as long as, or distinctly longer than, interocular space on vertex; posterior metapleural part and sides of tergites 1 and 2 more extensively or more conspicuously yellowish, and sometimes also with an intramarginal yellowish streak on sides of some other tergites; hind margins of only tergites 2 and 3 and sides of 4, or 2–4, yellowish whitish; short hairs on abdomen above, those on tibiae and hind femora slightly longer, denser . . . 66
- (b) Antennae distinctly shorter, segment 3 proportionally much shorter, distinctly or much shorter than interocular space on vertex; posterior metapleural part either entirely dark or only obscurely yellowish and sides of tergites 1 and 2 (usually only 1) less extensively yellowish; hind margins of tergites 2–4 and sides of 5 yellowish whitish; short hairs on abdomen above, on tibiae and hind femora slightly shorter, distinctly sparser . . . . . 68
66. (a) Bullae distinctly paler, orange yellowish or pale orange brownish; veins in wings paler, more reddish brownish, and wings usually more clear hyaline; processes of sternite 9, in side view, distinctly straighter, less sinuous or S-curved, more or less equally and gradually narrowed above and below to apex, an apical slender upturned part less delimited; lobes of tergite 9 tending to be narrowed and produced apically 67
- (b) Bullae very dark, usually black and shining; veins in wings darker, more blackish brown, and the wings sometimes tending to be very slightly tinged, especially along veins in middle parts; processes of sternite 9, in side view, distinctly more sinuous or S-curved, more rapidly narrowed towards apex in more or less basal two-thirds and more so above than below, an apical slender upturned part or third being more delimited; lobes of tergite 9 usually without a consistent tendency to be narrowed and produced apically . . . . . ♂ *campestris* n.sp. and forms of it
67. (a) Humeral tubercles darker, blackish; sides of tergites 3–5 without an intramarginal yellowish reddish streak; hind margins of tergites 2–3 and sides of 4 whitish; basal

- part of venter, sternites 2-4, slightly darker, more brownish, at least not yellowish along extreme sides; front and middle femora less contrastingly and less extensively pale along outer lower surface; spines and spicules on hind legs longer, the spines on femora fewer; antennae distinctly shorter, segment 3 proportionally shorter, about as long as width of interocular space on vertex, more slender, the club also relatively shorter, more pyriform, less rapidly broadened above a little before middle; thorax relatively narrower, the two discal submedial bare streaks narrower; processes of sternite 9 relatively shorter, in ventral view less sharply pointed . . . ♂ *sodalicus* n.sp.
- (b) Humeral tubercles more dark reddish or reddish brownish; sides of tergites 3-5 with a yellowish reddish intramarginal streak of variable distinctness; hind margins of tergites 2-4 and sides of 5 whitish; extreme sides of sternites 2-5 at least with a palish or yellowish streak; front and middle femora distinctly paler, more extensively and contrastingly yellowish below; spines and spicules on hind legs shorter, the spines on femora more numerous; antennae distinctly longer, segment 3 proportionally longer, distinctly longer than width of interocular space, stouter, and club proportionally longer, distinctly more rapidly dilated above beyond middle; thorax relatively broader, the two bare discal streaks broader, quite as broad as lateral ones; processes of sternite 9 longer, in ventral view more sharply pointed . . . ♂ *vallicolus* n.sp.
68. (a) Clypeus yellowish, yellowish brownish to brownish on sides to a variable extent; proboscis relatively more slender, shorter, only about 3 mm or less; antennae relatively shorter, segment 3 relatively more slender and proportionally slightly longer; greyish whitish tomentum discally across hind halves of tergites 3-7 denser, more conspicuous; wings very faintly, but distinctly, tinted greyish yellowish or yellowish  
♂ *saeculus* n.sp.
- (b) Clypeus entirely dark or black; proboscis relatively stouter, very slightly longer, about 3.2 mm; antennae slightly longer, segment 3 proportionally slightly longer, stouter; greyish whitish tomentum discally across hinder part of tergites 3-7 fainter, less dense, not conspicuous; wings clearer hyaline . . . ♂ *saeculus* n.sp. (var. of)
69. (a) Dorsum of abdomen, apart from whitish, yellowish whitish or yellowish hind margins of tergites, unicolorous, either black, blackish brown, dark castaneous brownish, or even ochreous brownish, without the discal part or discal patches on certain tergites being contrastingly paler, yellowish, orange yellowish, ochreous or ochreous brownish  
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- (b) Dorsum of abdomen, apart from the whitish, yellowish whitish or yellowish hind margins of tergites, distinctly bicolorous, with the discal part of certain tergites, either 1 and 2, or 2-4 (or 6), or even greater part of abdomen above, distinctly conspicuously and contrastingly paler, yellowish, orange yellowish, ochreous or ochreous brownish . . . . . 89
70. (a) Abdomen above distinctly less shining, tergite 1 dulled by conspicuous dense, greyish whitish tomentum and 2-3, or 2-4, or 2-5, distinctly dulled discally to a variable extent either by dark tomentum basally and greyish whitish tomentum apically or by greyish whitish tomentum only . . . . . 71
- (b) Abdomen above on the whole distinctly more shining or entirely shining, the tergites, especially middle ones mentioned above, not dulled by tomentum . . . . . 76
71. (a) At least tergites 1-5 dulled discally by tomentum, tergite 1 by greyish whitish, and 2-5 also by darker or black tomentum, that on latter tergites in dark saddle-shaped patches basally and greyish or greyish whitish ones distally or apically which often surround former as semilunar-shaped borders; hind margins of sternites, if white, only so across extreme sides; axillary lobe in wings distinctly narrower, narrower basally, only a little, or scarcely, broader basally than near apex, more subspindle-shaped . . . . . 72
- (b) Only tergites 1-3 or 4 distinctly dulled discally by greyish or greyish whitish tomentum, that on 2-3 or 4 confined to basal part or basal half, there being no dark or blackish basal patches; hind margins of sternites as conspicuously and uninterruptedly whitish as those of tergites; axillary lobe broader, much broader basally, much broader basally than apically near apex, not subspindle-shaped . . . . . 75



72. (a) Proboscis markedly short, only about, or less than, 2 mm; hairs on body very short, those on thorax above, metanotum, pleurae and tergites 1 and 2 very much shorter, sparser; greyish or greyish whitish tomentum discally on tergites 2-5 or 3-4 less extensive, more circumscribed as semilunar-shaped or crescent-shaped patches around basal dark patches; hind margins of tergites 2-5 or 6 whitish or yellowish whitish; axillary lobe in wings narrower; legs distinctly relatively shorter . . . . . 73
- (b) Proboscis distinctly longer, slightly, or much more than 2 mm; hairs on body distinctly much longer, denser, those on thorax above (both on sides and along streaks), metanotum, pleurae and tergites 1 and 2 much, or very much, longer and denser; greyish whitish tomentum discally on tergites 2-5 distinctly more extensive or broader, extending medially and laterally right up to yellowish hind margins, not in form of crescent-shaped patches; hind margins of tergites 2-6 or 7 rather broadly yellowish whitish or yellowish; axillary lobe relatively broader; legs distinctly longer, more slender . . . . . 74
73. (a) Antennae very much shorter, stouter, much shorter than thorax (excluding scutellum), segment 3 proportionally shorter, stouter, only a little, or scarcely, longer than club; latter more spindle-shaped; proboscis relatively slightly longer, quite 2 mm; hind margins of tergites 2-5 more narrowly yellowish whitish or whitish; bullae more reddish or reddish brownish, usually smaller; legs darker, often dark brownish, especially femora, the hind ones relatively thicker, the spines and spicules on legs darker, dark brownish or dark reddish brownish; hairs on body more reduced, much shorter on thorax above, pleurae and tergites 1 and 2, all those on head in front whitish, the fine ones in streaks discally on thorax dark, and reversed ones on tergites and sternites 7 and 8 relatively shorter, more yellowish; spines on ovicape usually darker, yellowish brownish or brown; slightly longer and stouter species, reaching 20.25 mm . . . . . ♀ *paganus* (Gerst.)
- (b) Antennae distinctly longer, more slender, about as long as, or scarcely shorter than, thorax, segment 3 relatively longer, more slender, distinctly longer than club; latter more elongate subpyriform; proboscis distinctly shorter, less than 2 mm hind margins of tergites 2-6 distinctly more broadly yellowish; bullae darker or blackish, usually larger; legs much paler, more yellowish, the hind femora relatively less thickened, the spines and spicules on legs paler, more yellowish reddish; hairs on body distinctly longer, denser, slightly longer on thorax, pleurae and tergites 1 and 2, those on sides of frons anteriorly and on clypeus more yellowish or fulvous, those discally on thorax whitish, and reversed ones on last two abdominal segments slightly longer, denser, more whitish; spines on ovicape paler, more fulvous or fulvous yellowish; slightly more slender species, reaching only about 18.5 mm . . . . . ♀ *inhacae* n.sp.
74. (a) Antennae shorter, subequal in length to, or only a little longer than, thorax, segment 3 and club proportionally shorter, the latter more ovate or subspindle-shaped, its basal constriction very short; proboscis stouter, its labella with finer striae; sides of thorax above and its base more broadly reddish; bullae paler, more yellowish brownish, not black-margined; hind margins of sternites scarcely, or only obscurely, whitish on sides; legs relatively longer, the hind tibiae with distinctly more numerous and longer spicules; hairs on thorax above, pleurae, metanotum and tergites 1 and 2 distinctly longer, denser, but those on legs, especially hind ones, distinctly shorter; short hairs on abdomen above very much shorter, sparser, and whitish also on the dull black patches; wings more distinctly tinted faintly yellowish brownish, much darker along veins, the hind border distinctly very much narrower in apical half . . . . . ♀ *opacinctus* n.sp.
- (b) Antennae relatively longer, distinctly longer than thorax, segment 3 and club proportionally longer, the latter more elongate pyriform, rather rapidly broadened at about, or a little beyond, middle, its basal constriction slightly longer; proboscis more slender, its labella more coarsely striate; sides of thorax above more narrowly reddish and base not, or only very narrowly, reddish; bullae darker, brownish or blackish brown, distinctly black-margined; hind margins of sternites more conspicuously whitish on sides; legs relatively shorter, the hind tibiae with much fewer and shorter spicules; hairs on thorax above, pleurae, metanotum and tergites 1 and 2 distinctly shorter, sparser, but those on legs, especially hind ones, distinctly denser, with longer

- ones; short hairs on abdomen above distinctly longer, denser, and those on dull black patches more yellowish or fulvous; wings more greyish hyaline, without any, or much fainter, yellowish borders along veins, the hind border, especially in apical half, distinctly very much broader . . . . . ♀ *griquaensis* n.sp.
75. (a) Antennae proportionally shorter, more slender, segment 3 proportionally shorter  $\pm 1 \cdot 5-1 \cdot 6$  mm; pleurae, especially metapleural and posterior episternal parts, to a variable extent sides of metanotum and sides of tergites 1 and 2, or 1-3, paler, more extensively yellowish brownish; abdomen above, except extreme blackish sides of tergites 2-4, more dark castaneous or chocolate brownish, the integument on the whole more shining with finer microsculpture and transverse striation; venter more yellowish brownish; femora and to a lesser extent tibiae on the whole darker, more brownish; hairs on head, anterior and lateral parts on thorax above, pleurae, metanotum and on tergites 1 and 2 relatively shorter, distinctly less dense, those on disc of thorax more yellowish, fulvous to even fulvous brownish; hairs on legs distinctly less dense; wings tinted very faintly to more obscurely yellowish brownish, more so along veins which are darker; last vertical tergite more shining, its keel-like central carina more prominent . . . . . ♀ *turneri* Beq.
- (b) Antennae proportionally longer, slightly stouter, segment 3 longer,  $\pm 1 \cdot 9$  mm; pleurae, excepting narrow reddish part around posterior spiracle, and metanotum mainly dark or black, the sides of tergite 1 basally narrowly and obscurely yellowish; abdomen above darker, entirely black, its integument mainly dull, with coarser microsculpture and transverse striation; venter conspicuously ochreous yellowish to near apex; hind femora and all the tibiae and tarsi very pale yellowish; hairs on head, thorax above, pleurae, metanotum, tergites 1 and 2 longer and markedly dense, those on disc of thorax more whitish or very pale sericeous yellowish; hairs on legs much denser; wings tinted more yellowish than yellowish brownish, the veins paler, more yellowish or yellowish reddish; last genital tergite duller, its central carina less raised . . . . . ♀ *koupsicolus* n.sp.
76. (a) Pleurae not entirely or uniformly dulled by greyish or greyish whitish tomentum, the sternopleuron and pleural parts in a streak obliquely up to base of humeral tubercles distinctly smoother, more shining and less covered with tomentum; hairs on antennal segments 1 and 2 usually pale; antennae usually relatively longer, more slender, segment 3 proportionally longer, more slender, usually much longer than club, the latter, relative to segment 3, longer, more subpyriform or elongate pyriform, not subspindle-shaped, the sensory area more subtruncate, more excavate, less oblique, and terminal tubercle less prominent; whitish or yellowish whitish hind margins of tergites relatively narrower, not or less prominently and convexly ring-like; hind claws proportionally more developed, longer . . . . . 77
- (b) Pleurae entirely or more uniformly dulled by greyish or greyish whitish tomentum, the sternopleuron and area above and in front of it not more shining and not less covered with tomentum than rest of pleurae; hairs on antennal segments 1 and 2 darker, antennae rather stoutish, relatively shorter, segment 3 proportionally shorter, stouter, usually subequal in length to, as long as, or even slightly shorter than, club and, if distinctly longer, it is stout and pleurae entirely covered with tomentum, the club itself appearing more subspindle-shaped, its apical sensory area more oblique and the terminal tubercle more prominent; yellowish whitish or yellowish hind margins of tergites relatively broader, appearing more conspicuously convexly ring-like; hind claws proportionally shorter . . . . . 86
77. (a) Following parts more extensively or conspicuously yellowish or yellowish reddish: entire clypeus or its sides extensively, more often the humeral tubercles, sometimes area around latter, sides of thorax above, pleurae, or at least metapleural and posterior episternal parts, extensively and sides of at least tergites 1 and 2; antennal club, in side view, usually more gradually broadened or thickened from, or beyond, middle . . . . . 78
- (b) All these parts less extensively yellowish reddish or mainly dark, the clypeus usually darker or only obscurely yellowish brownish on sides, humeral tubercles usually dark or, if with yellowish, their sides are entirely dark, the metapleural part less extensively yellowish or even mainly dark and usually only extreme basal and hind angles on sides of tergite 1 yellowish; club, in side view, usually rather rapidly and suddenly dilated slightly beyond middle . . . . . 80

78. (a) Antennae proportionally much shorter, segment 3 relatively shorter, much shorter than interocular space on vertex, only a little longer than club; bullae orange yellowish or orange brownish; metapleural part below halteres mainly dark and sides of tergites 2 and 3, like the rest, without any intramarginal reddish streak; hind margins of only tergites 2-4 distinctly yellowish whitish, that of 5 obscurely reddish brownish, especially on sides; clypeus less extensively yellowish brownish on sides; femora less extensively darkened above, the hind ones more extensively brownish; wings more uniformly tinted yellowish brownish . . . . . ♀ *saeculus* n.sp.
- (b) Antennae proportionally longer, segment 3 relatively longer, subequal in length to, or longer than, interocular space, much longer than club; bullae dark or black; metapleural part below halteres more distinctly yellowish and sides of tergite 2 or 2 and 3 with an intramarginal yellowish reddish streak of variable distinctness; hind margins of tergites 2-5 more conspicuously yellowish whitish and sometimes even 6 obscurely so; clypeus more extensively yellowish or reddish brownish on sides; femora more extensively darkened above, the hind ones mainly dark, less distinctly paler below; wings more darkly tinted along veins in middle parts . . . . . 79
79. (a) Antennal segment 3 proportionally shorter, subequal in length to, or only a little longer than, interocular space on vertex; club proportionally longer, with a more distinct basal constriction; humeral tubercles dark or black; only metapleural part below halteres yellowish . . . . . ♀ *campestris* n.sp.
- (b) Antennal segment 3 relatively longer, very much longer than width of interocular space; club proportionally shorter, without a distinct basal constriction; humeral tubercles yellowish; hind border of pteropleuron, prominence in front of halteres, sutural part below these and metapleural part yellowish reddish to a variable extent . . . . . ♀ *inopinus* n.sp.
80. (a) Slightly smaller, more slender species, their maximum length usually less than 25 mm; hind femora with distinctly denser and longer hairs, some or numerous ones basally usually longish, and usually with longer, more slender spines below; legs usually paler, more yellowish or yellowish brownish, though the femora may be darkened above; antennae more slender, with relatively much shorter, more pyriform or subpyriform clubs; scutellum usually more shining; hind margins of tergites 2-6 whitish or yellowish whitish and, if only across 2-5, hind femora with longer and denser hairs; wings, if tinted or infuscated, usually more yellowish or faintly yellowish brownish, the veins usually paler or more yellowish brownish to brownish . . . . . 81
- (b) Slightly more robust or larger species, reaching a maximum length of about 25 mm; femora with distinctly sparser and shorter hairs, without any distinct longish ones, and with relatively stouter spines below; legs on the whole darker, more dark brownish; antennae relatively stouter, with relatively longer, more elongate pyriform or amphoriform clubs, with longer slender basal part; scutellum distinctly duller or only subshining; hind margins of tergites 2-5 yellowish whitish; wings usually tinted more smoky brownish or brownish, especially along the darker, more dark brownish veins . . . . . ♀ *psammophilus* n.sp.
81. (a) Proboscis distinctly stouter, broader, relatively slightly longer, more than 2.68 mm, with longer (0.8-0.88 mm) and, in side view, broader labella; antennae distinctly longer, segment 3 proportionally longer, much or very much longer than buccal cavity . . . . . 82
- (b) Proboscis more slender, narrower, usually slightly shorter, only about 2.48-2.68 mm, with shorter (0.68-0.76 mm), smaller and, in side view, narrower labella; antennae distinctly shorter, segment 3 relatively shorter, scarcely, or only a little, longer than buccal cavity . . . . . 85
82. (a) Femora below more contrastingly, or sometimes almost entirely, paler, more pale yellowish brownish to yellowish, and tibiae paler, more yellowish; metapleural and posterior episternal parts, but more especially sides of tergites 1 and 2, more extensively, more conspicuously, or more broadly, yellowish; proboscis relatively longer, about 3-3.8 mm (or even slightly more); antennae usually longer, segment 3 proportionally longer, considerably longer than buccal cavity, the club also relatively longer, more gradually broadened from beyond middle; wings, if tinted, usually more yellowish, their veins paler, usually paler yellowish brownish, reddish or yellowish; abdomen, even if

- very dark or blackish, usually with a touch of brownish, sometimes distinctly reddish brownish; spines of ov scape usually paler, yellowish or yellowish brownish . . . 83
- (b) Femora more extensively darkened above and hind ones entirely, or almost entirely, darker, more dark blackish brown to almost black, and both tibiae and tarsi more darkened; pleural parts, and especially sides of tergites 1 and 2, distinctly less conspicuously and less extensively yellowish; proboscis relatively shorter, scarcely about, usually less than, 3 mm; antennae relatively shorter, segment 3 proportionally shorter, only a little longer than, or even subequal in length to, buccal cavity, the club proportionally also shorter, more rapidly dilated beyond middle; wings, if tinted, usually slightly more yellowish brownish, especially along the veins which are slightly darker; abdomen usually darker or more blackish; spines of ov scape darker ♀ *sobrinus* n.sp.
83. (a) Head and body, especially thorax above, the pleurae and abdomen distinctly much darker even if with a touch of castaneous brownish on latter and pleural parts; bullae orange brownish, orange reddish, wine red to reddish; legs usually with the femora, including hind ones, darkened above to a variable extent and, if mainly pale, pleurae and abdomen not pale reddish brownish; wings tinted more faintly yellowish to a variable degree, and the veins usually more reddish or yellowish reddish; knobs of halteres darkened above; abdomen less slender posteriorly, the last segment proportionally shorter, stouter, and the last two with denser, paler yellowish, more sericeous yellowish to more whitish hairs . . . . . 84
- (b) Almost entire body, excepting dark or more blackish frons and disc of thorax above and dark tergite 1, much paler, pale reddish brownish; bullae dark or blackish; legs paler, more pale yellowish brownish, the femora not distinctly darkened above; wings greyish hyaline, with pallid or very pale yellowish veins; knobs of halteres yellowish above; abdomen more slender posteriorly, the last segment proportionally rather longish and distinctly more slender, and the last two with more fulvous yellowish and rather sparse hairs . . . . . ♀ *rubellus* n.sp.
84. (a) Labella of proboscis much larger, distinctly more pointed, distinctly more than a fourth length of proboscis itself; antennal segment 3 proportionally shorter, distinctly much shorter than interocular space on vertex, with a longer thickened apical part; sides of thorax distinctly more narrowly, often more obscurely, reddish; sides of metanotum not or scarcely reddish; pteropleural, metapleural, posterior episternal parts and sides of tergites 1 and 2 less extensively yellowish; hind margins of tergites 2-5 or 6 relatively more narrowly yellowish whitish; hairs on last two abdominal segments distinctly denser; hind femora relatively less thickened, with relatively longer and fewer, more pallid, spines below . . . . . ♀ *humeralis* (Gerst.) and forms of it
- (b) Labella of proboscis smaller, shorter, more bluntly pointed or rounded at apex, only about one fourth length of proboscis; antennal segment 3 proportionally longer, about as long as, or even slightly longer than, interocular space, with relatively much shorter thickened apical part; sides of thorax distinctly more broadly reddish; sides of metanotum more distinctly reddish; pleural parts, and especially sides of tergites 1 and 2, more extensively or more broadly yellowish; hind margins of tergites 2-5, especially central discal parts of 3-5, more broadly yellowish; hairs on last two abdominal segments distinctly sparser; hind femora rather more thickened, with relatively shorter and more numerous deeper yellowish spines below  
♀ *simulans* n.sp. (= ♀ *nivosus* (Bezz.) *nec* (Gerst.))
85. (a) Sides of thorax distinctly reddish; posterior pleural parts and sides of tergites 1 and 2 more extensively, and also an intramarginal streak along sides of 3-6 or 7, yellowish; hind margins of tergites 2-6 more narrowly yellowish, the medial discal parts of those of 2-5 or 6 not tending to be broadened; hind margins of sternites 1-6 more obscurely yellowish, mainly so on sides; extreme sides of tergite 7, and sometimes also of 6, with a distinct impressed line, consisting of a row of impressed punctures; femora more distinctly darkened above; pulvilli normally long; wings rather narrowish, slightly more uniformly and more distinctly tinted yellowish brownish; hairs on last two tergites relatively denser . . . . . ♀ *marginipunctatus* n.sp.
- (b) Sides of thorax dark or black; posterior pleural parts and sides of tergites 1 and 2 less extensively yellowish, and sides of tergites without a distinct and conspicuous intra-

marginal yellowish streak; hind margins of tergites 1-6 or 7 distinctly more broadly yellowish, those of 2-5 or 6 medially discally broadened or extending patch-like anteriorly; hind margins of sternites 1-5 or 6 conspicuously and broadly yellowish; extreme sides of tergite 7 without a conspicuous impressed punctate line, such punctures, if present, are fewer and not in a line; femora less, or less extensively, darkened above; pulvilli more reduced, shorter; wings normally broad, slightly less deeply tinted yellowish; hairs on last two tergites distinctly sparser . . . . ♀ *rusticanus* n.sp. (in part)

86. (a) Greater part of head and greater part of, or entire, body not pale or pale ochreous brownish, mainly dark or at least much darker; antennae, clypeus and all the other parts not all pallid or pale yellowish; hind margins of tergites 2-5 or 6 yellowish; wings, even if almost hyaline, not markedly subopaquely milky whitish; usually tinted yellowish or yellowish brownish to a variable extent, especially along veins, the latter much darker; proboscis distinctly longer, more than 2 mm, not much laterally compressed, its lower margin straight or straighter; fine hairs discally on thorax above either much paler, more whitish or very dark and more brownish . . . . . 87
- (b) Greater part of head and entire body, excepting the slightly darkened disc of thorax, paler, pale ochreous brownish or pale yellowish brownish; antennae, clypeus, greater part of proboscis, humeral tubercles and legs very pale yellowish or pallid; hind margins of tergites 2-7 (though 7 only narrowly discally) yellowish whitish; wings with a distinct whitish subopacity basally and along veins in anterior half, the veins pallid or whitish; proboscis much shorter, only about 1.68 mm, markedly laterally compressed, its lower margin curved bow-like; fine hairs along middle parts of discal streaks on thorax above fulvous yellowish . . . . . ♀ *pallidipes* n.sp.
87. (a) Hairs on head, thorax above, pleurae, metanotum and base of abdomen distinctly longer, denser, those, on thorax above especially, distinctly longer and mainly pale, without any dark ones; clypeus darker, more brownish or brownish on sides, the sides of thorax above dark, the pleurae much darker to blackish and entire metanotum dark or black; hind margins of tergites 2-6 yellowish; bullae dark or black; entire abdomen dark or black; legs with lower part of femora and the tibiae paler, pale yellowish; antennae relatively longer, segment 3 proportionally much longer, stouter, distinctly much longer than length of buccal cavity, the club either much shorter than, or subequal in length to segment 3; hind border of wings relatively much broader . . . . . 88
- (b) Hairs on these parts distinctly much shorter, less dense, those, on disc of thorax especially, being short and those along its discal streaks distinctly darker, more brownish; clypeus, humeral tubercles, area around latter, sides of thorax above, extreme sides of metanotum, almost entire pleurae, sides of tergites 1 and 2 and to a lesser and more obscure extent sides of rest of tergites pale yellowish reddish or pale yellowish brownish; hind margins of tergites 2-5 yellowish; bullae ochreous yellowish or ochreous brownish; terminal half of abdomen, or at least last two or three segments, more dark reddish brownish than black; legs more brownish, the femora below scarcely much paler, and tibiae also brownish; antennae relatively shorter, segment 3 proportionally very much shorter, subequal to length of buccal cavity, the club subequal in length to segment 3; hind border of wings relatively narrow . . . . . ♀ *opacus* (Bezz.)
88. (a) Smaller species, ♀ reaching length of about 20.5 mm, with slight bluish reflections on abdomen; humeral tubercles darker; yellowish hind margins of tergites relatively much narrower; venter much darker, at least hinder half; femora, especially hind ones, more contrastingly yellowish below, the spines below latter more fulvous or reddish; antennal segment 3 subequal in length to club, the latter with at least basal sixth more constricted and slender, distinctly more narrowed to base; hairs on last two abdominal segments sparser, more whitish; hairs on femora, especially hind ones, distinctly denser, relatively longer, with more numerous longish ones basally and along inner side; wings relatively narrower near base across axillary lobe, more distinctly tinted brownish, especially along veins in middle parts, the apical stalk of anal cell shorter, not mainly transparent ♀ *anomalus* n.sp.
- (b) Slightly larger species, ♀ reaching 25 mm, without distinct bluish reflections on abdomen; humeral tubercles pale yellowish; yellowish hind margins of tergites conspicuously broadish, ring-like; venter mainly pale yellowish to near apex, darkened along middle

basally; femora less conspicuously pale below, the spines below hind ones more dark reddish brownish; antennal segment 3 stouter, much longer than club, the latter much thicker basally, not constricted and much less narrowed to base; hairs on last two abdominal segments distinctly denser, more yellowish; hairs on femora, especially hind ones, relatively shorter, less dense and with fewer longish ones; wings relatively rather broadish, especially across axillary lobe near base, less tinted brownish, more so along veins in middle parts, the apical stalk of anal cell rather long, mainly transparent

♀ *apricus* n.sp.

89. (a) Abdomen stouter, broader, more dorso-ventrally flattened, more extensively ochreous yellowish above, the yellowish occupying also tergite 1 and extending to penultimate tergite; yellowish hind margins of tergites 2-7 relatively broader, more conspicuous; integument of abdomen above less shining, tergites 1 and 2 discally and discal basal parts of at least 3 and 4 distinctly dulled by greyish tomentum; hind margins of sternites 1-6 or 7 conspicuously, broadly and uninterruptedly yellowish; thorax above not only broadly reddish on sides, but also along two distinct discal streaks and across base; legs on the whole paler, more pale yellowish reddish, the hind femora usually not, or much less, darkened above; wings with a distinct and greater milky whitish sub-opacity, even if slightly tinted yellowish, the veins much paler; hairs on thorax above, at least discally, more yellowish or fulvous yellowish or reddish, and with a tendency to be less regularly arranged in well-defined streaks . . . . . 90
- (b) Abdomen distinctly more slender, narrower, more cylindrical, less extensively ochreous discally above, tergite 1 at least and last 2-4 segments, apart from hind margins, usually dark or black; yellowish whitish or yellowish hind margins of tergites 2-5 or 6 (rarely 7) relatively narrower, less conspicuous; integument of abdomen above, including tergites 1 and 2, distinctly more shining or more extensively so, without dull tomentum on the tergites; yellowish hind margins of sternites usually interrupted in middle and, if conspicuous and uninterrupted, abdomen above more shining and less extensively ochreous; thorax above discally without any distinct and conspicuous reddish streaks; legs distinctly much darker, the femora usually darkened above and hind ones much or extensively darkened above, sometimes mainly dark; wings not or only feebly sub-opaquely whitish, even if mainly clear, usually tinted yellowish brownish to a variable extent, often more distinctly so along veins, the latter darker; hairs on thorax above, even discally, more whitish, usually more distinctly arranged in well-defined streaks . . . . . 91
90. (a) Clypeus darker reddish brownish on sides; reddish discal streaks on thorax above relatively narrower, more obscure, and base of thorax less extensively reddish; only hind border of scutellum and sides of metanotum reddish; tergite 1 with a central dark spot on its basal half; bases of tergites 3-6 or 7 more distinctly darkened discally; tergite 8 mainly reddish brownish; bullae darker, larger; hairs on head, thorax, and especially on sides of tergites 1 and 2, distinctly longer and denser, those on disc of thorax more fulvous yellowish; proboscis longer, about 3.36 mm; wings less tinted yellowish, relatively much longer, their apical cells relatively longer and first posterior cell less narrowed apically . . . . . ♀ *luteocinctus* n.sp.
- (b) Clypeus paler reddish on sides; reddish discal streaks on thorax relatively broader, more distinct along their whole length, and base of thorax broadly reddish; entire scutellum and almost entire metanotum reddish; tergite 1 without a central dark patch; bases of tergites 3-6 not, or scarcely, darkened discally; tergite 8 much darker reddish brownish, almost black, with the apical discal part yellowish; bullae wine reddish, smaller, with a puncture in upper and lower corners; hairs on head, thorax and sides of tergites 1 and 2 relatively shorter, less dense, those on disc of thorax, and even on sides, more reddish golden or fulvous reddish; proboscis (partly destroyed in unique type-specimen), but apparently shorter than 3 mm; wings more distinctly tinted yellowish, rather markedly short and broad, their apical cells proportionally shorter, and first posterior cell more narrowed apically . . . . . ♀ *latipennis* n.sp. (= ♀ ? *subclausus* (Bezz.) (in part))
91. (a) Pleural parts not entirely or mainly covered with greyish tomentum, the sternopleural part and parts obliquely upwards to humeral tubercles distinctly more shining, less covered with tomentum; antennae distinctly more slender, segment 3 relatively more slender, even if shortish, and club proportionally shorter, always much shorter than

segment 3 and usually more rapidly dilated apically or in apical half, more pyriform or elongate-pyriform; ochreous or yellowish parts on dorsum of abdomen relatively less extensive, at least discally, occupying less of disc, the black on sides more extensive; wings usually more hyaline or more faintly tinted yellowish or yellowish brownish; hind femora on the whole less thickened . . . . . 92

- (b) Pleural parts, including sternopleural part, either more extensively dulled by greyish whitish tomentum, the sternopleural part and oblique part to shoulders not distinctly shining, or these parts more dulled by fine areolar microsculpture; antennae distinctly stouter, thicker, segment 3 stouter, even if longish, and club relatively longer, only a little shorter than, or sometimes subequal in length to, segment 3, more gradually thickened or dilated in apical part or half, its basal part or half usually thicker, less pyriform, more conical; ochreous dorsal parts of abdomen usually more extensive, occupying more of the disc; wings usually more distinctly, or more darkly, tinted or infuscated yellowish brownish or brownish, more so along veins; hind femora distinctly more thickened . . . . . 95
92. (a) Sides of thorax and sometimes also humeral tubercles entirely dark or black; clypeus darker, either very dark, or with the sides more reddish brownish or deeper yellowish and less extensively so; ochreous infusions on middle parts of abdomen above on the whole narrower, less extensive, the black on sides relatively broader; legs on the whole darker, the femora, especially hind ones, more darkened above, and tibiae more brownish than yellowish; wings more distinctly, more obviously, or more darkly, tinted yellowish brownish in middle parts, especially along veins . . . . . 93
- (b) Sides of thorax above distinctly reddish to a variable extent; clypeus paler, mainly pale yellowish or reddish, or more extensively so on sides; ochreous infusions on middle parts of abdomen above relatively broader, occupying more of discal part of tergites, the black on sides distinctly narrower; legs on the whole paler, the underside of femora, especially of the hind ones, more extensively paler, and tibiae also paler, more yellowish; wings clear, greyish hyaline, or less tinted feebly yellowish along veins ♀ *braunsi* (Bezz.)
93. (a) Only posterior episternal part, sides of tergite 1 and extreme sides of 2 yellowish; hind margins of tergites 2-5, and sometimes discal part of 6, yellowish; tergite 6 entirely black; venter much darker, almost black, only extreme base more brownish, and hind margins of sternites only whitish on extreme sides; legs on the whole distinctly darker, more brownish, even the tibiae more brownish than yellow, the femora, especially hind ones, more extensively darkened above; antennae relatively longer, segment 3 proportionally longer, much longer than buccal cavity; proboscis much stouter, longer, more than 2·8 mm; wings tinted more darkly yellowish brownish to brownish . . . . . 94
- (b) Metapleural and posterior episternal parts and sides of tergites 1 and 2 more broadly or more extensively yellowish; hind margins of tergites 2-6, and discally on 7, yellowish; central discal part of tergite 6 also yellowish to a variable extent, but less so than on 5; venter slightly paler, more yellowish brownish, especially in basal half, and with hind margins of sternites 1-6 conspicuously, almost uninterruptedly, yellowish whitish; legs paler, more yellowish; antennae shorter, segment 3 proportionally shorter, about as long as, or scarcely longer than, buccal cavity; proboscis more slender, shorter, only about 2·8 mm; wings only very faintly tinted yellowish brownish in middle parts ♀ *rusticanus* n.sp. (in part)
94. (a) Humeral tubercles dark or black; tergite 2 without a dark central fascia; bullae larger, orange brownish, dark-margined; wings more faintly tinted yellowish brownish; last tergite with relatively more widely spaced and shallower transverse striation; antennae much shorter, segment 3 proportionally shorter, distinctly shorter than interocular space on vertex, the club shorter, more rapidly dilated from about middle; hind femora slightly less thickened . . . . . ♀ *sodalicus* n.sp.
- (b) Humeral tubercles yellowish; tergite 2 with a broadish black central streak; bullae small or vestigial, more reddish brownish; wings distinctly, though slightly, more darkly tinted brownish or smoky brownish; last tergite more coarsely, more densely and more deeply transversely striate; antennae distinctly longer, segment 3 relatively longer, subequal in length to interocular space, the club relatively longer, less rapidly dilated from about middle; hind femora slightly more thickened . . . . . ♀ *vallicolus* n.sp.

95. (a) Integument of pleurae and abdomen without any discernible areolar microsculpture, the former, especially sternopleural and anterior part of mesopleuron, dulled mainly by greyish whitish tomentum like rest of pleurae, and abdomen more shining; humeral tubercles, sides of thorax above, pteropleural, metapleural and posterior episternal parts and to a variable extent sides of metanotum yellowish reddish; hind margin of tergite 1 yellowish like rest of tergites with yellowish hind margins; tergite 5 usually with its base darkened to a variable extent; tergite 6 with a complete, broadish, conspicuous, yellowish hind margin; bullae smaller, without, or with only narrowish, dark margin; wings, if intensely or darkly tinted brownish, with the apical clearer or uninfuscated part contrastingly delimited; hairs on thorax above, especially sides, on metanotum, pleurae and base of abdomen distinctly shorter, and those on last 3 abdominal segments paler whitish or sericeous yellowish; antennae relatively longer, segment 3 proportionally longer, longer than buccal cavity and much longer than club; proboscis shorter, about 2·8-3·2 mm; hind femora slightly less thickened, much and more contrastingly paler below; basal segment of hind tarsi distinctly shorter than claw-segment . . . . . 96
- (b) Integument of pleurae and abdomen with distinct fine areolar microsculpture which on the pleurae, especially sternopleuron and anterior part of mesopleuron, is the main cause of dullness rather than the fine greyish bloom which is discernible to a lesser extent even on rest of pleurae, and the abdomen dull, due to the microsculpture; humeral tubercles, sides of thorax, pteropleural and to a certain extent metapleural parts and metanotum dark or blackish; hind margin of tergite 1 dark; tergite 5 entirely ochreous like 4 and 3; tergite 6 only yellowish discally across hind margin; bullae markedly large, reddish brownish, with very broad black margin; wings tinted rather darkly brownish, rather broadly so along veins, even along those in apical part; hairs on thorax, especially sides, on pleurae, metanotum and base of abdomen distinctly longer, denser, and those on last 3 segments darker, more brownish; antennae relatively shorter, segment 3 proportionally shorter, scarcely or not longer than buccal cavity, only a very little, or scarcely, longer than club; proboscis longer, quite 3·8 mm; hind femora distinctly more thickened, darker, not very much, or contrastingly, paler below; basal segment of hind tarsi distinctly longer than claw-segment . . . . . ♀ *microareolatus* n.sp.
96. (a) Brownish infuscation in wings ending distally rather abruptly, or truncately or subtruncately at about level of apex of third posterior cell and straight across to costal margin, leaving the rest, or apical part of wings, more or less contrastingly uninfuscated and slightly subopaquely milky whitish like hind border; clypeus distinctly shorter, its dorsal length, from depressed base to apex of buccal cavity, subequal in length, or scarcely longer than, antennal segment 1; tergites 2-4 with an indication or tendency to have a dark central discal streak, either in basal half or in middle; bullae, smaller reddish brownish, dark-margined; hind femora more broadly, or contrastingly, pale yellowish reddish or yellowish brownish below, their spines slightly more pallid and longer ♀ *suffusipennis* (Brun.)
- (b) Slightly more smoky brownish infuscation in wings narrower, darker along veins, not ending so abruptly, the apical part, even if slightly whitish, not contrastingly delimited; clypeus relatively longer, its dorsal length distinctly longer than antennal segment 1; tergites 2-4 entirely ochreous discally, without an indication of central darker streaks or marks; bullae larger, entirely dark or black; hind femora more narrowly or less extensively paler below, appearing darker, their spines more yellowish and shorter ♀ *flavidorsalis* n.sp.
97. (a) Body more extensively darkened, either mainly very dark blackish brown or black; abdomen above and below very dark, dark blackish brown or black, the black discal patches on tergites, if present, blending with the dark rest, not conspicuously and contrastingly evident; legs much darker or even blackish, or at least hind femora more extensively darkened or more blackish above . . . . . 98
- (b) Body on the whole much paler, with more extensive yellowish brownish, castaneous, or chestnut brownish; abdomen more yellowish brownish, reddish, reddish brownish, or castaneous brownish above and usually much paler below, more yellowish or pale yellowish brownish, the darker or blackish discal patches on tergites, if present, more



conspicuously and contrastingly evident; legs on the whole paler or much paler, more yellowish, pale yellowish brownish to brownish and, if castaneous, usually with at least the hind femora distinctly less dark or less extensively darkened above . . . . 100

98. (a) Stouter species, with relatively stouter abdomen; legs longer, the hind femora longer, more slender, less thickened, and entire legs much darker, the femora either much darker or more extensively darkened or blackened above; clypeus darker, either entirely dark or darker reddish brownish or reddish on sides; area around the yellowish humeral tubercles and the sides of thorax above dark or black; scutellum very dark or black; metanotum entirely black; antennae much shorter, segment 3 shorter, either shorter than, or subequal in length to, interocular space on vertex, and the club shorter, more pyriform or subpyriform; proboscis much shorter, stouter, very much shorter than vertical length of eyes; wings relatively shorter; sternite 9 shorter, more bluntly conical 99
- (b) More slender species, with relatively longer, more slender abdomen; legs shorter, stouter, the hind femora relatively shorter, stouter, distinctly more thickened, more subspindle-shaped, and entire legs paler, more brownish, the femora less darkened above, more castaneous brownish above; clypeus paler yellowish; area around the yellowish humeral tubercles extensively yellowish reddish like the sides of thorax above; scutellum yellowish or yellowish reddish; sides of metanotum reddish brownish to a variable extent; antennae much longer, segment 3 longer, distinctly longer than interocular space, and the club more elongate-pyriform or flask-shaped; proboscis longer, more slender, only slightly shorter than vertical length of eyes; wings distinctly longer; sternite 9 distinctly longer, more sharply conically narrowed . . . . . ♂ *tuliensis* n.sp.
99. (a) Antennal club distinctly much thicker, more inflated, about or nearly half as broad at broadest part as long, appearing shorter, more thickly conical, more rapidly narrowed basally; proboscis stouter, slightly shorter, its length, excluding basal thecal part, subequal to or even slightly shorter than width (length) of eyes in side view; clypeus yellowish on sides to a variable extent; halteres more extensively brownish above; sternite 9 narrower, more bluntly pointed apically . . . . . ♂ *anuliventris* n.sp.
- (b) Antennal club distinctly less thickened, less inflated, more subpyriform, distinctly less than half as broad at broadest part as long, appearing more elongated, more gradually narrowed basally; proboscis more slender, slightly longer, its length, excluding basal thecal part, distinctly more than width of eyes in side view; clypeus entirely dark; halteres with less brown above; sternite 9 more inflated or bulbular apically  
♂ *karoanus* n.sp.
100. (a) Not mainly light or pale reddish species; abdomen above at least darker and, apart from dark or blackish discal part of tergite 2, usually with conspicuous, dull, dark or black, saddle-shaped, discal patches on at least basal halves of tergites 3-5 or 6; proboscis usually only reddish below; sides of thorax above not or only narrowly and obscurely reddish and, if broadly orange or reddish, rest of body not mainly reddish; scutellum more often dark; metanotum entirely dark or blackish or with less extensive reddish on sides; legs either more yellowish, yellowish brownish or castaneous, not light reddish 101
- (b) Mainly light reddish, pale yellowish reddish, or chestnut-brownish species; entire abdomen, excepting sometimes segment 1, paler, light reddish, orange reddish, or chestnut-brownish, without any dull blackish, discal, saddle-shaped patches on tergites, such if present, more yellowish or golden gleaming; proboscis, excepting dark labella, entirely pale, light reddish or pale yellowish reddish; broadish sides of thorax above also light reddish, pale yellowish reddish or at least broadly much paler than disc; scutellum usually much paler, more light reddish; metanotum paler mainly or more extensively reddish; legs on the whole paler, more light reddish or pale yellowish reddish . . . 107
101. (a) Vestiture on body, especially on thorax discally above, abdomen beyond tergite 2, on coxae and legs distinctly shorter, the hairs on thorax above more whitish or snow whitish like rest of hair; proboscis distinctly longer, longer, or much longer than 1.6 mm and usually much blackened above; first posterior cell in wings usually narrower, not much broader, as broad as, or even a little narrower, than broadest part of second submarginal cell; knobs of halteres darkened or very dark above . . . . . 102

- (b) Vestiture on body longer, especially hairs on thorax discally, abdomen beyond tergite 2, on coxae and legs distinctly much longer, more villose, those on thorax above and to a certain extent on vertex distinctly more greyish yellowish to creamy yellowish; proboscis markedly short, only about 1.36–1.6 mm and, except for dark labella, mainly or entirely yellowish brownish, scarcely darker above; first posterior cell relatively broad, usually broader than broadest part of second submarginal cell; halteres and knobs entirely pallid or yellowish . . . . . ♂ *vansonii* n.sp.
102. (a) Area around yellowish or dark humeral tubercles dark or black, or distinctly less extensively yellowish reddish, reddish, or orange; sides of thorax above entirely dark or black, or only very narrowly and obscurely reddish; scutellum very dark or black; abdomen above usually darker, dark castaneous brownish to almost black; bullae more depressed or flattened and usually with more distinct pit-like depressions; sides basally of tergite 3 usually with some distinct longish hairs and, if without such, other characters conform . . . . . 103
- (b) Area around yellowish or pale humeral tubercles distinctly more broadly or extensively yellowish reddish, reddish, or orange reddish; sides of thorax above, to at least base of wings, more distinctly and fairly broadly yellowish, reddish or orange; scutellum sometimes paler, more reddish brownish; abdomen above on the whole paler brownish or paler castaneous brownish, especially in apical half or posteriorly; bullae more normally convex, not depressed, not pitted; sides basally of tergite 3 without distinct or conspicuous longish hairs . . . . . 106
103. (a) Clypeus darker, either very dark reddish brownish or almost black; extreme sides of abdomen above from tergite 3 to 7 distinctly more consistently and conspicuously contrastingly yellowish or ochreous; venter on the whole paler, yellowish or ochreous; bullae dull or duller, only slightly depressed, with scarcely any, or with only very shallow indications of, pit-like depressions; short decumbent hairs on abdomen above from tergite 3 distinctly sparser; legs, apart from dark upper surface of femora, much paler yellowish . . . . . 104
- (b) Clypeus paler, more yellowish, paler yellowish brownish, brownish, to castaneous; extreme sides of abdomen above from tergite 3 more obscurely or often only slightly, paler than disc, usually not so consistently and contrastingly yellowish, and often not reaching tergite 7; venter on the whole darker, often pale yellowish only at base; bullae polished and shining, more often with some more distinct pit-like depressions; short hairs on abdomen above from tergite 3 distinctly denser; legs on the whole slightly darker, more pale yellowish brownish than pale yellowish . . . . . 105
104. (a) Sides of abdomen, on sides of tergite 2 and along extreme sides of 3–7, more broadly ochreous yellowish, and venter and hypopygium ochreous yellowish; ring-like yellowish whitish hind margins of tergites relatively broader; scutellum dark reddish brownish and postalar calli more extensively reddish; metanotum more obscurely reddish brownish on sides basally; clypeus very dark reddish brownish; hairs at base of abdomen longish only on tergites 1 and 2, and hairs on venter sparser and shorter; greyish whitish tomentum on abdomen denser; wings tinted slightly more subopaquely whitish, with pale yellowish reddish veins; lobes of tergite 9 more bluntly rounded apically; sternite 9 more narrowed or compressed apically, keeled centrally below in apical part, its processes relatively broader, blunter apically, more shallowly hollowed below near apex  
♂ *capicolus* n.sp. (= *paganus* (Bezz.) nec (Gerst.))
- (b) Sides of abdomen on sides of tergite 2 only yellowish along extreme margin and extreme sides of 3–7 more narrowly yellowish, not ochreous yellowish, and venter and hypopygium also yellowish; yellowish whitish hind margins of tergites relatively narrower; scutellum darker or blackish, and postalar calli less extensively reddish; metanotum entirely black; clypeus darker, almost black; hairs at base of abdomen with some longish ones also at sides basally of tergite 3, and hairs on venter denser and longer; greyish whitish tomentum on abdomen above less dense; wings tinted slightly more yellowish, with darker veins; lobes of tergite 9 more sharply pointed apically; sternite 9 not compressed to apex, more bluntly conical, not keeled apically below, its processes relatively narrower, more sharply pointed at apex, more distinctly grooved below to apex  
♂ *orangiae* n.sp.

105. (a) Humeral tubercles pale yellowish; hind margin of tergite 1 more yellowish and those of 2-7 more conspicuous; clypeus tending to be paler or more yellowish  
♂ *mauricei* Beq. (more typical forms)
- (b) Humeral tubercles darkened to a variable extent; hind margin of tergite 1 darker or more brownish and yellowish whitish ones of 6 and 7 narrower, obscure, or almost confined to disc; clypeus tending to be darker, more brownish  
♂ *mauricei* Beq. (var. of)
106. (a) Hind femora relatively more thickened, less darkened above, without conspicuous transverse annulation; hind tibiae without conspicuous transverse annulation, with distinctly longer spicules; thorax above with less extensive reddish or yellowish reddish, the sides more narrowly and more obscurely reddish brownish; scutellum more distinctly reddish brownish; clypeus more brownish; tergite 1 darker, more blackish above; proboscis distinctly much shorter, only about 1.68 mm; wings more feebly tinted and knobs of halteres scarcely darkened above; sternite 9 relatively much shorter, smaller, its free conical part shorter, its processes, in side view, with a longer slender part, more bent up apically; smaller species, about 16.5 mm . . . . . ♂ *stevensoni* (Beq.)
- (b) Hind femora slightly less thickened, more darkened above, with rather distinct and conspicuous transverse annulation; hind tibiae with marked transverse annulation, with only small and minute spicules; thorax above with extensive orange or yellowish reddish, the sides broadly yellowish reddish or orange; scutellum darker, more blackish; clypeus more reddish; tergite 1 more brownish; proboscis distinctly longer, quite 3 mm; wings slightly tinted deeper yellowish and with knobs of halteres darker above; sternite 9 relatively longer, its free conical part longer, its processes, in side view, with relatively shorter and straighter slender part; larger species, about 20 mm . . . . . ♂ *rudebecki* (Beq.)
107. (a) More light reddish or pale yellowish reddish, tergite 1 dark; bullae darker, more blackish; tergites without distinct delimited antero-medial discal patches of golden-gleaming tomentum, most of the surface being covered with yellowish tomentum and denser golden-gleaming hairs; sternites with pallid hind margins, even if only on sides; proboscis distinctly longer, projecting considerably beyond buccal cavity; wings tending to be more distinctly tinted yellowish, more so along veins in apical part; appendix at base of second submarginal cell usually much longer; hind femora stouter, more thickened, with stouter base; processes of sternite 9, in side view, distinctly more S-curved, stouter; phallic tubes comparatively longer; epimere, relative to phallic tubes, much shorter . . . . . ♂ *matelsiensis* Beq.
- (b) More chestnut or castaneous brownish, tergite 1 only dark across basal depression; bullae more brownish; tergites 2-6 at least with more delimited or conspicuous semi-circular antero-medial discal patches of golden-gleaming tomentum and with much sparser and shorter hairs; sternites without any yellowish whitish hind margins; proboscis distinctly much shorter, only the labellar part projecting beyond buccal cavity; wings even more faintly tinted yellowish, without distinct yellowish borders along veins in apical part; appendix at base of second submarginal cell much shorter or even wanting; hind femora less thickened, their base distinctly more slender; processes of sternite 9, in side view, more slender, straighter; phallic tubes relatively much shorter; epimere rather longish . . . . . ♂ *junodi* Beq. (ex descr.)
108. (a) Abdomen above distinctly dulled basally, or in basal half, by distinct tomentum discally on tergites 1 and 2 or discally and basally on 1-4 or 5, only the apical half or part of abdomen distinctly polished and shining; tergites 7 and 8, or 6-8, usually extensively or broadly yellowish, ochreous, yellowish reddish or reddish across hinder part or half, tergite 8 often mainly, extensively, or entirely, differently coloured from rest of tergites; hind margins of tergites more broadly or conspicuously yellowish or yellowish whitish; humeral area around tubercles, and often sides of thorax, more extensively or more broadly yellowish reddish or reddish . . . . . 109
- (b) Abdomen above, excepting sometimes tergite 1, not dulled by tomentum discally, the entire abdomen distinctly more polished and shining; tergites 7 and 8 either entirely dark or with only the normal broad yellowish hind margins or, if 7 has a broadish hind margin, 8 is not pale or differently coloured from rest of tergites; hind margins of tergites usually more narrowly yellowish whitish; humeral area around tubercles without or

- with less extensive yellowish reddish or reddish, and sides of thorax above either black or only narrowly and obscurely reddish . . . . . 115
109. (a) Wings distinctly less infuscated, either greyish hyaline, tinted faintly yellowish, or tinted only in certain cells, without any conspicuous and contrasting fuscous borders along veins; legs more slender, on the whole relatively longer, especially hind ones of which the femora are distinctly less thickened, more clavate and tibiae long and slender; yellowish hind margins or parts of tergites 6 and 7, or at least 7, broader, conspicuously and extensively broader, broader than discal apical half of tergites . . . . . 110
- (b) Wings distinctly more infuscated, appearing much darker and, apart from a deeper uniform yellowish or yellowish brownish tinge, with more conspicuous or very conspicuous contrasting fuscous borders along veins; legs distinctly shorter, stouter, especially hind ones of which the femora are stouter, distinctly more thickened, appearing less clavate, with thicker base, and tibiae shorter, stouter; yellowish hind margins or parts of tergites 6 and 7, even if broadened and broader than rest, occupying less than apical half of tergites . . . . . 113
110. (a) Larger wasp- or masarid-like species, with much darker, dark castaneous brownish, blackish brownish to blackish, and also broader, abdomen; venter mainly dark; sides anteriorly of metanotum and pleurae with less extensive reddish, the former sometimes and the latter (excepting sometimes the ptero- and metapleural parts) mainly black; disc of thorax above black, without even two obscure submedial reddish streaks; wings without a very distinct subopaquely whitish tint; hairs on disc of thorax above, on sides of tergites 1 and 2 and on hind coxae distinctly longer and denser . . . . . 111
- (b) Slightly smaller, more slender species, with more slender and mainly pale yellowish brownish abdomen; venter pale, even more yellowish than abdomen above; sides anteriorly of metanotum and pleurae with distinctly more extensive reddish; disc of thorax with indications of two submedial reddish streaks; wings distinctly subopaquely faintly yellowish or yellowish whitish; hairs on thorax above, sides of tergites 1 and 2 and on hind coxae distinctly shorter, sparser . . . . . ♀ *subclausus* (Bezz.)
111. (a) Wings uniformly faintly greyish yellowish or greyish hyaline, not more yellowish in some central cells; veins darker; last tergite entirely or extensively yellowish or pale yellowish reddish; tergites 3 and 4 either not dulled or, if so in more than their basal half discally, they are only feebly so; hind margins of sternites conspicuously and broadly yellowish; reddish area around yellowish humeral tubercles more extensive, broader at base of thorax and sides more broadly reddish; antero-lateral parts of metanotum more extensively reddish; ptero- and metapleural parts to a variable extent reddish; legs much paler yellowish, the hind femora not, or less extensively, darkened above or laterally; antennae shorter, the club more inflated, longer than or subequal in length to, segment 3; proboscis shorter or much shorter, less than 2.4 mm; hairs on head in front entirely snow whitish and those on last two abdominal segments longer, either fulvous reddish or fulvous brownish . . . . . 112
- (b) Wings faintly greyish yellowish, the apical half of costal cell, first basal cell and lower half or part of second basal cell distinctly tinted more yellowish; veins paler yellowish reddish, pallid posteriorly; last tergite more brownish; tergites 3 and 4 distinctly more conspicuously dulled in more than their basal half discally; hind margins of sternites only distinctly yellowish whitish on extreme sides; reddish area around yellowish humeral tubercles more circumscribed, sides of thorax more narrowly reddish, and base also more narrowly so; antero-lateral part of metanotum more narrowly and obscurely reddish; pleurae, excepting obscure sutural parts, entirely dark or black; legs on the whole darker, the femora above, and especially hind ones, more extensively brownish; antennae longer, the club less obviously inflated, more elongate-pyriform, shorter than segment 3; proboscis longer, about 2.4 mm; hairs on vertex, sides of frons and on clypeus above distinctly yellowish, and those on last two abdominal segments shorter, sparser and dark . . . . . ♀ *campsomerooides* n.sp.
112. (a) Antennal clubs mainly or entirely orange yellowish, thicker, more inflated, subovate, more rapidly narrowed basally, about or nearly half as broad as long at broadest part; segment 3 also mainly orange yellow; clypeus entirely pale or orange yellowish; proboscis relatively shorter, stouter and excluding thecal part, subequal in length to, or even

shorter than, width (length in side view) of eyes, its labella longer; sides of thorax above not, or only very narrowly and obscurely, reddish; hairs on last three abdominal segments fulvous or fulvous reddish . . . . . ♀ *anuliventris* n.sp.

- (b) Antennal clubs not mainly orange yellowish, their apical and basal parts more extensively darkened, less thickened, more gradually broadened from base, elongate, cone-shaped, appearing longer, at broadest part distinctly much less than half their length; segment 3 darker or blackish; clypeus darker, more brownish, or yellowish only on sides; proboscis relatively longer, distinctly longer than width (length side view) of eyes, its stem more slender, its labella distinctly very much shorter, shorter than stem; sides of thorax above broadly or more conspicuously reddish; hairs on last three abdominal segments darker, more fulvous brownish . . . . . ♀ *karooanus* n.sp.

113. (a) Hairs on head in front, thorax above, metanotum, tergites 1 and 2, metasternum and coxae distinctly shorter and sparser; those on disc of thorax and on coxae fulvous reddish or brownish; those on legs shorter and sparser, more yellowish or fulvous; yellowish whitish hind margins of tergites 5-7 only conspicuous discally, obscure or darkish on sides; extreme sides of tergites 2-5 or 6 not yellowish; hind margins of sternites yellowish only on extreme sides; sternal parts, especially metasternal parts, less extensively blackish on sides, with more reddish; pleurae also with more reddish; coxae more reddish or reddish brownish, the legs more reddish brownish and last tarsal segment darkened apically; proboscis much longer, longer than 1.6 mm, mainly reddish; wings slightly less darkly tinted yellowish brownish; knobs of halteres darkened above . . . . . 114

- (b) Hairs on these sites distinctly longer and denser, the species on the whole more hirsute; those on disc of thorax and on coxae, especially hind ones, below more greyish yellowish or creamy yellowish; those on legs relatively longer, denser, more greyish whitish or pale sericeous yellowish; yellowish whitish hind margins of tergites 5 and 6 conspicuous also on sides, though slightly narrower than discally; extreme sides of tergites 2-5 contrastingly yellowish; hind margins of sternites more extensively and conspicuously whitish to near middle; sternal parts, especially metasternal parts, more extensively blackish; pleurae also more darkened or black; front and middle coxae darker, more blackish brownish or black and legs more pale yellowish brownish; proboscis markedly short, only about 1.6 mm long, yellowish brownish below, dark above; wings slightly more darkly yellowish brownish; halteres and their knobs pallid or yellowish ♀ *vansoni* n.sp.

114. (a) Thorax, metanotum and abdomen, except dark tergite 1, mainly reddish or pale reddish brownish; extreme sides of tergites darkened or blackish; tergites 5 and 6 extensively yellowish above in at least apical half, and yellowish hind margins of rest relatively broader; antennae relatively longer and segment 3 also relatively longer

♀ *matetsiensis* Beq. (more typical form)

- (b) Thorax above, to a large extent pleurae, extensive middle and postero-lateral parts of metanotum and greater part of abdomen very dark blackish brown or very dark castaneous brownish; extreme sides of tergites concolorous with rest of dark abdomen; tergites 5 and 6 less broadly yellowish and so only across hind margins, and yellowish whitish hind margins of rest relatively narrower; antennae proportionally shorter, segment 3 relatively shorter . . . . . ♀ *matetsiensis* Beq. (var. of)

115. (a) Proboscis much longer, about 2-2.8 mm; antennae much longer, more slender; abdomen more elongate, narrower; clypeus brownish or castaneous brownish; pale area around yellowish humeral tubercles distinctly less extensively yellowish brownish, or even black; posterior metapleural part, below halteres, yellowish brownish or yellowish to a variable extent; sides of tergite 1 basally, sometimes also laterally, more consistently yellowish; hind margins of tergites either more broadly yellowish or brownish or reddish, usually not broader so on sides than discally; venter usually paler basally, more brownish, and hind margins of sternites only whitish on extreme sides; last two or three abdominal segments more coarsely wrinkled; shortish hairs on sides basally of tergite 1 longer, whitish, and reversed hairs on abdomen posteriorly slightly longer, denser . . . . . 116

- (b) Proboscis very much shorter, only about 1.32-1.6 mm; antennae much shorter, segment 3 proportionally stouter; abdomen less elongate, proportionally broader; clypeus much darker or blackish; pale area around pale yellowish brownish humeral tubercles

- more extensive; posterior metapleural part entirely dark or black; sides of tergite 1 more reddish brownish, only across base; hind margins of tergites more narrowly yellowish, tending to be narrower and duller discally than laterally; venter entirely very dark, the yellowish whitish hind margins of sternites more conspicuous, only relatively narrowly darkened in middle; last two abdominal segments more shallowly and more feebly wrinkled; shortish hairs on sides basally of tergite 1 shorter, more yellowish brownish, and reversed hairs at apex of abdomen slightly shorter and sparser ♀ *kaokoensis* n.sp.
116. (a) Wings with the cells in hinder half clear in middle . . . . . 117  
 (b) Wings distinctly more uniformly infuscated or tinted, no clear areas in cells evident 118
117. (a) Hind margins of tergites distinctly and consistently yellowish; humeral tubercles yellowish . . . . . ♀ *mauricei* Beq. *s.str.*  
 (b) Hind margins of tergites more reddish brownish; humeral tubercles sometimes darkened to a variable extent . . . . . ♀ *mauricei* Beq. (var. 4 of)
118. (a) Hind margins of tergites conspicuously yellowish; humeral tubercles tending to be darkened to a variable extent . . . . . ♀ *mauricei* Beq. (var. 3 of)  
 (b) Hind margins of tergites darker, more consistently reddish brownish; humeral tubercles yellowish . . . . . ♀ *mauricei* Beq. (var. 2 of)

### Groups and species of *AFROLEPTOMYDAS*

In his revision of *Leptomydas* (now *Afroleptomydas*) Bezzi (1924b: 204, 206, 208) assigned the various South African species known to him to three distinct groups—Group I: *luctuosus*; Group II: *westermanni* and Group III: *humeralis*. In this memoir the *luctuosus* group, which shows certain distinct generic characters, is transferred to a separate new genus *Oreomydas*. The other two groups have been retained and constitute the two great categories in which all the known species of *Afroleptomydas* can be accommodated.

#### *Afroleptomydas westermanni* Group

This is 'Group II' of Bezzi which includes all those species showing the following combination of characters:

*Thorax* above without distinct and conspicuous, delimited, longitudinal, bare streaks between the hairs, the latter usually longish and dense, appearing more uniformly and extensively distributed.

*Abdomen* above in both sexes shining, or more extensively shining or sub-shining, without discal patches or rings of dull dark, or greyish whitish, tomentum.

*Pleurae* more extensively shining, without any, or with less extensive greyish whitish tomentum.

*Femora* with the hind ones usually more distinctly thickened or even markedly incrassate sometimes.

The following species are referable to this group:

#### *Afroleptomydas rufithorax* (Wied.) n.comb.

*Mydas rufithorax* Wiedemann, 1821: 117.

*Midas rufithorax* Wiedemann, 1828: 242. Wiedemann, 1831: 49, pl. 54, fig. 15.

*Cephalocera rufithorax* Westwood, 1841: 55. Walker, 1854: 375. Gerstaecker, 1868: 79.

*Leptomydas rufithorax* Bezzi, 1924b: 207.

This rust-reddish or fulvous-haired Cape species can be easily identified from Wiedemann's description of the ♂. The real ♀ is apparently still undescribed and is represented by three specimens in the collections before me. The ♀ specimen from Cape Town referred to this species by Bezzi obviously belongs to an entirely different species which Wiedemann described as *Midas fasciatus* in 1828 and with which I am dealing farther on.

The species *rufithorax* is characterized as follows:

*Body* mainly dark or black, the abdomen above in ♂ and the anterior half or more of the pleural and sternal parts in both sexes sometimes more blackish brown to dark reddish brownish; antennae usually mainly dark, but in ♀ and some ♂♂ more reddish brownish, the clubs in ♀ orange yellowish, but dark reddish to yellowish reddish in basal half in ♂; clypeus mainly yellowish reddish in ♀, infused with yellowish reddish or reddish brownish in ♂ to a variable extent on sides, in some ♂♂ almost entirely reddish brownish; rims of buccal cavity in both sexes blackish; proboscis reddish below, more extensively so in ♀; the following parts yellowish reddish: humeral tubercles, in ♀ the broad sides and two submedial streaks (fading out posteriorly) and base of thorax above, postalar calli in ♂, narrow hind border of scutellum in ♀, sides and midline of metanotum in ♀, middle and hinder parts of pleurae in ♀, metapleural part in ♂, metasternal part in both sexes, anterior lateral basal part of tergite 1 in ♂, entire sides of same tergite in ♀, a streak on sides of abdomen in ♀ (becoming much broader on last three segments and occupying almost entire last two), a similar, but reduced streak in ♂ occupying only hind corner halves of anterior segments, but more extensive in posterior corners of last three segments, genitalia in both sexes, greater part of venter and legs in both sexes; hind margins of tergites 2-7 in ♂ and 2-6 in ♀ yellowish whitish on sides, the middle parts being dark; hind margins of sternites also yellowish whitish on sides; front coxae and an inner streak in apical half of hind femora in ♂ however dark to a variable extent; bullae wine red.

*Integument* of middle part of frons, the scutellum, tergite 1 in ♂, entire abdomen above in ♀ and more or less anterior upper half of pleurae shining; that of abdomen above in ♂ less shining, due to fine setiferous puncturation.

*Vestiture* with the hairs longish and dense in both sexes, though slightly shorter and less dense on thorax above, tergite 1 and sides of 2 in ♀; those on head above to antennae, or in ♀ extending down to sides of clypeus, those on thorax above, on pleurae, coxae, sides of abdomen basally and to a large extent on venter fulvous yellowish, rust reddish to fulvous reddish; those on propleural prominence, on prominence in front of posterior thoracic spiracle, on sides of metanotum and even on sides of abdomen basally in some ♂♂ appearing more whitish; hairs on head below in both sexes, but sometimes on sides of clypeus in ♂, and on lower half of head behind whitish; shortish hairs on rest of abdomen above in ♂ paler, more yellowish than fulvous; reversed ones on last two segments in ♀ more brownish fulvous; hairs on legs in ♂ dense and long, especially on hind femora, with longish ones on inner sides of tibiae as well, those in ♀

shorter, mainly fulvous or yellowish, sometimes in some ♂♂ appearing paler, more whitish on femora; a dull greyish tomentum present on non-shining parts of body.

*Head* with the antennae a little shorter than thorax (excluding scutellum); segment 1 thickened, about 2.5–3 times length of 2; segment 3 stoutish, thickened segment-like apically, longer than club; latter inflated, pyriform, broadest just before middle in ♂, at about middle in ♀, from there rapidly sloping up from below to terminal tubercle for a longer distance than above; proboscis longish, much longer than vertical length of eye, with only sparse



FIG. 1 (same proportions)

Left: Side view of hypopygium of ♂ *Afroleptomydas rufithorax* (Wied.). Right: Side view of hypopygium of ♂ *Afroleptomydas rufihirtus* n.sp.

and short hairs below; palps distinct, at least as long as antennal segment 2; postvertical bristles very distinct.

*Wings* rather broadish, distinctly, though sometimes very faintly, tinted yellowish to yellowish brownish, more so in middle parts, due to diffused fuscous borders along veins; veins yellowish, the hinder ones darker; hind margin of wings narrower than first and third posterior cells; first posterior cell widely open apically on costal margin; apex of first submarginal cell sometimes tending to be narrower than second; discoidal cell usually stalked apically, sometimes scarcely so; knobs of halteres dark above.

*Legs* with the hind femora distinctly much thickened, a little more so in ♂, the double row of reddish spines below from very near base; hind tibiae slightly



curved; basal segment of hind tarsi longer than claw-segment.

*Bullae* markedly elongate in both sexes, in ♂ vertically longer than antennal segment 3, in ♀ subequal to it, the space between them in ♂ narrower than their vertical length, in ♀ very much broader.

*Oviscape* in ♀ with 9 or 10 spines on a side.

*Hypopygium* of ♂ (text-fig. 1, left), with the anal lappets above rather long, well developed; lobes of tergite 9 triangular, rather shortish, angularly pointed, the angle between them dorsally subrectangular; sternite 9 conical, rounded apically, slightly longitudinally wrinkled or grooved ventrally, with dense hairs on sides below their processes or prongs; latter in side view longish and slender, at least apical half slender, curved upwards towards apex, in dorsal view directed inwards, narrowed and rounded apically, flattened and depressed above to near apex and punctured on outer apical part above, in ventral view grooved to near apex; aedeagal apparatus prominently projecting, apex of dorsal epimere reaching or nearly reaching apex of anal lobes.

In the South African Museum.

Length of body: about 13·5–18 mm

Length of wing: about 10–13·5 mm

*Distribution*: Cape Province: Cape Peninsula (November–February).

#### *Afroleptomydas rufihirtus* n.sp.

A rust reddish or reddish-haired Cape species which resembles *rufithorax* superficially, but, apart from its larger size, may be distinguished from the latter in the following respects:

*Body* also mainly black or dark, with the abdomen distinctly more slender, more elongate, the head and thorax similarly coloured, but clypeus in ♂ more consistently entirely dark, the humeral tubercles in both sexes more consistently yellowish reddish and sides of thorax above in ♀ more narrowly reddish and metanotum in ♀ scarcely or not reddish on sides; clubs of antennae in both sexes more consistently lividly orange yellowish; abdomen with hind margins of tergites 2–7 and to a certain extent 8 in ♂ and 2–6 in ♀, apart from the whitish extreme apical margins, entirely broadly and conspicuously, almost orange yellowish, broadened out on sides, their discal parts not dark, that on 2 spot-like; bullae shining black, not reddish, larger and more narrowly separated above; tergite 7 in ♀ discally in basal half more extensively darkened than in *rufithorax*, and sides in apical part of 6 and 7 in ♂ more extensively yellowish; venter as in *rufithorax*; pleurae similarly coloured; legs also mainly pale reddish brownish, but front coxae in ♀ dark as in ♂, and with a dark streak or infusion on inner apical half of hind femora.

*Integument* of the abdomen above, in ♂ at least, less uniformly shining, being broadly dull across broadish yellowish hind margins of tergites; integument of other parts as in *rufithorax*, with the same parts shining.

*Vestiture* as long and dense as in *rufithorax*, but hairs on sides of tergite 3 in ♂ distinctly longer and denser, and short hairs on rest of abdomen also propor-

tionally longer and denser; all the hairs, excepting snow whitish ones on head behind, slightly deeper rust-coloured red or reddish, more fulvous reddish to orange, even those on head below more yellowish than whitish; hairs on legs as dense, but also with much longer ones on hind femora in both sexes, and with longer and denser ones on inner sides of hind tibiae, with most of the hairs on legs fulvous reddish, only the longish ones on femora being slightly paler, more yellowish.

*Head* with the antennae a little longer, quite as long as or even a little longer than thorax (excluding scutellum); segment 1 also thickened and with the same relationship to 2; segment 3 distinctly very much longer, slightly more slender, about or a little more than its apical third thickened; clubs shaped as in *rufithorax*, but relatively longer, and very much shorter than segment 3; proboscis relatively and distinctly longer; palps much longer than antennal segment 2.

*Wings* similarly tinted yellowish brownish, but on the whole slightly darker, especially in middle parts as diffused fuscous borders along veins, being clearer basally and along hind border; veins reddish; first posterior cell also broadly touching costal margin; second submarginal cell rather narrow basally; apex of discoidal cell with a more consistent stalk; knobs of halteres blackish brown above.

*Legs* relatively longer, but with the hind femora also thickened, and with the double row of spines below strong and dark reddish; basal segment of hind tarsi also distinctly longer than claw-segment.

*Oviscape* in ♀ with apparently only 8 spines on a side.

*Hypopygium* of ♂ (text-fig. 1, right) very similar, but lobes of tergite 9 relatively longer and slender part of processes of sternite 9 (side view) slightly less slender, more gradually narrowed from broad basal part, the upper surface more distinctly and more deeply grooved.

From 4 ♂♂ and 1 ♀, including the types, in the South African Museum.

Length of body: about 19–21·5 mm

Length of wing: about 14–15 mm

*Distribution*: Southern Cape: on sand dunes among vegetation at Pearly Beach in the Bredasdorp division (South African Museum, December 1958).

This species may be looked upon as the southern coastal representative of the Cape Peninsula *rufithorax*.

*Afroleptomydas westermanni* (Wied.) n.comb.

*Mydas westermanni* Wiedemann, 1819: 27.

*Midas westermanni* Wiedemann, 1828: 243. Wiedemann, 1831: 49, pl. 54, fig. 16.

*Cephalocera westermanni* Westwood, 1841: 55. Walker, 1854: 375. Gerstaecker, 1868: 78.

*Leptomydas westermanni* Bezzi, 1924b: 206.

This species, the second oldest mydaid to be described and the first one in the Southern Hemisphere, has a marked resemblance to a bee. Of this species

there is only one ♂ specimen in the collections of the South African Museum, without any locality label, but which Bigot labelled as '*Cephalocera longiventris*'. Bezzi in his revision referred it to *westermanni*. As it agrees in essentials with the description of Wiedemann I am also retaining it provisionally in this latter species. It may be easily recognized and distinguished from the other densely-haired forms in this section by the following characters:

*Body* rather plump, more bee- or asilid-like, with relatively stoutish abdomen for a ♂, mainly black; clypeus, proboscis below, antennae, pleural parts and to a certain extent tergites 6 and 7 discally more dark reddish brownish; extreme sides basally of tergite 1 and broadish streak on sides of the other tergites, becoming more diffuse and extensive on 6 and 7 and venter, more yellowish; postalar calli and narrow hind border of scutellum reddish; hind margins of tergites 1-7 (more broadly on 1-5) reddish brownish across discal part, but very pale yellowish whitish, or almost white, on sides of 1-5; bullae reddish or wine red, very broadly separated; hypopygial structures more yellowish reddish; legs castaneous brownish, the femora below, basal parts of hind ones and all tibiae and tarsi more yellowish.

*Integument* of upper anterior parts of pleurae and scutellum shining; that of abdomen, especially on sides and posteriorly, also shining to a certain extent, but more dulled above by fine, transverse, rugulose sculpture.

*Vestiture* with markedly dense, longish and shaggy hairs on head, thorax, pleurae, metanotum, tergites 1 and 2 and base of venter, which are denser than in most other species; all these hairs yellowish; those on sides of frons anteriorly, face, head below and behind and to a certain extent discally on tergites 1 and 2 more whitish; hairs on tergites 3 to apex shorter than those basally, but more dense than in other species, dark or blackish brown, those on sides longer than discally; hairs on venter longer than above, also blackish brown, denser posteriorly; hairs on legs, especially coxae and hind femora, very dense and long, longer than in most other species, yellowish on coxae, femora below and to a large extent on basal half and lower surface of hind ones, shorter ones on femora above and especially on hind ones on apical half and sides brownish; hairs on tibiae mainly yellowish, but long ones along inner and lower sides of hind ones more brownish.

*Head* broad; eyes large, distinctly more shining than in most other species, due to the facets being more flattened and each visible as a minute hexagon; antennae shorter than thorax (excluding scutellum), with segment 1 thickened, about or quite 3 times length of 2; segment 3 slender, thickened apically, much longer than club; latter inflated, pyriform, in side view broadest a little beyond middle, then sloping up to terminal prominence, this region greyishly minutely pubescent; proboscis longer than vertical length of eye, its labella relatively large, broad, ovate; palps relatively large, longer than antennal segment 2; postvertical spines present, bristle-like.

*Wings* short and broadish, at least in ♂, greyish hyaline, but very faintly tinted yellowish in middle parts; veins yellowish reddish; apex of first posterior

cell touching costal margin broadly; apex of discoidal cell stalked; knobs of halteres with a brownish spot above.

*Legs* with the hind femora much thickened, incassate, spindle-shaped, the double row of reddish spines below from near base; hind tibiae slightly curved; basal segment of hind tarsi much longer than claw-segment.

*Hypopygium* of ♂ with the lobes of tergite 9 markedly short, much shorter than in most other species, bluntly rounded posteriorly; sternite 9 conical, narrowed and rounded posteriorly, covered with longish hairs, especially on sides below, the processes, in side view (text-fig. 2, top left), gradually narrowed, curving up in apical part, in dorsal view flattened, directed inwards, bluntly pointed, hollowed out or depressed above.

Length of body: about 15.5 mm in the single ♂

Length of wing: about 11 mm in the single ♂

*Distribution*: Cape: ? probably south-western Cape.

#### *Afroleptomydas apiformis* n.sp.

This species, also represented by only a solitary ♂ specimen from the north western Cape in the collections before me, is almost indistinguishable from *westermanni* and obviously is the latter's northern representative. It, too, has a marked resemblance to a species of andrenine-bee, and may be distinguished from its counterpart *westermanni* as follows:

*Body* with the pleurae darker, not so castaneous brownish; scutellum entirely black, not piceous reddish across hind margin; entire abdomen above black, not yellowish or yellowish brownish on sides; bullae black, not orange or yellowish brownish, also longer vertically; hind margins of tergites discally darker or black and only sides of those of 2 and 3, not 2-5, whitish or yellowish whitish; venter darker, more castaneous brownish, being almost blackish posteriorly; hypopygium much darker, almost black; legs relatively darker, more brownish, the coxae black and femora above, especially hind ones, more extensively darkened, more dark brownish.

*Integument* of thorax above with slightly coarser setiferous granules; that of abdomen above with very similar 'nadelrissig' sculpture.

*Vestiture* on head, thorax, pleurae and tergites 1 and 2 as long and as dense, though that on thorax above slightly shorter, less dense, the hairs on vertex, frons, sides of face basally, thorax above, pleurae and tergites 1 and 2 also yellowish, even more so than in *westermanni*; hairs on rest of abdomen above, however, distinctly much shorter, entirely black, not with a slight dark brownish tint; hairs on venter distinctly very much shorter and denser, especially in apical half, also mainly black; hairs on coxae and legs distinctly very much shorter and less dense, there being no longish and dense villose hairs on coxae and femora as in *westermanni*, those on coxae below being mainly dark, not yellowish whitish, and those on femora also mainly dark or blackish brown.

*Head* with the interocular space on vertex relatively broader and space on head below relatively narrower, their relationship being 50:32 (47:38 in

*westermanni*); antennae relatively longer, though only about as long as thorax (in *westermanni* distinctly shorter than thorax); segment 1 relatively longer, about 2·5 times length of proportionally longer segment 2; segment 3 proportionally longer, also longer than club; latter shaped as in *westermanni*, but with a slightly longer, more distinct constricted base; proboscis only a very little shorter, its labella, however, with apparently more distinct spinules; some postvertical spines also present.

*Wings* tinted distinctly darker, more smoky brownish, more extensively so and more uniformly so, even alula, axillary lobe and hind border up to level of apex of third posterior cell being distinctly tinged; veins more brownish; knobs of halteres more extensively dark above.

*Legs* with the hind femora as stoutish, the double row of reddish spines below on distinctly less prominent tubercles.

*Hypopygium* with the lobes of tergite 9 slightly more pointed apically and black-haired; sternite 9, much shorter, its prongs (text-fig. 2, middle left) also relatively shorter, with shorter, apical, slender part (side view) which is less curved up and which in dorsal view is slightly narrower.

Single ♂ holotype in the Transvaal Museum.

Length of body: about 15 mm

Length of wing: about 12 mm

*Distribution*: North-west Cape: O'Ograbies (G. van Son, 11th December 1944).

#### *Afroleptomydas boothi* n.sp.

A smallish black and densely dark-haired species, represented in the collections before me by ♂♂ only, which also comes in this *westermanni* section in which the abdomen is rather stoutish and the pale yellowish whitish or whitish across hind margins of tergites is confined to sides. Named after Mr. Clive Booth of the South African Museum who collected it. It can be easily distinguished from all other species in this category by the following characters:

*Body* relatively short and plump, the abdomen relatively stoutish and tapering, asilid-like in appearance, almost entirely black, but the underside of proboscis to a variable extent, postalar calli, metapleural and metasternal parts and extreme base on sides of tergite 1 to a variable extent sometimes more dark reddish brownish; venter to a variable extent more yellowish brownish; hypopygial structures with the outer sides of lobes of tergite 9 and lower ventral part of sternite 9 also yellowish to yellowish brownish and upper outer margin in apical half and upper surfaces of prongs of sternite 9 more reddish to reddish brownish; hind margins of tergites 2-7 pale yellowish whitish or white only on extreme sides; bullae deep reddish; legs with the femora darkened or black above to a variable extent, sometimes almost entire hind femora dark, the lower surfaces of femora and bases, or sometimes basal part, outer and lower surfaces of hind ones to a variable extent castaneous to yellowish brownish, and tibiae and tarsi, especially front and middle ones, more yellowish; hind tibiae sometimes more

castaneous or darkened above and claw-segment of hind tarsi usually darkened above.

*Integument* of middle part of frons, to a certain extent clypeus, proboscis, scutellum, abdomen and upper anterior half of pleurae shining; that of thorax above with acicular setiferous puncturation, becoming slightly coarser, more subgranular anteriorly; that of abdomen above with acicular to 'nadelrissig' puncturation, becoming much sparser posteriorly.

*Vestiture* with the hairs on head, thorax, pleurae, metanotum, tergites 1 and 2 and base of venter long and dense, dull yellowish brownish, greyish brown to fulvous brownish in certain lights; those on clypeus (sometimes), head below, lower part of head behind and sometimes even those on sides of abdomen more whitish or appearing more whitish in certain lights; hairs on tergites 1 and 2 discally appearing either dark or greyish in different lights; shorter ones on rest of abdomen above yellowish or whitish; hairs on venter either entirely dark or mainly pale, even whitish or pale only posteriorly; hairs on legs dense and longish on coxae and femora, but without long and conspicuous ones on inner sides of hind tibiae as in *westermanni* and *rufithorax*, mainly dark or dark brownish, but in one paratype mainly greyish.

*Head* with the antennae a little longer than thorax (excluding scutellum); segment 1 slightly thickened, about 2·6–3 (or even a little more) times length of 2; segment 3 longish, slender, at least as long as, or a little longer than, width of eye, thickened apically, longer than club; latter inflated, pyriform, in side view broadest a little beyond middle below, from there more gradually sloping to apex than above and for a much longer distance; proboscis relatively long, slightly longer than antennae or much longer than vertical length of eye, with only very sparse hairs below; palps relatively long, distinctly much longer than antennal segment 2.

*Wings* shortish, relatively broad, smoky brownish, more so in middle parts and darker in some ♂♂ than in others; veins brownish; apex of first posterior cell broadly touching costal margin; apex of discoidal cell with a relatively long stalk; knobs of halteres black above.

*Legs* with the hind femora distinctly thickened, their double row of spines below reddish brownish and from near base; hind tibiae very slightly curved; basal segment of hind tarsi longer than claw-segment.

*Hypopygium* with the lobes of tergite 9 tending to be equilaterally triangular, their posterior angles acute, junction of their inner margins almost or about rectangular; sternite 9 bulbous, conically narrowed and bluntly rounded apically, its processes in dorsal view directed inwards to near apices, then straight, slightly pointed apically, slightly longitudinally grooved, in side view (text-fig. 2, bottom left) gradually narrowed, appearing slender in less than apical half, curving downwards, then horizontal or slightly upwards.

From 6 ♂♂, including the holotype, in the South African Museum.

Length of body: about 11·5–13·5 mm

Length of wing: about 7·5–9 mm

*Distribution:* Southern Cape: Pearly Beach in the Bredasdorp division (South African Museum, December 1958). Collected from under small restiaceous shrubs growing on the coastal sandy dunes.

The colour of the pubescence in this species appears to be slightly variable. One paratype differs from the other ♂♂ in having the hairs on sides of frons, entire clypeus, metanotum, pleurae, coxae and abdomen more greyish whitish to white.

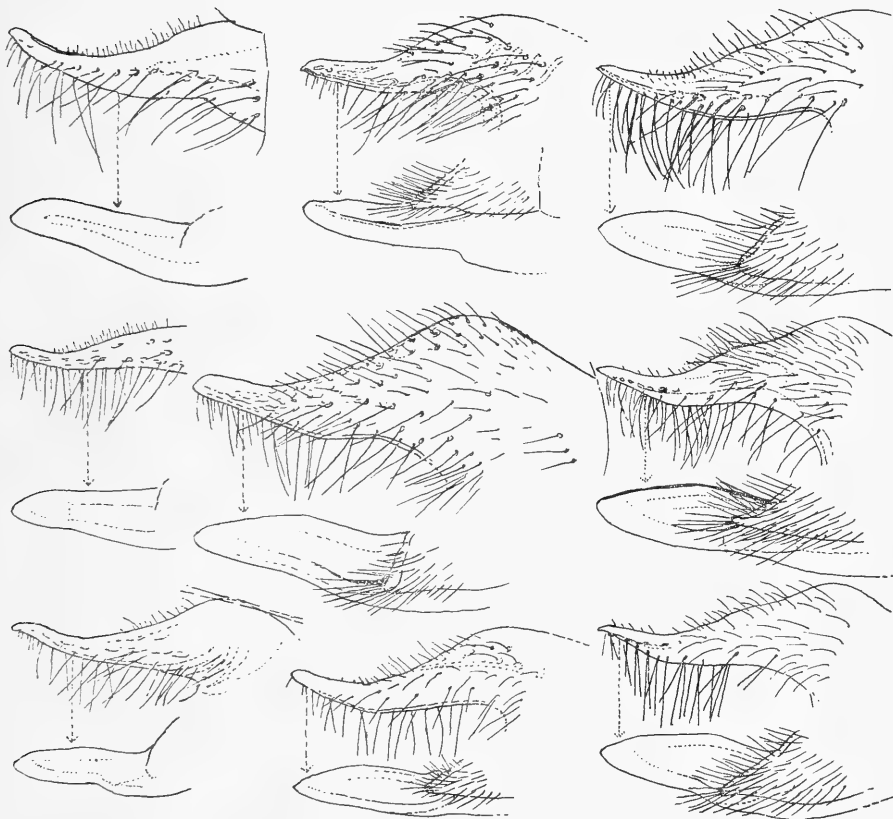


FIG. 2. Side and dorsal views (all to same scale) of right process of sternite 9 of ♂♂ of:  
*Afroleptomydas westermanni* (Wied.) (top left). *Afroleptomydas lanipes* (Bezz.) (top middle). *Afroleptomydas villosus* n.sp. (top right).  
*Afroleptomydas apiformis* n.sp. (middle left). *Afroleptomydas omeri* (Stuck.) (middle middle). *Afroleptomydas anthophilus* n.sp. (middle right).  
*Afroleptomydas boothi* n.sp. (bottom left). *Afroleptomydas fasciatus* (Wied.) (bottom middle). *Afroleptomydas gessi* n.sp. (bottom right).

*Afroleptomydas omeri* (Stuck.) n.comb.

*Leptomydas omeri* Stuckenberg, 1955: 243.

A striking and relatively large, fairly widely distributed species, with striking fulvous reddish hair on the thorax and snow whitish ones at base of abdomen, which is partly montane, occurring in mountainous parts and in valleys between mountains and which sometimes visits flowers, especially those of species of *Mesembryanthemum*. The original description of Stuckenberg was based on the ♂ only. Since then some other ♂♂ and also 3 ♀♀ have been collected.

Superficially the species resembles *rufithorax* and even more so the new species *rufihirtus*. A redescription of the species to include the as yet undescribed ♀ and to compare it with *rufihirtus* is as follows:

*Body* also mainly dark or black, with antennal segment 2 entirely or in part sometimes also reddish as in *rufihirtus*; clubs mainly orange reddish in both sexes; clypeus distinctly yellowish reddish to reddish or reddish brownish like the proboscis below; humeral tubercles yellowish or yellowish reddish in both sexes; sides of thorax above broadly reddish in both sexes, in the ♂ more conspicuously so than in ♂ of *rufihirtus*, and in ♀ without the two submedial, abbreviated, reddish streaks of the ♀ of the latter species; extreme sides of metanotum reddish to a variable extent in both sexes; hind margins of tergites 2-7 in ♂ and 2-6 in ♀ even more broadly yellowish or orange, the basal margin of these bands usually more orange and on sides of 5-7 in ♂ and 5 and 6 in ♀ the bands extend broadly basalwards; pteropleuron, metapleural, hypopleural and metasternal parts to a variable extent and sides of tergite 1 also yellowish brownish, yellowish reddish or reddish in both sexes; bullae large, usually shining black (but sometimes more dark brownish or yellowish brownish or even reddish), narrowly separated above in ♂, usually more broadly so in ♀; last tergite and apical half of penultimate one in ♀ sometimes reddish brownish, but sides of last tergite in ♀ also dark reddish brownish like last sternite; venter pale yellowish brownish in ♂, but sometimes much darker, more dark reddish or castaneous brownish in ♀, the hind margins of sternites broadly yellowish whitish on sides in ♂, the middle part of sternites 2-4 and that of entire 1 being dark or black; hypopygial structures mainly yellowish- or reddish brownish; legs mainly yellowish reddish or reddish brownish in both sexes, the front and middle coxae, however, blackish brown to black.

*Integument* of middle part of frons, postalar calli, scutellum, greater part of pleurae in both sexes, entire tergite 1 and sides of 2 and 3 in both sexes, but sometimes greater part or entire abdomen above and below in ♀, shining; that of tergites 2 and 3 above in both sexes and in some ♀♀ also base of 4 above as well as rest of tergites in ♂, excepting the yellowish rings, dull black and unlike those of *rufihirtus*.

*Vestiture* dense and longish on head, thorax, metanotum, pleurae, tergite 1 and sides of 2 (not on 3), basal half of venter and on coxae (those on thorax in ♀, however, slightly shorter, less dense), mainly fulvous yellowish to strikingly



fulvous reddish, but sometimes slightly paler, more yellowish or yellowish whitish on clypeus in ♀, contrastingly snow whitish on tergites 1 and 2 in both sexes and sometimes also more whitish on head below and behind eyes; relatively dense; shortish hairs discally on tergites 2 and 3 in ♂ appearing dark on dark tomentum, but like rest of hairs on abdomen above tinted pale yellowish whitish, yellowish to fulvous reddish; those on 2-4 discally in ♀ dark, sometimes more dark velvety brownish; the reversed ones on last two segments, however, longer and denser, more fulvous brownish; hairs on venter whitish at base, becoming more fulvous yellowish or reddish posteriorly; hairs on legs relatively dense, but slightly shorter than in *rufihirtus*, in ♂ at least, but entirely fulvous yellowish or reddish.

*Head* with the antennae a little shorter than thorax (excluding scutellum); segment 1 thickened, about 2.5-3 times length of 2; segment 3 elongate, stoutish, a little less than its apical third thickened; club slightly elongate-pyriform, in side view broadest around middle and there more dilated below, shorter than, or sometimes scarcely shorter than, segment 3, its base constricted bottle-neck-like and sometimes with the slightly narrower segment-like articulation between club and segment 3 distinctly evident; proboscis rather stoutish, shortish, shorter than antennal segment 3 and club combined, and longer than vertical length of eyes, about 3.08-4.28 mm, with some long hairs basally below; palps distinct, longer than, sometimes quite twice the length of, antennal segment 2, narrowed apically; postvertical spines present.

*Wings* distinctly tinted yellowish brownish, more so in middle parts and along the veins, slightly darker in ♀ than in ♂, often more spot-like at bases of second submarginal and first posterior cells, and sometimes with apical part of first submarginal cell more darkly infused in ♀, the wings in ♂ appearing less dark than in *rufihirtus*; veins yellowish to yellowish reddish in anterior part, darker, more brownish in hinder and apical parts; second submarginal cell narrowed basally; first posterior cell broadly open apically; apex of discoidal cell distinctly, even if only shortly, stalked; knobs of halteres very dark brown above.

*Legs* relatively long and stoutish, with the hind femora distinctly thickened, their double row of spines reddish or dark reddish; hind tibiae almost straight or only very slightly curved, their spicules stoutish and numerous; basal segment of hind tarsi much longer than claw-segment.

*Oviscape* in ♀ with 7-9 rather broadish and shortish, spatulate, brownish spines on a side.

*Hypopygium* of ♂ as figured by Stuckenberg, with the lobes of tergite 9 angularly pointed apically; sternite 9 rather suddenly narrowed in apical part, conically rounded, more or less transversely wrinkled basally and longitudinally on sides below in apical part, their processes, in side view (cf. text-fig. 2, middle middle) curved slightly upwards in apical third, narrowed and bluntly pointed apically in dorsal view.

From 9 ♂♂ and 3 ♀♀ (♂ holotype, ♀ allotype, 1 ♂ paratype, 4 ♂♂ and 2 ♀♀

in the South African Museum, 2 ♂♂ in the Transvaal Museum and 1 ♂ in the National Museum of Rhodesia).

Length of body: about 22–29 mm

Length of wing: about 15–19 mm

*Distribution*: South-western Cape: Haarlem along Swart- and Langebergen (P. Graham, September 1953) (♂ holotype and 1 ♂ paratype); near Haarlem (C. B. Cottrell, 26th October 1953) (♀ allotype); Seweweekspoort (G. van Son, November 1940) (2 ♂♂); Constable, north of Touws River (South African Museum, December 1962) (3 ♂♂ and 1 ♀ on reddish flowers of a species of *Mesembryanthemum*); western Cape mountains at Voëlvelei between Bains Kloof and Tulbagh Kloof (November 1948) (1 ♂); Pakhuis Pass near Clanwilliam (C. D. Michener, November 1966) (1 ♀). Northern part of Little Karoo: Slypsteen Towerwaterkloof in Willowmore district (South African Museum, October 1938) (1 ♂).

*Afroleptomydas lanipes* (Bezz.) n.comb.

*Leptomydas lanipes* Bezzi, 1924b: 207.

A densely-haired species reminiscent of *westermanni* and *rufithorax* and which is unfortunately represented in the collections before me by ♂♂ only, the unique ♂ holotype and 2 other ♂♂.

Bezzi has given a diagnostic description of it. It is one of the comparatively smallish, asilid-like species of which the typical form, as based on the type, shows the following distinguishing characters:

*Body* shortish, the abdomen stoutish and tapering, mainly dark and habitually held with the apical part bent downwards; head, thorax above, scutellum, metanotum and basal part of abdomen above very dark or blackish; pleural parts and greater part of abdomen above slightly more dark reddish brownish, with very slight purplish reflections; antennae, proboscis below, lower part of humeral tubercles, postalar calli, extreme basal part on sides of tergite 1 and sides of rest of tergites to a variable extent paler, more yellowish- or brownish reddish; hind margin of tergite 1 reddish and those of 2–7 yellowish whitish; bullae orange yellowish; venter yellowish, the hind margins of sternites yellowish whitish; processes of sternite 9 and lobes of tergite 9 mainly yellowish; legs mainly reddish brownish, the femora, especially hind ones, and hind tibiae more yellowish below.

*Integument* of body above, even on thorax, and anterior upper half of pleurae shining, the body above with slight, but distinct, violaceous to bluish green reflections; thorax anteriorly without a submedial patch of dull bloom.

*Vestiture* well developed, the hairs on head, thorax, pleurae, metanotum, tergites 1 and 2 and sides of 3, and on venter long, villose and dense; those on head, humeral tubercles, base of thorax, metanotum, tergites 1 and 2, and on pleurae more whitish; those on disc of thorax yellowish; shorter hairs on rest of abdomen above and longer ones on venter pale yellowish whitish; hairs on legs, especially hind ones, markedly long and dense, villose, those on lower surfaces

of hind tibiae being particularly and conspicuously dense, long and villose, more so than in most other species, and with all the hairs on legs pale yellowish, but those on front coxae whitish.

*Head* with the antennae quite as long as thorax and scutellum; segment 1 thickened, quite 3 times length of 2; segment 3 long and slender, much longer than club, its apical part scarcely thickened, this latter part nearly a third length of segment; clubs prominent, pyriform, broadest beyond middle, from there rapidly and steeply narrowed, more so below, appearing rounded, the terminal prominence small, much smaller and less protruding than in any of the preceding species; proboscis nearly as long as antennae, with some longish whitish hairs basally below; palps a little longer than antennal segment 2, their apical part slender.

*Wings* rather sharply pointed apically, hyaline, but with a faint, diffused, yellowish or yellowish brownish tinge in middle region; veins reddish; first posterior cell apically very broadly touching margin; apex of discoidal cell stalked; knobs of halteres brownish above.

*Legs* with the hind femora distinctly thickened, their double row of spines below yellowish, beginning near base on outer side, on inner side nearer middle, hind tibiae curved; basal segment of hind tarsi subequal in length to claw-segment, with dense hairs below.

*Hypopygium* with the posterior angles of lobes of tergite 9 rather drawn out lobe-like; sternite 9 conical, narrowed and rounded apically, somewhat roughly wrinkled below, their processes, in dorsal view, directed inwards, bluntly rounded apically, shallowly and broadly hollowed above, in side view (text-fig. 2, top middle), with less than apical half slender, straight.

The two other ♂ specimens, taken on the reddish flowers of a species of *Mesembryanthemum*, growing alongside the road between Touws River and Hottentots Kloof to Ceres, are slightly atypically coloured and may be taken to represent a slight colour form (if the unique holotype is not merely a faded specimen). They differ from the type-specimen in having darker legs, of which the hind femora are more extensively coloured above and all the tibiae are darker; the abdomen above also darker, more purplish dark brownish or almost black, rather than dark reddish brownish; a darker venter, not much paler than abdomen above; the wings distinctly more darkly tinted smoky brownish in middle parts and the veins darker; and the hairs along lower part of hind tibiae and to a certain extent on apical half of hind femora darker, more brownish or blackish brownish.

From 3 ♂♂, the holotype and 2 other ♂♂, in the South African Museum.

Length of body: about 11·5–14 mm

Length of wing: about 7·5–8·25 mm

*Distribution*: South-western Cape: Triangle (L. Péringuey, January 1885); Half-way on road between Touws River and Hottentots Kloof on reddish flowers of a species of *Mesembryanthemum* (South African Museum, December 1962).

*Afroleptomydas pseudolanipes* Beq.

*Afroleptomydas pseudolanipes* Bequaert, 1963: 23, fig. 6, 3.

A smallish, densely-haired ♂ specimen, with relatively shortish, stoutish abdomen and asilid-like appearance in the collections before me, is I think another representative or slightly colour-form of the species *pseudolanipes* described by Bequaert from South West Africa. It resembles *lanipes* but differs from the latter in the following respects:

*Body* mainly black, without even faint violaceous reflections above; clypeus also dark; entire humeral tubercles dark and postalar calli also much darker; pleurae much darker or black; extreme sides only of tergites 1-5 obscurely paler, more dark reddish brownish, not so conspicuously pale reddish brownish as in *lanipes*; hind margin of tergite 2 discally more orange yellowish; bullae orange yellowish, larger, the space between them less; hind margins of tergites 3-7 more whitish; venter also yellowish, but sternites 6-7 or 8 dark or blackish brown, and those of sternites on sides also whitish; sternite 9 very dark reddish brownish; legs with the front and middle femora darker, more castaneous brownish, only slightly more yellowish below; hind femora much paler, very pale yellowish or luteous basally and on inner and lower parts, the outer and upper apical half dark castaneous brownish; tibiae yellowish above and brownish below, the hind ones more pale reddish behind in basal half.

*Integument* of body above, of middle anterior half of pleurae and of hind femora shining, as in *lanipes*, also without any submedial patch of dull bloom on thorax anteriorly.

*Vestiture* as long and as dense as in *lanipes*, that on tibiae, however, slightly shorter, and hairs on inner sides of hind tibiae, though as dense and also perpendicular to surface, distinctly shorter; all the hairs on front part of body and base of abdomen, including those on thorax above, entirely snow whitish, not yellowish on thorax above as in *lanipes*; short, dense ones discally on tergites 3-5 not yellowish, but fulvous brownish; rest of hairs on abdomen above and below slightly denser and whitish; those basally and on inner sides of hind femora and on hind tibiae whitish, only those on outer and apical half above of hind femora fulvous.

*Head* with the interocular space on vertex relatively wider; antennae (damaged in specimen, segments 1 and 2 missing and only segment 3 and club have been gummed on card), with segment 3 relatively much shorter, though also longer than inflated pyriform club which is also much rounded apically, with non-prominent apical prominence; proboscis a little shorter, but still much longer than vertical length of eye, about 2.6 mm long (quite 3.6 mm in *lanipes*), also with some longish whitish hairs basally below.

*Wings* distinctly less pointed apically, entirely clear hyaline, with a very faint whitish subopacity, not tinted yellowish in middle; veins yellowish reddish; first posterior cell apically very much narrower, about or almost touching costal margin at a point; discoidal cell narrower, longer, though also stalked; first basal cell also more elongate, narrower; knobs of halteres only

faintly darker above.

*Legs* relatively shorter than in *lanipes*, the hind femora also distinctly thickened, their double row of spines below yellowish reddish; front and middle tibiae curved, hind ones more straight than in *lanipes*, also shorter, rather markedly short, with much shorter spicules; front tarsi even shorter than in *lanipes*, basal segment of hind ones without longish hairs (rest of segments missing in specimen).

*Hypopygium* with the lobes of tergite 9 relatively small, equilaterally triangular, much smaller than in *lanipes*; sternite 9 similar, the processes similar, but their slender apical part, in side view, much longer, slightly more distinctly curved upwards apically, the dorsal depression not extending so near apex and apical part of processes more distinctly or more coarsely punctured.

Length of body: about 12 mm (Bequaert's specimen given as 13 mm)

Length of wing: about 9 mm

*Distribution*: Southern South West Africa: Great Karas Mountains (Museum staff, November 1936); Aus (R. E. Turner, December 1929) (♂ holotype described by Bequaert).

*Afroleptomydas fasciatus* (Wied.) n.comb.

*Midas fasciatus* Wiedemann, 1828: 243. Wiedemann, 1829: 15, pl. 54, fig. 17.

*Cephalocera fasciata* Westwood, 1841: 55. Walker, 1854: 374. Loew, 1860: 253. Gerstaecker, 1868: 78

*Leptomydas rufithorax* Bezzi (*nec* Wiedemann), in part, 1924b: 207. (n.syn.)

*Leptomydas nivosus* Bezzi (*nec* Gerstaecker), 1924b: 210. (n.syn.)

The true specific identity of the *Midas fasciatus s.str.* of Wiedemann appears to be uncertain. Loew's redescription of this species, which he assigned to *Cephalocera*, differs materially from that given by Wiedemann in 1828. Wiedemann did not know from what country his specimens came, but Loew states that the species comes from the Cape and was collected by Tollini. It is possible that Loew based his diagnosis only on Wiedemann's short and inadequate description, and mistook the representatives of quite another species he had before him for that of Wiedemann. The problem of identity was still more complicated by Bezzi who obviously misinterpreted both Wiedemann and Loew's descriptions and mistook an entirely different species, not belonging to the genus *Afroleptomydas* (olim *Leptomydas*), for *fasciatus* and which he designated as the type-species of his new genus *Nomoneura*, an error in specific identification on his part which also misled Bequaert in 1938 (343). The position is thus very confusing. Provisionally I am accepting Loew's interpretation of this species which, however, belongs to *Afroleptomydas* and not *Cephalocera*, and though the specimens before me, which show a certain amount of variability, do not agree in all respects with the redescription of Loew they nevertheless agree sufficiently to assign them to the same species. Two ♂♂ of this distinctly variable species were mistaken for *nivosus* (Gerst.) by Bezzi. The latter species which Gerstaecker described from a ♂ specimen, however, appears to be only a dark

form of the ♂ of *humeralis* which Gerstaecker described from a ♀ only. Bezzi also mistook a ♀ specimen of this species for the ♀ of *rufithorax*, the true identity of which at that time was unknown to him. The species *fasciatus*, as based on the material before me, is characterized as follows:

*Body* mainly dark or black, the pleurae and abdomen above in ♂, and especially in ♀, tending to be more dark piceous brownish, reddish brownish to blackish brown, but in some ♀♀ even mainly yellowish; antennae reddish brownish to blackish brown in ♂, sometimes more yellowish in ♀, the clubs mainly paler reddish brownish to orange brownish in ♂, mainly orange yellowish in ♀; clypeus dark to reddish brownish in ♂, more consistently reddish brownish to yellowish in ♀; proboscis below reddish brownish in ♂, more extensively yellowish or yellowish brownish in ♀, humeral tubercles yellowish in both sexes; sides of thorax above in ♂ either entirely dark or reddish to a variable extent, broadly reddish or reddish brownish in ♀, in some ♀♀ also with two submedial reddish discal streaks and with the base reddish to a variable extent; hind margin of scutellum sometimes yellowish in ♀; metanotum in ♀ reddish on sides, sometimes greater lateral part reddish, usually dark in ♂; metapleural and metasternal parts and sometimes also pteropleural part, especially in ♀, broadish sides of tergite 1 and to a variable extent those of 2-4 and usually extreme sides of rest of tergites in ♂, broadish sides of abdomen in ♀ up to tergite 7 to a variable extent and greater part of or entire venter yellowish or pale ochreous yellowish; hind margins of tergites 2-7 in ♂ and 2-6 in ♀ conspicuously whitish or ivory yellowish, broader in ♀; hind margin of tergite 1 in ♀ usually dark reddish; bullae conspicuously orange yellowish to reddish, smaller and wider apart in ♀; hind margins of sternites whitish on sides; last abdominal segment in ♀ reddish- or yellowish brownish and at least apical half of second last yellowish; hypopygial structures extensively pale yellowish brownish; legs extensively yellowish, the front and middle coxae, in ♂ at least, and upper or upper and inner surfaces of hind femora, especially in ♂, and in ♂ sometimes to a lesser extent also upper surfaces of front and middle ones and sometimes even hinder surfaces of hind tibiae brownish, the claw-segment of tarsi also darkened to a variable extent.

*Integument* of middle part of frons, clypeus, middle and anterior upper part of pleurae, to a certain extent metanotum, and abdomen shining, the aciculate microsculpture and setiferous puncturation on abdomen above in ♂ render its abdomen slightly less shining than in ♀; thorax above dull, with fine setiferous puncturation.

*Vestiture* in ♂ on the whole rather longish and dense, longish and dense also on tergites 1 and 2 and sides of 3, slightly shorter and less dense in ♀; hairs on disc of thorax, though shorter than on head and base of abdomen, still rather long and dense in both sexes, not consistently arranged in definite streaks; the hairs mainly snow whitish, but those on disc of thorax and, in ♀, sometimes on vertex also slightly more greyish yellowish to yellowish or in some ♀♀ even almost rufous; rest of fine and shortish, rather dense, hairs on abdomen above in ♂, the longish ones even on sides of tergites 4 and 5 and even 6 in ♂, and

longish ones on venter whitish, those on abdomen in ♀ much shorter, sparser and also whitish, but longer and denser, reversed ones on last two segments more yellowish to fulvous; hairs on legs longish and dense, slightly shorter and less dense in ♀, entirely whitish, though in ♀ sometimes with a slight yellowish sheen.

*Head* with the antennae distinctly longer than thorax (excluding scutellum); segment 1 rather shortish, thickened, about 2–3 times length of 2; segment 3 elongate, much longer than club, its apical part slightly thickened; clubs about  $\frac{1}{4}$  shorter than segment 3, pyriform; proboscis rather longish and slender, subequal in length to thorax (excluding scutellum), apparently without any longish hairs below; palps about as long as or slightly longer than antennal segment 2, with yellowish hairs apically in ♀; post-vertical spines present, yellowish to yellowish reddish.

*Wings* faintly, but distinctly, tinted yellowish, more so in middle or anterior parts, in some ♀♀ distinctly more yellowish brownish, in both sexes with a distinct whitish subopacity; veins pale yellowish reddish or even pallid; first posterior cell broadly open on costal margin; apex of discoidal cell shortly stalked; knobs of halteres brownish above.

*Legs* with the hind femora distinctly thickened, less so in ♀, their double row of spines below yellowish reddish to reddish; basal segment of hind tarsi scarcely or only a little or distinctly longer than claw-segment.

*Oviscape* in ♀ with 7 or 8 brownish to reddish brownish spines on a side.

*Hypopygium* of ♂ with the posterior angles of lobes of tergite 9 sharply angular; sternite 9 conical, narrowed and bluntly rounded apically, transversely wrinkled basally below, more longitudinally towards apex, its processes, in side view (cf. text-fig. 2, bottom middle), curved upwards in apical part, rather sharply pointed apically in dorsal view.

From 4 ♂♂ and 7 ♀♀ in the South African Museum, 1 ♂ in the University of Stellenbosch, and 1 ♀ in the National Museum of Rhodesia.

Length of body: about 14.5–20 mm

Length of wing: about 11–14 mm

*Distribution*: South-western Cape: Cape Town (December); Rawsonville (January); Matjiesfontein (November).

As is evident from the description, this species is slightly variable in coloration, in the colour of its vestiture on thorax, and in the intensity of the wing-infuscation.

It may be easily confused with the other Cape Peninsula species *rufithorax* (Wied.) as was done by Bezzi in the case of the ♀. The latter species, however, has reddish or fulvous hairs even on body below, base of abdomen, and on the legs, has the discal parts of hind margins of the tergites darkened, has more darkly infused wings, relatively thicker hind femora, etc.

The ♀ specimen in the National Museum of Rhodesia is labelled as coming from Van Stadens Pass in the Eastern Province. This locality label is obviously wrong, for this species is restricted to the Western Cape Province.

*Afroleptomydas flavirostris* (Bezz.) n.comb.

*Leptomydas flavirostris* Bezzi, 1924b: 214.

Two ♀♀ from Hex River in the South African Museum, one of which is badly damaged, were described under this name by Bezzi. In a footnote a ♂ specimen without locality was doubtfully referred by him to this species. A careful examination of this latter specimen and a comparison of it with ♂♂ of *humeralis* Gerst., however, shows that it belongs to an undescribed species in the *humeralis* section. The ♂ of *flavirostris* is therefore still unknown. This species obviously comes in the same category as the western Cape species *fasciatus* with yellowish hairs on the thorax and resembles it superficially. Supplementing Bezzi's good description of the ♀ and comparing the ♀♀ before me with ♀♀ of *fasciatus*, the following comments concerning this species may be made:

*Body* and legs similarly coloured, though with a tendency for abdomen above to be slightly more pale reddish brownish; the yellowish whitish or yellowish hind margins of tergites distinctly and conspicuously broader, becoming more so posteriorly, and those of 6 and 7 occupying quite half of tergites; bullae much darker, more blackish brownish, dark piceous brownish to almost black, not wine reddish or orange brownish, and very much nearer together above, the space between them much less than twice vertical length of bullae.

*Integument* of abdomen above slightly less shining, due to slightly coarser transverse wrinkles.

*Vestiture* very similar, as long and as dense, also yellowish or fulvous yellowish on vertex and thorax above, but fine hairs on abdomen, other than those basally, distinctly longer, more conspicuous, being especially more conspicuous on tergites 3 and 4, also rendering these tergites slightly duller and less shining.

*Head* with the vertex on each side usually more consistently infused with reddish to a variable extent; antennae distinctly longer than in *fasciatus* and, though a little longer than thorax (excluding scutellum), the latter itself is slightly longer than that of *fasciatus*; segment 1 thickened, about 3.3 times length of 2; segment 3 distinctly much longer and more slender, much longer than club; the latter also relatively longer, more elongate-pyriform; proboscis about as long as in *fasciatus*, but on the whole more slender, shorter than antennae (not as long as latter as stated by Bezzi) and not always entirely yellowish as the specific name implies, usually only yellowish below, without any longish hairs basally below; palps distinct, longer than antennal segment 2.

*Wings* very similar, with a similar milky whitish subopacity and sometimes also distinctly tinted yellowish, but, if so, to a slightly lesser extent; venation similar.

*Legs* with the hind femora also slightly thickened, their double row of spines, below reddish; basal segment of hind tarsi longer than claw-segment.

*Oviscape* with 7 or 8 spines on a side.



From 4 ♀♀ (original holotype, a paratype, and 2 other ♀♀) in the South African Museum.

Length of body: about 17·5–20 mm

Length of wing: about 13–14 mm

*Distribution*: South-western Cape: Hex River near Worcester (L. Péringuey, December 1883) (holotype); Hex River (L. Péringuey, 1884) (paratype and 2 ♀♀).

*Afroleptomydas hirtipes* n.sp.

A distinct species with yellowish hair on thorax and very densely-haired legs which resembles *flavirostris* and ♀♀ of *fasciatus* superficially, but unfortunately represented by the ♀ only in the collections before me. The ♀ is characterized as follows:

*Body* mainly very dark or black, including humeral tubercles, sides of thorax, metanotum, pteropleural and posterior parts of pleurae and sides of base of abdomen (parts which in *flavirostris* and *fasciatus* are yellowish); antennae very dark blackish reddish; clypeus dark reddish; hind margin of tergite 1 dark reddish; hind margins of 2–7 fairly broadly yellowish whitish or yellowish, those on sides of 6 and 7 broader, extending more backwards along lateral margins; last segment reddish brownish; bullae very elongate vertically, rather narrowish, black or black anteriorly and reddish brownish in hinder half, separated above by a space much narrower than vertical length of bullae; venter differing from that of *flavirostris* and *fasciatus* in being mainly black, only last three sternites mainly, or with much, yellowish, the hind margins of sternites also broadly yellowish; legs mainly yellowish, the coxae mainly dark reddish brownish, and with an obscure faintly brownish streak along inner middle part of hind femora.

*Integument* of middle part of frons, middle part of clypeus, proboscis, hinder part of thorax above, postalar calli, scutellum, pleurae in part and abdomen above shining, the latter with slight bluish reflections.

*Vestiture* with the hairs on head, thorax, pleurae, metanotum and tergites 1 and 2 longish, dense, comparatively longer and denser and more villose than in either of the other two species; hairs on legs markedly dense and long, much longer than in the other two species or any of the known ♀♀ in this section, more like those of ♂♂ of long-haired forms; all these longish hairs mainly snow whitish, but those on vertex and thorax above tinted distinctly greyish, greyish yellowish to yellowish; rest of whitish hairs on abdomen above, though shorter than at base, distinctly denser and longer than in *flavirostris*, those on sides of tergites 3 and 4 also longer than on rest of tergites; reversed ones on last two tergites and last three sternites distinctly more yellowish; longish hairs on venter and dense ones on legs whitish, but those on front parts of coxae sometimes tinted slightly yellowish.

*Head* with the antennae rather stoutish, longer than thorax (excluding scutellum); segment 1 thickened, about 3, or a little more, times length of 2; segment 3 rather stoutish, longer than club, thickened in its apical third; club

distinctly more elongate, more subamphoriform than in *flavirostris*; clypeus rather prominent; proboscis rather stoutish, nearly or only a little shorter than thorax (excluding scutellum), with some longish hairs basally below; palps distinct, longer than antennal segment 2; postvertical spines present, yellowish.

*Wings* hyaline, but distinctly tinted yellowish in the middle parts, especially along veins, without the distinct milky whitish subopacity of *flavirostris* and *fasciatus*; veins yellowish; first posterior cell broadly open apically on costal margin; apex of discoidal cell stalked; knobs of halteres darkened above.

*Legs* with the hind femora distinctly thickened, their double row of spines below yellowish reddish; hind tibiae rather stoutish; basal segment of hind tarsi distinctly much longer than claw-segment.

*Oviscape* with 7 or 8 elongate-spatulate, yellowish spines on a side.

From 2 ♀♀ (holotype in the South African Museum and paratype in the Albany Museum).

Length of body: about 18.5–19 mm

Length of wing: about 13.5–14 mm

*Distribution*: South-western Cape: Hex River near Worcester (January 1884). The paratype in the Albany Museum was wrongly identified both as *Cephalocera longirostris* Wied. and *Ectyphus pinguis* Gerst. with both genera and species of which it has no connection or resemblance whatever.

#### *Afroleptomydas gigantulus* n.sp.

A very large ♀ specimen in the South African Museum, from the same locality as the preceding species *hirtipes*, is superficially almost indistinguishable from the latter and may almost be taken as representing only a large form or variety of *hirtipes*. It however appears to differ from the latter in the following respects:

*Body* very much larger, more or less similarly coloured; hind margin of tergite 1 dark like the rest of surface; those of tergites 2–7 relatively broader, more ring-like yellowish whitish; last tergite more ochreous yellowish, and last sternite yellowish, not reddish brownish; spines on oviscape more brownish.

*Vestiture* as long and as dense and similarly coloured, though apparently slightly denser on abdomen and legs.

*Head* with the antennae relatively longer; segment 3 proportionally longer as 1.22:1, and club also relatively longer, quite 3 times combined length of segments 1 and 2; proboscis slightly longer, about 4.52 mm, without any long hairs basally below, its labella with slightly coarser striae and microsculpture.

*Wings* similarly tinted faintly yellowish in middle parts; apical stalk of discoidal cell, however, very much shorter, the cell almost meeting third posterior cell at a point.

*Legs* similar, but hind femora in addition to double row of spines below also has a few distinct spines in pairs on their outer upper middle aspect (not found in any other of the known species of *Afroleptomydas*); hind tibiae with distinctly more numerous, longer and stouter spicules on outer lower apical

part, and with distinctly more, about 8, spicules in the subapical circlet.

Length of body: about 25 mm

Length of wing: about 16.5 mm

*Distribution*: South-western Cape: Hex River near Worcester (January 1884).

*Afroleptomydas villosus* n.sp.

A single ♂ specimen from Rawsonville in the collections before me may eventually prove to be the ♂ of *hirtipes*, but as it appears to differ in certain non-sexual respects from the ♀ of *hirtipes* it is provisionally referred to a separate species which differs from the latter in the following respects:

*Body* with the humeral tubercles yellowish, not dark; posterior episternal and metasternal parts and extensive anterior basal part of tergite 1 yellowish; hind margins of tergites 2-7 yellowish whitish, those of 5-7 being slightly margined with orange across basal parts; bullae as in *hirtipes* and *gigantulus*; venter entirely yellowish and broadish whitish hind margins of sternites less broad and, contrary to those of *hirtipes*, dark in middle; hind femora more distinctly and more broadly and extensively darkened along their inner upper and apical parts above.

*Vestiture* markedly dense and longish, denser and more villose than in preceding two species, the hairs on abdomen markedly dense and long, even much denser and longer than in ♂♂ of many other species, those on sides of tergites 3 and 4 also dense and longish, more so than in ♂♂ of *fasciatus* and related species; rest of snow whitish hairs on abdomen above also markedly dense and longer than in any of the ♂♂ in this section; hairs on venter denser and longer than in ♀ *hirtipes* and even in other ♂♂ in this section, tinted slightly more yellowish posteriorly and on lower parts of hypopygium; hairs on vertex and thorax above faintly yellowish; hairs on legs characteristically dense and long, denser and longer, more villose than in most ♂♂ of this section.

*Head* with the antennae unfortunately missing in the specimen; proboscis rather stoutish, about 4 mm long, without any longish hairs basally below, the labella finely striate.

*Wings* very faintly tinted yellowish; veins yellowish in anterior part.

*Legs* with the hind tibiae rather markedly stoutish.

*Hypopygium* with the lobes of tergite 9 less sharply pointed than in *fasciatus*; sternite 9 broader than in latter species, less conically narrowed in apical half, with longer and denser hairs below, their prongs relatively shorter, in profile (text-fig. 2, top right), less slender in apical part, and with rather dense and longish bristly hairs below.

The unique type in the South African Museum.

Length of body: about 18 mm

Length of wing: about 13 mm

*Distribution*: South-western Cape: Rawsonville (J. J. S. le Roux, December 1943).

*Afroleptomydas anthophilus* n.sp.

This species of which all the specimens, but two, were collected on the reddish flowers of a species of *Mesembryanthemum* also belongs to the *fasciatus* subsection and is characterized as follows:

*Body* mainly dark or black; antennae dark or blackish, segment 2 and sometimes apex of 1 tending to be reddish to a variable extent, the clubs orange reddish, their sensory area in apical half, however, darkened; clypeus mainly or entirely dark; proboscis reddish brownish below; humeral tubercles and entire pleurae dark or blackish; hind margins of tergites 2-7 in both sexes distinctly yellowish whitish or yellowish, more conspicuously so in ♀, the sides of margins broadened; tergite 1 usually entirely black on sides, but in a slight colour form is yellowish anteriorly and posteriorly, and rest of tergites usually yellowish on sides to a variable extent, especially in apical half, blending with the broadened sides of yellowish whitish hind margins; last tergite in ♀ mainly yellowish brownish; bullae shining black, sometimes with the narrow anterior margin more yellowish, smaller in ♀ and, in ♂, usually closer together discally; venter mainly yellowish or yellowish brownish in ♀, but in ♂ often darkened in apical half or with bases or basal halves of sternites darkened to a variable extent; hind margins of sternites broadly whitish to yellowish whitish, more so in ♀; male genital structures mainly yellowish; legs mainly yellowish, but front and middle femora with a dark streak above and hind ones darkened or blackened to a variable extent along upper and inner parts except in basal part, and the hind coxae yellowish below in apical part.

*Integument* of middle part of frons, the clypeus, proboscis, abdomen above shining in both sexes, the abdomen more so in ♀, that of thorax above and metanotum dull; pleurae slightly duller, more sub-shining than in most other species of this section, due to slightly more evident greyish tomentum.

*Vestiture* fairly dense and longish, the hairs on sides of tergites 1, 2 and 3 in both sexes, to a lesser extent also on 4 in ♂, longish, but longer in ♂; hairs on hind femora rather dense, with longish ones in basal half and along inner side, with longish ones also along lower inner side of hind tibiae; the hairs on vertex, disc of thorax (not in distinct streaks), metanotum, and tuft above posterior pleural spiracle buff-coloured, yellowish or even fulvous yellowish to a variable extent, the tuft at base of thorax above, however, more whitish; rest of hair on head and body whitish, though the shorter ones on abdomen above and on hypopygium in ♂ at least often with a slight pale sericeous yellowish tint; reversed hairs on last two abdominal segments in ♀ rather sparse, more yellowish brownish like those on genital segment; hairs on legs mainly whitish, though shortish ones on front and middle tibiae appear more faintly yellowish in certain lights.

*Head* with the antennae distinctly shorter than thorax (excluding scutellum), about 3.5-3.96 mm long; segment 1 about 2.5-3 times length of 2; segment 3 distinctly longer than club, distinctly thickened apically; club, in side view, almost spindle-shaped, the middle more rapidly broadened below,

broadest at about or a little beyond, its base narrowly constricted, the sensory area large, occupying most of apical half below; proboscis about 3·28–4 mm long, almost subequal in length to antennae, with some longish hairs sometimes evident basally below; palps distinct, slightly longer than antennal segment 2.

*Wings* greyish hyaline in ♂ and with a slight milky whitish tint, distinctly tinted faintly yellowish brownish in ♀, especially in middle parts, and slightly darker around basal cross-vein and basal appendix of second submarginal cell; veins with the costal, basal parts of 2, 3 and 4, and sometimes the fifth, pale reddish yellowish, the rest darker brownish; first posterior cell sometimes tending to be only narrowly open apically, in one specimen even narrowly subtending on costal margin; apex of discoidal cell shortly stalked; knobs of halteres darkened or blackish above.

*Legs* with the hind femora distinctly subclavately thickened in both sexes, their double row of spines below rather stoutish, yellowish to yellowish brownish, beginning near base and situated on rather prominent tubercles; spicules on tibiae well developed, those on hind ones rather numerous along outer apical half, and hind tibiae slightly curved forwards near apex; basal segment of hind tarsi longer than claw-segment.

*Oviscape* in ♀ with about 9 brownish spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 triangular, the posterior angle rather sharply acute and slightly produced; sternite 9 bluntly conical, its processes, in side view (text-fig. 2, middle right), slightly S-curved, gradually narrowed apically, in dorsal view rather broadish, bluntly pointed apically; phallic tubes rather sharply pointed apically.

From 10 ♂♂ and 3 ♀♀ in the South African Museum.

Length of body: about 18–22·5 mm

Length of wing: about 12–16 mm

*Distribution*: South-western Cape: half-way between Touws River and Hottentots Kloof (South African Museum, December 1962) (♂ holotype, ♀ allotype, 7♂ and 2♀ paratypes); 18 miles south east of Touws River (C. D. Michener, 12th November, 1966) (1♂ paratype). Southern Koup: Laingsburg (R. Lightfoot, November 1910) (1♂ paratype).

The ♂ paratype from Laingsburg appears to represent a slight northern colour form, differing from the typical ♂♂ in having the abdomen above slightly more dark castaneous brownish than blackish; sides of tergite 1 distinctly yellowish anteriorly and posteriorly, and extreme sides of the other tergites slightly more extensively yellowish; venter mainly yellowish; and hind coxae more extensively yellowish below.

From *fasciatus* (Wied.) this species may at once be distinguished by the dark humeral tubercles, dark sides of thorax, entirely dark pleurae, black bullae, less extensive yellowish on sides of abdomen, and denser and longer hairs on legs.

From ♀♀ of *hirtipes* and *gigantulus* the ♀ may at once be distinguished by the comparatively much shorter antennae of which segment 3 is not longer (usually shorter) than interocular space on vertex, and the shorter, more orange yellow-

ish clubs; more extensively yellowish venter; and more extensively darkened hind femora.

*Afroleptomydas occidentalis* n.sp.

A unique ♂ specimen in the South African Museum, from the southwestern coastal region, appears to be a new species which shows some resemblance to *fasciatus*, *villosus* and related forms.

It is characterized as follows:

*Body* mainly black; antennae black, but clubs showing dark reddish brownish across broadened middle part; proboscis black, tinted slightly reddish brownish along ventral part; clypeus black; humeral tubercles yellowish brownish, the sides of thorax above however entirely black; postalar calli very dark reddish black; metanotum entirely black; metapleural parts in front of and below halteres, sides of tergite 1, metasternal part and hind coxae reddish brownish; sides of tergites 2-7 yellowish brownish, more or less intramarginally so, those of 5-7 more broadened postero-laterally; segment 8 and hypopygial structures, as well as entire venter, also yellowish brownish; bullae elongate vertically, narrowish, very dark reddish blackish or piceous, narrowly separated above; hind margins of tergites 2-7 whitish, broadened on sides, especially across 2 and 3, those of 4-7 only narrowish whitish discally, bounded and encroached upon by yellowish on sides; extreme sides of hind margins of sternites also whitish, those of 5 and 6 obscurely extending to middle; legs almost entirely yellowish brownish, only front and middle coxae and a streak along inner surface of apical halves of hind femora and extreme upper articulating bases of hind tibiae dark or blackish.

*Integument* of central frontal ridge, clypeus, head below, proboscis, greater part of pleurae, postalar calli, scutellum, tergites 1 and 2, bullae and basal parts of 3 and 4 highly shining; integument of thorax above, under the hairs, subshining; metanotum also subshining to a certain extent; rest of tergites 4-7 and rest of sternites also shining to a certain extent; legs also shining; abdomen with fairly dense setiferous puncturation, slightly less dense on tergites 1 and 2, those on rest of tergites in distinct fine cross striae, more evident and denser in hind halves where the integument also appears slightly less shiny.

*Vestiture* slightly less dense than in *fasciatus*, very much less so than in *villosus*; hairs on vertex, sides of frons, antennal segment 1, upper part of clypeus, fairly dense ones on thorax above, on metapleural part in front of halteres yellowish; those on sides of face and clypeus, on head below, propleural part, extreme base of thorax above, postalar calli, scutellum, metanotum, longish and dense ones on sides of tergites 1 and 2, slightly shorter ones on sides posteriorly of 3-5, less dense or sparser ones on sternites (becoming progressively shorter posteriorly), those on metasternal part, and to a certain extent on hind coxae, whitish to snow whitish; shortish, decumbent hairs on discal parts of tergites 2-7 appearing more greyish yellowish or sericeous yellowish in certain lights; those on hypopygium not very dense or long, gleaming more sericeous

yellowish; hairs on legs not very long, but fairly dense, with longish ones only on coxae, but especially along inner surfaces of hind tibiae, and some sparse ones along inner faces of hind femora, with all these hairs, as well as the shortish dense ones on legs, appearing whitish in certain lights, but gleaming slightly more sericeous yellowish in others; hairs on front and middle coxae and posteriorly on hind coxae gleaming more fulvous; spines and spicules on legs yellowish reddish; tomentum on head greyish whitish; that in 4 faint longitudinal streaks on thorax above greyish; that on propleural, pteropleural and meta-pleural parts sparse, greyish whitish.

*Head* with the interocular space on vertex wider than that on head below; antennae subequal in length to thorax (excluding scutellum); segment 1 thickened, about 2.5 times length of 2; segment 3 longer than club, thickened segment-like in a little more than apical third, slightly longer than interocular space; club pyriform, broadest a little beyond middle (above) and at about middle (below) in side view, very slightly constricted basally, its sensory area large, occupying about apical half on lower aspect; proboscis stoutish, subequal in length to vertical length of eyes, about 2.8 mm long; palps distinct, quite as long as second antennal segment.

*Wings* clear hyaline, but with a scarcely perceptible yellowish tinge across basal parts of marginal and first submarginal cells to base of third posterior cell; apex of first submarginal cell narrower than that of second submarginal; first posterior cell broadly open apically on costal margin; discoidal cell shortly stalked apically; third posterior cell sausage-shaped, almost equally narrowed apically and basally; knobs of halteres darkened.

*Legs* with the hind femora clavately thickened, their double row of spines below on tubercles and the outer row beginning nearer base and also with more spines; spicules on tibiae well developed, those on hind ones stouter; basal segment of hind tarsi subequal in length to claw-segment.

*Hypopygium* similar to that of *fasciatus*, with the lobes of tergite 9 however rather narrowly produced tongue-like apically; sternite 9 more bluntly or truncately rounded apically than in *fasciatus*, its processes, in side view, more slightly S-curved, the slender apical part slightly upcurved, more gradually slender for a longer distance; aedeagal apparatus relatively shorter, the phallic tubes and epimere relatively shorter, the latter less rapidly broadened apically and projecting less beyond phallic tubes.

Length of body: about 20 mm

Length of wing: about 12 mm

*Distribution*: Western coastal region: Velddrif on the coast at the mouth of the Berg River (C. D. Michener, 5th November 1966).

Apart from the few differences already mentioned, this ♂ differs from ♂♂ of *fasciatus* in the more shiny integument under the hairs on the thorax, the distinctly yellowish hairs on thorax above, entirely yellowish brownish legs, with much shorter hairs on the femora, darker bullae, shorter and stouter proboscis, not slightly milky whitish wings, etc.

From *villosus* it may at once be distinguished by the distinctly less dense and not villose vestiture.

From *anthophilus*, which it also resembles superficially, it differs in having yellowish humeral tubercles, more yellowish metapleural parts and sides of abdomen, and in having no dense longish hairs on femora.

The proportionally shorter antennae, longer proboscis, yellowish hairs on thorax above, shorter hairs on abdomen, absence of longish hairs on sides of tergite 3, darker bullae, more extensive yellowish on sides of tergites 3-7, etc., distinguish it from *capensis*.

*Afroleptomydas gessi* n.sp.

Another new species with yellowish hair on thorax above which resembles and comes in the same category of *fasciatus* and *anthophilus*, and which may be looked upon as the near Eastern Province coastal representative of *fasciatus*. It agrees with and differs from the latter in the following respects:

*Body* more consistently mainly very dark blackish brown to black; antennae mainly black, only the clubs dark reddish apically in ♂, paler orange reddish in ♀, though not so livid as in ♀ *fasciatus*; clypeus entirely dark or castaneous brownish in both sexes; humeral tubercles and postalar calli in ♂ entirely dark, the apex and outer hind margin of humeral tubercles and postalar calli in ♀ obscurely reddish or reddish brownish; sides of thorax in both sexes entirely dark, without any reddish; metanotum black in both sexes; only posterior metapleural and metasternal parts in ♂ and, in ♀ sometimes also metapleural part in front of halteres, yellowish brownish or reddish brownish, and on abdomen only basal lateral part of tergite 1 yellowish in both sexes, not on sides of most tergites as in *fasciatus*; hind margins of tergites 2-7 in ♂ and 2-6 in ♀ also whitish or ivory yellowish, broader in ♀; hind margin of tergite 1 black in both sexes; bullae mainly shining black, sometimes, however, deeply dark reddish, more narrowly separated above in both sexes than in *fasciatus*; venter mainly reddish brownish, the hind margins of sternites whitish on sides, darker medially; outer part of lobes of tergite 9, processes of sternite 9 and sternite 9 itself in ♂ reddish brownish; last abdominal segment in ♀ either reddish brownish or with much reddish brownish on sides, and tergite 7 yellowish in apical half or at least broadly so across apical part; legs usually more yellowish brownish than yellowish, the front and middle coxae dark or black in both sexes, the upper surfaces of front and middle femora to a variable extent, especially in ♂, and to a variable extent upper and inner and outer apical halves or more of hind ones in both sexes, as well as a streak on outer and inner apical half of hind tibiae, especially in ♂, dark blackish brown to almost black.

*Integument* of middle part of frons, clypeus, postalar calli, scutellum, anterior middle parts of pleurae and abdomen above in both sexes even more brilliantly shining than in *fasciatus*.

*Vestiture* with the hairs as long and dense as in *fasciatus*, the long ones also mainly whitish, but those on vertex and thorax above in both sexes greyish



yellowish to yellowish or in ♀ sometimes even more fulvous, the hairs on antennae, frons, upper part of clypeus in ♀ sometimes also more greyish yellowish than white; fine and shorter ones on abdomen of ♂ whitish; reversed hairs on last two abdominal segments and last three sternites in ♀ yellowish or golden, the rest also whitish; hairs on coxae, especially front faces, yellowish to golden, more so in ♀; rest of hairs on legs whitish, but those on outer sides of hind femora and on tibiae in both sexes gleaming slightly yellowish, more golden in ♀, where most of the shortish ones on front and middle femora also appear more golden.

*Head* with the antennae subequal in length to or a little longer than thorax (excluding scutellum); segment 1 thickened, about 3 times length of 2; segment 3 elongate, slender, longer than club, a little less than its apical third thickened segment-like; club pyriform like that of *fasciatus*; clypeus distinctly larger, more convex; proboscis relatively long, nearly, subequal in length to, or sometimes as long as, antennae, relatively stouter than in *fasciatus*, without any longish hairs below; palps relatively well developed, finger-shaped, quite twice, or even a little more, length of antennal segment 2; postvertical spines present, yellowish.

*Wings* distinctly more infuscated than in *fasciatus*, more uniformly so, more reddish brownish, more diffusedly so along veins in middle parts, becoming clearer in basal part and along hinder border, without a whitish subopacity; veins slightly darker, more reddish brownish; first posterior cell also broadly open apically and apex of discoidal cell also stalked; knobs of halteres darkened above.

*Legs* with the hind femora distinctly thickened, slightly less so than in *fasciatus* and in ♀ than in ♂, their double row of spines below reddish; hind tibiae slightly curved; basal segment of hind tarsi distinctly longer than claw-segment, proportionally longer than in *fasciatus*.

*Oviscape* in ♀ with 7-9 brownish or reddish brownish spines on a side.

*Hypopygium* of ♂ with the acute posterior angles of lobes of tergite 9 slightly more prolonged lobe-like than in *fasciatus*; sternite 9 and its structures (cf. text-fig. 2, bottom right) very similar.

From 4 ♂♂ and 3 ♀♀ (types and paratypes in the South African Museum and 1 ♀ paratype in the Transvaal Museum).

Length of body: about 16-18.5 mm

Length of wing: about 11-13 mm

*Distribution*: Southern Cape: Coastal region at the mouth of the Great Brak River near Mossel Bay (South African Museum, February 1960) (♂ holotype, ♀ allotype and 4 paratypes); Great Brak River (George) (Dr. Brauns, January 1920) (1 ♀ paratype).

This species is named after Mr. F. W. Gess of the Entomology Department of the South African Museum who caught the first specimen on the Museum's expedition to the Eastern Province in 1960.

*Afroleptomydas flavitibialis* n.sp.

An easily recognizable hairy and shiny species, with yellowish or fulvous hairs on the thorax and pale yellowish or fulvous tibiae, which also comes in the *fasciatus* group and which is characterized as follows:

*Body* almost entirely black; antennae mainly black or blackish reddish in ♂, more dark reddish in ♀, the clubs in both sexes mainly very dark reddish or blackish red; clypeus very dark reddish brownish, darker or even black in ♂; proboscis black, but slightly dark reddish brownish below in ♀; humeral tubercles and thorax above black, the postalar calli in ♀ very dark reddish brownish, darker or black in ♂; pleurae black, but sometimes infused slightly more with dark reddish brownish, especially in ♀; abdomen mainly black in both sexes, the last segment in ♀ dark reddish brownish or reddish; hind margins of tergites 2-7 yellowish whitish in ♂, more yellowish in ♀, slightly broader in ♀ or more so across 6 and 7, bordered basally in both sexes with faint orange, and in both sexes broader on sides than discally, and on 6 and 7, or sometimes 5-7, usually also extending some distance towards base along lateral margins to a variable extent, especially in ♀; bullae rather elongate vertically, large in both sexes, though slightly narrower in ♀, narrowly separated in both sexes, very dark blackish brown, dark reddish brownish to even black; venter mainly very dark, dark blackish brownish or black, the hind margins of sternites 1-7 broadly and conspicuously whitish or yellowish whitish, sometimes slightly darkened in middle and usually bordered across their anterior margins with yellowish or orange yellowish to a variable extent, sometimes fairly extensive, but usually so on 6 and 7 or even 5-7 to such an extent that at least apical halves or even more of these sternites are yellowish, and 8 in ♂ sometimes also extensively yellowish; hypopygium of ♂ mainly yellowish reddish or yellowish brownish, the processes of sternite 9 usually being conspicuously yellowish reddish; legs with the femora dark blackish brownish above, paler and more yellowish below to a variable extent, with the bases of hind ones and their apices below and all the tibiae and tarsi conspicuously pale yellowish or luteous.

*Integument* of middle part of frons, clypeus above, proboscis, head below, to a certain extent disc of thorax under the vestiture, scutellum, anterior half of pleurae, to a lesser extent metanotum and entire abdomen shining; integument of thorax above without distinct or broadish bare streaks, covered with more or less uniform, minute, somewhat acicular, setiferous puncturation; that of abdomen shining in both sexes, in ♂ with fairly dense, fine, transverse striate or aciculate, setiferous puncturation, sparser across bases of tergites and apical part of tergite 2, with even finer and sparser setiferous puncturation in ♀, transversely striate on last four segments, more distinctly and more coarsely so on last two; venter shining, transversely wrinkled, excepting last sternite in ♂ and 1-4 in ♀; integument of femora also shallowly transversely wrinkled to a variable extent.

*Vestiture* fairly dense, longish, villose, slightly denser in ♂, that on thorax above also slightly denser and longer in ♂, not distinctly separated by bare streaks; hairs on sides of tergites 1 and 2 and sides of 3 denser and longer in ♂,

hairs on rest of abdomen in ♂ fairly dense, corresponding to the setiferous puncturation, those on sides of tergites longer than discally, in ♀ shorter and sparser, excepting reversed ones on last three segments; hairs on head and body in both sexes mainly snow whitish, those on vertex and, in ♀, also frons and on disc of thorax in both sexes greyish yellowish, yellowish to fulvous yellowish, the latter especially in ♀, those on abdomen tinted very slightly more greyish yellowish to pale sericeous yellowish from tergite 4 in ♂ and from disc of 2 in ♀, the reversed ones on last three segments in ♀ distinctly more fulvous; hairs on venter longer and denser in ♂, mainly whitish, tinted slightly more yellowish in posterior half in ♀; hairs on legs dense and longish in both sexes, mainly whitish, those above and on sides in apical half of hind femora and to a certain extent on other femora above tinted more yellowish or fulvous; all the short ones on tibiae and tarsi, except longish whitish ones on inner sides of hind tibiae, golden yellowish or fulvous yellowish; spines and spicules on legs yellowish reddish to fulvous yellowish.

*Head* with the antennae distinctly much longer than thorax (excluding scutellum); segment 1 thickened, about 2.5–3 times length of 2; segment 3 stoutish, longer than club, its apical third or less thickened segment-like; clubs elongate, subspindle-shaped, broadest at about or just beyond middle, then more rapidly narrowed below, this sensory part with greyish whitish tomentum, the base of clubs shortly neck-like; proboscis longish, as long as, slightly longer than, or slightly shorter than, thorax (excluding scutellum), about 4–4.4 mm, with some longish hairs below near base; palps distinct, lobe-like, relatively longer in ♂ than in ♀, in former quite twice length of antennal segment 2; postvertical spines present, yellowish.

*Wings* distinctly tinted yellowish, slightly deeper so in ♀, the apical part and hind border, including hinder half or part of third posterior cell, axillary and alular lobes and anal cell, clear or clearer and with slightly milky whitish reflections, the base also clearer; veins yellowish; hind border in apical part distinctly much narrower than first posterior cell; latter broadly open apically; apex of first submarginal cell tending to be narrower than that of second; apex of discoidal cell shortly stalked; axillary lobe and alula markedly broadish; halteres brownish, their knobs darker above.

*Legs* with the hind femora thickened in both sexes, their double row of spines below rather bluntish and on tubercles and from near base; hind tibiae with numerous spicules on outer and lower aspect in apical half; basal segment of hind tarsi much longer than claw-segment.

*Genital segment* in ♀ with tergite 8 rather produced medially, with relatively shortish vertical carina on last vertical tergite; oviscape with 7 or 8 yellowish brownish spines on a side; last sternite depressed or grooved centrally.

*Hypopygium* of ♂ with the lobes of tergite 9 angularly or subangularly pointed, though rounded at apex; sternite 9 conical, more rapidly narrowed from about middle, transversely wrinkled basally, more longitudinally so towards apex, covered with fairly dense yellowish or golden hairs, its processes

(text-fig. 3, top left), in side view, S-curved, the apical half slender, curved up apically and in dorsal view broadish and with longish hairs on outer side below.

From 8 ♂♂ and 1 ♀ (♂ holotype, ♀ allotype and 6 ♂ paratypes in the Transvaal Museum, and 1 ♂ paratype in the South African Museum).

Length of body: about 18–20.5 mm

Length of wing: about 12–14 mm

*Distribution*: Southern Karoo: Willowmore (Dr. Brauns, 20th December 1923) (types and 6 ♂ paratypes); Willowmore (Dr. Brauns, 1st December 1921) (1 ♂ paratype).

### *Afroleptomydas rutilus* n.sp.

A handsome, striking, fulvous reddish-haired species which, in its contrastingly whitish-haired base of abdomen and pleurae, resembles *omeri* superficially, but which is more closely related to *flavitibialis*. This species, unfortunately represented in the collections before me by a unique ♂ specimen only, which was caught on flowers, is characterized as follows:

*Body* mainly dark or blackish, the antennae, clypeus, proboscis, thorax, entire pleurae and abdomen above also black; hind margins of tergites 2–7 yellowish; bullae shining black, only narrowly separated above; upper half and apical part of processes of sternite 9 and the sternite itself dark reddish brownish; venter mainly dark or black, but hind margins of sternites fairly broadly yellowish whitish, narrowly interrupted along middle, and hinder marginal parts of sternites 6 and 7, as well as sides of tergite 8, infused with reddish brownish; legs reddish brownish, the tibiae and tarsi slightly more yellowish reddish or reddish, but front and middle femora darkened along their upper surface and hind ones darkened along their inner face to near base and also along the upper and outer apical half.

*Integument* of middle part of frons, clypeus, head below, proboscis, postalar calli, scutellum and abdomen above shining, the latter with the hind marginal parts of tergites, however, dulled by greyish tomentum; integument of abdomen itself finely transversely aciculate punctate, less so across bases of tergites; bare parts of pleurae somewhat dulled by greyish whitish tomentum, more so than in most of the other species in this category.

*Vestiture* rather dense and long, being dense and villose on hind femora, long and dense on tergite 1, sides of 2–5 and sternites 1–5, and the shorter hairs on abdomen above also dense; hair on following parts strikingly fulvous reddish: on vertex, antennal segments 1 and 2, thorax above, mesopleural tuft in front of wing-base, some hairs anteriorly on pteropleuron, tuft above posterior thoracic spiracle, hairs on extreme sides of metanotum, shorter ones on disc of tergites 2–5 and all on rest of tergites and hypopygium, those on sternites 6–9, some hairs on coxae below, those on front and middle femora and on outer and upper apical half of hind femora and on entire tibiae and tarsi; rest of hairs on head, body and hind femora contrastingly snow whitish; spines and spicules on legs also fulvous reddish.

*Head* with the antennae rather stoutish, longer than thorax (excluding scutellum); segment 1 thickened, about 3 times length of 2; segment 3 stoutish, thickened in apical part, longer than club; latter elongate-pyriform, broadest a little beyond middle below (side view), equally gradually narrowed from broadest part to base, its sensory area large, extending from broadest part below to apex, the base slightly shortly constricted; proboscis stoutish, about 4.2 mm long, with a few longish hairs basally below, its labella rather sharply pointed.

*Wings* rather broadish, very faintly tinged yellowish brownish, more evident in middle parts, the hinder part appearing more greyish hyaline; veins reddish in anterior part, darker, more blackish brownish in hinder half; knobs of halteres dark blackish brownish above.

*Legs* rather stoutish, the hind femora thickened, their double row of spines below beginning near base, situated on distinct tubercles; hind tibiae comparatively stoutish, slightly curved, with numerous well-developed spicules; basal segment of hind tarsi longer than claw-segment.

*Hypopygium* with the lobes of tergite 9 triangular, angularly pointed posteriorly; sternite 9 conically pointed, longitudinally grooved below, its processes (text-fig. 3, middle left), in side view, S-curved, rather broadish basally, more rapidly narrowed above from base to the slightly upcurved apical part, in dorsal view broadish, slightly depressed above, directed inwards, bluntly pointed, the apex itself bluntly rounded and the upcurved apical part punctured above in outer apical part.

The ♂ holotype in the South African Museum.

Length of body: about 21 mm

Length of wing: about 14 mm

*Distribution*: South-western Cape: Matroosberg Station, on whitish flowers of a species of *Mesembryanthemum* (South African Museum, December 1962).

From the ♂ of *flavitibialis*, to which species it is very closely related, this species may at once be distinguished by the fulvous reddish hairs on thorax above, part of pleurae, abdomen above and femora which contrast with the rest of the whitish hairs on head and body; by the slightly duller pleurae, covered with more extensive greyish whitish tomentum; less extensively darkened femora; more yellowish reddish tibiae and tarsi; slightly more greyish yellowish tinted wings; and proportionally shorter and broader processes of sternite 9, of which the apical part is less slender and slightly less curved up.

#### *Afroleptomydas zinni* n.sp.

A rather densely-haired Koupe Karoo species with yellowish-thorax, represented in the collections by a ♂ specimen only, which superficially resembles *gessi* from the Mossel Bay region very closely and with the ♂ of which it agrees and differs as follows:

*Body* with the abdomen rather tapering posteriorly, the body almost entirely black, even entire venter and greater part of hypopygium very dark blackish brown or black; processes of sternite 9 reddish; legs, unlike those of

*gessi*, also mainly dark, only the extreme apices of femora, the lower apical part of hind ones, lower surfaces of hind tibiae, apices of the others and lower surfaces of tarsi more obscurely reddish; hind margins of tergites 2-6 and obscurely across 7 yellowish whitish, those of 2-4 broadest; hind margins of sternites also whitish on sides; bullae shining dark reddish brownish, not shining black as in *gessi*, in vertical length relatively shorter and distinctly more widely separated above.

*Integument* of central part of frons, postalar calli, scutellum, pleural parts and abdomen above more or less shining, the latter above slightly less so than in *gessi*.

*Vestiture* with the hairs on head, thorax, pleurae, metanotum, tergite 1, on sides of following two tergites and on coxae long and dense as in *gessi*, but appearing more villose, those on tergite 1 and coxae, however, distinctly denser and slightly longer, more villose; those on head white and those on disc of thorax pale yellowish or greyish yellowish, and those on basal part of abdomen, on pleurae and coxae also tinted slightly greyish yellowish whitish, not contrastingly snow whitish as in *gessi*, only those on propleural prominence, prosternal part and longish ones on basal half of venter more whitish; shorter hairs on rest of abdomen above slightly denser than in *gessi* and with a slightly more greyish yellowish sheen, without such distinct longish ones on sides of tergites beyond 3 as in *gessi*; hairs on legs distinctly very much longer, denser, more villose, those on hind femora and tibiae, especially inner sides of latter, very long and dense, reminiscent of *lanipes*, and all hairs on legs tinted slightly greyish yellowish.

*Head* with the antennae relatively a little shorter than in *gessi*, a little shorter than thorax (excluding scutellum); segment 1 thickened, about 3 times length of 2; segment 3 elongate, longer than club, with a little less than its apical third thickened segment-like; clubs pyriform, slightly more so than in *gessi*, being broader relative to length, more rapidly narrowed to base; proboscis nearly as long as, or subequal in length to, antennae, its labella arrow-head-shaped, sharply pointed and rather large; palps a little longer than antennal segment 2; postvertical spines not distinctly differentiated.

*Wings* distinctly tinted yellowish brownish as in *gessi*, more so in middle parts; veins reddish brownish, paler towards base; other venational characters as in *gessi*; knobs of halteres also darkened above.

*Legs* with the hind femora only very slightly thickened, much less so than in *gessi* and most other species with yellowish-haired thorax, their double row of spines below much fewer, longer, more widely separated and pallid (only about 4 on outer and 3 on inner aspect of left femur and 2 on outer and 2 on inner aspect of right femur in unique specimen); hind tibiae rather stoutish; basal segment of hind tarsi only a little longer than claw-segment.

*Hypopygium* with the lobes of tergite 9 much shorter than in *gessi*, though also sharply angular apically; sternite 9 conical, its apical part or half more delimited, feebly longitudinally wrinkled below, but basal half smoother and

more shining than in *gessi*, with distinctly longer and denser hairs, its processes (text-fig. 3, bottom left) shorter than in *gessi*, not so S-curved, the apical slender half in side view almost straight, in dorsal view narrower, blunter and more rounded apically.

The unique holotype in the South African Museum.

Length of body: about 16·5 mm

Length of wing: about 12 mm

*Distribution*: Koup Karoo: Merweville in Laingsburg division (H. Zinn, February 1941).

This species also has some resemblance to *lanipes* (Bezz.) in the general shape of the body and the villose vestiture on body and legs, but may at once be distinguished by the duller integument of thorax, entirely dark or black abdomen, much darker (not orange) bullae, much darker and longer legs, much less thickened hind femora which have fewer, longer, more widely separated spines below, the relatively longer wings, etc.

#### *Afroleptomydas capensis* n.sp.

A ♂ specimen from the Cape Peninsula in the collections of the South African Museum is still another species which, apart from the white hair on the thorax, resembles the *fasciatus* of Wiedemann from the same region superficially. It and the following series of species constitute a sort of subsection of the *westermanni* section in which the thorax above is white-haired and not yellowish or rufous-haired. From *fasciatus* it differs as follows:

*Body* with the clypeus more uniformly reddish brownish; the yellowish on sides basally of tergite 1 less extensive, without any yellowish on extreme sides of rest of tergites, the sides 2 and 3 being scarcely or only a little paler reddish brownish or piceous brownish than rest of abdomen above; hind margins of tergites 2-7 more yellowish whitish than whitish and relatively narrower; bullae only orange reddish in hinder half, much closer together dorsally, almost touching; venter less extensively yellowish, sternites 4-7 being on the whole more darkened; legs similarly coloured, but on the whole less extensively brownish on hind femora above.

*Vestiture* with the longish hairs on head, thorax, basal part of abdomen and legs slightly less dense, especially those on thorax above distinctly less dense and those on sides shorter; hairs on thorax above entirely snow whitish like rest of hairs on body and legs.

*Head* with the antennae distinctly longer, longer than thorax (excluding scutellum) which itself is relatively longer than in *fasciatus*; antennal segment 1 thickened, relatively longer, about 3·3 times length of 2; segment 3 elongate, similar, but distinctly longer than in *fasciatus*; clubs also relatively longer, less than a fourth shorter than segment 3; clypeus distinctly larger, more prominent, more like that of *anthophilus*; proboscis similar, but labella narrower, more gradually acuminate apically; palps longer, more slender, much longer than antennal segment 2.

*Wings* relatively a little longer than in *fasciatus*, otherwise very similar, but distinctly more hyaline, without the characteristic whitish subopacity of the latter species.

*Legs* with the hind femora, though also distinctly thickened, relatively less so than in *fasciatus*, at thickest part about as thick as combined length of tarsal segments 2 and 3 of hind tarsi (much more than this tarsal relationship in *fasciatus*).

*Hypopygium* with sternite 9 not so distinctly or coarsely grooved, more pointed apically, its processes (side view) (text-fig. 3, top middle), slightly more S-curved, more bent upwards and blunter apically than in *fasciatus*.

Length of body: about 16 mm

Length of wing: about 10.5 mm

*Distribution*: Western Cape: Rondebosch in the Cape Peninsula (L. Péringuey, 1889).

### *Afroleptomydas patruelis* n.sp.

*Leptomydas paganus* (♀) Bezzi (*nec* Gerstaecker), 1924b: 214. (n.syn.)

Three ♂♂ and a ♀, with whitish hair on the thorax, which belong to the same category as *capensis* and the rest of the *westermanni* section described in the following pages are obviously new. The ♀ specimen from Stellenbosch was considered by Bezzi as the undescribed ♀ of *paganus* (Gerst.). As the true ♀♀ of this latter species were collected together with, and also in copulation with, the ♂♂ of *paganus* (Gerst.) *s.str.* by the South African Museum expedition to Port Elizabeth and its environs, the ♀ specimen from Stellenbosch, which is specifically different, cannot possibly be the undescribed ♀ of *paganus*. Without doubt it belongs to the same species as the three ♂♂ from the same locality. Another ♂ specimen in the Transvaal Museum from the same locality was also wrongly labelled by Engel as *nivosus* (Gerst.), a species which is really only the ♂ of Gerstaecker's *humeralis*.

The new species *patruelis* is characterized as follows:

*Body* mainly dark or black, but abdomen above and to a certain extent dark pleural parts more dark piceous brownish than black; apical half of clubs, thickened apical part of antennal segment 3, and in ♀ also basal antennal segments, more dark reddish brownish; clypeus on sides, more extensive in ♀, and proboscis below reddish brownish; humeral tubercles yellowish; sides of thorax in front of wings and postalar calli in ♂, entire sides of thorax in ♀ as well as two submedial discal streaks to beyond middle, narrow base of thorax and narrow hind border of scutellum in ♀ reddish; metanotum in ♂ either entirely dark or with a small pale spot on each side as in *capensis*, but in ♀ infused with reddish on sides; pteropleural, metapleural, hypopleural and metasternal parts, as well as sides of tergite 1, yellowish in both sexes as in *capensis*; venter mainly yellowish in both sexes; hind margins of tergites 2-8 in ♂ and 2-6 in ♀ whitish or yellowish whitish, relatively broader than in *capensis*, more so in ♀; processes of sternite 9 in ♂ reddish brownish and apical half of this sternite yellowish;



last two abdominal segments in ♀, excepting dark lateral edges of tergites, yellowish brownish, the basal discal part of second last, however, slightly darker and its broadish hind margin more yellowish; bullae shining black, not reddish as in *capensis*, and also a little wider apart; legs mainly yellowish, the anterior and middle coxae dark and more than apical halves of hind femora above and on sides in ♂ and above and more or less in apical third on outer sides in ♀ dark to blackish brownish; these femora more extensively darkened than in *capensis*; a fainter streak along outer apical part or third of hind tibiae and claw-segment of tarsi also darkened, more so in ♂.

*Integument* with the same parts shining as in most of the preceding species, but that of thorax above in both sexes distinctly more shining than in *capensis*; integument of hind margins of tergites 3–8 distinctly broadly dulled by greyish bloom, not present in *capensis*.

*Vestiture* as long as in *capensis*, but slightly denser, only a little shorter in ♀ than in ♂, all these long hairs, even on thorax above, entirely snow whitish; shorter ones on abdomen above in ♂ and sparse reversed ones on middle parts of abdomen in ♀ whitish, but reversed ones on last two segments in ♀ more yellowish; hairs on legs also entirely whitish in both sexes.

*Head* with the antennae relatively much shorter than in *capensis*, a little shorter than thorax (excluding scutellum); segment 1 thickened, about 3·3 times length of 2; segment 3 stoutish, relatively shorter than in *capensis*, its apical third thickened; clubs more elongate-pyriform or vase-shaped, shorter than segment 3; clypeus prominent; proboscis comparatively shorter and stouter than in *capensis*, longer than vertical length of eyes, with a few longish hairs basally below; palps distinct, thumb-shaped, longer than antennal segment 2.

*Wings* glassy hyaline; veins reddish, paler in anterior part; first posterior cell broadly open apically; apex of discoidal cell shortly stalked or meeting third posterior cell at or almost at a point; knobs of halteres brownish above.

*Legs* with the hind femora slightly thickened, at thickest part thicker than combined length of hind tarsal segments 2 and 3, their double row of spines below yellowish reddish; hind tibiae relatively stoutish, only very little S-curved, less curved apically than in *capensis*; basal segment of hind tarsi usually longer than claw-segment.

*Oviscape* in ♀ with about 7 brownish spines on a side.

*Hypopygium* of ♂ with the posterior angles of lobes of tergite 9 blunter than in *capensis*, the lobes themselves shorter; sternite 9 blunter apically, distinctly coarsely grooved as in *fasciatus*, its processes, in side view, relatively shorter than in *capensis*, with the apical slender part also proportionally shorter, tending to be less sharply curved upwards, in dorsal view broader, blunter apically.

From 3 ♂♂ and 1 ♀ (♂ holotype and ♀ allotype in the South African Museum and 2 ♂ paratypes in the Transvaal Museum).

Length of body: about 14–19·5 mm

Length of wing: about 10–14 mm

*Distribution:* South-western Cape: Stellenbosch (L. Péringuey, January 1888) (types and 1 ♂ paratype); Stellenbosch (A. de Vries, 17th March 1927) (1 ♂ paratype).

*Afroleptomydas nitidus* (Bezz.) n.comb.

*Leptomydas nitidus* Bezzi, 1924b: 209.

This characteristic and slightly variable montane species which may at once be recognized by its white vestiture, shining integument on body above and mainly luteous legs is characterized as follows:

*Body* mainly black; sides of clypeus, pleural parts and abdomen above in some ♂♂ tending to be more blackish brown or dark reddish brownish than black; antennae very dark brownish, blackish brown, to black, the clubs either dark in both sexes with only the middle or basal half appearing more dark reddish or apical two-thirds orange yellowish in some ♀♀; proboscis below dark reddish brownish; hind margins of tergites 2–5 and sometimes faintly of 6 in ♂ whitish and those of 2–6 in ♀ broader ivory yellowish and broader on sides where the yellowish is sometimes also present on sides of 7 or even broadly on sides of 6 and 7; extreme sides basally of tergite 1 and sometimes on 2 in ♀ sometimes also yellowish to a variable extent; bullae vertically elongate, large, shining black, space between them in ♂ narrower than their vertical length, in ♀ about as wide as, or a little wider than, their vertical length; venter either mainly yellowish or so to a variable extent, more so in ♀, the last sternite in ♀, however, black, in ♂ with only apical parts of sternites yellowish, the hind margins of 1–6 whitish, especially on sides; lower hypopygial structures luteous or yellowish, but last segment in ♀ usually mainly black; legs mainly strikingly pale yellowish or luteous, only the coxae, especially front and middle ones, in ♂ at least, darkened or black, and inner or upper apical halves of hind femora to a variable extent, especially in ♂, and sometimes also upper surfaces of the others, darkened.

*Integument* along middle part of frons, entire body above and along middle parts or upper anterior half of pleurae highly shining, that on disc of thorax also conspicuously shining under the hair-covering.

*Vestiture* without an anterior submedial patch of dull greyish white bloom on each side discally of thorax; the hairs fairly long and dense on front half of body, not in streaks on thorax above, long also on tergites 1 and 2 and sides of 3 and, in ♂, also fairly longish on sides of 4 and 5, with all these hairs, as well as longish ones on venter and coxae, snow whitish; reversed ones on last three abdominal segments in ♀ somewhat sparse, sericeous yellowish to yellowish, those on last two segments sometimes even slightly fulvous; hind margins of tergites 5–8 in ♂ dull, due to whitish bloom; hairs on legs fairly dense and longish, more so in ♂, mainly white or at least the longer ones white, the shortish ones on outer sides of hind femora gleaming more yellowish.

*Head* with the antennae a little longer than thorax (excluding scutellum); segment 1 thickened, about 3·3 times length of 2; segment 3 slender, some-

times appearing stouter in ♀, a little more than its apical third slightly thickened, longer than club; the latter dilated, subpyriform, broadest just beyond middle, more bulging below, then gradually narrowed, sloping up to terminal prominence, more rapidly and more shortly so on inner side above, the base of club constricted neck-like; proboscis longer than vertical length of eyes, its labella rather broad, ovate, and base of proboscis below with some longish white hairs; palps distinct, longer than antennal segment 2; postvertical spines present.

*Wings* glassy hyaline in ♂, in ♀ very faintly tinted yellowish in middle parts; veins yellowish reddish, darker in hinder part of wings; first posterior cell broadly open; second submarginal cell rather narrowish basally; apex of discoidal cell consistently shortly stalked; knobs of halteres darkened above.

*Legs* with the hind femora thickened, subspindle-shaped, their double row of spines below luteous or yellowish, beginning near base; basal segment of hind tarsi longer than claw-segment.

*Oviscape* in ♀ with 6–8 dark reddish brownish spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 sharply angular posteriorly; sternite 9 conically narrowed and rounded apically, its surface grooved to apex, its processes, in side view, S-curved along their upper margins, bent downwards and then slightly upwards, rather deeply grooved above to near apex in dorsal view.

From several ♂♂ and ♀♀, including the types, in the South African Museum.

Length of body: about 15.5–18.5 mm

Length of wing: about 10–14 mm

*Distribution*: South-western Cape: Matroosberg (alt. 3,500–4,000 ft) in the Ceres division (Lightfoot, January 1917) (types); Upper sources of the Olifants River in the Ceres division (Museum Expedition, December 1949).

#### *Afroleptomydas nitens* Beq.

*Afroleptomydas nitens* Bequaert, 1963: 20, fig. 5B.

Described by Bequaert from a single ♀ specimen collected by the late Mr. R. Turner at Ceres, but not represented in any of the collections submitted to me. According to the description it is characterized by its pale colour, the head, body and legs being mainly pale brownish or yellowish brownish; its shining integument, including that of the thorax above; the rather broadish yellowish hind margins of tergites 2–7; the large shining blackish bullae; its entirely whitish vestiture, which on thorax above is not arranged in distinct streaks; and its rather shortish and uniformly yellowish brownish tinted wings.

It appears to be nearest to the ♀ of *nitidus* (Bezz.) which also occurs in the same geographical region, but, according to the description, it differs from the latter in having almost the entire head and body paler, more pale yellowish brownish, relatively shorter wings in relation to body-length, and a relatively stouter and more bluntly pointed proboscis, with relatively shorter labella. As

*nitidus*, however, appears to be a slightly variable species, with at least one known slight colour form from the upper sources of the Olifants River near Ceres, it is quite possible that *nitens* may prove to be only another paler colour form of Bezzi's species.

In colour it appears to resemble *flavivestris* (Bezz.) which is also almost entirely pale yellowish brownish, but in the latter the antennae are longer, the proboscis is longer, the hairs on vertex and thorax above are yellowish or fulvous, and the hind femora have apparently less dense, or fewer, long hairs along outer basal part.

Length of body: about 17 mm

Length of wing: about 9.6 mm

### *Afroleptomydas sorbens* n.sp.

Two ♂ specimens, caught on the reddish flowers of a species of *Mesembryanthemum* near the railway station Constable by members of the South African Museum, resemble the ♂♂ of *nitidus* so closely that they may even be considered as representing only a slight northern geographical variety of the latter. Distinct differences in the shape of the processes of sternite 9, however, appear to exclude them specifically from *nitidus*, from the latter of which they differ in the following respects:

*Body* and legs with the front and middle femora more extensively darkened above, with a rather conspicuous black streak from base to near apex; hind femora distinctly more extensively darkened above, the black extending also along upper outer and upper inner apical half; hind coxae entirely dark or blackish; hind margins of tergites 2-7 in one specimen whitish, but in the other specimen only distinctly so on 2-5 (evidently hidden under greyish tomentum across the rest); venter on the whole darker, more darkened, or at least with less extensive yellowish.

*Vestiture* with the hairs on abdomen at least appearing distinctly denser.

*Wings* not entirely clear hyaline, but with a very feeble and scarcely perceptible brownish tinge in middle parts, more evident in apical part of first basal cell and around basal cross-veins of first posterior cell.

*Hypopygium* with the lobes of tergite 9 relatively longer and larger; processes of sternite 9 distinctly longer, in side view appearing distinctly more slender, being more gradually and continuously narrowed from base to apex, the apical upcurved part not so distinctly delimited as in *nitidus*, and the processes in ventral view slightly more gradually narrowed to apex.

Holotype and paratype in the South African Museum.

Length of body: about 17-18.3 mm

Length of wing: about 11.75-12 mm

*Distribution*: South-western Cape: Constable, about 17 miles north-east of Touws River (South African Museum, December 1962).

*Afroleptomydas similimus* n.sp.

Another two ♂ specimens in the collections before me also very closely resemble the species *nitidus* and may almost be considered as only representing a variety of it. As there are, however, slight, but distinct differences and also a slight difference in the shape of the processes of the ninth sternite, they are referred to a separate species which differs from the ♂ of *nitidus* in the following respects:

*Body* also mainly black, similarly coloured, with most of the integument, as well as that of thorax above, similarly shining; humeral tubercles, however, not entirely black, but obscurely yellowish along outer surface, though also densely covered with greyish tomentum; metapleural part just behind and below halteres and sometimes also pteropleural part yellowish, not dark; sides basally of tergite 1 yellowish, not dark or black as in *nitidus*; hind margins of tergites 2-7 (not 2-6 only) slightly more broadly whitish; hypopygial structures mainly dark or blackish, only apices of processes of sternite 9 yellowish reddish or reddish; hind margins of sternites 1-7 more broadly whitish, tending to be more broadly interrupted in the middle; coxae, especially hind ones, either entirely black or with less dark reddish or reddish towards their apices; the luteous or yellowish legs with more extensive or more intense black on femora above, the hind ones especially more extensively darkened or black along almost entire upper surfaces and more than half outer and inner surfaces, and hind tibiae not entirely yellowish, on the whole darker or much darkened or blackish along outer surfaces apically or in apical part or along inner surface, and claw-segment of tarsi also much darkened or black.

*Vestiture* very similar, also entirely snow whitish, but shortish hairs discally from tergite 4 relatively denser.

*Head* with the antennae slightly shorter, shorter than, or subequal in length to thorax (excluding scutellum); segment 1 thickened, about 2.6 times length of 2; segment 3 proportionally slightly shorter than in *nitidus*, slightly less than its apical third thickened; clubs similarly shaped and about as long; proboscis distinctly shorter, only about 2.6-2.76 mm (at least 3 mm in *nitidus*), also with some longish hairs basally below; palps minute, shorter than in *nitidus*, distinctly shorter than antennal segment 2.

*Wings* as in *nitidus*, though very faintly, but distinctly, tinged more greyish yellowish, not so clear hyaline as in *nitidus*; veins slightly darker; base of first posterior cell tending to be distinctly broader and apex of this cell slightly more narrowly open; appendix at base of second submarginal cell shorter.

*Legs* as in *nitidus*, the hind femora thickened to the same extent, similarly spined below.

*Hypopygium* with sternite 9 distinctly more sharply conical, its apex vertically carinate or subcarinate, not so bluntly rounded as in *nitidus*, its processes in side view slightly, but distinctly, longer, slightly more slender, with a slightly longer apical slender part which is less curved upwards, in dorsal view slightly less rapidly narrowed apically, the bluntly rounded apex slightly broader;

dorsal epimere of aedeagal apparatus projecting less, being shorter beyond the two phallic tubes, distinctly less than the length of a tube (about as far as tube-length in *nitidus*).

Holotype in the South African Museum and paratype in the National Museum of Rhodesia in Bulawayo.

Length of body: about 16·3–17·5 mm

Length of wing: about 11–12 mm

*Distribution*: Western Cape: Perdeberg near Malmesbury (C. Thorn, February 1961) (holotype); Malmesbury (January 1947) (paratype).

### *Afroleptomydas nitidusculus* n.sp.

Another montane species with the integument above also mainly shining, but entirely different from both *nitidus* and *similimus*. The only representative, a ♂ specimen, in the South African Museum, is characterized as follows:

*Body* mainly black, the antennae, proboscis below and abdomen in hinder half slightly more dark piceous or blackish brown than black; clypeus and humeral tubercles dark; postalar calli slightly dark reddish brownish; hind margins of tergites 2–5, and to a narrower and more obscure extent also 6 and 7, yellowish whitish; venter mainly dark reddish brownish, with obscure yellowish on sides of sternites 2–4 and sides of 7 and 8, the hind margins of 2–5 also yellowish on sides; bullae dark reddish brownish, the space between them narrower than vertical length of bullae; hypopygium mainly reddish brownish; legs with the coxae, femora above and in apical half below and more than apical two-thirds of hind ones reddish- or castaneous brownish, the bases of front ones, slightly less than basal third of hind femora, extreme apices of femora and all the tibiae and tarsi yellowish, the claw-segments, however, slightly more brownish above.

*Integument* of middle part of frons, greater part of dorsum of thorax, excepting the dull greyish bloom on humeral tubercles and a submedial anterior patch on each side, the rest of thorax above, abdomen above and below, middle anterior half of pleurae and to a certain extent metapleural part shining as in *nitidus*.

*Vestiture* fairly dense and longish on head, thorax above, especially on sides, on metanotum, pleurae, metasternum, tergites 1 and 2 and to a very much lesser extent sides of 3, and all these hairs snow whitish, excepting the slightly yellowish ones on antennal segments 1 and 2 above and the slightly faintly yellowish-tinted postvertical spines and hairs on thorax above; rest of shortish hairs on abdomen above and longish ones on venter whitish, gleaming slightly sericeous yellowish in certain lights; hairs on front and middle coxae and posteriorly on hind ones more fulvous yellowish; hairs on legs not very long, mainly whitish, but those on outer sides of hind femora and all the tibiae with a slight yellowish sheen; hind margins of tergites 3–8 with greyish whitish tomentum.

*Head* with the antennae longer than thorax (excluding scutellum); segment 1 thickened, quite 3 times length of 2; segment 3 slender, much longer than club,

a little less than apical third demarcated segment-like; clubs pyriform, broadest before middle (side view), from there obliquely narrowed to terminal prominence, their base constricted and extreme base more slender; proboscis longer than vertical length of eyes, rather stoutish, with some longish whitish hairs basally below; palps distinct, slightly longer than antennal segment 2.

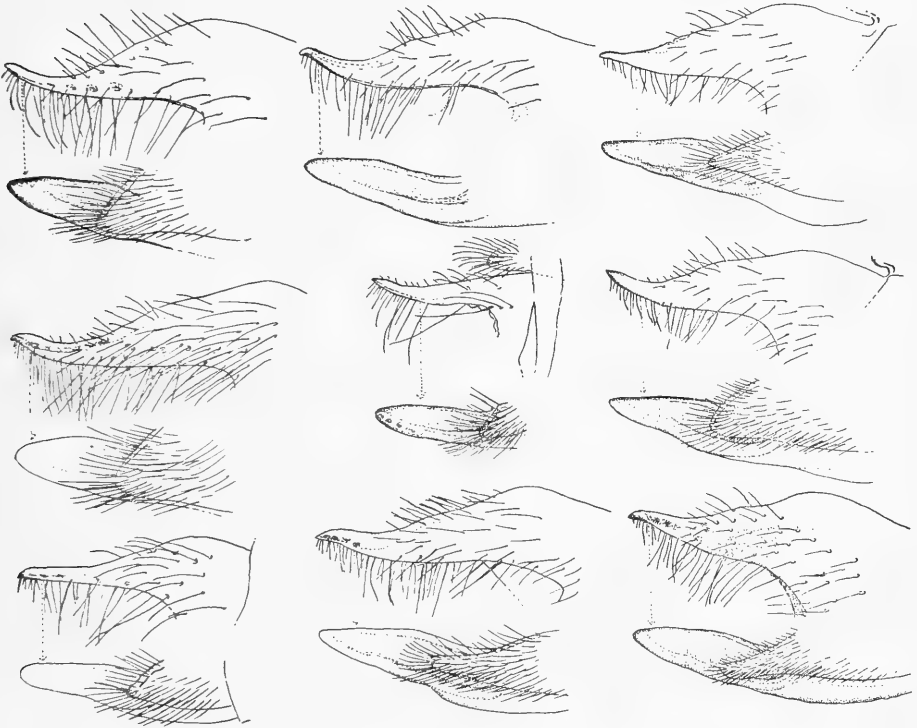


FIG. 3. Side and dorsal views (all to same scale) of right process of sternite 9 of ♂♂ of: *Afroleptomydas flavitibialis* n.sp. (top left). *Afroleptomydas capensis* n.sp. (top middle). *Afroleptomydas sobrinus* n.sp. (top right). *Afroleptomydas rutilus* n.sp. (middle left). *Afroleptomydas lampronotus* n.sp. (middle middle). *Afroleptomydas campestris* n.sp. (middle right). *Afroleptomydas zinni* n.sp. (bottom left). *Afroleptomydas humeralis* (Gerst.) (bottom middle). *Afroleptomydas psammophilus* n.sp. (bottom right).

*Wings* greyish hyaline; veins reddish; apex of first posterior cell broadly open; apex of discoidal cell shortly stalked; knobs of halteres dark brownish above.

*Legs* with the hind femora distinctly thickened, their double row of spines below yellowish reddish; hind tibiae slightly curved near apex; basal segment of hind tarsi slightly longer than claw-segment.

*Hypopygium* with the posterior angles of lobes of tergite 9 bluntly rounded, their inner margins together forming a sharp angle; sternite 9 conical, narrowed and bluntly rounded posteriorly, transversely wrinkled in basal half, then more longitudinally so to apex, its processes, in side view, gradually narrowed to near apex, bending first downwards and then upwards, in dorsal view slightly depressed above along inner aspect, bluntly pointed apically.

The single holotype in the South African Museum.

Length of body: about 15.5 mm

Length of wing: about 10.5 mm

*Distribution*: Western Cape: Hex River (L. Péringuey, January 1888).

This species may prove to be the as yet unknown ♂ of *flaviostris* (Bezz.) from the same locality, but the much darkened legs, dark venter and shorter and darker proboscis seem to exclude it.

### *Afroleptomydas lampronotus* n.sp.

An easily recognizable shortish species belonging to this section without bare streaks on the thorax and with the integument of the latter shining as in *nitidus* and related forms. It shows sexual dichroism, with ♀♀ which have the dorsum of the abdomen in part orange or ochreous yellowish as in *braunsi*, *sodalicus*, *flavidorsalis* etc., representatives of the next section. The ♀♀, moreover, have some superficial resemblance to the asilid *Hoplister auriventris* which also occurs in the same region. It is characterized as follows:

*Body* relatively short, plump, the abdomen not very elongate, cylindrical in ♂, less so and broader in ♀, in both sexes curving downwards apically; mainly black or very dark, more so in ♂, but pleurae in ♀ and sometimes also dark parts of abdomen in ♀, as well as extreme sides of posterior abdominal segments in ♂, more dark or very dark reddish brownish rather than black; antennae dark brownish, dark reddish brownish to black in ♀, blackish in ♂, the basal two-thirds of clubs more dark reddish, the clubs, however, appearing greyish or greyish whitish, due to fine greyish whitish tomentum; vertex and frons, as well as clypeus and face in ♂, black, but sides of vertex, sometimes middle front part of frons, clypeus, sides on head below and sometimes even sides of face in ♀ dark reddish brownish to dark reddish; proboscis reddish below, darker in ♂; humeral tubercles black in ♂, only dark reddish below their bases, in ♀ dark reddish as well as the humeral part around them, the tubercles in both sexes, however, appearing greyish whitish, due to dense greyish tomentum; postalar calli in ♂ very dark reddish, almost black, in ♀ more reddish brownish as well as sides of thorax just above wing-bases and sometimes narrowly and obscurely so across base in front of scutellum; posterior metapleural and metasternal parts, as well as extreme sides basally of tergite 1, in ♀ paler reddish brownish; abdomen in ♀ orange- or ochreous yellowish above on tergites 2-4 and medially discally on 5 to a variable extent, the sides of these tergites black except across apical margins; hind margins of tergites 2-7 in ♂ conspicuously and rather broadly yellowish whitish, narrower on extreme sides, their basal



borders being slightly tinted orange; hind margin of tergite 1 in ♀ reddish brownish or dark reddish, those of 2-6 broadly pale yellowish or yellowish whitish and also narrower on sides than discally, narrowest across 6; bullae rather elongate vertically, dark reddish brownish or dark wine red, in ♀ slightly smaller, more widely separated and surrounded by dark; venter in ♂ yellowish brownish in middle basally and in ♀ so up to sternite 4, the rest of venter dark reddish brownish, and hind margins of sternites 1-7 in ♂ and 1-6 in ♀ whitish, usually more so on sides; processes of sternite 9 in ♂ brownish; legs with the femora dark brownish above, paler, more yellowish below, the front and middle tibiae and bases of hind femora also more yellowish, the hind tibiae brownish, and all tarsi more brownish, the claw-segments being darker.

*Integument* with the following parts distinctly shining: vertex, middle part of frons, clypeus, head below, proboscis, dorsum of thorax and scutellum, greater part of pleurae (anteriorly and metapleural part behind halteres), to a slightly lesser extent metanotum, entire abdomen above and below, coxae, and legs; integument of thorax above covered with minute setiferous punctures which are separated by 4 indistinct, narrowish, less punctured, slightly less shining streaks (two along central part and one on each side halfway to notopleural edge); integument of abdomen in ♂ fairly densely covered with acicular or 'nadelrissig', setiferous puncturation across base of tergite 2 and across rest of tergites, reminiscent of that of ♂ of *lanipes*, the setiferous puncturation on tergite 1 being less transverse; abdomen in ♀ with dense, minute, setiferous puncturation across tergite 1 and base of 2 and sides of 3, the rest of surface with slight transverse striation, more evident laterally, with sparse, fine, setiferous puncturation, denser on last three tergites, which latter are also coarsely transversely wrinkled; integument of legs, especially femora, appearing transversely wrinkled apart from the setiferous puncturation.

*Vestiture* with the hairs rather dense and long in both sexes, only a little shorter in ♀, dense and longish on tergites 1 and 2 and sides of 3, those on thorax above not arranged in 5 streaks, but much denser and longer on sides; those on legs, especially hind ones, dense and longish, more so and more villose in ♂, the hind tibiae on inner sides with long and dense hairs, only slightly less dense in ♀; hairs on abdomen in ♂, apart from basal ones, fairly dense and long, in ♀ much sparser, slightly longer on sides in both sexes; those on venter long in both sexes, only much denser in ♂; the hairs on head and body mainly snow whitish, but those discally from tergite 2 in ♂ tinted yellowish or pale golden, becoming paler, more whitish, towards apex, and the hairs on last four segments in ♀ also more yellowish or even yellowish brownish, more so on last segment; hairs on legs with the shorter ones tinted more yellowish, even darker on hind femora above and hind tibiae below, but the longer ones more greyish whitish, those on middle and hind coxae below even more fulvous, especially in ♀; greyish whitish tomentum is present on sides of frons and face, antennal clubs, behind eyes, humeral tubercles, propleurae, and more feebly on pleurae.

*Head* with the antennae in ♂ distinctly longer than thorax (excluding

scutellum), in ♀ more often a little shorter; segment 1 not much thickened, about 3·2–3·6 times length of 2; segment 3 elongate, with feeble annulations, slightly thickened apically, distinctly longer than club itself; the latter pyriform, thickest beyond middle and there about or nearly half as broad as long, inner apical part sharply and obliquely sloping up to terminal tubercle, the extreme base constricted neck-like, and the entire surface covered with greyish tomentum, denser on sensory area; proboscis either a little longer or a little shorter than thorax, or sometimes even the antennae, about 3·2–3·6 mm, sometimes with a few longish hairs basally below in ♀; palps distinct, longer in ♂ than in ♀; some distinct yellowish postvertical spines present in ♀.

*Wings* rather markedly arched near base opposite cross-vein in costal cell, both the alula and axillary lobe rather markedly broad, the wings distinctly tinted yellowish brownish in middle parts along veins in those parts in both sexes, though slightly darker in ♀, with the base, greater part of costal cell, basal part or upper basal part of first basal cell before base of third vein, alula, axillary lobe, at least apical halves of marginal and first submarginal cells, greater part of or entire second submarginal and first posterior cells and hind border of wings clear or with a slight milky whitish tint, and to a lesser extent also middle parts of anal, discoidal, and third posterior cells; veins yellowish brownish, becoming darker apically and in hinder part; apex of discoidal cell shortly stalked; hind border of wings slightly narrower than cells; base of costal margin with some distinct longish hairs; halteres yellowish, their knobs brownish above.

*Legs* with the hind femora distinctly thickened in both sexes, their double row of spines below rather widely separated, long and stoutish, beginning near base; tibiae curved, the hind ones rather thickened, armed in ♀ with strong spicules in apical part; basal segment of hind tarsi subequal in length to claw-segment.

*Genital segment* in ♀ with last sternite depressed or grooved centrally for most of its length; last vertical tergite with some coarse punctures near its lower edge on each side; oviscape with about 7 or 8 yellowish brownish to brownish spines on a side.

*Hypopygium* of ♂ somewhat enclosed by seventh abdominal segment; lobes of tergite 9 rather shortish, rather sharply pointed apically, sternite 9 conical, bluntly rounded apically, with longish hairs on sides and basally below, its processes in side view (text-fig. 3, middle middle) relatively slender, gradually narrowed apically, the apical part curved upwards, with some sparse, longish hairs on apical part along outer margin below, in dorsal view only slightly narrowed apically, bluntly rounded at apex, shallowly grooved along inner side.

From 1 ♂ and 4 ♀♀ (types and paratypes in the Transvaal Museum).

Length of body: about 12·5–15 mm

Length of wing: about 9–11 mm

*Distribution*: Southern Karoo: Willowmore (Dr. Brauns, 25th December 1920 (♂ holotype); 10th December 1903 (♀ allotype); December 1908 (2 ♀

paratypes); December 1912 (1 ♀ paratype)).

From the ♂ of *lanipes*, which the ♂ of this species resembles superficially, it may at once be distinguished by the distinctly less dense hairs on body and legs, whitish (not yellowish) hairs on thorax above, less pointed and more infuscated wings, darker bullae, broader whitish hind margins of tergites, relatively longer, slightly more incrassate hind femora, more slender processes of sternite 9, shorter phallic tubes, etc.

From the ♂ of *pseudolanipes* Beq., which it resembles even more closely, it may be distinguished by the longer antennae and proboscis, darker bullae, broader whitish hind margins of tergites, infuscated wings, longer and stouter hind femora which are not so strikingly and extensively luteous basally, and broader processes of sternite 9.

#### *Afroleptomydas humeralis* Group.

This is 'Group III' of Bezzi and to it are assigned all those species which are characterized by the following combination of characters:

*Thorax* discally above with distinct and conspicuous, delimited, longitudinal, bare streaks between the hairs, the latter usually shorter, less dense, less uniform, more definitely in streaks and usually with a narrow, central, linear streak of hairs.

*Abdomen* above in ♂♂, and sometimes in ♀♀ also, either or not, or not much, shining, usually with discal patches or rings of either dull, dark or black, or greyish whitish, tomentum, or sometimes even mainly or entirely dull.

*Pleurae* less extensively shining than in the *westermanni* group, with more extensive tomentum, or even entirely covered with greyish whitish tomentum to a variable extent.

*Femora* with the hind ones usually less thickened, or sometimes not or scarcely thickened.

The following species are referred to this group:

#### *Afroleptomydas humeralis* (Gerst.) n.comb.

*Leptomydas humeralis* (♀) Gerstaecker, 1868: 82, pl. 1, fig. 3. Bezzi, 1924b: 211.

*Leptomydas nivosus* (♂) Gerstaecker, 1868: 83. Séguy, 1960: 155. (n.syn.)

A slightly variable species from Namaqualand of which the ♀♀ in the collections before me agree in essentials with Gerstaecker's original description of a ♀ specimen from the 'Cape of Good Hope' and which is also identical specifically with certain ♂♂ and ♀♀ identified as *humeralis* by Bezzi in 1924. From Gerstaecker's description of *nivosus*, based on a single ♂ specimen, it is quite evident that the latter merely represents a dark form of the ♂ of *humeralis* with which Gerstaecker was not acquainted and which shows some variability in the colour of the clypeus and the presence or absence of reddish on the sides of the thorax above. On the other hand the ♂ specimens and a ♀ specimen in the South African Museum, identified as *nivosus* (Gerst.) by Bezzi (1924b: 210),

do not agree with Gerstaecker's description or with any of the ♂ forms of *humeralis* and moreover do not constitute one species. The 2 ♂♂ from Cape Town and Matjiesfontein respectively belong to *fasciatus* (Wied.) as stated under that species, and the somewhat damaged ♀ from Matjiesfontein is a new species described farther on in this memoir as *simulans*. The third ♂ from Hex River, mentioned by Bezzi, is not represented in the collections by a labelled specimen. It was either not labelled and may represent the new species described in this paper as *nitidusculus* in the *westermanni* group or it may be one of the other new forms described by me from Hex River.

The species *humeralis*, as based on a series of ♂♂ and ♀♀, is characterized as follows:

*Body* mainly dark or black, the abdomen above and pleural parts, and in ♀ sometimes sides of vertex, however, sometimes more castaneous brownish to a variable extent; antennae reddish brownish to entirely black, the clubs even in ♀ mainly dark, though sometimes more dark reddish towards base; clypeus usually mainly yellowish, but in some ♂♂ sometimes only variably so on sides; proboscis to a variable extent yellowish brownish below in apical half and below bases of labella; humeral tubercles yellowish, but sometimes tending to be darkened in some ♂♂; sides of thorax above and sometimes also anteriorly on inner sides of humeral tubercles yellowish reddish or reddish to a variable extent, but entirely dark in some ♂♂; pteropleural and metapleural parts below wings and to a variable extent hinder episternal and sternal parts, sides of tergites 1 and 2 and sides basally of 3, and sometimes extreme sides of 3-5, yellowish or yellowish brownish; hind margin of tergite 1 sometimes obscurely brownish or yellowish brownish; hind margins of 2-5 in ♂ and 2-5 (or sometimes also obscurely of 6) in ♀ yellowish whitish or whitish, broader and more conspicuous in ♀; bullae orange, orange brownish to brownish, surrounded by a coarsely transversely-ridged black margin, smaller in ♀ than in ♂, separated above in ♂ by a space as wide as, or narrower than, vertical length of bullae, more or very broadly in ♀; venter usually mainly dark or castaneous brownish, the basal part or half sometimes yellowish to a variable extent, the hind margins of sternites 1-5, or in ♀ sometimes also 6, yellowish whitish or whitish on sides; lower parts of hypopygium and processes of sternite 9 in ♂ with much yellowish brownish or mainly so; legs mainly yellowish or yellowish brownish, the coxae and upper faces of femora darkened, more piceous brownish to a variable extent.

*Integument* of middle parts of vertex and frons, head below, proboscis, scutellum, anterior middle part of pleurae to a variable extent, mesosternum, tergites 1 and 2 in both sexes, basal discal parts of tergites 3-6 and to a lesser extent 7 in ♂ and 3-6 in ♀ shining or more or less shining; the abdomen in ♀, though not brilliantly shining, more extensively so than in ♂ where at least the apical halves discally and usually more than apical halves laterally of tergites from 3 are dulled by greyish whitish tomentum; integument of abdomen in ♀ finely transversely wrinkled, becoming more coarsely so on last two or three segments, rendering the abdomen less shining in hinder half.

*Vestiture* with the hairs on head, sides of thorax, in a submedial anterior tuft on each side, on metanotum, pleurae, tergites 1 and 2 in both sexes and also on sides of 3 in ♂ fairly long and dense, shaggy, slightly less so in ♀, entirely snow whitish; shorter hairs in two conspicuous, broadish, submedial, discal, whitish-tomented streaks and in a narrow central streak on thorax above also snow whitish; longish ones basally on venter also whitish; fine hairs on rest of abdomen above in ♂ very faintly tinted greyish yellowish or yellowish, and the reversed ones on last two segments of ♀ also tinted slightly more greyish yellowish to even brownish; hairs on legs fairly long and dense, longer and denser in ♂, entirely whitish.

*Head* with the vertex comparatively broad in both sexes, about or nearly as broad as thorax anteriorly between inner margins of two humeral tubercles; antennae rather elongate, slightly longer than thorax (excluding scutellum); segment 1 slightly thickened, especially in ♂, about 3 times length of 2; segment 3 elongate, slender, much longer than club (but not twice length of club as stated by Gerstaecker); club pyriform to elongate-pyriform, more truncated apically in ♀; proboscis rather long, usually a little longer than thorax, without or with only a few shortish hairs basally below, its labella ovate, rather large, very finely striated longitudinally; palps distinct, longer than antennal segment 2; postvertical spines only a few on each side near middle, whitish or pallid, more distinct in ♀.

*Wings* either entirely clear hyaline in both sexes, but more often so in ♂ only, in ♀ more often tinted greyish yellowish to yellowish or even yellowish brownish, especially in middle parts and more so along the veins, more conspicuous in some ♀♀, in both sexes tinted slightly milky whitish in clearer apical, hinder and basal parts, more perceptible in certain lights; veins yellowish or yellowish reddish; second submarginal cell sometimes tending to be rather broad apically; apex of first posterior cell either broadly open or often tending to be narrowed if second submarginal is broad apically; apex of discoidal cell more often shortly stalked, but sometimes meeting third posterior cell at a point; knobs of halteres brownish to almost black above.

*Legs* with the hind femora only very slightly, or scarcely, thickened, less so in ♀, their double row of spines below rather slender, whitish, pallid to pale yellowish; basal segment of hind tarsi slender, slightly longer than claw-segment.

*Oviscape* in ♀ with the lower middle part on each side of central carina usually with some rugae and coarse sculpture, with about 7–9 spines on a side.

*Hypopygium* of ♂ with the posterior angles of lobes of tergite 9 usually and to a variable extent slightly prolonged, subacute to bluntly angular at apex; sternite 9 bluntly conically pointed, transversely wrinkled basally below, but on sides with the wrinkles curving round in a longitudinal direction apically, the upper half sometimes with rows of setiferous punctures, its processes (text-fig. 3, bottom middle) slightly S-curved in side view, the upper margin more rapidly narrowed to more slender apical fourth or fifth which is slightly curved upwards, in dorsal view narrowed to a blunt point.

From a series of ♂♂ and ♀♀ in the South African and Transvaal Museums.

Length of body: about 14–21·5 mm

Length of wing: about 9·5–14·5 mm

*Distribution*: North-western Cape: Namaqualand and Bushmanland (October–November).

*Afroleptomydas sobrinus* n.sp.

A species almost indistinguishable from *humeralis* and which may almost be considered as representing only a more southern variety of the latter. As the slight differences, however, appear to be consistent in a series of ♂♂ and ♀♀, it is considered as a distinct species which is distinguished from *humeralis* and forms of the latter by the following combination of characters:

*Body* with the bullae entirely shining black, not orange or reddish, relatively larger and closer together above, especially in ♂; hind margins of tergites 2–4 (not 2–5 or 6) in ♂ distinctly yellowish whitish and 2–6 (not sometimes 2–5) in ♀ consistently broadly so; yellowish on pteropleural, metapleural and hinder episternal parts, and on sides of tergite 1, relatively less extensive; sides of vertex more consistently entirely black in both sexes (not tending in ♀ to be more often reddish); legs on the whole distinctly much darker, the hind femora with distinctly less yellowish below, usually entirely or almost entirely castaneous brownish, and tibiae, especially hind ones, much darker, and the hind femora comparatively even less thickened.

*Integument* with the same parts shining, but the transverse striae on abdomen of ♀ comparatively finer, less coarse, even posteriorly.

*Vestiture* similar and similarly coloured, but two submedial streaks of whitish tomentum on thorax comparatively broader.

*Head* with the antennae very similar, but relatively slightly shorter, though also slightly longer than thorax; segment 3 proportionally shorter and its slight thickening at apex distinctly much shorter; proboscis distinctly shorter, more slender, subequal in length to, or shorter than, thorax (including scutellum), its labella comparatively smaller, and with distinctly more and longer hairs at base of proboscis below.

*Wings* very similar, but more consistently clear in ♀, but usually more faintly tinted if at all; veins on the whole darker.

*Oviscape* in ♀ very similar, with 7–8 spines on a side.

*Hypopygium* of ♂ also very similar, but posterior angles of lobes of tergite 9 usually even more produced; sternite 9 less conspicuously wrinkled, its processes (text-fig. 3, top right) more gradually narrowed posteriorly, with fewer hairs on outer side below, the slender apical part, in side view, relatively shorter, and their apices much sharper.

From 18 ♂♂ and 8 ♀♀, including types, in the South African Museum.

Length of body: about 13–19·5 mm

Length of wing: about 8·5–14·5 mm

*Distribution*: South-western Cape coastal region: Leipoldtville–Elands Bay

(Museum Expedition, November 1948) (♂ holotype, ♀ allotype and ♂ and ♀ paratypes); Leipoldville–Elands Bay (South African Museum, November 1956) (♂ and ♀ paratypes).

*Afroleptomydas simulans* n.sp.

*Leptomydas nivosus* (♀) Bezzi (*nec* Gerstaecker), 1924b: 210. (n.syn.)

The somewhat damaged ♀ specimen in the South African Museum, from Matjiesfontein, which Bezzi described as the ♀ of *nivosus* cannot be made to agree with Gerstaecker's description of a unique ♂ specimen, and which species I take to be the ♂ of his *humeralis*. This ♀ is, however, much nearer to the ♀ of *humeralis* than to any other known species and may even be considered as representing a Koup Karoo variety of the latter. From ♀♀ of *humeralis* it differs as follows:

*Body* similarly coloured, but sides of thorax above and postalar calli relatively more broadly reddish; extreme sides of metanotum also distinctly yellowish reddish; pteropleural, metapleural and posterior episternal parts more extensively yellowish; sides of tergites 1 and 2 distinctly very much broader yellowish, and discal parts of 1 and 2 obscurely, but distinctly, more ferruginous; hind margins of tergites 2–5 slightly more broadly yellowish, the medial discal parts of 3–5, especially 3, more broadly so; bullae more brownish, surrounded by only a very narrow, not broad and coarsely transversely-ridged, black margin; integument of abdomen above with the transverse striae slightly farther apart.

*Vestiture* similar, but short hairs on abdomen, apart from the longish basal ones, distinctly sparser, less dense, more conspicuously so on two last segments.

*Head* with the antennae slightly shorter than thorax (excluding scutellum); segment 3 comparatively longer and stouter, its apical thickened part distinctly shorter than in *humeralis*; club relatively longer, more elongate-pyriform; proboscis about as long, but its labella markedly smaller and narrower, only about a fourth length of proboscis (more or much more than a fourth in *humeralis*).

*Wings* similarly tinted slightly yellowish brownish in middle parts; veins also yellowish reddish, and other venational characters similar; hind margin of squamae more brownish, not whitish; stem of halteres and margins of knob brownish, not pallid above, but latter also brownish or dark in middle.

*Legs* similarly yellowish, but femora more distinctly, more extensively darkened above, the hind ones slightly, though distinctly, more thickened, with shorter, stouter, blunter, and deeper yellowish, more yellowish reddish, spines below; basal segment of hind tarsi relatively shorter, subequal in length to claw-segment.

*Oviscape* with 7–8 rather more slender spines on a side.

Length of body: about 20 mm

Length of wing: about 12.5 mm

*Distribution*: Matjiesfontein (R. M. Lightfoot, November 1910) in the south-western part of the Koup Karoo.

*Afroleptomydas saeculus* n.sp.

An almost entirely black Koup Karoo representative of the *humeralis* of Namaqualand which is represented by some ♂♂, as well as a ♀ specimen which I take to belong to the same species, in the collections before me. These specimens differ from *humeralis* only in the following respects:

*Body* almost entirely black or dark; clypeus yellowish on sides to a variable extent, but sometimes even black; humeral tubercles and sides of thorax above entirely black; pteropleural and metapleural parts usually black and posterior episternal part less extensively or less obviously yellowish, sometimes also mainly black; extreme sides only of tergite 1 with two transverse yellowish marks, sometimes much reduced or even wanting; hind margins of tergites 2-4 and sometimes sides of 5 or even 6 in ♂ whitish, and 2-4 broadly and 5 more obscurely yellowish whitish in ♀; bullae, as in *humeralis*, orange yellowish, orange brownish to reddish, dark or black-margined, separated above in ♂ by a space subequal in length to, or a little wider than, vertical length of bullae, in ♀ wider; hind margins of sternites 1-4 or 5 only whitish on extreme sides, usually darkened in middle; venter itself even more extensively darkened than in *humeralis*, only sternites 1 or 2 or 1-3 slightly yellowish in some ♂♂, but otherwise entirely dark in ♂ and ♀.

*Integument* with the same parts shining, but basal discal shining parts of tergites in ♂ more extensive, and with the greyish whitish bloom or pattern on abdomen in ♂ very similar; tergites 7 and 8 in ♀ distinctly less coarsely transversely striated than in *humeralis*.

*Vestiture* with the hairs as long as and as dense as in *humeralis* and *sobrinus*, also snow whitish; those on abdomen similar to those of *humeralis*; outer or lateral bare streaks on thorax above relatively narrower.

*Head* with the antennae proportionally distinctly much shorter, usually a little longer than thorax (excluding scutellum); segment 1 relatively shorter than in *humeralis*, slightly thickened, slightly more than 2.5, or nearly 3, times length of 2; segment 3 proportionally shorter than in *humeralis*, longer than club, shorter than interocular space on vertex, its apical thickened part usually a little less than apical third; club, in ♂ especially, more distinctly pyriform, less elongate, more rapidly dilated above from middle; proboscis very similar, but more slender, with smaller labella, about as long as, or more usually a little longer than, thorax (excluding scutellum), usually with a few longish hairs near its base below; palps distinctly, longer than antennal segment 2; post-vertical spines not distinctly differentiated in ♂, pallid in ♀.

*Wings* also clear or only greyish hyaline, though sometimes very faintly tinted yellowish brownish in ♂ and more so in ♀; veins yellowish reddish to reddish; second submarginal cell with a relatively shorter or very short appendix basally, usually less dilated basally and sometimes tending to be narrower apically than first submarginal; first posterior cell also broadly or more narrowly open apically, its outer vein, however, tending to be less roundly curved outwards in apical part than in *humeralis*; other venational characters similar; halteres also



pallid or whitish, the middle of knobs dark above.

*Legs* on the whole darker, deeper yellowish brownish to brownish, the upper faces of femora also darkened, with the hairs about as long and silvery whitish, but longish ones on hind femora distinctly less dense than in *humeralis*; hind femora more slender, distinctly less, or scarcely, thickened; basal segment of hind tarsi also slightly longer than claw-segment.

*Oviscape* in ♀ with about 7 spines visible on a side.

*Hypopygium* of ♂ with the posterior angles of lobes of tergite 9 blunter, less angularly produced; sternite 9 relatively shorter, not, or less, or only very feebly, transversely wrinkled basally below, its processes relatively shorter, less curved up apically than in *humeralis*.

From 4 ♂♂ and 1 ♀, including the types, in the South African Museum.

Length of body: about 13–17 mm

Length of wing: about 9–11·5 mm

*Distribution*: South-western Koup Karoo: Koup Siding—Laingsburg (Museum Expedition, October 1952) (♂ holotype and 2 ♂ paratypes). Tankwa Karoo, west of Matjiesfontein: Waterval (Museum Expedition, November 1952) (♀ allotype); Dikbome near Merweville (Museum Expedition, October 1952) (1 ♂ paratype).

The ♂ paratype from Dikbome represents a variety which is slightly larger, with entirely black clypeus and slightly longer proboscis (about 3·2 mm), slightly longer and stouter antennae, and clearer, more hyaline wings.

#### *Afroleptomydas campestris* n.sp.

A slightly variable southern Karoo species, belonging to the *saeculus* and *sodalicus* category of the *humeralis* group, mostly found sitting on the ground, but sometimes also on the flowers of species of *Mesembryanthemum*. It is characterized as follows:

*Body* mainly dark or black; clypeus or sides of it reddish brownish to a variable extent; antennal segments 1 and 2 sometimes with a slight reddish or dark piceous reddish tint, especially in ♀; proboscis below also reddish brownish to a variable extent, especially in ♀; humeral tubercles dark or black, but, area between the base and anterior spiracle often tinted slightly reddish brownish; pleurae mainly dark, but metapleural part behind posterior thoracic spiracle yellowish brownish to reddish brownish, the spiracle itself usually similarly coloured, and raised parts in front of it tending to be dark reddish brownish or piceous to a variable extent; sides basally, extreme side and sides apically of tergite 1, sides of 2 (often relatively broadly), to a variable extent extreme sides intramarginally of 3, 4 and even base of 5 (or in ♂ sometimes entire length of 5), as well as base of venter or sides of sternites 2–5 (especially in ♂), to a variable extent yellowish, pale yellowish brownish to reddish brownish; venter in ♀ usually mainly dark, only slightly paler or yellowish brownish on sides of sternites 2 and 3 and base of 4; hind margins of tergites 2, 3 and sides of 4, or 2–4 and sides of 5, in ♂ yellowish whitish (that of 2 often

dark between bullae), and 2-5 or 6 in ♀ more broadly or fairly broadly yellowish whitish or yellowish, sometimes with their basal margin tinted slightly more orange and tending to be more broadened along middorsal line; hind margins of corresponding sternites also yellowish whitish on sides; bullae usually shining black, though sometimes with a slight obscure dark reddish brownish or piceous tint across middle, smaller and more broadly separated in ♀, in both sexes with the basal part radiately grooved or striate; apical part of processes of sternite 9 in ♂, and even entire sternite, and often lateral margin of lobes of tergite 9, tinted more piceous dark reddish to dark blackish red; legs very dark castaneous brownish, blackish brownish or piceous brownish, the outer face of front and middle femora and inner lower face of hind ones yellowish brownish to reddish brownish, and the tibiae and tarsi also yellowish brownish, though hind tibiae sometimes rather dark along outer aspect.

*Integument* of middle part of frons, to a large extent the clypeus, head below, proboscis, middle anterior (or sternopleural and mesopleural) part of pleurae, scutellum, greater part of abdomen (excepting under the broadish apical rings of greyish tomentum on tergites in ♂), and the legs shining; rest of head and pleurae dulled by greyish whitish tomentum; thorax above and metanotum dull; integument of abdomen above in ♂ finely transversely striate, especially across more or less apical halves of tergites from 3, and covered with sparse, minute, setiferous puncturation, more coarsely transversely striate in ♀, especially across last three segments; integument of hind femora finely transversely striate, more so in ♀.

*Vestiture* fairly long and dense on head, sides of thorax above, pleural parts, sides of metanotum, tergite 1, sides of 2 and 3 (in ♂ at least), at base of venter, metasternal part and hind coxae, and all these hairs entirely snow whitish; shortish ones on disc of thorax in 3 streaks on 3 streaks of greyish tomentum also whitish; shortish, not very dense, ones on rest of abdomen in ♂ mainly whitish, but sometimes gleaming very slightly sericeous yellowish on basal, dark, shining, discal parts of tergites, in ♀ also not very dense, slightly longer and more evident on sides than above, mainly pale, but denser reversed ones on last three segments appearing slightly more yellowish in certain lights; abdomen in ♂ with a little less than apical halves of tergites from 3 dulled by greyish whitish tomentum, broadened on sides to extend towards base; hairs on legs also mainly whitish, those on front and middle femora above longish, those on hind femora with sparse, longish ones along inner face and in basal half above, the rest shortish, and also with rather sparse longish ones along inner face of hind tibiae; spines and spicules on legs yellowish whitish, pallid, to whitish.

*Head* with some postvertical spines present; antennae distinctly much longer than the rather shortish thorax (excluding scutellum); segment 1 about 3 or 3.3 times length of 2; segment 3 elongate, subequal in length to, or a little longer than, width of interocular space on vertex, also more than half length of thorax, longer than club, its apical part distinctly thickened segment-like; club elongate-pyriform, rather rapidly broadened from about or a little beyond

middle, usually slightly more so above, thus appearing slightly hollow-backed, its sensory area sloping obliquely upwards to tubercular prominence, its base distinctly shortly constricted; proboscis rather longish, about 3.2–3.68 mm, usually slightly longer than thorax above, without distinct longish hairs below; palps distinct, of variable length, sometimes reaching length of antennal segment 1, its apical segment not markedly narrower than basal one.

*Wings* in ♂ almost clear hyaline, to a variable extent very faintly tinted brownish from base of marginal cell towards apex, more so along veins, in ♀ more distinctly tinted smoky brownish and more so along veins; apex of discoidal cell shortly stalked; knobs of halteres blackish brown above.

*Legs* slender, with the hind femora only slightly thickened, their double row of spines below relatively shortish, beginning near base; hind tibiae slightly curved near apex, their well-developed spicules arranged in an outer lower and an inner apical row; basal segment of hind tarsi distinctly longer than claw-segment; claws in ♂ longer and more rapidly curved down apically, especially hind ones, in ♀ proportionally shorter, more sickle-shaped; pulvilli in ♂ much broader and longer than in ♀.

*Oviscape* in ♀ with from 6–9 dark brownish to blackish brown spines on a side.

*Hypopygium* of ♂ with sternite 9 conical, transversely grooved basally below, more longitudinally so on sides, its processes, in side view (text-fig. 3, middle right), S-curved, more rapidly narrowed above than below, ending in a slender upturned apical part, with the hairs below longer and stiffer near base, the processes in dorsal view rather sharply pointed apically; epimere of aedeagal apparatus slightly broadened apically (shoe-horn-shaped).

From 25 ♂♂ and 7 ♀♀ (♂ holotype, ♀ allotype, 23 ♂ and 5 ♀ paratypes in the South African Museum, and a ♂ and ♀ paratypes in the Transvaal Museum).

Length of body: about 16.5–22 mm

Length of wing: about 11.14 mm

*Distribution*: South-western Cape: 18 miles east of Touws River along railway line to Ladismith, mostly on the ground, but one paratype on the whitish flowers of a species of *Mesembryanthemum* (South African Museum, December 1962 (♂ holotype, ♀ allotype, 18 ♂ and 4 ♀ paratypes); 18 miles south-east of Touws River (C. D. Michener, 12th November 1966) (2 ♂ and 1 ♀ paratypes); half-way along road between Touws River and Hottentots Kloof on reddish flowers of a *Mesembryanthemum* (South African Museum, December 1962) (3 ♂ and 1 ♀ paratypes)). Constable, north-east of Touws River, on reddish flowers of a *Mesembryanthemum* (South African Museum, December 1962) (1 ♂ paratype).

From *saeculus*, which it closely resembles, this species may at once be distinguished by the distinctly longer antennae of which segment 3 is proportionally longer, as long as or slightly longer than interocular space on vertex; the more extensive yellowish on sides of tergites 1 and 2 and even extreme sides of 3 and 4; dark bullae; denser and longer hairs on abdomen, hind femora and

tibiae; and more extensively darkened femora.

From *sodalicus* and *vallicolus* it may be separated by the dark bullae, slightly more tinged wings, darker veins, and in ♂ by the distinctly more S-curved processes of sternite 9 which are more rapidly narrowed, especially above, and with a more delimited upcurved apical part.

*Afroleptomydas inopinus* n.sp.

A species very near *campestris*, of which it may even be considered as a subspecies. It is unfortunately represented in the collections before me by only a single ♀ specimen which is characterized as follows:

*Body* mainly black; sides of clypeus reddish brownish; humeral tubercles yellowish; hind border of pteropleuron, tubercle in front of halteres, sutural part below the latter, to a certain extent upper border of hypopleuron, meta-pleural part below halteres, sides of tergite 1 basally and to a smaller extent apically, sides of tergite 2 and to a fainter extent extreme sides and base laterally of 3, base on sides of 4, sternites 1, 2, base and extreme sides of 3 and base of 4 laterally yellowish brownish or yellowish reddish; hind margins of tergites 2-5 yellowish and those of corresponding sternites also yellowish on sides; bullae black, widely separated above; legs with the femora dark blackish brownish above, the hind ones being more so along inner aspect, and the tarsi yellowish brownish.

*Integument* of middle part of frons, head below, proboscis, scutellum, middle parts of pleurae, and greater part of abdomen above shining; disc of thorax dull, with streaks of greyish tomentum under the streaks of hair; metanotum also dull; abdomen above transversely striate from tergite 3, denser and coarser posteriorly; integument of legs also mainly shining.

*Vestiture* fairly dense and longish on head, sides of thorax above, sides of metanotum, pleurae, tergite 1, sides of 2 and on coxae, and entirely whitish; shortish ones on disc of thorax in two broadish submedial streaks and a narrow central one; shortish hairs on rest of abdomen above rather sparse, whitish, only those on last two abdominal segments tinted very slightly more greyish yellowish; hairs on legs mainly whitish, longish on front and middle femora above, shortish on hind ones, but with longish ones also above in basal half, and with sparse, longish ones along inner lower aspect of hind tibiae; spines and spicules on legs pallid.

*Head* with some pale postvertical spines; antennae longer than thorax (excluding scutellum); segment 1 about 3 times length of 2; segment 3 elongate, much longer than interocular space on vertex, much longer than club; latter slightly elongate-pyriform, more rapidly broadened below from just beyond middle, the sensory area sloping up, the base very shortly or scarcely constricted; proboscis rather long, slightly longer than thorax, about 3.6 mm; palps distinct, nearly or about as long as antennal segment 1, their apical segment distinct, narrower and shorter than basal part.

*Wings* clear hyaline in more or less basal fourth and axillary part, distinctly

tinted brownish beyond, more distinctly so along veins; veins dark brownish; appendix at base of second submarginal cell rather long; apex of discoidal cell shortly stalked; knobs of halteres blackish brown above.

*Legs* with the hind femora slightly, but distinctly, thickened, their double row of spines below beginning near base, the spines rather shortish; hind tibiae slightly curved near apex, with fairly longish spicules below, beginning at about basal third; basal segment of hind tarsi longer than claw-segment.

*Genital segments* with sternite 8 slightly depressed medially near apex; oviscapae with about 6 or 7 shortish and brownish spines on a side.

From a single ♀ holotype in the South African Museum.

Length of body: about 20 mm

Length of wing: about 13 mm

*Distribution*: South-western Cape: Ouberg Pass, south-east of Touws River (South African Museum, December 1962).

As may be seen from the description this species is very near and almost identical with ♀♀ of *campestris*. From the ♀ of the latter it may, however, be distinguished by the proportionally much longer antennal segment 3 (proportions of 10:9) and which is very much longer than interocular space on vertex; the proportionally shorter club (proportions of 10:11), with scarcely any basal constriction; the yellowish humeral tubercles; and slightly more extensive yellowish reddish on pleurae (which more distinctly occupies hind border of pteropleuron), tubercle in front of halteres, sutural part below latter, to a certain extent upper border of hypopleuron and metapleural part below halteres.

#### *Afroleptomydas marginipunctatus* n.sp.

Another Western Cape and coastal species, belonging to the *humeralis* group, and which is very near *humeralis* and *sobrinus*. From these two species it may, apart from its consistently smaller size, however, be separated by the following characters:

*Body* similarly coloured, with the same parts more or less yellowish reddish, but with the yellowish on sides of abdomen more consistently perceptible as a narrow, intramarginal streak along extreme sides of tergites 2-5 and, in ♀, sometimes along the rest as well; extreme base of thorax sometimes transversely obscurely reddish in ♀; yellowish on pleurae usually less extensive, the pteropleuron and sometimes metapleural part in front of halteres being dark; venter usually more extensively yellowish up to at least sternite 5, sometimes beyond it or even entirely so, especially in ♀; hind margins of tergites 2-4, and 5 laterally, in ♂ narrowly, and 2-6 in ♀ more broadly, yellowish whitish or whitish; hind margin of tergite 1 obscurely brownish to yellowish; bullae shining black as in *sobrinus*, separated above in ♂ by a space as wide as, or narrower than, bullae, broader in ♀, but less broadly so than in *humeralis*.

*Integument* with the same parts shining as in the other two species and the whitish tomentum on tergites disposed in the same way, but with the abdomen above as in *sobrinus*, shining to apex and striae less coarse than in *humeralis*;

tergite 7 on each extreme side intramarginally with a consistent row of impressed, rivet-like, shining punctures in both sexes, sometimes also with some along preceding tergites, especially in ♀ (these punctures absent in the other two species or represented by only a few).

*Vestiture* with the hairs as dense and as long as, and also snow whitish as in the other two species, but the two submedial dark bare streaks on thorax above much narrower than in *humeralis*, more like those of *sobrinus*.

*Head* with the antennae comparatively much shorter, a little longer than thorax (excluding scutellum) which latter itself is, however, shorter than in the other two species, the antennal segments proportionally shorter; segment 1 a little more than twice length of 2, slightly thickened in ♂, more slender in ♀; segment 3 a little longer than articulating part and club together, a little more than its apical third segment-like, but scarcely thickened; clubs relatively stouter, more pyriform, especially the dilated part beyond articulating section; proboscis subequal in length to shortish thorax, relatively much shorter than in both *humeralis* and *sobrinus*, with some distinct longish hairs basally below; palps distinct, sometimes slender and longer than antennal segment 2.

*Wings* very similar, relatively narrower, clear hyaline in ♂, faintly tinted yellowish brownish in middle parts in ♀, though not so dark as in some ♀♀ of *humeralis*; venational characters similar, but appendix at base of second submarginal cell tending to be much shorter, sometimes very short or even absent; halteres also pallid, with middle part of knobs above dark brownish.

*Legs* mainly yellowish as in *humeralis*, with equally dense hairs, the femora also darkened above, the hind ones a little more extensively than in *humeralis*, but not so much as in *sobrinus*; hind ones even less thickened than in either of the other two species, their double row of spines below slender, pallid, or whitish, beginning just before middle; hind tibiae with rather longish spicules or spurs apically; basal segment of hind tarsi also longer than claw-segment.

*Oviscape* in ♀ with 6-8 spatulate spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 much like those of *humeralis*; sternite 9 similar, but not or only feebly transversely wrinkled basally, its processes (text-fig. 4, top right) more like those of *sobrinus*, their apical slender parts (side view), however, shorter than in *humeralis*, and outer side below with relatively fewer hairs than in latter species.

From 5 ♂♂ and 3 ♀♀, including the types, in the South African Museum.

Length of body: about 13.5-17 mm

Length of wing: about 9-11.5 mm

*Distribution*: Coastal region of south-western Cape: Papendorp near mouth of Olifants River (Museum Expedition, October 1950).

#### *Afroleptomydas psammophilus* n.sp.

A sand- and dune-frequenting species from the western Cape which has a superficial resemblance to *humeralis*, but is characterized as follows:

*Body* mainly black, but following parts yellowish, yellowish reddish or

yellowish brownish: greater part or entire sides of clypeus (excepting sometimes dark, central, dorsal part), sometimes lower part of proboscis, humeral tubercles, broadish sides of thorax above, including part on inner sides of humeral tubercles, usually extending down along upper margin of mesopleuron in front of wings, postalar calli, extreme sides of metanotum, pteropleural and metapleural parts, upper part of hypopleuron, posterior episternal part, sides of tergites 1 and 2, an intramarginal streak along extreme sides of 3 and 4, and basally of 5 in ♂ and to a fainter extent in ♀, sternites 1-4 and part or sides of 5 in ♂ and to a lesser or darker extent 1-3 (or sometimes also 4) in ♀, upper part of sclerite on sides above sternite 8 in ♂, apical parts of lobes of tergite 9, and lower part and processes of sternite 9, as well as greater part of this sternite itself, in ♂; antennae piceous brownish or dark reddish brownish, sometimes blackish brown, the greater part of clubs in ♀ sometimes appearing dark reddish, and antennal segment 1 in ♀ sometimes reddish below; legs mainly piceous brownish or dark reddish brownish, the hinder faces of front and middle femora more yellowish, and lower surfaces of hind ones more reddish, the tibiae and tarsi a little paler, more yellowish than femora; coxae dark blackish brownish or black, only outer surfaces of hind ones being more yellowish brownish; hind margins of tergites 2-4, and sometimes of 5, yellowish whitish in ♂, and 2-5 in ♀ more broadly so; hind margins of corresponding sternites also yellowish whitish only on extreme sides, or often only obscurely so; bullae fairly large, reddish brownish, orange brownish to wine reddish, reddish, or even, in some ♀♀, black, dark-margined, sometimes smallish in some ♀♀, separated above in ♂ by a space usually narrower than vertical length of bullae, more broadly so in ♀.

*Integument* with the following parts shining: middle part of frons, head below, proboscis, hind part of scutellum, oblique middle parts of pleurae, tergites 1 and 2 in both sexes, rest of abdomen above in ♀, and discal parts on at least basal halves of tergites 3-5 and to a certain extent basal discal parts also of 6 or even 7 in ♂; the apical and lateral parts of these tergites in ♂ dulled by greyish whitish tomentum; last two abdominal segments of ♀ rather coarsely transversely striate.

*Vestiture* with the hairs on head, sides of thorax, metanotum, prosternal, pteropleural, metapleural, and metasternal parts, on tergites 1 and 2, and in ♂ sides of 3 and to a lesser extent sides of 4 and also on sternites 1-3, as well as on coxae in both sexes, longish and dense, but relatively shorter in ♀, entirely snow whitish; hairs on disc of thorax in two broadish, submedial streaks and a narrow central one (separated by the usual bare streaks), slightly shorter than those on sides, also whitish; fine hairs on rest of abdomen in ♂ greyish whitish, but those below processes of sternite 9 and on the sternite itself more yellowish to golden or yellowish brownish; fine and sparse, short hairs on abdomen in ♀ whitish, the longer and denser reversed ones on last two segments yellowish brownish to brownish, those on oviscape almost black; hairs on legs not very dense and long, not so dense and long as in *humeralis*.

*Head* with the antennae rather long, stoutish, much longer than thorax

(excluding scutellum); segment 1 slightly thickened, in ♂ at least, relatively long, about 3.5–3.6 times length of 2; segment 2 with a crown of shortish, yellowish or golden hairs; segment 3 stoutish, a little longer than club plus articulating part, with a little more than its apical third thickened segment-like; clubs relatively elongate, elongate-pyriform, becoming relatively gradually thickened towards apices, their bases rapidly narrowed or constricted before junction of articulating part; proboscis relatively short, stoutish, shorter than thorax, without any longish hairs basally below; palps minute, or only a little longer than antennal segment 2; postvertical spines well developed.

*Wings* greyish hyaline in both sexes, with a feeble whitish tint, but often faintly tinted brownish, distinctly more so in some ♀♀, and especially so along veins in middle parts, the basal third of wings being hyaline, in ♂ usually also with slight narrow dark borders along basal veins of second submarginal and first posterior cells; veins brownish; appendix at base of second submarginal cell longish; apex of discoidal cell shortly stalked; first posterior cell usually broadly open apically; knobs of halteres blackish brown above.

*Legs* rather long, with the hind femora also rather long, distinctly thickened, their double row of spines below shortish, pallid or yellowish, and beginning from near base; hind tibiae rather stoutish, curved, especially near apices, granular below, with distinctly more numerous spicules, especially on outer sides below, than in *humeralis* and related forms; basal segment of hind tarsi not longer than claw-segment, more or less subequal to it in length.

*Oviscape* usually convergently striated in inner posterior angles of sclerite on each side of vertical carina, the spine-bearing sclerites each with about 7–9 spines.

*Hypopygium* of ♂ with the posterior angles of lobes of tergite 9 usually distinctly produced lobe-like; sternite 9 conically pointed, somewhat constricted nearer apex, transversely wrinkled basally below, rather densely hairy below, its processes, in side view (text-fig. 3, bottom right), S-curved, rather rapidly narrowed towards apices, with more or less their apical fourth slender, horizontal or slightly tilted up, in dorsal view rather acutely pointed apically.

From 18 ♂♂ and 10 ♀♀, including the types, in the South African Museum.

Length of body: about 17–25 mm

Length of wing: about 11–15 mm

*Distribution*: South-western Cape: Paleisheuvel (Museum Expedition, November 1948) (♂ holotype, ♀ allotype, 16 ♂ paratypes, and 7 ♀ paratypes); Bulhoek between Clanwilliam and Klawer (Museum Expedition, October 1950) (1 ♂ and 2 ♀ paratypes).

*Afroleptomydas braunsi* (Bezz.) n.comb.

*Leptomydas braunsi* Bezzi, 1924b: 211. Bequaert, 1959: 367, 370.

This species from Willowmore with its rufous-backed ♀ was the first dichroic form of this genus to be described from South Africa. In the collections



of the Transvaal Museum are 4 ♂♂ and 4 ♀♀, one pair of which was taken in copulation by the late Dr. Brauns. All the specimens have been caught during November and two ♀♀ in the same year as the type specimens. The species is apparently slightly variable and Bezzi's description of his ♂ and ♀ is not strictly applicable to this species in general. Moreover, as there are several other South African species with rufous-backed ♀♀, two of which also occur at Willowmore, Bezzi's description may easily lead to confusion.

The species is characterized as follows:

*Body* mainly dark or black, the pleurae in both sexes and the dark parts of abdomen in ♂ being sometimes more castaneous brownish than entirely black; antennae blackish brownish or dark reddish brownish; clypeus yellowish or yellowish brownish in both sexes, slightly darker above; proboscis yellowish brownish below; humeral tubercles dark in ♂, but these and anterior spiracles in ♀ yellowish; sides of thorax above and postalar calli in ♀ obscurely reddish, only postalar calli in ♂ very dark reddish brownish; metapleural and metasternal parts, sides basally and apically of tergite 1, extreme sides of tergite 2, and in ♂ also very narrowly those of 3-4 (or 5), to a variable extent yellowish; hind margins of tergites 2-5 (or sides of 5) in ♂ yellowish whitish and those of 2-6 (or only sides of 6) in ♀ yellowish; bullae ochreous brownish, reddish brownish, blackish brown to shining black, dark-bordered; abdomen above in ♀ ochreous brownish or orange brownish discally to a variable extent from tergites 2-6, that on 5 and 6 present only discally and that on 6 usually small, confined to hinder part and sometimes even absent, that on 2 sometimes not uniformly ochreous, and sides of 2-5 with large black spots, the one on sides of 5 the largest, and sides of hind margins opposite the black spots more whitish than yellowish; abdomen in ♂ appearing greyish, due to greyish whitish tomentum which is absent on tergites 1 and 2, basal two-thirds discally on 3 and 4 and basal half discally of 5 and to a certain extent that of 6; venter mainly yellowish on sternites 1-4 (or 5) in ♂ and 1-3 and basally across 4 in ♀, the rest dark, though in one ♂ more brownish, the hind margins of sternites whitish on sides of 1-4 (or 5) in ♂ and 1-5 in ♀, the middle parts of these margins in ♀ more yellowish and with that of 6 sometimes obscurely dirty yellowish; hypopygium of ♂, excepting dorsal anal lappets, mainly yellowish; legs mainly yellowish brownish or slightly pale reddish brownish, the femora, especially hind ones, appearing darkened above.

*Integument* of part of vertex, central part of frons, middle dorsal part of clypeus, sides of head below, proboscis, anterior middle parts of pleurae, scutellum, tergites 1-6 in ♀, and untomented dark basal parts on 3-6 in ♂, shining; hinder part of abdomen dull in both sexes, though in ♀ sometimes subshining; integument of thorax above and metanotum dull in both sexes, due to microscopic leathery microsculpture; legs very little shining.

*Vestiture* with the hairs fairly long and dense in both sexes, though slightly shorter at base of abdomen (tergites 1 and 2) in ♀, and slightly less dense on legs in ♀, though not scarce and short as stated by Bezzi; those on hind tibiae in

both sexes longish along inner sides, though slightly less dense in ♀; hairs on thorax arranged in 5 streaks, and those on sides of tergite 3 in ♂ longish also as on 1 and 2; all the hairs on head, body and legs snow whitish in both sexes, those on dark parts of abdomen in ♂ tinted very slightly more sericeous yellowish, not dark or black as stated by Bezzi, and reversed hairs on last three abdominal segments in ♀ distinctly yellowish brownish or fulvous brownish, not whitish as implied by Bezzi; tomentum on head on non-shining parts dense and greyish whitish, also on sides behind eyes, on non-shining anterior, upper and hinder parts of pleurae, and on non-shining parts of abdomen in ♂; spines and spicules on legs yellowish whitish.

*Head* with the antennae usually longer than thorax (excluding scutellum); segment 1 slightly thickened, about 2·6–3 times length of 2; segment 3 elongate, a little more than 3 times length of 1 and 2 combined, longer than club, its apical part slightly thickened segment-like; clubs slightly elongate-pyriform, becoming rapidly broadest beyond middle, the extreme base shortly constricted; proboscis shorter than antennae, usually slightly longer than thorax (excluding scutellum), with some longish hairs basally below, its labella fairly large; palps distinct, clavate in appearance, longer than antennal segment 2, apically with a short, slender terminal segment; some feeble, whitish, postvertical spines discernible in ♀.

*Wings* almost hyaline, very slightly or very faintly tinted yellowish from about level of base of discoidal cell, scarcely perceptible in ♂, but more distinctly so in ♀, especially along course of veins, the wings also appearing whitish in certain lights; veins yellowish brownish, more brownish in hinder part; first posterior cell normally broadly open apically; second submarginal cell not much dilated basally; apex of discoidal cell shortly stalked, though sometimes scarcely so or not at all; hind border of wings in apical half narrower than cells; halteres yellowish, their knobs darkened above.

*Legs* with the hind femora only slightly, but distinctly, thickened, their double row of spines below, slender, yellowish whitish, beginning from just before middle; hind tibiae slightly curved forwards in apical part, armed below on outer aspect, especially in apical part, with slender, yellowish whitish spicules, more numerous and stouter in ♀; basal segment of hind tarsi distinctly longer than claw-segment; claws distinctly much longer in ♀.

*Oviscape* in ♀ with about 8 or 9 relatively shortish, blunt, yellowish brownish or brownish spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 somewhat produced, pointed subangularly rounded apically; sternite 9 more or less obliquely transversely wrinkled in basal half, its processes, in side view, slightly S-curved, gradually narrowed to apex, more rapidly so above to about halfway, then slightly curving upwards, in dorsal view rather broadish, bluntly pointed.

From 4 ♂♂ and 4 ♀♀ in the Brauns collection in the Transvaal Museum.

Length of body: about 16–21 mm

Length of wing: about 10·5–16 mm

*Distribution:* Southern Karoo: Willowmore (Dr. Brauns, October 1920, November 1909, 1916, 1917 and 1920).

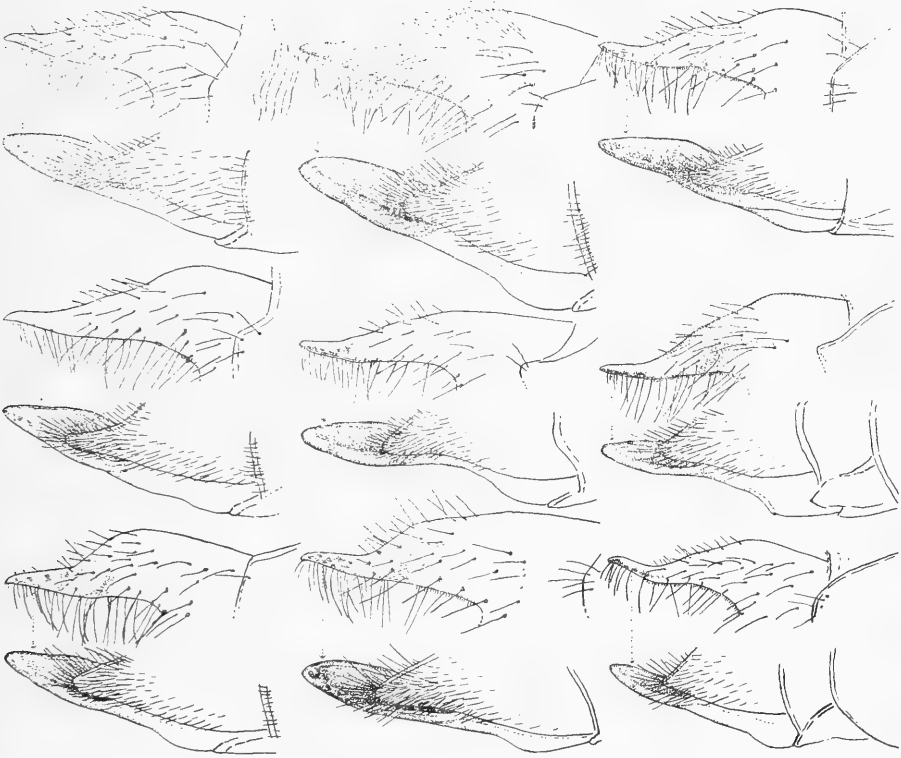


FIG. 4. Side and dorsal views (all to same scale) of right process of sternite 9 of ♂♂ of:  
*Afroleptomydas sodalicus* n.sp. (top left). *Afroleptomydas koupicolus* n.sp. (top middle). *Afroleptomydas marginipunctatus* n.sp. (top right).  
*Afroleptomydas vallicolus* n.sp. (middle left). *Afroleptomydas rusticanus* n.sp. (middle middle).  
*Afroleptomydas rubellus* n.sp. (middle right).  
*Afroleptomydas thorni* n.sp. (bottom left). *Afroleptomydas microreticulatus* n.sp. (bottom middle).  
*Afroleptomydas inhacae* n.sp. (bottom right).

#### *Afroleptomydas sodalicus* n.sp.

A Koup Karoo species belonging to the *humeralis* section, of which the ♂ is almost entirely black and the ♀ with yellowish brownish dorsum of the abdomen as in ♀ of *braunsi*. It is characterized as follows:

*Body* mainly black, entirely so in ♂; clypeus in ♂ entirely black, yellowish on sides in ♀, dark above; humeral tubercles, sides of thorax, pteropleural and metapleural parts entirely dark or black in both sexes, only posterior episternal part yellowish; two broadish transverse streaks on extreme sides of tergite 1, and in ♀ sometimes also extreme sides of 2, yellowish to an obscure extent; dor-

sum of abdomen discally on tergites 2-4 broadly and on 5 narrowly pale ochreous brownish in ♀; hind margins of tergites 2-4 and obscurely on sides of 5 in ♂ whitish; hind margin of tergite 1 in ♀ obscurely reddish brownish, those of 2-5 and sometimes discally of 6 more broadly yellowish whitish; bullae orange or ochreous brownish, black- or dark-margined, separated above in ♂ by a space a little narrower than their vertical length plus dark margin, much more broadly in ♀; venter in both sexes extensively dark, more so than in *humeralis*, only basal two or three sternites being paler, ochreous brownish or yellowish brownish, and extreme sides of hind margins of sternites 1-4 (or 5) whitish; sternite 9 and apical halves or so of its processes and lobes of tergite 9 in ♂ yellowish; legs mainly brownish.

*Integument* with the same parts shining as in *humeralis* and the pattern of greyish whitish tomentum on abdomen in ♂ also similar; abdomen in ♀ as shining as in other ♀♀ in this section.

*Vestiture* as long and dense as in *humeralis*, also snow whitish; short ones on abdomen above, however, relatively dense; reversed hairs on last two abdominal segments in ♀ appearing slightly more brownish than in ♀ of *humeralis*, relatively less dense; hairs on legs also fairly dense and long, snow whitish, with numerous longish ones also on hind femora; spines and spicules on legs pallid or pale yellowish.

*Head* with the antennae proportionally shorter than in *humeralis*, but longer than in the species *saeculus*, a little longer than thorax (excluding scutellum); segment 1 about or nearly 3 times length of 2; segment 3 longer than club, in ♂ subequal in length to width of interocular space on vertex, its apical third, or slightly more, segment-like; clubs elongate-pyriform, gradually dilated beyond middle, more rapidly so in ♀, their bases shortly constricted; proboscis distinctly a little longer than thorax (excluding scutellum), about 3.4-3.6 mm, without any or with only a few, longish hairs basally below; palps distinct, much longer than antennal segment 2; postvertical spines present, yellowish.

*Wings* greyish hyaline in ♂, though very faintly tinted towards apex, in ♀ more distinctly tinted yellowish brownish in middle and apical parts; veins yellowish brownish; second submarginal cell tending to be less dilated basally than in *humeralis*; knobs of halteres brownish above in apical two-thirds.

*Legs* with the hind femora slightly, but distinctly, thickened, their double row of spines below slender, from near base; basal segment of hind tarsi a little longer than claw-segment; claws, especially hind ones, in ♂ longer than in ♀.

*Oviscape* in ♀ with about 6-8 yellowish brownish spines on a side.

*Hypopygium* of ♂ with the apical part of lobes of tergite 9 distinctly prolonged or produced, more so than in *humeralis*; sternite 9 also conical, with slightly more hairs than in *humeralis*, its processes in side view (text-fig. 4, top left) slightly sinuous, more or less narrowed above and below to apex, relatively longer than in *humeralis*, in dorsal view slightly blunter apically; aedeagal apparatus very slender.

From 1 ♂ and 2 ♀♀ in the South African Museum.

Length of body: about 16·5–18 mm

Length of wing: about 11–14 mm

*Distribution*: Koup Karoo: Dikbome near Merweville (Museum Expedition, October 1952) (♀ holotype, ♀ paratype and ♂ allotype).

The ♀, which resembles the ♀ of *braunsi* (Bezz.) differs from the latter in having the abdomen above more narrowly ochreous; discal part of tergite 6 not ochreous; less extensively yellowish clypeus; darker humeral tubercles; dark sides of thorax above; less extensive yellowish on sides at base of abdomen; darker base of venter; proportionally longer antennae; relatively darker legs, etc. The ♂ may at once be distinguished from that of *braunsi* by the dark clypeus, dark humeral tubercles and dark sides of thorax, absence of orange hind borders to the whitish hind margins of tergites, darker venter, darker legs, longer antennae, and longer and less S-curved processes of sternite 9.

*Afroleptomydas vallicolus* n.sp.

This mountain valley frequenting species, from the Swartberg region of Laingsburg, is, apart from its slightly larger size, almost indistinguishable superficially from *sodalicus*. The ♂ may, however, at once be distinguished from the ♂ of the latter by its slightly more dark reddish or reddish brownish humeral tubercles; the presence of a yellowish reddish intramarginal streak on sides of tergites 3–5; by the whitish hind margins of tergites 2–4 and sides of 5 (not 2–3 and sides of 4 as in *sodalicus*); the yellowish streak on extreme sides of sternites 2–5; the paler more extensively yellowish lower faces of front and middle femora; relatively longer antennae, of which segment 3 is distinctly longer than interocular space on vertex; the more rapidly dilated and slightly longer clubs; and the relatively longer, and in dorsal view, more sharply pointed processes (text-fig. 4, middle left) of sternite 9.

The ♀, which also has the dorsum of abdomen ochreous yellowish, differs from ♀ *sodalicus* in having yellowish humeral tubercles; a darkish central streak on tergite 2; distinctly much longer antennae, with proportionally much longer segment 3; longer clubs, which are less rapidly dilated from middle; slightly more thickened hind femora; and even more darkly tinted wings.

From 2 ♂♂ and 1 ♀ in the South African Museum.

Length of body: about 19–21·5 mm

Length of wing: about 13–15 mm

*Distribution*: Koup Karoo: Rooinek Pass in mountainous part near and to the east of Laingsburg (Museum Expedition, October 1952) (♂ holotype, ♀ allotype and ♂ paratype).

*Afroleptomydas thorni* n.sp.

A single ♂ specimen, from the Little Karoo, before me, is obviously very near *saeculus* and *sodalicus*. From the ♂ of *saeculus* it differs in having distinctly and proportionally longer antennae, much longer than thorax (excluding scutellum), segment 3 being proportionally longer, with only its apical fourth

segment-like, and with the club very much longer, elongate and only slightly shorter than segment 3 and more gradually narrowed basally; a relatively longer proboscis which is much longer than thorax (excluding scutellum); a clypeus; less darkened above; slightly more extensively yellowish on sides of tergite 1 and extreme sides of basal angles of 2-5 also more yellowish; hind margins of tergites 2-5 whitish; denser longish hairs on sides of tergite 3 and also rather longish ones on sides of 4 and 5; darker veins in wings; lower surfaces of femora paler, more markedly delimited from upper darker parts; relatively shorter hairs on femora; distinctly more thickened hind femora; relatively shorter spicules and spurs on hind tibiae; blunter and more rounded posterior angles of lobes of tergite 9; and more S-curved and relatively shorter processes (text-fig. 4, bottom left) of sternite 9 which are also more rapidly narrowed to apical slender part.

From ♂ of *sodalicus* it may at once be distinguished by the more yellowish clypeus; more slender and relatively shorter proboscis, with smaller labella; more conical antennal clubs, only gradually narrowed to base and which are only a little shorter than segment 3; hind margins of tergites 2-5 (not 2-4) whitish; slightly more widely separated bullae; slightly denser hairs, denser hairs on sides of tergite 3 and longish ones also on sides of 4 and 5; relatively sparser, short hairs on rest of abdomen; shorter and less dense hairs on femora; paler yellowish on lower faces of femora which is more markedly delimited from darker upper parts; relatively shorter apical spurs on hind tibiae; and in having the apical slender part of processes of sternite 9, in side view, more rapidly delimited above, and lobes of tergite 9 less produced (cf. top and lower figures in text-fig. 4 on left).

Single ♂ holotype in the South African Museum.

Length of body: about 18 mm

Length of wing: about 12 mm

*Distribution*: Little Karoo: between Oudtshoorn and Zebra (Museum Expedition, October 1951). (Named after the late Mr. C. Thorn who was a technical assistant in the South African Museum and who collected it).

#### *Afroleptomydas rusticanus* n.sp.

A smallish, slightly variable, Karoo species very near and almost indistinguishable superficially from *humeralis* from which it, however, differs in the following combination of characters:

*Body* also mainly black; humeral tubercles piceous brownish or dark reddish brownish, not yellowish; sides of thorax dark or black in both sexes; pteropleural, metapleural and posterior episternal parts less extensively yellowish or darker, especially in ♂, or only yellowish in episternal part; sides of tergites 1 and 2 less extensively yellowish, only so in part along extreme sides; bullae black, not orange or orange brownish, much smaller in ♀ than in ♂ and very much smaller than in ♀ *humeralis*, very widely spaced in ♀; dorsum or discal parts of tergites 2-6 (confined to narrow middle of 5 and 6) in ♀ sometimes

ochreous to a variable extent as in *braunsi* and *sodalicus*; hind margin of tergite 1 reddish brownish, especially in ♀, those of 2-5 in ♂ narrowly yellowish whitish, and those of 2-6 (or discally also on 7) in ♀ broadly yellowish, sometimes broader discally on 2-5; venter as in *humeralis*, pale basally, dark in apical half or more, the hind margins of sternites, corresponding to those of tergites, yellowish whitish, though apparently more completely so in ♀ than in *humeralis*; legs on the whole darker, more castaneous brownish than yellowish, only the tibiae more yellowish.

*Integument* with the same parts shining, and pattern of shiny dark and dull greyish whitish tomentum in ♂ very similar; striae on abdomen in ♀ relatively less coarse.

*Vestiture* with the longish hairs on body distributed in same way, but distinctly and relatively shorter and slightly less dense, also entirely snow whitish; shorter ones on abdomen in ♂ distinctly less dense than in *humeralis*; the two submedial bare streaks on thorax above narrower.

*Head* with the antennae usually a little longer than thorax (excluding scutellum), but proportionally shorter than in *humeralis*; segment 1 a little more than 3 times length of 1, not or scarcely thickened, less so than in latter species; segment 3 proportionally much shorter than in *humeralis*, pyriform, its basal constricted part relatively much shorter; proboscis as long as, or a little longer than, thorax, markedly more slender than in *humeralis*, its labella comparatively very much smaller, narrower; palps distinct, longer than antennal segment 2; postvertical spines feeble, even in ♀.

*Wings* as in *humeralis*, clear or hyaline in ♂, slightly tinted yellowish brownish in ♀; veins also reddish brownish, and venational characters the same.

*Legs* with slightly longer hairs on femora; hind femora much less thickened than in *humeralis*; basal segment of hind tarsi a little longer than claw-segment.

*Oviscape* in ♀ with 6 or 7 spines on side.

*Hypopygium* of ♂ with sternite 9 not or scarcely transversely wrinkled basally, its processes, in side view (text-fig. 4, middle middle), slightly less S-curved than in *humeralis*, more gradually narrowed apically, less curved upwards apically and slightly blunter.

From 1 ♂ and 2 ♀♀ in the South African Museum.

Length of body: about 13-16 mm

Length of wing: about 9.75-11.5 mm

*Distribution*: Karoo: Richmond district (Museum staff, November 1939) (♂ holotype, ♀ allotype, and ♀ paratype).

The abdomen in the ♀ paratype is not ochreous above, but black.

#### *Afroleptomydas microareolatus* n.sp.

Another species from Willowmore, represented in the collections by a single ♀ specimen only, which also has the dorsum of the abdomen ochreous yellowish or orange yellowish in part as in ♀ of *braunsi*, and with which latter species from the same region it may be easily confused. It, however, differs

from *braunsi* as follows:

*Body* similarly coloured, but clypeus more reddish brownish yellowish; humeral tubercles dark; sides of thorax above black, not dark reddish; metapleural part in front of halteres more reddish brownish than yellowish; abdomen above, on at least tergites 3-5, more extensively ochreous- or orange yellowish, even more so than in the next species, the black spots or patches on sides smaller than in *braunsi*, confined to extreme sides, and tergite 2 also blackened across base, but 6 as in ♀ *braunsi s.str.* with a discal spot near apex which is, however, smaller; hind margins of only tergites 2-4 (not 2-6) yellowish, but discally almost indistinguishable from the ochreous yellowish, but on sides appearing whitish only on sides of 2-4 and not 2-5 or 6 as in *braunsi*; bullae also yellowish brownish; legs, however, much darker, entirely dark reddish brownish.

*Integument* of head as in *braunsi*, with only middle part of frons, head below and to a lesser extent clypeus shining; integument of thorax above dull, with slightly coarser areolar microsculpture; entire pleurae less shining, duller, due to distinct or more evident areolar microsculpture than in *braunsi*, in which species the anterior lower part is distinctly smoother and more shining and the rest covered with greyish tomentum; scutellum dull, not shining; abdomen on the whole less shining or only subshining, due to distinct, minute, areolar microsculpture, and with slightly coarser, transverse striation across last three or four segments; venter more coarsely transversely wrinkled; legs also duller than in *braunsi*, also due to distinct, fine, areolar microsculpture.

*Vestiture* distinctly shorter and less dense than in *braunsi*, especially on disc of thorax, pleural parts and more especially on legs, but also rather dense on tergite 1 and sides basally of 2; sparse hairs on tergites 3-5 also very short discally, but longer on sides; hairs on head and body mainly snow whitish, but those in two broadish submedial streaks on thorax above tinted slightly yellowish in certain lights, and the reversed ones on last three abdominal segments darker than in *braunsi*, more dark brownish or almost black; hairs on legs markedly short and sparse, the hind tibiae on inner side with sparse longish hairs which are, however, not so long and dense as in *braunsi*, all the hairs mainly greyish whitish, but those on lower apical part of front tibiae and on tarsi below darker; spines on hind femora yellowish reddish and spicules on tibiae and tarsi more reddish brownish.

*Head* with the antennae shorter than in *braunsi*, shorter than thorax (excluding scutellum); segment 1 more thickened, about 3·3 times length of 2; segment 3 more coarsely subannulated, more stoutish, with only about one-fifth of its apex thickened, only a little longer than club; latter more conical or more gradually thickened than in *braunsi*, its base also constricted; proboscis relatively stouter, subequal in length to antennae, about 3·8 mm, the fine striation on labella slightly coarser than in *braunsi*, without any longish hairs at base of proboscis below; palps minute, very much shorter than in *braunsi*, not much longer than antennal segment 2, dark-haired apically; postvertical spines distinct, stoutish, reddish brownish.



*Wings* distinctly tinted yellowish brownish, due more to infusions along veins opposite base of third vein to near apex and also along lower vein of second basal cell; veins darker, reddish brownish; other venational characters as in *braunsi*; halteres brownish.

*Legs* stouter than in *braunsi*; hind femora distinctly more thickened, less slender basally, their double row of spines below stouter, beginning nearer base; hind tibiae stouter, armed with fewer spicules in apical half below; basal segment of hind tarsi also longer than claw-segment.

*Oviscape* with about 8 darker spines on a side, and with darker, more blackish, longer and slightly denser, bristly elements on the two genital and anal pads.

The ♀ holotype in the Transvaal Museum.

Length of body: about 21 mm

Length of wing: about 15 mm

*Distribution*: Southern Karoo: Willowmore (Dr. Brauns, 20th November 1920).

#### *Afroleptomydas microreticulatus* n.sp.

This species, unfortunately represented by ♂♂ only in the collections before, characterized by an entirely dull abdomen, finely micro-areolate pleurae and bullae as in ♀ of *microareolatus*, apparently comes in the subsection in which the ♂♂ are characterized by the dull abdomen and dark, basal, discal patches on tergites. Specifically, however, it is very near the preceding species *microareolatus*, of which only the ♀ is known. It is characterized as follows:

*Body* mainly dark or black; clypeus to a variable extent somewhat obscurely reddish brownish on sides; humeral tubercles rather convex, a little dilated, appearing large, entirely dark like rest of thorax above; metapleural part around halteres, suture and extreme upper margins of sternopleural and hypopleural parts to a certain and variable extent, broad sides of tergite 1 and base laterally of 2 yellowish brownish or reddish brownish; bullae light reddish to reddish brownish; hind margins of tergites 2-4 or 5 (or sides of 5) yellowish whitish, their basal borders sometimes tending to be obscurely orange brownish; venter dark or blackish, the hind margins of sternites 1-4 obscurely yellowish, more distinct on sides, and bases laterally of 3-6 obscurely yellowish brownish; legs mainly dark, the front and middle femora reddish brownish along outer lower aspect, and hind ones also reddish brownish below and along inner lower part as are the front and middle tibiae along outer part and hind ones along inner aspect and all the tarsi.

*Integument* of middle part of frons, head below and extreme bases of tergite on sides more or less shining; thorax above, scutellum, metanotum and abdomen, including discal parts of tergites 1 and 2, mainly dull; abdomen, apart from very fine areolar microsculpture and aciculate puncturation, with slightly less than apical halves of tergites 3-7, as well as most of their sides, covered with greyish tomentum, leaving the basal discal parts dark or with dark tomentum;

pleurae slightly dulled by very fine reticulate or areolar microsculpture; bullae also finely or microscopically areolate as rest of abdomen; integument of legs also mainly dull.

*Vestiture* with the hairs on head, sides of thorax above, pleural parts, tergite 1 and sides of 2, sides of 3 to a much lesser extent, hind coxae and base of venter longish and entirely snow whitish; shortish hairs in three discal streaks on thorax whitish and slightly yellowish or greyish yellowish in certain lights, those at base of thorax whitish; shortish hairs on rest of abdomen above whitish, but those on basal discal patches, from tergite 3 at least, appearing dark, but with a yellowish or slightly fulvous yellowish to fulvous brownish tint in certain lights; hairs on hypopygium almost fulvous brownish; those on legs short and not very dense, with rather sparse longish ones along inner aspect of hind tibiae, and with all the hairs on legs whitish; spines and spicules on legs blackish brown.

*Head* with a few darkish postvertical spines; antennae longer than thorax (excluding scutellum); segment 1 slightly thickened, about 2.5–2.9 times length of 2; segment 3 distinctly longer than club and slightly longer than interocular space on vertex; club elongate-pyriform, gradually broadened to beyond middle, then more suddenly broadened, obliquely subtruncate apically across sensory area, the latter sometimes somewhat sunk in, the base of club shortly constricted; proboscis usually shorter than thorax, about 3.2–3.6 mm long; palps minute.

*Wings* tinted smoky brownish in middle parts, more so along the veins and even more distinctly so along veins at bases of second submarginal and first posterior cells; veins dark blackish brownish; hind border of wings distinctly narrower than first and third posterior cells; apex of discoidal cell shortly stalked; halteres blackish brown, their knobs rather large, narrowed and pointed in inner apical aspect.

*Legs* with the hind femora distinctly thickened, slightly spindle-shaped, their double row of rather shortish and blunt spines below blackish brownish, beginning near base; hind tibiae curved apically, their spicules along apical lower and outer parts longish and stoutish; basal segment of hind tarsi longer than claw-segment.

*Hypopygium* with the lobes of tergite 9 slightly prolonged or produced apically, their upper surface dulled by distinct areolar microsculpture; sternite 9 rather scoop-like, transversely striated and with fairly dense hairs on sides, its processes, in side view (text-fig. 4, bottom middle), slightly S-curved, rapidly narrowed, more so above (somewhat like those of *thorni*), to the more upcurved, slender, apical part, bluntly pointed in dorsal view, with relatively dense and longish hairs below; dorsal central epimere of aedeagal apparatus relatively long and slender, projecting much beyond the two phallic tubes, and not much broadened shoe-horn-like towards apex as in most species.

From 3 ♂♂ in the South African Museum.

Length of body: about 17.5–20.5 mm

Length of wing: about 12–13 mm

*Distribution*: South-western Cape: 18 miles east of Touws River along railway line to Ladismith (South African Museum, December 1962) (holotype on white flowers of a species of *Mesembryanthemum*, and 1 paratype); Ouberg Pass south-east of Touws River (South African Museum, December 1962) (1 paratype).

The fine reticulate or areolar microsculpture on the pleurae and abdomen distinguishes this species from most others except the ♀ of *microareolatus* from the Little Karoo. The possibility that it may prove to be only the unknown ♂ of *microareolatus* is not excluded, but the antennae are relatively longer, segment 3 being proportionally longer, and the proboscis is shorter. Moreover, there are very few mydaiids with such a widely separated distribution.

From the ♂♂ of other species, such as *opacicinctus*, *flavigenualis* and *koupicolus*, which also have the entire abdomen above, including the discal parts of tergites 1 and 2, dull, it may at once be distinguished by the fine reticulate microsculpture on pleurae and abdomen, the distinctly more thickened hind femora, the more tinted wings, and the more S-curved processes of sternite 9.

#### *Afroleptomydas flavidorsalis* n.sp.

This is a Transvaal species in which the ♀ has the dorsum of the abdomen ochreous or pale yellowish brownish as in *braunsi*, *sodalicus* and *microareolatus*. It, however, resembles *braunsi* more than the other two species, and the unique ♀ specimen in the collections before me differs from the latter in the following respects:

*Body* similarly coloured, but yellowish reddish on sides of thorax above slightly broader; pteropleuron, metapleural part in front of halteres and adjacent posterior metapleural and metasternal parts more extensively yellowish reddish; abdomen with the ochreous-yellowish or brownish above relatively more extensive, almost equally extensive on tergites 3–5, not present only discally on 5 as in *braunsi*, but absent discally on 6, the black spots on sides of 3–5 distinctly smaller; hind margin of tergite 1 distinctly yellowish reddish and those of 2–6 more broadly yellowish; hind margins of sternites slightly more broadly yellowish whitish on sides and that on sides of 6 also more distinctly whitish; bullae narrower, almost black, and shining; legs also mainly yellowish brownish, but femora more extensively darkened above and hind tibiae slightly more brownish, and last tarsal segment darker above.

*Integument* of pleurae distinctly duller, entirely covered with greyish whitish tomentum, even anteriorly below, a part which is shining in *braunsi*; scutellum dull like thorax above, not shining as in *braunsi*; abdomen, however, also mainly shining.

*Vestiture* distinctly very much shorter and less dense, especially the hairs in 5 streaks on thorax above, on pleurae, base of abdomen and on legs; the hairs, as in *braunsi*, mainly whitish, but very short ones on disc of thorax tinted slightly more greyish yellowish; reversed ones on last three abdominal segments also yellowish brownish or fulvous brownish, but slightly less dense and shorter;

those on legs much shorter than in *braunsi*, less dense, though similarly greyish whitish; spines and spicules on legs also yellowish whitish.

*Head* with the antennae relatively longer and stouter, though shorter than thorax (excluding scutellum), the thorax itself relatively longer than in *braunsi*; segment 1 about 3.3 times length of 2; segment 3 relatively stouter and very slightly longer than in *braunsi*, with its apical part slightly more thickened, the segment also longer than club, but less so than in *braunsi*; club relatively more elongate, its apical part distinctly more tapering or conical to the relatively larger terminal prominence, not so subtruncate as in *braunsi*; proboscis much shorter, only about 2.8 mm long, much shorter than thorax (longer than thorax in *braunsi*), also with some longish hairs basally below, its labella not finely striate, but microscopically scabrous and obliquely ridged in lower half; palps relatively longer, more slender; postvertical spines as feebly developed as in *braunsi*.

*Wings* distinctly tinged more smoky greyish, with darker veins and more conspicuous or darker borders along those in middle; venation as in *braunsi*.

*Legs* with the hind femora slightly more thickened and with slightly more numerous spines below; beginning nearer base; basal segment of hind tarsi relatively shorter, subequal in length to, or even slightly shorter than, claw-segment.

*Oviscape* with only about 7 much darker spines on a side.

From 1 ♀ holotype in the Transvaal Museum.

Length of body: about 18 mm

Length of wing: about 15 mm

*Distribution*: Transvaal: Pretoria North (G. van Son, September 1935).

### *Afroleptomydas rubellus* n.sp.

*Leptomydas* ? *flavirostris* (♂) Bezzi, 1924b: 215. (n.syn.)

*Leptomydas humeralis* (♀) Bezzi (*nec* Gerstaecker) in part, 1924b: 211. (n.syn.)

A ♂ and a ♀ specimen in the South African Museum, which I take to belong to the same species, constitute another distinct species very near *humeralis*. The ♂, without any locality-label, was questionably referred to *flavirostris* and the ♀ specimen, from Triangle, was referred to and labelled as *humeralis* (Gerst.) by Bezzi. These specimens, however, differ from *humeralis* in the following respects:

*Body* with the abdomen, especially in ♀, rather more slender, the last segment being longer and more slender than in ♀ *humeralis*; body-colour mainly reddish brownish, only central part of frons, sides of face, thorax above, medial and sublateral infusions of metanotum and, in ♀, also discal part of tergite 1, dark or blackish; two central bare streaks on thorax above, especially in ♀, obscurely reddish to a variable extent; humeral tubercles more reddish than yellowish, more like sides of thorax; pteropleural, metapleural and posterior episternal parts, sides of tergites 1 and 2 yellowish as in *humeralis*, or at least

paler than rest of integument; hind margin of tergite 1 reddish, those of 2-4 and obscurely on 5 in ♂ yellowish whitish and those of 2-5 (and more narrowly and obscurely on 6 and 7) in ♀ broadly yellowish whitish; bullae in ♂ dark brownish, not orange or reddish, and in ♀ dark blackish brown; entire or greater part of venter unicolorous reddish brownish or yellowish brownish, not so contrastingly paler basally.

*Integument* with the same parts, as in *humeralis*, shining and in ♂ with a similar pattern on abdomen; transverse striae on abdomen in ♀, especially posteriorly, distinctly less coarse than in *humeralis*.

*Vestiture* with the hairs as long and as dense as in *humeralis*, also snow whitish, but with the two submedial bare streaks on thorax above distinctly narrower.

*Head* with the antennae unfortunately missing in the two specimens; proboscis, however, distinctly more slender, a little shorter than thorax, its labella smaller and narrower than in *humeralis*, more like that of *rusticanus*.

*Wings* in both specimens greyish hyaline; venation as in *humeralis*.

*Legs* mainly yellowish, the femora not or scarcely darkened above; hind femora distinctly less thickened than in *humeralis*; other leg-characters the same.

*Oviscape* in ♀ with 7, more slender, yellowish spines on a side.

*Hypopygium* of ♂ very similar to that of *humeralis*, but sternite 9 distinctly less conically pointed apically, broader, blunter, more truncate, without any transverse wrinkles, its processes (cf. text-fig 4, middle right with text fig. 3, bottom middle) relatively shorter, in side view proportionally broader basally, with relatively fewer hairs below; lobes of tergite 9 less produced apically.

Length of body: about 14.5-17.5 mm

Length of wing: about 10-12 mm

*Distribution*: South-western Koup Karoo: Triangle (January 1885) (♀ allotype). The ♂ holotype without locality-label, but judging from the age of the specimen and the special type of mounting-pin used, presumably from the same region.

### *Afroleptomydas paganus* (Gerst.)

*Leptomydas paganus* Gerstaecker, 1868: 84.

*Afroleptomydas paganus* Bequaert, 1961b: 14.

? *Afroleptomydas bezzianus* Bequaert, 1963: 26, figs 4D and 7C.

Gerstaecker described this species from a single ♂ specimen without any reference to a definite locality, but reputed as coming from South Africa and collected by Drège. Subsequently Bezzi referred a ♂ and ♀ from Cape Town and Stellenbosch respectively and another ♂ from Okiep in Namaqualand to this species. Not one of these specimens agrees with Gerstaecker's fairly good description of the ♂. Moreover, Bezzi's three specimens do not belong to the same species, but to three entirely different species which are described in this revision as *capicolus*, *patruelis* and *namaquensis* respectively. The only specimens in the collections before me which agree in main essentials with Ger-

staecker's description of the species and which are referable to *paganus s.str.* come from the Eastern Province. These constitute material from the coastal regions, from Wilderness eastwards to Port Elizabeth and beyond. As Drège was known to have collected many plants and insects in the eastern Cape Province, especially around Port Elizabeth, the logical supposition is that Gerstaecker's ♂ specimen was also collected in that area. Apparently this species is more or less restricted to the coastal parts and coastal sand-dunes of the eastern Cape and does not appear to occur more inland even within the area of its distribution. From the series of both ♂♂ and ♀♀ before me it is also evident that the species is subject to slight local and environmental variation.

This species was designated by Bequaert in 1961*b* as the type-species of his new South African genus *Afroleptomys* to which all the species of *Leptomys* in southern Africa are now referred.

To include the as yet undescribed ♀ and the slight variational differences of the ♂, the following supplementary redescription of the species is given as follows:

*Body* mainly dark or black, but more often with much reddish- or yellowish brownish; the following parts yellowish, yellowish- or reddish brownish: entire or greater part of clypeus, in some ♀♀ head below to a variable extent, proboscis below in ♀, humeral tubercles, broadish sides of thorax above (broader in ♀), two submedial discal streaks (broader in ♀), sometimes hind margin of scutellum, to a variable extent or even greater part of metanotum in some ♀♀, pleurae or parts of these to a variable extent (sometimes entire or greater part of pleurae dark or more dark castaneous or blackish brownish), sides anteriorly of tergite 1, sometimes to a variable extent extreme sides of 2-4 in ♂ and 2-6 in ♀ or even to apex in both sexes, and basal part or half of venter to a variable extent; abdomen sometimes, especially in ♀♀, dark castaneous or reddish brownish; hind margins of tergites 2-5 in ♂, sometimes to a fainter and narrower extent also on 6, and 2-5 (or 6) in ♀ yellowish whitish or ivory yellowish; hind margins of sternites 1-3 (or 4) also pallid, more evident on sides; bullae bean-shaped to hemispherical, smaller in ♀, reddish to reddish brownish, separated above in ♂ by a space broader or much broader than vertical length of bullae, very broadly separated in ♀; legs varying from pale yellowish brownish, reddish brownish, brownish to dark brownish, the tibiae in the latter case paler, the femora sometimes appearing darker above.

*Integument* of middle part of frons, clypeal part of face, scutellum, tergite 1 on sides and across depression between tergites 1 and 2 in both sexes, and in ♀ to a great extent abdomen above and below, shining, in ♂ mainly dull; integument of abdomen in ♀ finely transversely wrinkled, more coarsely and conspicuously so on last three segments.

*Vestiture* with the tomentum greyish whitish on vertex, sides of frons, occiput, sides of thorax and two submedial streaks above, sometimes confluent posteriorly, as well as a thin central stripe in both sexes, but more conspicuous in ♀; in ♀ also with greyish bloom on scutellum and metanotum; in both sexes

with greyish tomentum on pleural and sternal parts; abdomen in ♂ with broad, dull, black, discal patches in basal halves or more of at least tergites 2-6, and rest of surface of tergites with faint greyish tomentum; abdomen in ♀ with a conspicuous pattern of greyish whitish tomentum across disc of tergite 1, half-moon-shaped ones discally on 2-4 and on disc basally of 5, and with the half-moon-shaped greyish patches on 2-4 surrounding a dull, darker or black, basal, discal patch, but along middle line usually extending slightly basalwards into the black basal patch; hairs on head, sides and base of thorax, sides of metanotum, propleural tubercle, upper hinder corner of mesopleuron, on pteropleuron, on tubercle in front of halteres, metasternum, tergite 1, sides of 2 and to a lesser extent those of 3 and basal part of venter in ♂ much longer and denser than on same parts in ♀, and whitish; those on head in ♀ longer than on rest of its body, and whitish as in ♂; hairs on antennal segments 1 and 2, especially above, dark or blackish in both sexes; postvertical row of spines on each side well developed, brownish; streaks of short hairs on disc of thorax brownish to fulvous brownish in both sexes, though sometimes more whitish, especially in ♂; hairs on extreme sides of tergites from 3 posteriorly and sometimes across their hinder parts, as well as those on genitalia, and to a variable extent on posterior half of venter in ♂ whitish and gleaming; fine ones on dark discal patches and on greater discal parts of tergites 2-8 above, or sometimes even on entire tergites from 3 posteriorly and sometimes on all or most of those on sternites 5-7 (or 8) in ♂ black or dark; fine and much sparser hairs on abdomen in ♀, reversed from tergite 3 to apex, but longer on last two segments, gleaming pale or whitish; hairs on legs longer and denser in ♂, more so on femora, those on hind femora above and below and on sides of other femora more whitish, and those on front and middle femora above appearing darker; shorter ones on sides of hind femora with a slightly more sericeous yellowish or yellowish sheen; shorter hairs on legs in ♀ with a more yellowish sheen; spines and spicules of legs reddish to reddish brownish.

*Head* (cf. text-fig. 7, left) with the antennae much shorter than thorax (excluding scutellum), relatively stoutish; segment 1 about or a little more than 2 times length of 2; segment 3 relatively shortish, stoutish, thickened segment-like apically, subequal in length to, or a little shorter than, or sometimes a little longer than, club; latter sub-pyriform, basally only very shortly or scarcely perceptibly constricted, apically more rapidly obliquely sloping upwards; proboscis relatively shortish, not, scarcely, or only a little, longer than front tarsi and claws, with distinct hairs basally below, its labella ovate to slightly pointed, about half, or a little less than half, length of rest of proboscis; palps shorter in ♂, but in ♀ quite as long as antennal segment 2; postvertical spines well developed in both sexes.

*Wings* rather shortish, hyaline or scarcely greyish hyaline in ♂, but in ♀ usually more greyish, appearing slightly more tinted, due to faint diffused fuscous borders along veins in middle part up to base of second submarginal cell; veins either yellowish brownish or dark, usually darker in ♀; knobs of halteres dark.

*Legs* with the hind femora thickened in both sexes, their double row of spines below beginning much before middle; spicules on hind tibiae strongly developed, especially in ♀; basal segment of hind tarsi longer than claw-segment, especially in ♀.

*Oviscape* in ♀ with 7 or 8 flattened, yellowish brownish to brownish spines on a side (one side often with one spine less than the other side).

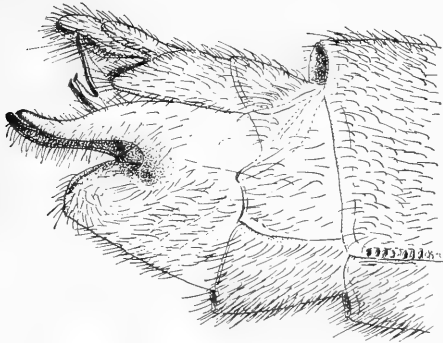


FIG. 5. Side view of hypopygium of ♂ *Afroleptomys paganus* (Gerst.).

*Hypopygium* of ♂ (text-fig. 5) with the lobes of tergite 9 triangular, rather sharply pointed posteriorly, slightly more produced in some ♂♂, their inner margins meeting in the middle at almost, or quite, a right angle; sternite 9 conical, narrowed and bluntly rounded posteriorly, with long hairs or dense tufts, its processes, in side view, rather rapidly narrowed apically, slightly S-curved, with a little more than apical third bent upwards, in dorsal view blade-like, flattened, bluntly rounded apically, slightly longitudinally grooved above and more so below; aedeagal apparatus typically three-pronged, the two phallic tubes rather long and almost parallel.

From a fairly long series of ♂♂ and ♀♀ in the South African Museum, Transvaal Museum, Natal Museum, Albany Museum, and University of Stellenbosch.

Length of body: about 11·5–20·25 mm

Length of wing: about 8–12·5 mm

*Distribution*: East Cape: Great Brak River (February); Wilderness (January); Jeffrey's Bay (December and January); Papiessfontein near Gamtoos River mouth (January); Van Staden's River mouth near Port Elizabeth (January); Port Elizabeth (January); Swartkops (November and December); Bushman's River mouth (December); Port Alfred (February); Kleinemonde; and Kasouga (January).

Two ♂ specimens, from the collections of the late Dr. Brauns, in the Transvaal Museum and labelled 'Willowmore (xi, 1919)' are obviously wrongly labelled, for from this very large series of ♂♂ and ♀♀ in the collections before me not a single specimen was collected elsewhere than among vegetation on the coastal dunes. The late Dr. Brauns collected the same species at the same time at Swartkops ('See-Dünen') near Port Elizabeth and confusion of labels may



easily have taken place.

The species *bezzianus*, described from Mossel Bay by Bequaert (1963: 26, figs 4D and 7C), appears to me to be only a variant of this variable coastal species. His ♂ paratype, from Lourenço Marques (collected by H. A. Junod), either belongs to the very closely related species described below by me as *inhacae* from Inhaca Island or, if this specimen is in fact conspecific with *bezzianus*, a wrong locality label has been pinned on to it. The majority of South African species of *Afroleptomydas* are remarkably circumscribed in their distribution, and it is most unlikely that a species occurring at Mossel Bay would also be found at Lourenço Marques.

*Afroleptomydas inhacae* n.sp.

This species, from Inhaca Island in Portuguese East Africa, resembles *paganus* (Gerst.) from the eastern Cape and like it is a coastal form and probably restricted to a sand-dune coastal environment. It is characterized as follows:

*Body* mainly dark, the pleurae and abdomen to a variable extent more castaneous brownish or, in ♀, sometimes even yellowish brownish; antennae brownish or blackish brown to black, sometimes paler, more yellowish brownish in ♀, the clubs more reddish brownish to dark reddish in middle part; clypeus reddish brownish, especially on sides, and vertex laterally in ♀ usually also reddish brownish; humeral tubercles yellowish; sides of thorax, postalar calli and two discal streaks on thorax yellowish brownish or reddish brownish to a variable extent, though in ♂ the two discal streaks more often obscure, indistinct or absent; pteropleural, metapleural and metasternal parts tending to be slightly paler, more yellowish brownish than rest of pleurae; metanotum dark in ♂, more reddish brownish to a variable extent or even extensively yellowish brownish in ♀; sides basally of tergite 1 or, in ♀, sometimes entire sides of 1, sides basally or 2 or more often entire sides of 2, and to a variable extent sides of 3 and 4 or even some of rest, also tending to be paler yellowish brownish; hind margins of tergites 2–6 whitish or yellowish whitish, broader and more conspicuous in ♀, and 6 in ♂ usually very narrow; bullae shining black, widely separated above in both sexes, though tending to be wider in ♀; venter yellowish brownish to reddish brownish, becoming darker in apical half; extreme sides of hind margins of sternites 1–6 also yellowish whitish to a variable extent; apices of lobes of tergite 9 and apical halves of processes of sternite 9 in ♂ yellowish brownish; legs yellowish brownish to castaneous brownish, the femora appearing as if darkened above.

*Integument* of central part of frons, to a certain extent across vertex, clypeus, proboscis, and below buccal cavity shining; rest of head dull, due to dense greyish whitish tomentum; that of thorax above leathery, with fine, sparse, setiferous puncturation, and with 5 streaks of dull greyish whitish tomentum, the central one narrow; scutellum shining; pleurae and coxae mainly dulled by fine, greyish whitish bloom, less dense and more shiny obliquely anteriorly; metanotum mainly dulled by greyish whitish bloom; abdomen in ♂ shining on

sides of tergite 1 and across junction between 1 and 2, the rest dulled mainly by greyish whitish tomentum, replaced discally across more than basal halves of tergites 2-6 and base above of 7 by saddle-shaped patches of black tomentum which are narrowed on sides and do not reach margins, and in addition with fine, evenly separated, setiferous puncturation on entire tergites; abdomen in ♀ mainly shining, but tergites 1 and 2 (excepting a transverse, discal, basal, bilobed, dark patch) and base of 3 discally dulled by greyish whitish tomentum, the rest of tergites 4-8, especially 5-7, transversely striated; venter basally shining in ♂, but almost entirely so in ♀, and in latter also with shining transverse striation.

*Vestiture* with the hairs on head, sides of thorax, pleurae, metanotum, tergite 1, sides of 2 and to a lesser extent sides of 3, and venter basally in ♂ longish and fairly dense, in ♀ shorter and sparser, with scarcely any longer ones on sides of tergite 3; hairs on antennal segments 1 and 2 dark, those on frons in front on sides of antennae, yellowish or slightly fulvous to a variable extent, the rest of hairs whitish; postvertical spines also yellowish; hairs on thorax above in 5 streaks, the central one narrowest, and on sides broadest and longest, mainly whitish, though discal ones sometimes with a very slight sericeous yellowish tint; those on pleurae, metanotum, tergite 1, sides of 2-4, venter in ♀, and venter basally in ♂, also whitish; short hairs on rest of abdomen in ♂ dark or black, in ♀ whitish, even reversed ones on segments 6-8; hairs on legs slightly longer and denser in ♂, with longish ones on hind femora basally, absent in ♀, mainly whitish, but those on outer part of hind femora and anterior faces of front and middle ones in ♂ appearing dark or yellowish, more whitish in ♀; hairs on inner lower aspect of tibiae, especially hind ones in ♂, also appearing dark; spines and spicules more fulvous.

*Head* with the antennae only a little shorter than thorax (excluding scutellum); segment 1 slightly thickened, about 2.6-3 times length of 2; segment 3 stoutish, a little less than its apical third thickened, and a little longer than club; latter elongate-pyriform, thickest beyond middle, conical apically, its base shortly constricted; proboscis shortish, much shorter than vertical length of eyes, only about 1.36-1.72 mm, with some longish hairs basally below, its labella oval, finely spinulate; palps distinct, short; postvertical spines present,

*Wings* in ♂ glassy hyaline, very faintly tinted slightly greyish yellowish in ♀, and with faint, scarcely perceptible, fuscous borders along veins; veins yellowish brownish to brownish; first posterior cell opening fairly widely on costal margin; apex of discoidal cell stalked to a variable extent, the stalk sometimes rather long, occasionally absent and apex meeting third posterior cell at a point; hind border of wings opposite first posterior cell narrower than cell; knobs of halteres brownish or dark above.

*Legs* with the hind femora slightly, but distinctly, thickened in both sexes, their double row of spines below rather stoutish, separated, yellowish reddish or fulvous, beginning just before middle; basal segment of hind tarsi distinctly longer than claw-segment.

*Oviscape* in ♀ with 7 or 8 yellowish or fulvous spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 triangular, angularly pointed apically; sternite 9 conical, conically narrowed apically, in side view rather truncate apically, its processes, in side view (text-fig. 4, bottom right), S-curved, curved up apically, in dorsal view gradually narrowed apically, bluntly pointed.

From 10 ♂♂ and 6 ♀♀ (♂ holotype, 9 ♂ paratypes and 2 ♀ paratypes in the Transvaal Museum, ♀ allotype, 2 ♀ and 1 ♂ paratypes in the South African Museum, and 1 ♀ paratype in the Natal Museum).

Length of body: about 15–18.5 mm

Length of wing: about 11–12.5 mm

*Distribution*: Portuguese East Africa: Inhaca Island (G. van Son, 20th–25th September 1959) (♂ holotype, 5 ♂ paratypes and 1 ♀ paratype); Inhaca Island (E. McC. Callan, December 1954) (♀ allotype and 2 ♀ paratypes) and (K. Kniep) (1 ♀ paratype); Inyack (Inhaca) Island (H. G. Breyer, September 1919) (4 ♂ and 1 ♀ paratypes).

This species differs from the southern coastal form *paganus* in having relatively longer antennae, segment 3 being proportionally longer; relatively shorter and less dense hairs in ♂, especially on abdomen and legs, and longer hairs in ♀ than in ♀ *paganus*; hairs on vertex and above base of antennae tinted slightly more greyish yellowish and tomentum on frontal part more yellowish; black discal patches on abdomen in ♂ smaller; the whitish tomentum broader, more extensive; in having patches of greyish tomentum on tergites 1, 2 and base of 3 only in ♀, not on 4 and 5 as well; hind margins of tergites 2–6 whitish; black bullae; distinctly less thickened hind femora; less produced lobes of tergite 9 in ♂; and relatively shorter slender part of processes of sternite 9, which are more sharply pointed in dorsal view.

#### *Afroleptomydas pulverulentus* n.sp.

Some palish, faded-looking, somewhat dust- or sand-covered ♂ specimens from South West Africa in the collections before me obviously belong to the *paganus* and *inhacae* subsection of the *humeralis* group and may be considered as an arenophilous South West African representative of these two coastal dune-frequenting species. They are characterized as follows:

*Body* mainly yellowish brownish, appearing greyish brownish, due to adhering dust or sand grains; antennae brownish, pale yellowish brownish to almost yellowish; clypeus pale yellowish brownish; proboscis yellowish brownish, only labella, as well as central part of frons, very dark blackish brownish; thorax above brownish, with the sides, humeral tubercles, an infusion anteriorly on inner side of tubercles, a submedial discal streak on each side, postalar calli and a narrow transverse basal line in front of scutellum paler yellowish, separating broadish darker almost blackish brown streaks; scutellum brownish to castaneous brownish, its sides and hind border pale yellowish and foveae on sides dark blackish brown or castaneous brownish; metanotum dark brownish, slightly paler on sides; pteropleural, metapleural, posterior metapleural parts,

and to a certain extent metasternal part, paler, more yellowish than the yellowish brownish rest of pleurae; sides basally of tergite 1, fairly broadish sides of 2, 3 and 4 more ochreous yellowish, merging into slightly paler yellowish brownish sides of rest of tergites; abdomen above with disc of tergite 2 basally and discal, saddle-shaped, basal patches on 3-6 (smallest on 6) very dark brown or blackish brown, not reaching sides; hind margins of tergites 2-4 (or 5), and sometimes to an obscure or lesser extent 6 and 7, whitish; bullae pale orange brownish, rather widely separated above; venter pale yellowish brownish to almost ochreous brownish basally, becoming more yellowish brownish or brownish apically; hind margins of sternite 1 to about 5 whitish only on extreme sides; processes of sternite 9 darkened to a variable extent along their upper basal parts; legs pale yellowish brownish.

*Integument* of central part of frons, to a certain extent clypeus, proboscis, and to a certain extent sides of tergites 1 and 2 shining; rest of body mainly dull, due to greyish or greyish whitish tomentum.

*Vestiture* with the hairs longish and fairly dense, and snow whitish on head, sides and base of thorax above, sides of metanotum, pleurae, tergite 1, sides of 2, extreme sides of 3, base of venter, coxae and basally above on hind femora; hairs on antennal segments 1 and 2 dark brownish; those on thorax above in streaks, the shorter ones in discal streaks more fulvous; short hairs on abdomen not very dense, except on extreme sides, mainly dark up to tergite 7; those at extremity of abdomen and hypopygium paler, very pale greyish yellowish or sericeous yellowish; hairs on venter sometimes with darkish ones on sternites 5-7, otherwise pale; those on legs shortish, not very dense, with longish ones only on inner and upper basal half of hind femora, and some sparse longish ones on inner parts of hind tibiae, with all the hairs on legs mainly whitish; spines on femora dark reddish and spinules on tibiae and tarsi more fulvous reddish.

*Head* with the antennae relatively short, distinctly shorter than thorax; segment 1 not much thickened, about 2.6-2.8 times length of 2; segment 3 relatively short, only a very little more than three times length of segment 1, subequal in length to, or a little shorter than, club, a little less than its apical third thickened; club subspindle-shaped or slightly elongate-pyriform, thickened slightly beyond middle; its extreme base constricted; proboscis shortish, less than vertical length of eyes, only about 1.48-1.8 mm, with some longish hairs basally below; postvertical spines present, bristle-like.

*Wings* distinctly subopaquely whitish, appearing dull greyish whitish; veins pallid or pale yellowish; appendix at base of second submarginal cell tending to be short; apex of discoidal cell shortly stalked; alula and axillary lobe normally broad; knobs of halteres oval, brownish above.

*Legs* with the hind femora distinctly thickened, spindle-shaped, their double row of spines below from near base; basal segment of hind tarsi subequal in length to claw-segment; hind claws more sickle-shaped than middle and front ones.

*Hypopygium* with the lobes of tergite 9 narrowed and produced in apical

part, bluntly angularly pointed; sternite 9 conical, transversely wrinkled basally and more obliquely longitudinally in apical half, its processes, in side view, S-curved, the apical part slender, curved upwards, in dorsal view only gradually narrowed apically, bluntly rounded apically; aedeagal apparatus with the central epimere narrowish, and the phallic tube rather long, appearing distinctly truncated apically.

From 4 ♂♂ (holotype and 3 paratypes in the Transvaal Museum and 1 paratype in the South African Museum).

Length of body: about 13.5-17 mm

Length of wing: about 10-11.5 mm

*Distribution*: South West Africa (Museum Expedition, March 1923), without any more definite locality-label, but according to Dr. Van Son of the Transvaal Museum these specimens may have been collected by the son of Dr. H. G. Breyer who was stationed at Namutoni near the Etosha Pan in Ovamboland.

This species may at once be distinguished from *paganus* by the paler, more yellowish brownish or paler brownish body; proportionally shorter antennal segment 3 which is more often shorter than club; hind margins of tergites 2-6 (or even 7) yellowish whitish and not only 2-5; the markedly subopaquely whitish wings; more yellowish brownish or cinnamon brownish discal hairs on thorax above and on abdomen above; paler more yellowish reddish or reddish spines on hind femora below; and relatively shorter, more rapidly narrowed (side view), less slender, and in ventral view slightly broader processes of sternite 9 in the ♂.

From the ♂ of *inhacae* it may be distinguished by the shorter antennae; shorter legs of which the hind femora are distinctly more thickened and more spindle-shaped, not so clavately as in *inhacae*; much paler bullae; and the markedly subopaquely whitish wings.

*Afroleptomydas opacus* (Bezz.) n.comb.

*Leptomydas opacus* Bezzi, 1924b: 213.

This slightly variable Eastern Province species resembles *paganus* superficially. As in the case of the latter, representatives (only ♂♂) of it were also obtained by members of the South African Museum on their collecting trip to Port Elizabeth and its surroundings. In the collections before me there are also some ♂♂ from the Transvaal Museum, collected by the late Dr. Brauns near Willowmore. Bezzi's description was based on a single ♂ specimen. In addition to the ♂♂ there is also in the collections of the Transvaal Museum a somewhat damaged ♀ specimen from the Albany district, which I believe to be the as yet unknown ♀ of this species. Unlike *paganus*, this species does not usually frequent the coastal dune regions, but more often appears to occur more inland in open patches in forested or shrub-covered parts.

Supplementing Bezzi's original description of the unique ♂ type, adding

the characters of the ♀, and comparing it with *paganus*, this species is characterized as follows:

*Body* with the head, dorsum of thorax and metanotum mainly black, the pleurae mainly yellowish brownish or reddish brownish and abdomen mainly dark castaneous brownish (in ♂ sometimes very dark blackish brownish) above, slightly paler on sides and paler, more yellowish brownish or reddish brownish on venter, darker posteriorly in ♂; antennae dark, dark reddish brownish, the clubs in middle more dark reddish; clypeus brownish to a variable extent in ♂, especially on sides, more yellowish in ♀, the rims in buccal cavity on sides of proboscis more consistently blackish; proboscis in ♂ mainly black, in ♀ paler reddish brownish below; humeral tubercles yellowish in both sexes as in *paganus*, and infusion around them yellowish reddish, fairly extensive on inner sides of the tubercles, extending broadly on sides of thorax to opposite wing-bases, then more narrowly; postalar calli also yellowish reddish; hind margin of scutellum in ♀ dark reddish; metanotum mainly black in ♂, the sides, however, sometimes obscurely dark reddish brownish, especially in ♀; posterior metapleural part below halteres and metasternal part usually paler, more yellowish to a variable extent than rest of pleurae; sides of tergite 1, sometimes only in hinder half, and sides of 2 and 3 or 2-4 and to a variable extent extreme sides of rest yellowish or paler yellowish brownish than discally; hind margin of tergite 1 dark or dark reddish in ♂, more distinctly reddish brownish in ♀, and those of 2-5 (and 6 obscurely) in ♂ narrowly yellowish whitish to a variable extent as in *paganus*, and those of 2-5 in ♀ more broadly ring-like yellowish, but, unlike *paganus*, obscure and narrow on sides, and with that of 6 in ♀ narrowly obscurely pale; bullae paler than in *paganus*, more orange yellowish to orange brownish, smaller in ♀, more narrowly separated above in ♂ than in *paganus*, by a space subequal to, or slightly narrower than, vertical length of bullae; hind margins of sternites 1-5 in ♂ and 1-4 in ♀ pallid or yellowish whitish on sides to a variable extent, and bases of sternites also pale, pallid or yellowish; hypopygium of ♂ mainly yellowish brownish or reddish brownish below; legs mainly yellowish brownish, castaneous brownish, or reddish brownish, sometimes very dark in ♂, the front and middle tibiae and tarsi sometimes slightly darker brownish, and apical margins of tarsal segments usually dark, with the upper faces of femora sometimes darkened to a variable extent in ♂, the hind ones sometimes entirely dark, the claws more dark reddish brownish and with black tips in both sexes.

*Integument* of central ocellar part of head, dorsum of clypeus, proboscis, hinder half of scutellum, tergites 1 and 2 in ♂ and to a feebler extent sides of 3 and 4, and entire abdomen in ♀, shining; head in front and behind eyes dulled to a variable extent by dense, greyish whitish tomentum; pleurae also mainly dulled by greyish tomentum; thorax above dull and, especially in ♀, with 5 streaks of greyish whitish tomentum, separated by 4 black streaks; abdomen in ♂ dulled mainly by greyish or greyish whitish tomentum replaced by dark or blackish tomentum on disc of tergite 2 and by dark, saddle-shaped, discal

patches of variable distinctness across more than basal halves of 3-5 and basally on 6 which in certain lights appear reddish brownish or dark coffee brownish; abdomen in ♀, unlike that of ♀ *paganus*, without any dull discal patches on certain tergites, the last 3 segments and to a certain extent also 5 transversely wrinkled as in *paganus*, but last two more coarsely so, on which there are also slightly coarser, sparse, setiferous puncturation; integument of hind femora in ♀ more transversely wrinkled than in ♀, not so smooth as in *paganus*.

*Vestiture* longish and dense in ♂ as in *paganus*, with longish and dense hairs on head, sides of thorax above, across base of thorax, on metanotum, pleurae, especially posterior metapleural and metasternal parts, on tergite 1, sides of 2 and 3 and even of 4 (in *paganus* absent on 3 and 4), and with all these hairs entirely snow whitish; hairs in ♀, unlike those of ♀ *paganus*, however, also fairly longish and dense, though shorter than in ♂, also mainly whitish; hairs along streaks on disc of thorax above brownish to fulvous brownish, but whitish anteriorly on the two broadish submedial whitish streaks, shorter in ♀, but similarly coloured; short hairs on abdomen above in ♂ from disc of tergite 2 posteriorly, and including those on sternites 5-8 and hypopygium, entirely dark or black, though some on posterior sternites sometimes appearing more yellowish, all these hairs relatively longer than in ♂ *paganus*, the longish ones in basal half of venter whitish; hairs on abdomen in ♀, including rather longish reversed ones on last three segments, entirely whitish, slightly longer than in *paganus*; hairs on legs in both sexes slightly longer and denser than in *paganus*, also mainly whitish, those on coxae distinctly longer, and those posteriorly on hind ones sometimes deeper yellowish, with longish hairs also basally and along inner lower sides of hind femora, and in ♂ also with longish ones on inner sides of hind tibiae; fine hairs on outer sides of hind femora tinted slightly more yellowish; spines and spicules on legs dark brownish or blackish brown.

*Head* with the antennae distinctly longer than in *paganus*, subequal in length to, or in ♀ slightly shorter than, thorax (excluding scutellum); segment 1 only slightly thickened in ♂, not much in ♀, about 2.3-2.6 times length of 2; segment 3 distinctly and proportionally much longer than in *paganus*, either slightly longer than club or, in ♀, about as long as club, its apical third or slightly less thickened; club subspindle-shaped, slightly more pyriform in ♂, thickest at about its middle third, conically narrowed to apex, about equally narrowed to base below in basal third as in apical third below, the extreme base constricted; clypeus larger than in *paganus*; proboscis relatively very much longer, sometimes stouter, usually a little or much longer than vertical length of eye, its surface more wrinkled, its base also with some longish hairs below, the labella oval, very finely striate; postvertical spines distinct, yellowish to yellowish brownish.

*Wings* distinctly tinted yellowish brownish to smoky brownish to a variable extent in both sexes, though in ♂ sometimes almost hyaline, the infuscation more evident along veins, especially in middle parts; veins yellowish brownish, brownish, or almost black in some specimens, though paler in specimens with

almost hyaline wings; hind border relatively narrow, much narrower opposite first posterior cell than cell itself; first posterior cell sometimes broadly open apically, appearing more truncate; apex of discoidal cell distinctly shortly or even, in ♀, longly stalked; alula distinctly broader than in *paganus*; knobs of halteres relatively broader, more truncated apically, also dark above.

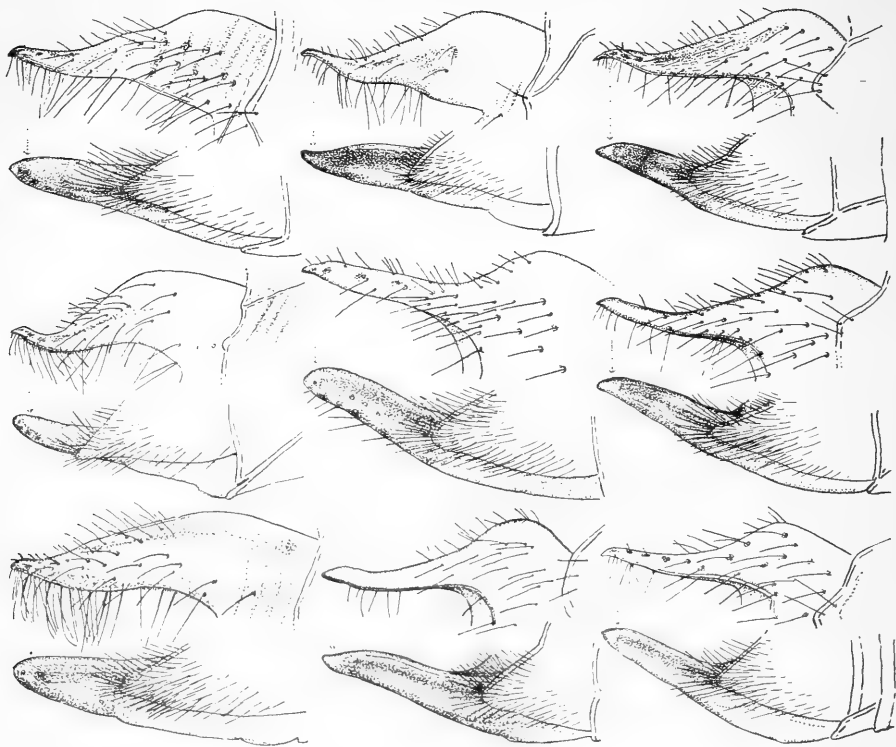


FIG. 6. Side and dorsal views (all to same scale) of right process of sternite 9 of ♂♂ of:

*Afroleptomydas opacus* (Bezz.) (top left). *Afroleptomydas suffusipennis* (Brun.) (top middle). *Afroleptomydas (Crossoprosopus) vansoni* n.sp. (top right). *Afroleptomydas griquaensis* n.sp. (middle left). *Afroleptomydas (Crossoprosopus) anuliventris* n.sp. (middle middle). *Afroleptomydas (Crossoprosopus) tuliensis* n.sp. (middle right). *Afroleptomydas (Crossoprosopus) namaquensis* n.sp. (bottom left). *Afroleptomydas (Crossoprosopus) capicolus* n.sp. (bottom middle). *Afroleptomydas (Crossoprosopus) orangiae* n.sp. (bottom right).

*Legs* with the hind femora slightly, but distinctly, thickened in both sexes, slightly less so in ♀, their double row of spines below somewhat slender, dark reddish brownish to blackish brown, and from just before middle; hind tibiae curved towards apex, their spicules along outer lower parts longer and stouter than in *paganus*; basal segment of hind tarsi in ♂ subequal in length to, or in both sexes distinctly longer than claw-segment.

*Oviscape* in ♀ specimen with 6 or 7 dark brownish spines on a side.

*Hypopygium* of ♂ with the posterior angles of lobes of tergite 9 more bluntly



rounded than in *paganus*, with longer and denser hairs below; sternite 9 more narrowed and conically pointed apically, its surface also wrinkled, its processes (text-fig. 6, top left) longer than in *paganus*, less strongly S-curved, with more than apical third, in side view, slender, slightly curved up, less so than in *paganus* and more flattened, in dorsal view more shallowly, or scarcely, grooved on inner side above apically, broader and more broadly rounded apically, and with some distinct punctures along outer upper part apically.

From 7 ♂♂ and 1 ♀ (3 ♂♂, including ♂ holotype, in the South African Museum, 3 ♂♂ and ♀ allotype in the Transvaal Museum, and 1 ♂ in Dr. Bequaert's collection).

Length of body: about 16·5–18·5 mm (very large specimen 23 mm)

Length of wing: about 10·5–12·25 mm (very large specimen 15·5 mm)

*Distribution*: South-eastern Karoo and eastern Cape: Modderfontein near Willowmore (Dr. Brauns, January 1918, 1920); Dunbrody (J. O'Neil, 1901) (♂ holotype); Loerie (South African Museum, February 1960); Swartkops (Dr. Brauns, February 1919); Resolution in Albany district (A. Walton, 23rd December 1927) (♀ allotype).

#### *Afroleptomydas opacicinctus* n.sp.

A striking, contrastingly black and greyish-ringed, whitish-haired species, of which the abdomen of the ♂ has a marked resemblance to the tail-pattern of a cat or of a lemur, and which belongs to the series with dull and non-shining abdomen. It is characterized as follows:

*Body* mainly dark or black, the pleural parts, especially in ♀, being in part more dark castaneous or blackish brownish; antennae brownish to blackish brown, the clubs usually velvety black, but often, especially in ♀, with a dark reddish or dark reddish brownish tint in basal three quarters; the following parts yellowish, reddish yellowish or yellowish brownish: clypeus, proboscis below to a variable extent, humeral tubercles, sides of thorax above (more distinct in ♀), thorax anteriorly on inner sides of humeral tubercles, especially in ♀, postalar calli to a variable extent, base of thorax above medially in ♀ to a variable extent, sides of metanotum in ♀, propleural prominence, especially in ♀, metapleural parts in front of halteres, pteropleural part in some ♀♀, upper part of metasternal part, especially in ♀, posterior episternal part, outer aspect of hind coxae, extreme sides and a basal and apical transverse streak on sides of tergite 1, sides of 2, extreme sides intramarginally of 3 and 4 to a variable extent (broader in ♀ than in ♂), and base or basal half of venter or sides of sternites 1–4; hind margins of tergites 2–4 and obscurely of 5 in ♂ whitish, those of 2–6 and discally or obscurely on 7 in ♀ broader yellowish whitish, margined on basal side with faint ochreous- or orange yellowish; hind margins of the corresponding sternites also obscurely whitish on extreme sides; bullae orange yellowish, yellowish brownish to orange reddish or orange brownish, separated above in ♂ by a space as broad as, or usually a little broader than, vertical length of bullae;

legs mainly dark castaneous brownish or reddish brownish, the hinder parts of front and middle femora and lower inner aspect of hind ones, as well as the tibiae and tarsi, paler, more yellowish.

*Integument* with only the central part of frons, head below, proboscis and, in ♀, last four abdominal segments and sides up to tergite 2, more or less shining, the entire abdomen in ♂ being dull, due to greyish whitish tomentum which is replaced on at least basal halves above of discal and sublateral parts of tergites 2-6 and basally only on 7 by posteriorly-deeply-indented patches of contrasting, velvety blackish bloom, and that of ♀ also dulled above discally by greyish whitish bloom up to end of tergite 4, of which the discal basal parts of 2-4 are also replaced by contrasting, posteriorly-indented, discal patches of the same velvety black bloom; pleurae mainly dull.

*Vestiture*, apart from the greyish whitish tomentum mentioned above, with hairs on head, in streaks on thorax above, especially on sides, on metanotum, propleural and prosternal parts, along hind border of mesopleuron, on pteropleural and metapleural parts, hinder part of metasternum, coxae, tergite 1 and sides basally of 2 and, in ♂, also on sternites 1-3, longish, dense, subvillose, but slightly shorter in ♀, entirely conspicuously snow whitish; rest of fine and shortish hairs on abdomen above in ♂ dark or brownish on the black patches, tinted feebly greyish yellowish on rest of dorsal discal surface, but more whitish on sides of tergites and on venter; hairs below processes of sternite 9 in ♂ and on the sternite itself yellowish or yellowish brownish; fine, short, and sparse hairs on abdomen of ♀ pale, but the longer reversed ones on last two segments more yellowish or brownish, appearing dark in certain lights; hairs on legs relatively short, shorter and less dense, especially on hind legs, than in *paganus* and *opacus*, mainly whitish.

*Head* with the antennae in ♂ as long as, or a little longer than, thorax (excluding scutellum), in ♀ usually a little shorter than, but sometimes as long as, thorax; segment 1 relatively short, only slightly thickened, about 2.3-2.6 times length of 2; segment 3 stoutish, only a very little, or scarcely, longer than club and articulating part combined, its apical fourth or a little less distinctly, though slightly thickened; clubs pyriform, with shortish neck-like basal constriction; proboscis relatively short, stoutish, distinctly shorter than thorax, without any longish hairs basally below, its labella broadish; palps well developed, longer than antennal segment 2, one sometimes longer than the other; postvertical spines slender, pallid, more distinct in ♀.

*Wings* greyish hyaline, appearing tinted brownish to a variable extent, more so in ♀, due to diffused fuscous borders along veins in apical two-thirds; veins dark brownish; first posterior cell moderately broadly open apically, but sometimes somewhat narrowly so; apex of discoidal cell shortly stalked; knobs of halteres dark brown to blackish brown above.

*Legs* with the hind femora slightly, but distinctly, thickened, their double row of spines below shortish, yellowish to yellowish reddish; hind tibiae slightly curved near apices; basal segment of hind tarsi longer than claw-segment.

*Oviscape* in ♀ with 7–8 slender yellowish brownish to brown spines on a side.

*Hypopygium* of ♂ with the apical angles of lobes of tergite 9 rather sharp, acutangular; sternite 9 relatively short, its apical part bluntly or subtruncately rounded, and with a patch of darker or black hairs on each side just below bases of processes, the latter, in side view, rather rapidly and almost equally narrowed above and below apically, the lower margin substraight, the slender apex slightly tilted up, in dorsal view rather sharply pointed.

From 21 ♂♂ and 3 ♀♀ in the South African Museum.

Length of body: about 15–20·5 mm

Length of wing: about 10–15 mm

*Distribution*: South-western Cape: between Leipoldtville and Elands Bay (Museum Expedition, October 1947) (♂ holotype, ♀ allotype 18, ♂ paratypes, and 2 ♀ paratypes). Western Karoo: east of Pakhuis Pass (Museum Expedition, December 1947) (2 ♂ paratypes).

*Afroleptomydas consanguineus* n.sp.

A Namaqualand species with annulate abdomen, unfortunately represented by ♂♂ only in the collections before me, and which resembles *opacinctus* very closely. From the ♂ of the latter it is distinguished as follows:

*Body* similarly coloured, but with the clypeus, humeral tubercles and sides of thorax above darker or more blackish, at least not pale yellowish or yellowish reddish; legs on the whole paler, femora below, tibiae and tarsi paler, more yellowish.

*Integument* of pleurae more shining, less densely covered with tomentum.

*Vestiture* very similar, similarly coloured, but fine hairs on hind femora above darker, appearing blackish brown; fine hairs on last three sternites also darker, more blackish brown, at least in certain lights, and hairs on hypopygium on the whole more blackish brown or black; velvety black, opaque, discal patches on tergites distinctly more extensive, extending to much beyond middle of tergites and straight-margined, not indented centrally above, appearing as broad black annulations separating the relatively narrower greyish whitish ones; spines on hind femora below, spicules on hind tibiae and longish hairs and spicules on tarsi paler, more yellowish or pallid, the inner faces of hind tibiae without markedly long hairs.

*Head* with the antennae distinctly proportionally longer, segment 3 being proportionally much longer, much longer than width of eye, which in *opacinctus* is subequal in length to, or only a little longer than, width of eye; clubs proportionally longer, more elongate-pyriform, with a much longer narrowed basal half.

*Wings* very similar, but shorter relative to body length; veins sometimes tending to be paler, and in the specimens before me without fuscous borders.

*Hypopygium* with the processes of sternite 9, in side view, relatively much narrowed basally, more gradually narrowed to apex, becoming slender from at least apical third and not at about apical fifth.

From 2 ♂♂ in the South African Museum.

Length of body: about 17–20 mm

Length of wing: about 10·3–12 mm

*Distribution*: Namaqualand: Wallekraal near coast (Museum Expedition, October 1950).

*Afroleptomydas milnertonensis* Beq.

*Afroleptomydas milnertonensis* Bequaert, 1963: 42, fig. 7B.

A smallish species from Milnerton, near Cape Town, described by Bequaert from 2 ♂ specimens collected by the late Mr. R. Turner and which is not represented in the collections before me, not even in those of the South African Museum. According to the description, it is a peculiar species, differing from most other species of this genus, and more especially from those occurring in the neighbourhood of Cape Town, in certain important aspects which render its recognition easy.

It appears to be characterized by its small size; the brownish humeral tubercles, sides of thorax above and postalar calli; its short antennae; the relatively shortish vestiture which is yellowish brownish or brownish on the vertex, disc of thorax and on the brownish dull abdomen, the absence of longish hairs on femora and tibiae, especially hind ones; the dull pleurae; its rather transversely long orange brownish-margined bullae; the first posterior cell in wings which is scarcely open apically or subtends angularly on costal margin; its only slightly thickened hind femora, armed below with a double row of slender, bristle-like spines; and hind tibiae which are straight, armed below with a double row of rather longish spicules and without any long hairs along inner side.

Characters such as the dull abdomen, dull pleurae and the feebly thickened hind femora, place it in the *humeralis* group as was done by Bequaert, but the subdivision or section of this group to which it is to be assigned is uncertain. The dull abdomen and shortish antennae seem to relegate it to the *paganus* section, but the less thickened hind femora, armed with feeble spines below, the two rows of rather slender spicules on hind tibiae and the indistinct streaks on thorax above suggest a subsection of its own. The only other species in the *paganus* section, without any markedly long hairs along inner face of hind tibiae, is *consanguineus*, a species which, however, differs from *milnertonensis* in all other respects.

Length of body: about 13–14 mm

Length of wing: about 9–10 mm

*Distribution*: Western Cape: Milnerton near Cape Town (R. Turner, January 1926).

*Afroleptomydas griquaensis* n.sp.

Another species with striking and characteristic, contrasting, velvety black and greyish whitish annulations on the abdomen, like the markings on a lemur's

tail, and which resembles *opacinctus* and to a certain extent also *consanguineus* superficially. From both these species, especially the former, it differs as follows:

*Body* also mainly black, the yellowish brownish or reddish brownish parts very similar, but clypeus distinctly more brownish than yellowish; antennae and proboscis below usually paler reddish brownish or reddish; sides of thorax above in ♂ either entirely dark or only obscurely reddish brownish and in ♀ either more narrowly reddish brownish or also mainly dark; sides of metanotum in ♂ entirely dark, in ♀ less reddish brownish or also mainly dark; sides of tergites 1 and 2 on the whole less extensively yellowish and sides of 3 and 4, or the rest, not, or not so consistently, yellowish or reddish brownish intramarginally; hind margins of tergites 2-6 (or 7), not only 2-4, in ♂ slightly more broadly whitish and 2-6 or 7 in ♀ more broadly yellowish; hind margin of sternite 1 more consistently and conspicuously yellowish whitish and sides of 2-6 also more conspicuously yellowish whitish; bullae ochreous brownish, brownish to blackish brown, black-margined.

*Integument* of the head with the same parts shining, but, unlike in *opacinctus*, the scutellum and more or less sides of tergites 1 and 2, as well as articulation between them, also shining; pleurae on the other hand more consistently dulled by greyish whitish tomentum; integument of abdomen in ♂, as in latter species, mainly dulled by greyish whitish tomentum which is also replaced above on a little more than basal halves of tergites by contrasting, velvety black, discal, saddle-shaped patches which are, however, not indented posteriorly and which are also confined to extreme bases on tergites 2 and 7; that of abdomen in ♀ also more or less shining on last two, sometimes three, segments, the rest 1-5 (or 6) dulled discally by greyish whitish tomentum, which on 2-5 and at extreme base of 6 is replaced by velvety blackish, basal, discal patches not so broadly and deeply indented along their hind margins as in ♀ *opacinctus*.

*Vestiture* with the hairs on head, sides of thorax above, pleural parts, metanotum, and tergites 1 and sides of 2 and 3, and coxae as long, but slightly less dense, slightly more so in ♀, also snow whitish in both sexes; hairs along the narrow central and two broadish submedial discal streaks on thorax in both sexes distinctly much shorter and sparser than in *opacinctus*; short ones on abdomen above and on posterior half of venter in ♂ slightly longer than in latter species, but also dark on dark discal patches; hairs on hypopygium mainly pale, not dark; short hairs on abdomen in ♀ as in *opacinctus*, but relatively longer, the longer reversed ones on last three segments, however, whitish; hairs on legs also snow whitish, but those on femora, especially hind ones, distinctly longer, more so in ♂.

*Head* with the interocular space below relatively broad, proportionally broader than in both *opacinctus* and *consanguineus*, only a little narrower than that on vertex (in latter two species considerably broader); antennae subequal in length to, or a little longer than thorax (excluding scutellum); segment 1 scarcely thickened, about 3 times length of 2; segment 3 stoutish, scarcely longer than, or about as long as, club plus articulating part, its apical segment-like

fourth thickened; clubs subpyriform, but more gradually narrowed basally than in *opacinctus*; proboscis relatively shorter, subequal in length to, or a little longer than, vertical length of eyes (much longer in latter species); palps distinct, conical, longer than antennal segment 2; postvertical spines distinct, whitish or pallid.

*Wings*, relative to body-length, longer than in *opacinctus*, usually greyish hyaline in ♂, but sometimes with a very faint yellowish tinge along veins in middle parts, faintly tinted yellowish in ♀, less dark than in *opacinctus*, the infusion mainly along veins; veins yellowish to yellowish reddish or reddish; discoidal cell shortly stalked apically; knobs of halteres more subbracket-shaped middle part above brownish to dark blackish brown.

*Legs* with the femora shining (dull in *opacinctus*); hind ones slightly more thickened, their double row of spines below pallid; basal segment of hind tarsi subequal in length to claw-segment.

*Oviscape* of ♀ with 7–8 relatively broader spines on a side.

*Hypopygium* of ♂ with sternite 9 very similar to that of *opacinctus*, but without dark hairs on each side, its processes, in side view (text-fig. 6, middle left), distinctly more S-curved, with more or less apical fourth or less curved up, with fewer hairs below; aedeagus with relatively shorter epimere projecting for a shorter distance beyond phallic tubes.

From 3 ♂♂ and 4 ♀♀, including the holo- and allotype, in the South African Museum.

Length of body: about 14–18.5 mm

Length of wing: about 10.5–14.5 mm

*Distribution*: Griqualand West: Vryburg (Museum Staff, October 1939).

#### *Afroleptomydas pseudoopacus* Beq.

*Afroleptomydas pseudoopacus* Bequaert, 1963: 31, figs 6, 4 and 8A.

This species, described from a single ♂ from Aus in South West Africa, is not represented in the collections before me. From the description of Bequaert it is quite clear that it belongs to the *paganus* section of the *humeralis* group, with dull abdomen and dark discal patches on anterior part of tergites, and also dull pleurae. From *paganus s.str.* and also *opacus* it appears to differ in the distinctly longer proboscis, distinctly broader interocular space and fronto-facial part, the less widely-separated bullae, the whitish, not brownish or fulvous, shortish hairs on disc of thorax, the not entirely dark short hairs on greater part of abdomen above (those in apical part of tergites being whitish), and the contrasting yellowish inner faces of hind femora.

It appears to be nearer *griquaensis* and *opacinctus*, but closer to the former, which also differs from *paganus* and *opacus* in these respects. From *griquaensis* it differs, according to the description, in being distinctly much paler, with paler thorax, abdomen and venter, with hind margins of only tergites 2–5 yellowish whitish, in having a broader interocular space and fronto-facial part, a slightly

longer proboscis, finely granular thorax above, and more yellowish brownish fine hairs on anterior faces of femora and tibiae, and a longer epimere which is more rounded apically.

Length of body: about 22 mm

Length of wing: about 16 mm

*Distribution*: South West Africa: Aus in Great Namaqualand (R. Turner, January 1930).

*Afroleptomydas turneri* Beq.

*Afroleptomydas turneri* Bequaert, 1963: 38, figs 5A and 7A.

*Afroleptomydas turneri* var. *pallidus* Bequaert, 1963: 42.

A dark, mainly dull-bodied, variable, montane species, frequenting mountain valleys, sometimes at high altitudes, in the Western Cape, and described by Bequaert in 1963 from ♂♂ and ♀♀ collected by the late Mr. R. Turner at Ceres. The ♂ was described in detail by him, but not the ♀. To supplement Bequaert's original description and include the ♀ a redescription of the species is as follows:

*Body* mainly dark or black, the pleural parts and abdomen in ♀ usually more dark castaneous or blackish brownish; clypeus dark castaneous brownish to almost black; antennae dark or blackish, more dark reddish brownish to yellowish brownish in ♀; humeral tubercles dark blackish brownish to dark reddish brownish in ♂, usually paler to even yellowish reddish in ♀; sides of thorax above and anteriorly on inner sides of humeral tubercles dark in ♂, but usually reddish to a variable extent in ♀; postalar calli usually dark reddish brownish; metanotum black, but in some ♀♀ obscurely reddish on extreme sides; posterior pleural (metasternal and episternal) parts in ♀ usually yellowish or yellowish brownish to a variable extent, in ♂ usually mainly dark; extreme sides of tergites 1 and 2, and sometimes also sides of 3 and 4 or even 5 in ♀, usually also yellowish to a variable extent, usually entirely black in ♂, though in some ♂♂ with some obscure brownish on sides basally of 1 and 2; venter in ♂ mainly dark, in ♀ usually slightly paler than abdomen above; hind margins of tergites 2-5, and to a certain extent 6, in ♂ narrowly whitish, in ♀ 2-5 distinctly (sometimes also 6) more broadly yellowish whitish, their basal borders usually tinted more orange; hind margins of sternites 1-6 in both sexes also conspicuously and broadly yellowish whitish; bullae vertically elongate, narrowish, shining black, narrowly separated above in ♂ by a space narrower than the vertical length of bullae; apices of lobes of tergite 9 and apical halves of processes of sternite 9 in ♂ reddish brownish; legs mainly dark, dull castaneous brownish or dark reddish brownish to blackish brown, the knees yellowish reddish and the inner lower faces of femora and tibiae, hind tibiae, and the tarsi more yellowish, in ♀ slightly paler.

*Integument* with the following parts more or less shining: central part of frons, clypeus, to a certain extent proboscis, head below, to a variable extent middle anterior part of pleurae, in ♀ greater part of abdomen from hinder half

of tergite 2, and in ♂ sides of tergites 1-3 and base of 4 as well as basal half or more of venter; integument of greater part of abdomen above in ♂ dulled by dull greyish whitish tomentum, replaced by dull blackish, saddle-shaped, discal patches on basal parts or halves of tergites 2-6 and extreme base of 7; in ♀ dulled by greyish whitish tomentum discally across tergite 1, bases of 2 and 3 and sometimes obscurely across 4.

*Vestiture* with the hairs on head in both sexes, extreme sides of thorax in ♂, metanotum, tergite 1 and sides of 2 in both sexes, sides of 3 and even 4 in ♂, and more sparsely on sternites 2-4 in ♂ longish and dense, though slightly less dense in ♀, entirely snow whitish; hairs in streaks on disc of thorax slightly shorter, shorter and sparser in ♀, greyish yellowish, golden yellowish to fulvous brownish; those on propleural prominence, pteropleural and metapleural parts, across hind margin of metasternum and on sides of hind coxae shorter than hairs on tergite 1 and also shorter in ♀ than in ♂, greyish whitish, but those on pteropleural and metapleural parts sometimes tinted slightly yellowish or even fulvous, especially in some ♀♀; short hairs on abdomen in ♂ slightly longer on extreme sides of tergites and on venter, greyish whitish to greyish yellowish, but darker, deeper yellowish or brownish on black basal patches; those on abdomen in ♀ very short, sparse, pale, but the longer and denser reversed ones on last two segments yellowish brownish to brown; hairs on hypopygium of ♂ mainly yellowish reddish to fulvous brownish; those on legs short in both sexes, though sparser in ♀, mainly greyish whitish, appearing more yellowish on front and middle femora above.

*Head* with the antennae a little shorter than thorax (excluding scutellum); segment 1 about, or very little more than, 3 times length of 2, slightly thickened; segment 3 longer than club plus articulating part, its apical third, or a little less, slightly thickened; club pyriform, more or less gradually narrowed to base, only its extreme base constricted; proboscis relatively shortish, much shorter than thorax (excluding scutellum), but longer than vertical length of eyes, without long hairs basally below; palps distinct, slightly longer than antennal segment 2; postvertical spines present, pale yellowish.

*Wings* relatively longer in ♀ than in ♂, tinted slightly yellowish brownish in ♂, sometimes only very slightly so, or even only greyish hyaline, more distinctly or darker yellowish brownish in ♀, due mainly to diffused fuscous borders to veins in some ♀♀; veins yellowish brownish to brownish; first posterior cell narrowly to fairly broadly open apically; apex of discoidal cell shortly stalked; hind border of wings narrower than first and third posterior cells; knobs of halteres golf-driver-club-shaped, the apex sometimes rather pointed, dark brownish above.

*Legs* with the hind femora scarcely, or only very slightly, thickened, their double row of spines below yellowish or pallid; basal segment of hind tarsi much longer than claw-segment.

*Oviscape* in ♀ with the inner lower angle on each side of carina rugosely punctured, with 7 or 8 spines on a side; two lobes below with a dense brush of



rather short, stiffish, bristly hairs.

*Hypopygium* of ♂ with the anal lobes rather prominent, projecting, with short and rather stoutish, bristly hairs above; lobes of tergite 9 relatively long, slightly produced apically, sharply pointed or acutangular apically; sternite 9 conical, laterally more rapidly narrowed to narrower and bluntly rounded apical part, grooved or wrinkled basally and with rows of setiferous punctures on sides of broad basal part, rather densely haired below, its processes relatively stoutish, in side view, S-curved, rather densely and long-haired below, the apical part slightly curved upwards, in dorsal view relatively broad, bluntly pointed apically.

From 41 ♂♂ and 20 ♀♀ in the South African Museum and in the South African Institute for Medical Research.

Length of body: about 16·5–22 mm

Length of wing: about 11·5–17 mm

*Distribution*: Western Cape: Ceres (original material collected by R. Turner at 1,500 ft., December 1920); upper sources of Olifants River in Ceres division (Museum Expedition, December 1949); Citrusdal district (Museum Expedition, November 1948); Olifants River between Citrusdal and Clanwilliam (Museum staff, October–November 1931); Clanwilliam South African Institute for Medical Research, October 1951; Bulhoek between Clanwilliam and Klawer (Museum Expedition, October 1950); Wit River Valley, Bains Kloof near Wellington (Museum Expedition, December 1949).

One representative of a variational colour form, from the same locality as the holotype, was named var. *pallidus* by Bequaert. It apparently differs from the more typical form in having paler antennae, of which segment 3 is proportionally longer and the apical part of the clubs is darkened; a paler proboscis, with dark labella; uniformly pale brownish legs; a more yellowish tuft on the upper part of metapleurae; a faint yellowish hind margin across tergite 6; no pale hind margins on sternites 5 and 6; a more broadly open first posterior cell in wings; and in having the apical stalk of the second submarginal cell very short.

#### *Afroleptomydas flavigenualis* n.sp.

A dull-bodied species from Namaqualand, represented in the collections before me by 2 ♂♂ only, and which obviously belongs to the same series as *turneri* and which may be considered as the Namaqualand representative of the latter, from which it differs in the following respects:

*Body* also mainly black, both the clypeus and humeral tubercles also dark; pleurae also entirely dark; hind margins of tergites 2–6 also whitish, but the bands distinctly broader and more conspicuously margined across their basal margins with orange; hind margins of the corresponding sternites also uninterruptedly yellowish whitish; bullae shining blackish brown or dark reddish brownish, distinctly more widely separated above by a space only a little narrower, or broader than, vertical length of bullae; legs, however, with the

broadish apical parts of femora, the basal parts of hind ones, and the tibiae and tarsi conspicuously and contrastingly yellowish or luteous.

*Integument* of body mainly dull as in *turneri*, the entire abdomen above, excepting junction between tergites 1 and 2, being also dull, but mainly black, without pale greyish whitish tomentum on apical halves or more of the tergites as in latter species.

*Vestiture* very similar, as long and as dense, but hairs across occiput just behind vertex more yellowish, and those on thorax above and on pteropleural and metapleural parts distinctly darker, deeper fulvous reddish or brownish; hairs on metanotum sometimes appearing slightly more pale creamy yellowish than whitish; rest of hairs at base of abdomen snow whitish as in *turneri*.

*Head* with the antennae (malformed in one specimen) very similar, the segments with same proportions; proboscis, however, relatively longer.

*Wings* as in *turneri*, but first posterior cell tending to be broader open apically; veins in anterior part of wings paler, more yellowish.

*Legs* very similar.

*Hypopygium* differs in having sternite 9 slightly less densely hairy, its processes, in side view, distinctly shorter, less S-curved, the upper and lower margins straighter, more rapidly narrowed apically, the apical part less curved upwards, and in dorsal view relatively broader.

Holotype in the South African Institute for Medical Research, and paratype in the South African Museum.

Length of body: about 19–23 mm

Length of wing: about 13–14.5 mm

*Distribution*: Namaqualand: Kamieskroon (October 1951) (South African Institute for Medical Research).

#### *Afroleptomydas koupicolus* n.sp.

Another species belonging to the dull-bodied *turneri* and *flavigenualis* section and which may almost be considered as a Koup variety of *turneri*, but from which latter species it differs in the following respects:

*Body* also mainly dark or black; clypeus in both sexes also dark; humeral tubercles in ♂ dark, in ♀ reddish brownish as in ♀ *turneri*; pleurae mainly dark; hind margins of tergites 2–6 also whitish in ♂ and yellowish whitish in ♀; bullae similar; venter, however, yellowish on sternites 1 and 2, base and middle of 3, and bases of 4–6 in ♂, and 1–4, and to a variable extent middle parts of 5–7, in ♀; hind margins of sternites also uninterruptedly whitish as in *turneri*; apices of lobes of tergite 9, greater part of processes of sternite 9, and greater part of the latter sternite itself in ♂ also yellowish brownish; legs with the apical parts of front and middle femora below, at least basal halves and entire lower and outer lower surfaces of hind ones in ♂, entire hind femora in ♀, and all tibiae and tarsi yellowish, the femora of ♂ thus with even more yellowish than in ♂ *flavigenualis*, and in both sexes the legs are less dark than in *turneri*.

*Integument* with the same parts shining as in latter two species, the abdomen

in both sexes dulled by the same type or pattern of greyish whitish tomentum and black as in ♂ and ♀ of *turneri*.

*Vestiture* with the longish hairs on head, sides of thorax and base of abdomen in both sexes also snow whitish, but distinctly denser and slightly longer than in *turneri* and *flavigenualis*, those at base of abdomen especially dense, those on sides of tergite 3 in ♂ very much denser than in latter two species; shortish hairs in streaks on disc of thorax paler yellowish, the streaks distinctly broader, and two submedial bare streaks on thorax above in both sexes as in *turneri*, but those of ♂ relatively a little longer; hairs on legs equally long and dense and similarly coloured.

*Head* with the antennae relatively a little longer, but apparently a little shorter than thorax, especially in ♀; segment 1 thickened, about 3.3 times length of 2; segment 3 longer than club, relatively longer in ♀ than in ♂; clubs shaped as in *turneri*; proboscis distinctly longer than in latter species, its base below with distinct longish hairs.

*Wings* similarly tinted and the venational characters similar.

*Legs* with the hind femora only slightly thickened and in other respects very similar.

*Oviscape* in ♀ with about 7 relatively shorter spines on a side.

*Hypopygium* of ♂ very similar, but with sternite 9 tending to be more distinctly, though bluntly, keeled below, its processes, in side view, more like those of *flavigenualis*, less slender apically, less curved up apically than in *turneri*, more equally narrowed above and below, less curved downwards and then upwards as in the latter species, in dorsal view more rapidly narrowed apically, the apex being sharper.

From 1♂ and 1♀ in the South African Museum.

Length of body: about 20–21 mm

Length of wing: about 14–17.5 mm

*Distribution*: Koup Karoo: Lammerkraal in the Prince Albert District (Museum Expedition, September 1947).

### *Afroleptomydas namaquensis* n.sp.

*Leptomydas paganus* Bezzi (*nec* Gerstaecker), 1924b: 214. (n.syn.)

The unique, markedly large ♂ specimen from Okiep in the South African Museum which Bezzi referred to and labelled as *paganus* (Gerst.) *s.str.* is, like the other ♂ and ♀ specimens so identified by him, not referable to *paganus* at all. The true specific identity of *paganus* was unknown to Bezzi and, as stated under *paganus* (Gerst.) in this paper, he confused no less than three different species with the latter species. This specimen from Okiep is an entirely different form which is closer to *turneri* than to other species. From the ♂ of the latter it differs in the following respects:

*Body* much larger and longer; antennae reddish brownish; clypeus yellowish; proboscis below also more extensively yellowish brownish; humeral

tubercles more castaneous brownish, and greater part of pleurae also more castaneous brownish; basal part on sides of tergite 1 as well as extreme sides of 2-4 (or even 5) comparatively paler, more pale castaneous or yellowish brownish; hind margins of tergites 2-6 distinctly broader, more conspicuously, yellowish whitish, their basal margins, at least discally, more broadly tinted orange; hind margins of the corresponding sternites yellowish whitish only on sides, not uninterruptedly as *turneri*; bullae distinctly very much shorter vertically, orange yellowish, very widely separated above by a space very much broader than vertical length of bullae; legs mainly reddish brownish, paler on hind femora below.

*Integument* also mainly dull, even greater part or entire pleurae dull, and also entirely so on disc of tergite 2 and on rest of abdomen above, but dulled mainly by black or dark tomentum, no pale greyish or greyish whitish tomentum being so evident as in *turneri*.

*Vestiture* with the long hairs on head, thorax, and base of abdomen as long and as dense, but those on sides of tergite 3 not so dense and long; all the hairs not entirely whitish, but those on each side of occiput above, on thorax above, pleurae, metanotum, tergites 1 and 2 discally and on middle and hind coxae brownish, slightly darker on thorax above; those on disc of thorax relatively slightly longer and separated by relatively broader bare streaks; longish ones at base of venter whitish; short hairs on rest of abdomen above slightly longer than in *turneri*, and mainly dark brownish, only pale on extreme sides of tergites, and on rest of venter; hairs on hypopygium blackish brown, not fulvous or reddish; those on legs as in *turneri*, but those on femora above appearing dark in certain lights, and pale ones on tibiae more greyish yellowish or yellowish-tinted than whitish.

*Head* with the antennae relatively very much shorter, considerably shorter than thorax (excluding scutellum); segment 1 thickened, about 3 times length of 2; segment 3 very much shorter than in *turneri*, appearing stoutish, subequal in length to, or even a little shorter than, club plus articulating part, its apical third only slightly thickened; club distinctly more spindle-shaped, not pyriform, broadest at about middle; proboscis rather stoutish, scarcely, or only very slightly, longer than vertical length of eyes, with distinct longish hairs basally below; palps distinct, much longer than antennal segment 2, dark-haired; postvertical spines present, reddish.

*Wings* in the specimen hyaline, not tinted at all; veins reddish; appendix at base of second submarginal cell rather long; first posterior cell broadly open apically; discoidal cell shortly stalked; hind margin of squamae brownish, not whitish; halteres brown.

*Legs* with the hind femora relatively slightly more thickened, their double row of spines below more dark reddish brownish; basal segment of hind tarsi longer than claw-segment.

*Hypopygium* similar to that of *turneri*, but sternite 9 distinctly longer, more sharply conically pointed, being relatively narrower apically, though also

transversely wrinkled basally and in curves on sides, its processes (text-fig. 6, bottom left) distinctly relatively shorter, stouter, in side view less slender, less S-curved, more gradually narrowed apically, in dorsal view even blunter and broader apically; last sternite (8) rather elongate, relatively longer than in *turneri*.

Holotype in the South African Museum.

Length of body: about 26 mm

Length of wing: about 17.5 mm

*Distribution*: Namaqualand: Okiep.

### *Afroleptomydas apricus* n.sp.

A species with rather long and broad wings and of which the ♂ resembles *paganus* and especially *opacus* superficially. It is characterized as follows:

*Body* mainly black, with the antennae in ♂ mainly black, the apical part of segment 3 obscurely and apical half of club dark reddish, in ♀ more dark reddish brownish, especially segments 1 and 2, and clubs entirely dark reddish; sides of clypeus reddish brownish, more extensively so in ♀; proboscis below yellowish reddish; humeral tubercles in ♀ yellowish, in ♂ appearing dark, showing slightly and obscurely reddish through the bloom; sides of thorax above in ♂ dark, in ♀ dark reddish in anterior half and on inner side of humeral tubercles anteriorly; postalar calli obscurely dark reddish in ♀, dark in ♂; metanotum black in ♂, obscurely dark reddish on sides in ♀; pleurae in both sexes mainly black, the area below wing-bases, however, yellowish brownish and, in ♀, that below halteres also obscurely yellowish brownish; base on sides of tergite 1 and, in ♀ also sides basally of tergite 2, yellowish; venter yellowish in basal half in ♂, in ♀ mainly yellowish up to sternite 6, but 7 and 8 being slightly darker, and middle part of three basal sternites blackened; ventral part of hypopygium reddish brownish; hind margins of tergites 2–6 in ♂ whitish and those of 2–6 in ♀ rather conspicuously and broadly yellowish; hind margins of sternites in ♂ whitish, and in ♀ broadly yellowish, on sides; bullae black, more broadly separated above than vertical length of bullae in ♂, more broadly so in ♀; legs yellowish, front and middle coxae and, in ♂, also hind ones, almost black, with the upper faces of the femora and, in ♂, extensive upper and outer and inner upper halves of hind ones, and upper and lower faces of hind tibiae very dark or blackish brownish, and claw-segments of tarsi in both sexes darkened.

*Integument* of middle part of frons, proboscis, scutellum, tergite 1 and greater part of 2 shining, and in ♀ also most of abdomen above up to basal part or half of tergite 6; thorax above dull in both sexes, streaked greyish whitish and black, entire pleurae dulled by rather dense whitish tomentum; rest of abdomen in ♂ mainly dull black above, but with greyish whitish tomentum across hind margins of tergites 3–7 (fairly broadly), broader on sides and also extending basalwards on extreme sides, and apical half of venter in ♂ also dusted slightly greyish.

*Vestiture* with the hairs on head, sides of thorax above and anteriorly, on

pleurae, sides of metanotum, tergite 1, sides of 2 and 3, and basal half of venter rather longish, dense, villose, slightly shorter in ♀, entirely snow whitish; hairs towards apex of antennal segment 1 and on 2 brownish; short hairs in streaks on thorax above tinted slightly greyish yellowish in certain lights; short ones on disc of tergites 2 and 3 and on greater parts above and sides of rest of tergites in ♂ fairly dense, longer than in *opacus*, black, only some on extreme sides of 4–6 whitish; those on sternites 5–8 in ♂ tinted slightly more greyish yellowish than whitish, and with dark or blackish ones along middle of 5–7; shortish hairs on rest of abdomen in ♀ much sparser than in ♂, greyish whitish, but reversed ones on last two segments longer, more fulvous brownish; hairs on legs fairly dense and long, less so in ♀, the longer ones in ♂ relatively longer and denser than in *opacus*, mainly whitish, though the fine ones on sides of hind femora in ♂ appear more greyish yellowish.

*Head* with the antennae relatively longer than in *opacus*, a little longer than, or in ♀ subequal in length to, thorax (excluding scutellum); segment 1 slightly thickened, about or a little less than 2.5 times length of 2; segment 3 relatively stoutish, a little more than its apical fourth thickened, in ♂ about as long as club, in ♀ a little longer; club elongate-pyriform; proboscis longer than vertical length of eyes, with some longish hairs basally below, its labella obvate; palps distinct, slightly longer than antennal segment 2; postvertical spines present, yellowish.

*Wings* relatively long and broad, more so than in *opacus* and in other related forms, hyaline in ♂, with a slight milky whitish tint, in ♀ tinted slightly yellowish along veins, especially in middle parts; veins brownish; first posterior cell broadly open apically; apex of discoidal cell shortly stalked; alula broadly lobe-like; knobs of halteres brown.

*Legs* with the hind femora distinctly thickened in both sexes, their double row of spines below reddish or reddish brownish; hind tibiae curved near apex, especially in ♂; basal segment of hind tarsi scarcely, or only a little, longer than claw-segment.

*Oviscape* in ♀ with 9 or 10 brownish spines on a side.

*Hypopygium* of ♂ with the posterior angles of lobes of tergite 9 acutangular; sternite 9 longitudinally wrinkled, narrowed apically, bluntly pointed, its processes, in side view, S-curved, the apical third slender, curved up, in dorsal view more sharply pointed and narrowed than in *opacus*.

From 1 ♂ and 1 ♀ in the South African Museum.

Length of body: about 18–25 mm (♀ larger than ♂)

Length of wing: about 13–17 mm

*Distribution*: Southern Koup: Rooinek Pass to the east of Laingsburg (Zinn and Hesse, Museum Expedition, January 1943).

### *Afroleptomydes anomalus n.sp.*

A ♂ and a ♀, from the same locality, in the collections before me belonging to the *opacus* and *apricus* section are, however, anomalous in that the ♂ has clear wings and the ♀ distinctly tinted ones, and the antennal clubs in ♀ are, relative

to segment 3, longer than in the ♂, suggesting that they may not belong to the same species. As these sexual differences have also been noticed in some other species and as these specimens agree in most other characters, as far as the sexes in this genus agree, they are here provisionally taken to be specifically identical. They show the following characters:

*Body* mainly black, the pleurae in ♀ slightly more castaneous brownish; antennae dark blackish brownish, the apical parts of clubs in ♀ more dark orange reddish; clypeus reddish brownish on sides; proboscis reddish brownish below; humeral tubercles dark in both sexes, though more obscurely dark blackish brownish in ♀; sides of thorax above black; postalar calli obscurely dark reddish brownish, more so in ♀; metanotum entirely dark; posterior meta-pleural and metasternal parts, sides basally of tergite 1 more yellowish brownish, and sides of 2 and 3 slightly paler than discally, more reddish brownish; hind margin of tergite 1 dark reddish brownish, almost black; those of tergites 2-6 in ♂ whitish, more broadly and conspicuously pale yellowish or yellowish whitish in ♀; bullae black or very dark; hypopygium in ♂ mainly reddish brownish, the apical parts of processes of sternite 9 paler; venter reddish brownish, paler and more yellowish basally; hind margins of sternites 1-6 in both sexes whitish on sides, broader in ♀; legs with the coxae in ♂ darker, in ♀ dark reddish brownish or dark castaneous brownish, the femora dark or dark brownish above, paler or more yellowish below, the hind ones especially more contrastingly yellowish below and basally, the tibiae and tarsi yellowish brownish, slightly paler in ♀, the hind ones appearing darkened below, especially in ♂, and claw-segment of tarsi darkened.

*Integument* of head dulled by dense, greyish whitish tomentum, only central parts of frons, clypeus above and proboscis shining; thorax above dull, with 4 streaks of greyish whitish tomentum; scutellum shining; metanotum and pleurae mainly dulled by greyish tomentum; abdomen in ♂ with tergites 1 and 2 shining, but rest dull; composed of greyish whitish tomentum, replaced by dullish, black, saddle-shaped, discal patches in more than basal halves of tergites 3-7, smallest on 7, the integument itself transversely aciculate or sub-stiitate, covered with small setiferous puncturation; abdomen in ♀ smooth and shining, with very feeble dark bluish reflections, obscurely transversely striate, but more distinctly and more coarsely so on last three segments, and also covered with minute, sparse, setiferous puncturation, denser posteriorly; venter in ♀ also shining, in both sexes transversely striated in posterior half.

*Vestiture* long and fairly dense on head, thorax, especially sides and basally, sides of metanotum, pleurae, tergites 1 and 2, sides of 3, and, in ♂, to a lesser extent and more shortly on sides of rest, and on legs, all these being slightly shorter and less dense in ♀, and in both sexes mainly snow whitish; hairs on antennal segments 1 and 2 dark; those on thorax above in 5 streaks, those discally with a very feeble sericeous yellowish tint in certain lights; shorter and fairly dense hairs on abdomen above in ♂ black discally on tergites 2-7 on black patches, those on 8, as well as those on sides and on hypopygium, whitish;

sparser hairs on abdomen above in ♀, even reversed ones posteriorly, whitish; hairs on venter whitish in both sexes, denser and longer in ♂, and in ♂ also with some dark ones medially on sternites 5–8; hairs on legs much longer and denser in ♂, mainly whitish in both sexes; spines on hind femora reddish brownish in ♂, more fulvous in ♀, the spicules on legs in both sexes fulvous.

*Head* with the antennae in ♂ distinctly longer than thorax (excluding scutellum), in ♀ a very little shorter than thorax; segment 1 slightly thickened, about 2·3–2·5 times length of 2; segment 3 equally long in both sexes, a little less than its apical third thickened, slightly longer than club in ♂, in ♀ about as long as club; latter elongate-pyriform, gradually and equally narrowed to base, conical apically, broadest at about middle, but in ♀ with a longer broader part, its base shortly constricted; proboscis a little longer than vertical length of eyes, in ♂ about 2·2 mm, in ♀ about 2·6 mm, with some longish hairs basally below; palps markedly slender in ♂, much longer than antennal segment 2, in ♀ much shorter, scarcely longer than this segment; postvertical spines slender, bristle-like, yellowish.

*Wings* almost clear hyaline in ♂, the middle veins with scarcely perceptible, faint, narrow, fuscous borders, in ♀ distinctly tinted yellowish brownish from about level of bases of marginal and discoidal cells to more or less level of apices of these cells, more so along veins in this part; veins reddish brownish; apex of discoidal cell shortly stalked; alula and axillary lobe rather broadish; knobs of halteres darkened above.

*Legs* with the hind femora slightly, but distinctly, thickened, their double row of spines below from near base; hind tibiae slightly curved near apex; basal segment of hind tarsi sub-equal in length to claw-segment or very slightly shorter.

*Oviscape* in ♀ with about 8 or 9 brownish spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 angularly pointed apically; sternite 9 conical, transversely wrinkled basally, and obliquely longitudinally so towards apex, its processes, in side view, S-curved, relatively shortish, curved upwards apically, in dorsal view bluntly pointed apically.

From 1 ♂ and 1 ♀ in the Transvaal Museum.

Length of body: about 16·5 (♂)–20·5 (♀) mm

Length of wing: about 12 (♂)–15 (♀) mm

*Distribution*: Southern Karoo: Willowmore (Dr. Brauns, 20th December 1920) (♂ holotype); Willowmore (Dr. Brauns, 15th February 1921) (♀ allotype).

From *apricus* it differs in having relatively narrower wings, relatively shorter antennae and proboscis, whitish hairs, not fulvous ones, on last three abdominal segments in ♀, much shorter and more bluntly pointed processes of sternite 9 in ♂, and sternite 8 in ♂ not slightly emarginate in middle.

From *opacus* the ♂ differs, apart from certain comparisons already made in the description, in having clear wings, dark humeral tubercles, dark sides of thorax, blackish bullae, more contrasting yellowish on femora, especially the



hind ones, denser shortish hairs on abdomen above which, even posteriorly, are whitish on sides, shorter, more pointed lobes of tergite 9 and shorter, less slender processes of sternite 9.

From *paganus* it may be distinguished by the black or dark humeral tubercles, black sides and disc of thorax, without two submedial reddish streaks, whitish hind margins across tergites 2-6, not 2-5, black bullae, longer antennae, much broader alula and axillary lobe, contrasting yellowish on femora below, absence of discal patches of greyish whitish tomentum on tergites in ♀, etc.

*Afroleptomydas pallidipes* n.sp.

This mainly pale Karoo species is unfortunately represented in the collections by a single ♀ specimen only. It is characterized as follows:

*Body* and head, with the exception of the dark eyes and labella of proboscis, and the shining black bullae, mainly yellowish brownish or toffee brownish; greater part of antennae, clypeus, humeral tubercles, extreme base on sides of tergite 1, and legs paler yellowish; hind margins of tergites 2-6 (and faintly on 7) conspicuously broadly lemon yellowish as are also the corresponding sternites on sides.

*Integument* of middle part of frons, scutellum, and abdomen shining; entire pleurae dulled by greyish whitish bloom or tomentum, as are also to a greater extent the thorax above (in streaks) and the metanotum; legs mainly shining.

*Vestiture* with the hairs on head, sides of thorax above, on metanotum, pleurae, tergites 1 and 2, to a much lesser extent sides of 3, base of venter, coxae, inner basal parts or halves of hind femora, and on inner sides of tibiae, longish, fairly dense, whitish; hairs on apical half of antennal segment 1 and those on 2 brownish; postvertical spines yellowish; shorter hairs in three streaks on disc of thorax above also yellowish or pale fulvous in certain lights; sparse shortish hairs on abdomen above, reversed ones on tergites 5-8 and on posterior half of venter gleaming pale sericeous yellowish in certain lights; those on legs whitish; spines and spicules on legs pale reddish.

*Head* with the antennae longer than thorax (excluding scutellum); segment 1 quite 3 times length of 2; segment 3 only slightly thickened apically, longer than club; latter elongate-conical, more swollen in apical half on inner side than on outer side; clypeus rather prominent, convex; proboscis shortish, somewhat laterally compressed, subequal in length to antennal segments 2 and 3, its labella ovate, more than half length of shining stem; palps small, about as long as antennal segment 2.

*Wings* faintly subopaquely yellowish whitish; veins pallid; first posterior cell apically broadly touching costal margin; discoidal cell rather longly stalked apically; knobs of halteres pallid or yellowish.

*Legs* with the hind femora only slightly thickened, their double row of pale reddish spines from near base; basal segment of hind tarsi subequal in length to claw-segment.

*Oviscape* with a comb of 7 or 8 brownish spines on a side.

Holotype in the South African Museum.

Length of body: about 17 mm

Length of wing: about 12 mm

*Distribution*: Nieuveld Karoo: Rietvlei on escarpment near Beaufort West (Zinn and Hesse, January 1949).

*Afroleptomydas latipennis* n.sp.

*Leptomydas subclausus* Bezzi (in part), 1924b: 216. (n.syn.)

This species is the other somewhat damaged ♀ from Namaqualand which Bezzi questionably referred to his species *subclausus* (*Afroleptomydas* (*Crossoprosofus*) *subclausus*). There is no doubt that the ♀ specimen on which this species is based is specifically different from *subclausus*. It is characterized as follows:

*Body* mainly yellowish brownish; head in front and below and pleurae dark reddish brownish; thorax discally above blackish, but with the sides broadly reddish and two submedial discal streaks above also fairly broadly reddish; humeral tubercles, an infusion on propleural part, pteropleuron and meta-pleural part in front of halteres yellowish; dorsum of abdomen pale yellowish brownish, with very dark reddish brownish patches on sides of tergites, and last tergite also mainly dark reddish brownish, except for some yellowish discally at apex; hind margins of tergites 1-7 conspicuously and broadly yellowish, and extreme base of tergite 1 more dark reddish brownish; bullae smallish, reddish brownish, very widely separated; hind margins of sternites very broadly and conspicuously, and uninterruptedly, yellowish; legs mainly yellowish, their spines and spicules pallid.

*Integument* of middle parts of frons and clypeus shining; thorax above, scutellum, metanotum, entire pleurae and more or less tergites 1-3 dull, due to greyish whitish bloom or tomentum which is fairly dense on head, but less dense on pleurae and tergites 1-3; rest of abdomen above more or less shining; legs dullish.

*Vestiture* with the hairs on head, thorax, especially sides, pleurae, metanotum, and abdominal segments 1 and 2 and on 7 and 8 longish, fairly dense, whitish on most of these parts, but posteriorly on abdomen more yellowish, and on last segment and genital parts more brownish; hairs on disc of thorax yellowish or fulvous, and not quite as short as in many other species; hairs on legs, especially coxae, also longish and whitish.

*Head* with the antennae, excepting segments 1 and 2, missing in the specimen, but with 1 distinctly thickened, quite 3 times length of 2; proboscis also broken off in specimen, but judging from remaining labral part, probably shortish; palps minute, shorter than antennal segment 2; postvertical spines not differentiated, not observable.

*Wings* relatively short, markedly broad, at broadest part distinctly much more than one-third of their length, with a distinct greyish yellowish subopacity,

or milky whitish appearance in certain lights; veins pale yellowish reddish; second submarginal cell markedly narrowed apically; first posterior cell also tending to be narrowed apically; discoidal cell with a rather long apical stalk; squamal margin whitish; knobs of halteres brownish above.

*Legs* relatively longish, especially hind ones; hind femora scarcely or only slightly thickened, their basal parts, relative to their thickness, rather stoutish, and their double row of pallid spines from near base.

*Oviscape* with comparatively short yellowish brownish spines, as far as can be seen about 5 or 6 on a side.

Holotype in the South African Museum.

Length of body: about 18.5 mm

Length of wing: about 11 mm

*Distribution*: Namaqualand: Spektakel (Lightfoot, October 1890).

#### *Afroleptomydas luteocinctus* n.sp.

Another somewhat damaged ♀ specimen from Namaqualand in the collections before me also belongs to the dull-bodied section with extensive yellowish to pale yellowish brownish on the body of the ♀ above, and very closely resembles the preceding species *latipennis*. It is characterized as follows:

*Body* with the head, thorax above, scutellum, discal part of metanotum, pleural parts, abdomen below and laterally mainly dark; clypeus mainly dark, but its sides appearing reddish brownish through the hairs; humeral tubercles yellowish; the following parts pale yellowish reddish or yellowish brownish to a variable extent: broadish sides of thorax above, two submedial longitudinal streaks on thorax above (broadish anteriorly and thinning out posteriorly), sides and hind margin of scutellum, sides of metanotum, hind margin of mesopleuron, pteropleural and metapleural part in front of halteres, entire tergite 1 (except for a dark basal spot discally), entire tergite 2 (except for a dark spot laterally), and discal parts on more or less apical halves of tergites 3-7 (becoming less extensive posteriorly); last abdominal segment reddish brownish; sides of tergites 3-7 and across their basal parts above dark blackish brown; venter, except basally, mainly dark blackish brown; hind margins of tergites 2-7 and of the corresponding sternites broadly yellowish whitish, the basal margins of those across the tergites being more yellowish and merging into rest of the yellowish brownish above; bullae blackish brown, smallish, very widely separated above; legs mainly yellowish or pale yellowish brownish, the coxae dark, but outer sides of hind ones and lower parts of middle ones more reddish or yellowish reddish.

*Integument* of middle part of frons, head below, proboscis, and to a lesser extent anterior and lower parts of pleurae, and the abdomen from hind margin of tergite 3 shining or subshining; metanotum, tergites 1 and 2, more than basal half discally of 3, and across base of 4 dulled by greyish whitish tomentum like thorax above.

*Vestiture* with the hairs on head, sides of thorax above, sides of metanotum,

on pleural parts, tergites 1 and 2 (especially on sides) longish, mainly whitish; those on sides of thorax and on pleurae tinted slightly more yellowish; shorter hairs on disc of thorax more golden or fulvous; rest of shortish hairs on abdomen above whitish, but the longer reversed ones on last two segments darker, more brownish or reddish brownish; hairs on oviscape also reddish brownish; hairs on legs not long or dense, mainly whitish; spines and spicules on legs pallid or very pale yellowish.

*Head* with the antennae in this specimen partly broken off, but with segment 1 slightly thickened, about 3·3 times length of 2; proboscis rather longish, slender, much longer than vertical length of eyes, though much shorter than thorax (excluding scutellum), without any longish hairs basally below; palps distinct, but short, only a little longer than antennal segment 2; eyes in this specimen rather depressed vertically along their anterior aspect; some longish, yellowish, postvertical spines present.

*Wings* relatively long, tinted faintly yellowish, especially as faint borders along veins in middle parts, and with a slight subopacity; veins yellowish to pale yellowish reddish; first posterior cell broadly open apically; apex of discoidal cell shortly stalked; hind margin of squamae more yellowish than whitish; knobs of halteres brown above in middle.

*Legs* with the hind femora slightly, but distinctly, thickened, their double row of spines below pallid, and from near base.

*Oviscape* with about 6 spines on a side.

Holotype in the South African Museum.

Length of body: about 21 mm

Length of wing: about 17 mm

*Distribution*: Namaqualand: Kamieskroon (Museum staff, September 1930).

This species differs from *latipennis* by its slightly darker clypeus, narrower reddish submedial discal streaks on thorax, the less extensive reddish on sides only of metanotum, the more distinctly darkened bases of tergites 3-6 (or 7), darker and larger bullae, distinctly longer and denser hairs on head, thorax, and especially sides of tergites 1 and 2, more fulvous yellowish hairs on thorax above and the much longer, less tinted wings.

*Afroleptomydas suffusipennis* (Brun.) n.comb.

*Leptomydas suffusipennis* Brunetti, 1929: 9.

A striking and characteristic species with bicolorous abdomen of dark and yellow and bicolorous wings which Brunetti described from Rhodesia and of which the late Dr. Arnold, of the National Museum in Bulawayo, has very kindly submitted some specimens identified by Brunetti himself. The species is characterized as follows:

*Body* with the following parts black or blackish brown or dark castaneous brownish: the head, thorax above, scutellum, discal part of metanotum to a variable extent, discal part of tergite 1, sides of transverse basal depression of

tergite 2 as well as sides in more than basal half of same tergite, a patch or infusion of variable size on sides of tergites 3-5 in ♂ (larger on 5) and 3-4 in ♀, to a variable extent across almost entire tergite 6 and entire 7 in ♂ and across 5 and 6 and entire 7 and 8 in ♀, to a variable extent sternites 5-7 in ♂ and 3-8 in ♀, and anterior lower pleural parts; the following parts yellowish to ochreous yellowish: humeral tubercles and an area on inner sides of them, sides of thorax above, sides of metanotum in ♂ to a variable extent, more extensive or even greater part of metanotum in ♀, pteropleural and metapleural parts around halteres as well as upper part of hypopleuron, sides anteriorly of tergite 1, disc and sides posteriorly of tergite 2 and of 3-5 in ♂, to a variable extent 3 and 4 in ♀, to a variable extent apical part of 6 in ♂ and 5 in ♀, basal half of venter in ♂, base of venter in ♀, last sternite in ♂, and lower parts of hypopygium in ♂ (the yellow on abdomen being more ochreous or even orange, contrasting much with the dark basal and apical parts); antennae blackish brownish or dark reddish brownish, segment 2 yellowish, and clubs paler reddish brownish in ♂ to more yellowish reddish or orange in ♀; clypeus yellowish brownish or reddish brownish; proboscis reddish brownish, with black labella; hind margins of tergites 1-7 in ♂ and 1-6 in ♀ yellowish whitish, those across 6 and 7 in ♂ being narrow; hind margins of corresponding sternites also yellowish whitish on sides; bullae relatively small, more so in ♀, reddish or reddish brownish, dark- or black-margined, widely separated above, at least twice or a little more, vertical length of bullae in ♂, in ♀ a little more than 4 times this length; legs mainly yellowish, the coxae brownish or castaneous brownish, and upper surfaces of front and middle femora, extensive upper and lateral parts of hind femora, and last tarsal segments castaneous brownish.

*Integument* of central part of frons, scutellum, tergite 1 and base of 2 in ♂, as well as 6 and 7 in ♀, and most of abdomen above in ♀ shining; entire pleurae dulled by greyish whitish tomentum.

*Vestiture* with the longish hairs on head, sides of thorax, on pleurae, sides of metanotum, tergite 1, sides of 2, and on basal part of venter whitish; shortish ones in streaks on thorax above also whitish; fine, shortish, fairly dense hairs on rest of abdomen above in ♂ yellowish to golden or fulvous yellowish, longer and more whitish on sides of tergites 3 and 4; those on apical half of venter in ♂ also yellowish like those on hypopygium; reversed hairs on last three, especially last two, abdominal segments in ♀ greyish whitish, appearing dark in certain lights, those on coxae longer, whitish, but the shorter ones on front faces, especially apically, sometimes tinted slightly yellowish; hairs on inner sides of hind tibiae longer than rest.

*Head* with the antennae a little shorter than, or scarcely longer than, thorax (excluding scutellum); segment 1 slightly thickened, quite 3 times length of 2; segment 3 distinctly longer than club, a little less than its apical third slightly thickened; clubs elongate-pyriform, their terminal crater-like prominence more prominent in ♂ than in ♀; proboscis shorter than antennae, but longer than vertical length of eyes, with a few longish hairs near base below, its labella

arrow-head-shaped, sharp pointed; postvertical spines present.

*Wings* characteristically bicolorous, the basal part up to apex of third posterior cell and straight across to costal margin tinged brownish, more so along veins, with the rest or apical part contrastingly clear, tinted subopaquely whitish; veins yellowish brownish in tinted part, paler and more yellowish or pallid in whitish apical part; first posterior cell fairly broadly open apically; apex of discoidal cell very shortly stalked; knobs of halteres with a brownish or dark brownish spot above.

*Legs* with the hind femora distinctly thickened, less so in ♀, their double row of spines below pallid or yellowish, beginning just before middle; hind tibiae slightly curved, slightly less so in ♀; basal segment of hind tarsi distinctly shorter than claw-segment.

*Oviscape* in ♀ with 6 or 7 yellowish brownish spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 equilaterally triangular, their posterior angles subacute; sternite 9 conically and bluntly pointed, wrinkled below, the wrinkles more transverse basally and curving round longitudinally below to apex, its processes, in side view (text-fig. 6, top middle), gradually tapering, S-curved, a little more than their apical third turned up, in dorsal view rather narrowish, rather pointed apically.

From material in the South African Museum, Transvaal Museum, National Museum of Rhodesia, and Division of Entomology, Pretoria.

Length of body: about 18–20·5 mm

Length of wing: about 12·6–14 mm

*Distribution*: Rhodesia: Bulawayo and surroundings (September and October). Northern Transvaal: Njelele River (September).

### **Crossoprosopus** n.subgen. of *AFROLEPTOMYDAS* Beq.

*Nomoneura* Bequaert (*nec* Bezzi) in part (for *stevensoni*), 1938: 343. (n.syn.)

Some species of *Afroleptomydas* in the collections before me differ from all the other species of the latter genus in a combination of characters which at once characterizes them as belonging to a distinct group or division of *Afroleptomydas*. Representatives showing these characters merit a distinct subgeneric status within the latter genus which, as at present constituted, appears to be rather heterogeneous. To accommodate these species a new subgenus *Crossoprosopus* is proposed which shows the following combination of characters distinguishing it from the more typical representatives of *Afroleptomydas*:

*Head* (cf. text-fig. 7, right) with the hairs in front characteristically arranged in tiers in at least two transverse, awning-like fringes, leaving bare and usually shining, transverse spaces between them, except for tomentum along inner margins of eyes, as follows: the hairs on vertex and then a smooth space across ocellus, followed by an awning-like, fringe-like, downwardly-directed tuft at the same level on each side just above antennae, then another smooth and hairless, transverse space below antennae and across at least basal half and upper clypeal part of face, followed once more by an awning-like fringe of downwardly-

directed hairs across middle or near apical part of clypeus, leaving dorsal part and to a certain extent sides below of latter, and the genal depression, hairless; head in front rather narrowish or even markedly so, the inner margins of eyes being more narrowly separated than in *Afroleptomydas s.str.*, sometimes converging above and below in ♂♂; interocular space on vertex in ♂♂ tending to be subequal in width to or only a little broader than, space just below proboscis, and, in ♀♀, in comparison with that of most other species of *Afroleptomydas s.str.*, proportionally narrower relative to width below; vertex itself rather more deeply sunk in, especially in ♂♂.

*Wings* with a tendency for first posterior cell sometimes to open comparatively narrowly on costal margin, sometimes subtending angularly on the margin, appearing sessile or as if very shortly stalked.

*Abdomen* usually with conspicuous, broadish, ring-like, yellowish or ivory yellowish hind margins (more conspicuous in ♀♀) across all the tergites, excepting sometimes across 1, and with hind margins of all the sternites also correspondingly yellowish or yellowish whitish.

*Vestiture* with the individual hairs relatively stiff or stoutish, more apparently serrated; those on thorax above also in streaks as in the *humeralis* group of *Afroleptomydas s.str.*, usually in four broadish ones and a narrow central one, but hairs are markedly depressed, decumbent and flattened against the surface; pleurae invariably dull, due to fine, greyish or greyish whitish tomentum; hairs on legs comparatively poorly developed, shortish and sparse, without any longish ones on inner side of hind tibiae.

*Legs* with the spines on hind femora below usually whitish, pallid, or pale, or very pale yellowish; spicules on hind tibiae below situated on distinct small tubercles or granules and these tibiae without any longish hairs like those in most species of *Afroleptomydas*.

*Hypopygium* of ♂♂ not much different from those of ♂♂ of *Afroleptomydas s.str.*, though the processes (cf. text-fig. 6, middle middle—bottom right) are usually more rapidly narrowed to apex, with the base usually much dilated, the apex tending to be more sharply pointed and bent slightly downwards, and usually without or fewer hairs along outer ventral edge.

As the first two described species, *subclausus* (Bezz.) and *stevensoni* (Beq.), as well as the other two species *rudebecki* and *junodi* of Bequaert, are based on one sex only, the species *mauricei* of Bequaert (1963: 15) is designated as the type-species of the new subgenus.

From the new genus *Oreomydas*, described farther on, which also has a narrowish head in front, this subgenus, apart from the characteristic arrangement of the hairs on head in front, is distinguished by the less markedly narrowish head in front, the larger sensory area on apical part of antennal clubs which is not so terminal and truncated, the distinctly longer and denser vestiture, the larger, longer and broader anal lobes in ♂♂, more conical sternite 9, and the comparatively longer, less divergent phallic tubes.

From *Nomoneura* Bezz. (emended sense), which also has a narrowish head

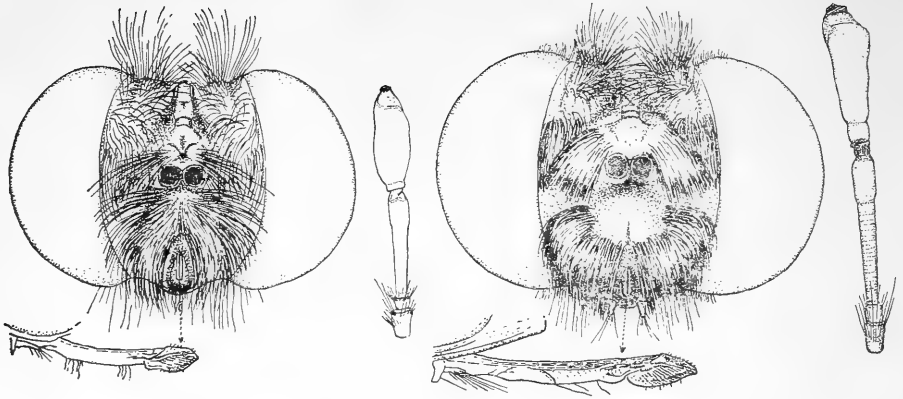


FIG. 7 (same proportions)

Left: Front view of head (minus antennae) of ♂ *Afroleptomydas paganus* (Gerst.) to show arrangement of hair of *Afroleptomydas* s.str. Also separately dorsal view of left antenna and side view of proboscis of same species.

Right: Front view of head (minus antennae) of ♂ *Afroleptomydas* (n.subgen. *Crossoprosopus*) *mauricei* Beq. to show arrangement of hair of n.subgen. *Crossoprosopus*. Also separately dorsal view of left antenna and side view of proboscis of same species.

in front and narrowish interocular space, this subgenus may at once be distinguished by the arrangement of the fronto-facial hairs, presence of hairs on metanotum, posterior part of mesopleuron and on pteropleuron, and the distinctly less stalked first posterior cell in wings. The various species assigned to this subgenus are:

*Afroleptomydas* (*Crossoprosopus*) *anuliventris* n.sp.

A Karoo species of which the conspicuously yellow-ringed abdomen of the ♀ gives it a marked wasp-like appearance resembling a masarid, or a *Campsomeris*-species of the Scoliidae. It is characterized as follows:

*Body* rather stoutish and thick, mainly black in both sexes; antennae in ♀ yellowish, the clubs more orange yellowish, in ♂ mainly dark, only apical halves of clubs reddish; clypeus in ♂ reddish, in ♀ brighter, more orange yellowish; humeral tubercles in both sexes and base of tergite 1 (on sides) in ♀, and extreme base of venter in both sexes yellowish; more yellowish reddish to reddish are: stem of proboscis in ♀, postalar calli in ♂, broadish sides of thorax above in ♀, basal part of scutellum in ♀, sides basally of metanotum in ♀ to a variable extent, area below wing-bases in both sexes, sometimes greater part of pteropleuron in ♀, area surrounding halteres (deeper reddish in ♂), basal part of venter, especially in ♂, apical slender half of processes of sternite 9 in ♂, apical part of anal lobes of ♂ to a variable extent, aedeagus and ventral part of hypopygium to a variable extent, hinder halves and posterior faces of hind coxae in both sexes, entire abdominal segment 8 in ♀ (usually more yellowish than yellowish reddish), and last sternite and genital segment in ♀; hind margins



of tergites 1-7 in ♀ and 2-7 in ♂ broadly and conspicuously yellowish, especially in ♀, that of 7 in ♀ yellowish in more than apical half; broadish hind margins of sternites in both sexes and also sides of sternite 7 in ♀ yellowish; bullae well developed in both sexes, shining black, widely separated; legs in ♂ reddish brownish, the femora blackened above, and tarsi slightly paler, more yellowish, the legs in ♀ paler, more yellowish.

*Integument* of middle part of frons, transverse depression between tergites 1 and 2, and in ♀ abdomen from tergite 3 (without coppery tomentum on 3 and 4), shining; that of tergites 1 and 2 in ♀ and entire abdomen in ♂, and entire pleurae and thorax above in both sexes dull; integument of abdomen above in ♀ strongly transversely wrinkled in posterior half, especially across last three segments.

*Vestiture* with the hairs on head, sides of thorax above, sides of metanotum, on pleurae (where present), on tergites 1 and 2 and on coxae longer and denser, more or less equally developed in both sexes, entirely snow whitish, the individual hairs even more coarsely beaded or serrated in appearance than in many other species; shortish hairs on rest of abdomen in ♂ also whitish; reversed ones on posterior part of abdomen in ♀, especially last two segments, rather dense, stiff, bristle-like, conspicuous and fulvous like hairs on genital segment; hairs on legs short and sparse in both sexes, a little denser on tibiae, whitish; spines and spicules on legs also whitish.

*Head* with the antennae much shorter than thorax (excluding scutellum); segment 1 about 2.5 times length of 2 in ♀ and about 3 times in ♂; segment 3 more slender in ♂, slightly thickened apically, subequal in length to, or even very slightly shorter than, or sometimes a very little longer than, club; club inflated, pyriform, its apical third rapidly conical or narrowed to terminal protuberance, and finely silvery pubescent; proboscis short, stoutish, shorter than vertical length of eye, its labella elongate-oval, only a little shorter than stem; palps distinct, a little longer than antennal segment 2; postvertical spines well developed in ♀.

*Wings* rather long in ♀, greyish hyaline in ♂, distinctly, though faintly, tinted more yellowish in ♀, especially along main veins; veins pale reddish; first posterior cell broadly touching or opening on costal margin; apex of discoidal cell with a short or very short stalk; knobs of halteres brownish above.

*Legs* with the hind femora in ♂ distinctly thickened a little, though scarcely so in ♀, but longer in ♀, their apical parts in ♂ sometimes tending to be slightly bent upwards, their double row of spines below well developed; hind tibiae curved near apex, especially in ♂; basal segment of hind tarsi markedly elongate, much longer than claw-segment; claws markedly elongate, rapidly curved down apically.

*Oviscape* in ♀ armed with 6-8 stoutish, flattened, blunt, reddish brownish spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 angularly pointed apically, their inner hind margins together forming a broad obtuse angle; sternite 9 conical,

narrowed and bluntly rounded apically, its processes, in side view (text-fig. 6, middle middle), with the basal half broad, and the apical half nearly straight, slender and, in dorsal view, narrowish, slightly grooved above, at first converging then diverging, and rather bluntly pointed apically, with relatively very few hairs along outer ventral edge; epimere of aedeagal apparatus apically broadened, scoop-like, about as broad as distance between apices of phallic tubes, and extending only a little beyond phallic tubes.

From 2 ♂♂ and 2 ♀♀ in the South African Museum.

Length of body: about 17-23.5 mm

Length of wing: about 11-18 mm

*Distribution*: Koup Karoo: Laingsburg district. (Museum Staff, October 1931 (♂ holotype); September 1931 (♀ allotype and 1 ♂ and 1 ♀ paratypes)).

*Afroleptomydas (Crossoprosopus) karoanus* n.sp.

Another species very near to, if not merely a distinct variety of, *anuliventris*, and of which the very similar ♀ also has a superficial resemblance to a masarid or to scoliids of the genus *Campsomeris*. From *anuliventris* it however differs in the following respects:

*Body* in the ♂ comparatively more slender, similarly coloured in both sexes, but clypeus darker, either entirely dark in ♂ or, in ♀, only yellowish or brownish on sides; the yellowish reddish on sides of thorax above in ♀ more consistently present from humeral tubercles to postalar calli; antennae in ♀ darker, segment 3 mainly dark, and clubs also more darkened apically; sides of metanotum in ♀ more extensively reddish; hind margins of tergites 7 and 8 in ♂ more broadly yellowish, and tergite 6 in ♀ distinctly more broadly yellowish posteriorly, at least, or more than its apical half yellowish; knobs of halteres less extensively darkened above.

*Integument* similar, but that of tergites 3 and 4 in ♀, apart from discal parts of 1 and 2, duller, due to a tomentum which gleams feebly coppery in certain lights (absent in *anuliventris*).

*Vestiture* with the hairs on last three abdominal segments in ♀ darker, more brownish.

*Head* with the antennal clubs distinctly less inflated or thickened, appearing more elongated, more gradually narrowed basally, at broadest part distinctly much more than half its length; proboscis distinctly more slender, slightly longer, its length, from theca, distinctly more than horizontal width of eyes, its labella very much shorter than stem.

*Hypopygium* of ♂ with sternite 9 more inflated or bulbous apically, not so narrowed and conically pointed apically as in *anuliventris*, more bluntly truncated, its process relatively longer; epimere of aedeagal apparatus narrower, narrower than distance between phallic tubes, comparatively longer, extending for a longer distance beyond phallic tubes than in *anuliventris*.

From 5 ♂♂ and 2 ♀♀ (types and 2 ♂ and 1 ♀ paratypes in the South African Museum, and 2 ♂ paratypes in the Transvaal Museum).

Length of body: about 14–21 mm

Length of wing: about 9–17 mm

*Distribution*: Karoo: Murraysburg district (Museum staff, March 1931) (♂ holotype, ♀ allotype and 2 ♂ paratypes). Koup: Laingsburg division (Museum staff, February 1938) (♀ paratype); Laingsburg district (Museum staff, December 1937) (1 ♂ paratype). Southern Karoo: Willowmore (Dr. Brauns, March 1910) (2 ♂ paratypes).

*Afroleptomydas* (*Crossoprosopus*) *campsomeroide* n.sp.

A single ♀ specimen in the Transvaal Museum, from the south-western corner of the Orange Free State, resembles the ♀♀ of *anuliventris* and *karooanus* very closely and like them has a marked superficial resemblance to ♀♀ of certain Scoliidae, such as those of the genus *Campsomeris*. It agrees and differs from ♀♀ of *anuliventris* and *karooanus* as follows:

*Body* also mainly dark or blackish, the non-pale yellowish parts of abdomen above and below more castaneous brownish or reddish brownish than even in *karooanus*; sides of vertex dark reddish; antennae dark brownish as in latter, the clubs however darkened in basal parts, more orange brownish in more than apical halves; clypeus darkish, more castaneous, like that of *karooanus*; reddish infusion around yellowish humeral tubercles distinctly more circumscribed than in the other two species; extreme sides of thorax above only very narrowly and obscurely reddish, but postalar calli and base of thorax also yellowish reddish; scutellum darker, more blackish; metanotum even less extensively reddish on sides anteriorly than in *anuliventris*; pleurae, including metapleural part in front of halteres, mainly dark or blackish; sides basally of tergite 1 also yellowish, but sides of 2 more castaneous like rest of abdomen, not very dark or blackish; hind margin of tergite 1 darker, more dark reddish brownish, not pale yellowish; hind margins of rest of tergites also broadly and conspicuously, ring-like yellowish whitish, also becoming broader on 5–7 as in *karooanus*, but only so discally, the last tergite however dark, not yellowish or reddish; hind margins of sternites not conspicuously and strikingly yellowish as in the other two species, only so on extreme sides; bullae black, with some shallow, pit-like depressions intramarginally along base; legs slightly darker, especially femora above, the hind ones more extensively brownish, and apical parts of hind tibiae also more darkened.

*Integument* with the same parts shining as in the other two species, but not only are discal parts of tergites 1 and 2 dulled by more conspicuous greyish tomentum, but more than basal halves of 3 and 4 are dull dark discally, with a tomentum which gleams coppery in certain lights, very much more conspicuously so than in *karooanus* (absent in *anuliventris*); last three abdominal segments also transversely wrinkled, but less coarsely so than in *anuliventris*, more like those in *karooanus*.

*Vestiture* very similar, but comparatively slightly shorter, even on head in front, but especially on thorax above, metanotum, on sides of tergites 1 and 2

and apical part of abdomen, and legs; hairs on head not entirely snow whitish, those on sides of vertex, a tuft on each side at middle of frons, on sides of clypeus above, and on palps distinctly yellowish; short, decumbent hairs in streaks on disc of thorax and to a certain extent the slightly longer ones on extreme sides also tinted yellowish, not whitish; rest of hairs on pleurae and abdomen whitish, the reversed ones on last three abdominal segments comparatively shorter and sparser, as in *karooanus*, but distinctly even darker, those on genital segment even more blackish; hairs on legs much shorter, sparser, though also mainly whitish; spines and spicules on legs whitish or rather pallid.

*Head* with the antennae distinctly proportionally longer than in other two species, only a little shorter than thorax; segment 1 shorter, about 2.6 times length of 2 (proportions 8:3, whereas in the other two species, these are 9:4); segment 3 proportionally longer, even a little longer than club; latter also relatively longer, less inflated, more rapidly narrowed to base, the latter constricted for a slightly longer distance; proboscis distinctly longer, even slightly longer than in *karooanus*, about 2.4 mm, though also shorter than vertical length of eyes; some whitish postvertical spines present.

*Wings* also very faintly greyish yellowish, but apical half of costal cell, first basal cell and faint borders along upper vein of latter cell, as well as along lower vein of second basal cell and base of first posterior cell, distinctly tinted more faintly yellowish; veins yellowish reddish, posterior ones pallid; venational characters similar; halteres pallid, the outer upper parts of knobs brownish.

*Legs* as in the other two species, the hind femora comparatively shorter, but slightly more thickened, their double row of spines below also from just before middle; basal segment of hind tarsi also much longer than claw-segment.

*Oviscape* with 7 darker, more brownish, and slightly more slender, spines on a side.

Length of body: about 17.5 mm

Length of wing: about 15.3 mm

*Distribution*: South-western corner of Orange Free State near Orange River: Rooipan (Herbert) (H. Munro, 24th March 1922).

*Afroleptomydas (Crossoprosopus) matetsiensis* Beq.

*Afroleptomydas matetsiensis* Bequaert, 1963: 46, figs 4B and 10.

A yellowish reddish, not very densely-haired, species from Rhodesia, of which the ♂ was described in detail by Bequaert in 1963. To include the as yet undescribed ♀, the species is redescribed as follows:

*Body* and legs mainly yellowish reddish, the thorax above in ♂ and the anterior and sternal part up to behind middle coxae however darkened more brownish, as are also the dorsum of tergite 1 in both sexes, extreme sides of tergites in ♀, last tergite in ♀, hind margins of sternites in ♀, and to a variable extent so medially in ♂; antennal segments 1 and 2, basal part or half of segment 3, greater part of club, greater part of proboscis (excepting dark labella), humeral tubercles, pteropleural part, and abdomen slightly paler, more

ochreous or orange; scutellum orange yellowish, the depression on its sides, as well as bullae, shining black; hind margins of tergites 1-7 in both sexes broadly and conspicuously pale yellowish, that of 1 in ♂ being narrower, less distinct, and that of 8 in ♂ sometimes also narrowly yellowish, with the pale yellow on 6 and 7 in ♀ usually more extensive, extending basalwards to about or nearly middle of the segments; hind margins of sternites 1-5 in ♂ also yellowish on sides, dark in middle, and hind margins of all sternites in ♀ usually darkened.

*Integument* of middle part of frons (entire frons in ♀), clypeus, and in ♀ depressed base of tergite 2 and most of abdomen above and below, excepting tergites 1-4 discally, shining; most of body above dull in ♂; pleurae in both sexes mainly dulled by tomentum like abdomen in ♂.

*Vestiture* poorly developed in ♀, the body almost bare, in ♂ rather dense and longish on head, broadly on sides of thorax above, in a submedial patch anteriorly on thorax on each side (continued as streaks of finer, shorter and sparser ones), at base of thorax, on metanotum, on posterior part of metasternum, posterior metapleural part, tergite 1, especially sides, sides of 2, and to a lesser extent sides of 3; all these hairs in ♂ and those on head in ♀ snow whitish; fine hairs in streaks on thorax above in ♀ yellowish or fulvous, being more whitish only on extreme sides of thorax; sparse ones on pleurae whitish; fine hairs on abdomen in ♂ white; reversed hairs on last two abdominal segments in ♀ brownish to blackish brownish; hairs on venter shortish; hairs on legs in both sexes poorly developed, more so in ♀, but denser on coxae in both sexes, though longer in ♂, whitish or greyish whitish in ♂, more yellowish or fulvous in ♀; spines and spicules on legs yellowish; tomentum on head (where present), on disc of thorax, metanotum, tergite 1, and entire pleurae greyish whitish in ♂, more yellowish or even brownish in ♀.

*Head* with the antennae subequal in length to thorax (excluding scutellum); segment 1 in ♂ about 3 and in ♀ about 2.3-2.6 times, length of 2; segment 3 elongate, thickened apically, slightly shorter than club; the latter elongate-pyriform to amphoriform, its apical fifth or less sharply conically narrowed to apical protuberance, its base constricted; proboscis stoutish, longer than anterior tarsi, its labella shortish, comparatively small, sharply pointed; palps distinct, longer than antennal segment 2; some postvertical spines present.

*Wings* tinted very faintly yellowish in ♂, more distinctly faintly yellowish brownish in ♀, especially along veins of which the fuscous borders render the wings darker; veins reddish brownish; first posterior cell apically either broadly opening on margin or touching very narrowly at a point; discoidal cell shortly stalked apically; knobs of halteres brownish above.

*Legs* with the hind femora distinctly thickened in both sexes, more so in ♂, their double row of spines from near base.

*Oviscape* in ♀ armed with 6-8 flattened, brownish spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 rather sharply angular posteriorly, their inner margins together forming almost a semicircle; sternite 9 narrowed and bluntly rounded apically, its surface slightly shallowly grooved

below, its processes undulating, curving downwards then upwards in side view, nearly the apical half tapering to a sharp downwardly curved apex, in dorsal view flattened, slightly broadly depressed, directed inwards, rather sharply pointed apically.

From 2 ♂♂ and 2 ♀♀ (♀ allotype and ♀ paratype in the South African Museum).

Length of body: about 14-19 mm

Length of wing: about 11.5-13.5 mm

*Distribution*: Rhodesia: Matetsi (R. Stevenson, April 1934).

This species appears to be variable in the colour of the ♀ and in the apical width of the first posterior cell which in two specimens (♂ and ♀) almost touch the costal margin at a point. One ♀ also differs from the ♀ allotype in having the body darker, more dark reddish brownish or castaneous brownish and with comparatively narrower yellowish hind margins of the tergites.

From the other Rhodesian species *stevensoni* (Beq.), dealt with below, this species differs, apart from slight colour differences, in not having conspicuous, discal patches of tomentum on tergites 3-5, in having only about apical half of processes of sternite 9 slender, and sides of the sternite itself not distinctly verruculous.

*Afroleptomydas* (*Crossoprosopus*) *stevensoni* (Beq.) n.comb.

*Nomoneura stevensoni* Bequaert, 1938: 343, figs 7-10.

Of this species I have seen only the unique ♂ holotype in the National Museum of Rhodesia at Bulawayo and which Bequaert described so comprehensively in 1938. Unfortunately the antennae are missing in the specimen. The character which induced Bequaert to refer it to the genus *Nomoneura* is apparently the nature of its first posterior cell which at its apex only touches the costal margin at a point. As Bezzi's definition of *Nomoneura* is somewhat vague and as he confused other genera with it, Bequaert at the time could not have referred the specimen to any other genus. There is, however, no doubt that it belongs to the genus *Afroleptomydas* and that the characteristic and peculiar arrangement of the hairs on the head in front relegates it to the new subgenus *Crossoprosopus* of that genus.

It is apparently very near the preceding species *matetsiensis*, from the ♂ of which it differs in having the thorax above darker; the metanotum dark; abdomen above with dark, discal, basal, greyish-bloomed patches on tergites 3-5; pale yellowish brownish legs of which the hind femora are scarcely or only very faintly darkened on inner aspect; its rather narrow and more sunk in interocular space on vertex which is comparatively narrower; its comparatively shorter proboscis which is very much shorter than vertical length of eyes; its only very faintly tinted yellowish brownish wings; the blunter posterior angles of lobes of tergite 9; the minutely verruculous texture on sides of sternite 9 posteriorly; and the rather slender, apically more attenuated, and less curved downwards, processes of latter sternite.

Length of body: about 16.5 mm

Length of wing: about 11 mm

*Distribution*: Rhodesia: Bulawayo (October).

*Afroleptomydas (Crossoprosopus) capicolus* n.sp.

*Leptomydas paganus* Bezzi (*nec* Gerstaecker) in part, 1924b: 214. (n.syn.)

The ♂ specimen from Cape Town which Bezzi referred to, and labelled as *paganus* Gerst. is obviously not the *paganus* s.str. from the eastern Cape (see under *paganus*). It does not agree with Gerstaecker's good description of the latter. Moreover, the peculiar arrangement of the hairs on the head in front, places it at once in the subgenus *Crossoprosopus* together with *anuliventris*, *matetsiensis*, *stevensoni* and other species. In fact, it resembles the two Rhodesian species—*matetsiensis* and *stevensoni*—very closely, but differs from them in the following respects:

*Body* mainly dark above; clypeus darker than in *matetsiensis*, even slightly darker castaneous brownish than in *stevensoni*; antennae with the basal segment reddish brownish, and clubs mainly orange as in *matetsiensis*; proboscis dark reddish brownish above, paler below; thorax above dark; dark scutellum dark reddish brownish; humeral tubercles yellowish; sides of metanotum with some obscure reddish on sides anteriorly; pleurae mainly blackish brownish, even hypopleural and metasternal parts dark, not mainly yellowish as in *matetsiensis*; abdomen above with the foundation colour mainly dark, even darker than in *stevensoni*, but sides of tergite 1 anteriorly, sides of 2 (especially posterior half) and narrower, extreme sides of the rest contrastingly ochreous yellowish like venter; hind margins of tergites 1–7 broadly and conspicuously ivory yellowish, bordered on basal side with distinct orange; hind margins of sternites correspondingly whitish; bullae dull blackish brownish, widely separated by a space wider than vertical length of a bulla, but narrower than in *matetsiensis*; hypopygial structures mainly yellowish, though last sternite (8) darkened; discal part of tergite 2 and greater discal parts of 3–5, and basal parts of 6 and 7 (very narrow) appearing dull blackish, more extensively so on sides than in *stevensoni*, and with brownish or slightly brownish golden bloom on these parts, the discal part of tergite 2, apical parts of 3–5 (broader on sides), more than apical half of 6, and almost entire 7 with greyish whitish bloom; legs mainly yellowish, the front and middle coxae darkened and inner and outer apical two-thirds of hind femora, and an obscure streak along upper surface of the other femora darkened.

*Integument* of body above (excluding shining central parts of frons, mid-dorsum of clypeus and transverse depression across base of tergite 2) and pleurae mainly dull, the latter also with fine greyish tomentum.

*Vestiture* with the hairs as long as and as dense and arranged as in *matetsiensis* and *stevensoni*, entirely snow whitish; hairs on sides of thorax above and in a submedial anterior elongated patch on each side also dense and longish; sides of tergite 3, as in *stevensoni*, without any longish hairs; shortish ones on abdomen above distinctly less dense than in the other two species; hairs on legs apparently

a little denser than in *stevensoni*, also entirely whitish.

*Head* with the antennae longer than thorax (excluding scutellum); segment 1 about 2.6 times length of 2, not thickened; segment 3 slender, with less than its apical third thickened; club elongate, shaped as in *matetsiensis*, a little longer than segment 3; proboscis slender, less stout than in the other two species, subequal in length to vertical length of eyes, but distinctly longer than in *stevensoni*, its labella smallish; palps distinct, yellowish, longer than antennal segment 2; some yellowish postvertical spines present.

*Wings* slightly more subopaquely whitish and less distinctly tinted yellowish than in the other two forms; veins yellowish reddish; first posterior cell broadly open apically; apex of discoidal cell stalked; knobs of halteres darkened above.

*Legs* with the hind femora slightly, but distinctly, thickened, their double row of spines below yellowish; basal segment of hind tarsi rather long, longer than claw-segment.

*Hypopygium* very much like that of *stevensoni*; sternite 9, however, longer, more compressed apically, with a more pronounced keel apically below, the lateral apical parts not verruculous, not longitudinally wrinkled, its processes (text-fig. 6, bottom middle) similar to those of *stevensoni*, but the slender part (side view) longer, less sharply pointed apically, in dorsal view slightly broader, apparently less deeply grooved above.

Holotype in the South African Museum.

Length of body: about 15 mm

Length of wing: about 12 mm

*Distribution*: Cape: Cape Town (without any other particulars).

#### *Afroleptomydas* (*Crossoprosopus*) *tuliensis* n.sp.

Another species from Rhodesia, with reddish sides to the thorax, which resembles *stevensoni* very closely and may almost be considered as only representing an autumn variety of the latter. It is, however, characterized and different from *stevensoni* in the following respects:

*Body* mainly dark, the abdomen much darker, mainly very dark brown to blackish brown, not mainly yellowish brownish as in *stevensoni*; antennae mainly black, the thickened part of more than apical half of clubs, however, orange; humeral tubercles, a large infusion around latter, and also sides of thorax up to wing-bases yellowish or yellowish reddish (in *stevensoni* not sides of thorax); postalar calli and greater part of scutellum also reddish brownish or yellowish brownish as in *stevensoni*; sides of metanotum to a variable extent reddish brownish, black in latter species; posterior metapleural part and metasternal part not yellowish as in *stevensoni*; sides of tergite 1 as in latter yellowish basally and apically, but rest of abdomen not yellowish or paler along extreme sides; hind margin of tergite 1 darker and those of 2-7 comparatively broader yellowish, whitish, even broader and more conspicuous across 5-7; bullae also black, but usually with some reddish in middle; venter darker, with more conspicuous and broader whitish hind margins; hypopygium darker, more brownish or reddish



brownish than yellowish brownish; legs on the whole more brownish than yellowish, the femora appearing darker above and hind ones distinctly much darker or more extensively brownish or dark brownish above and on sides or, excepting paler base, almost entirely brownish; hind tibiae much darker or even mainly brownish, the claw-segment of all the tarsi darker or blackish.

*Integument* as in *stevensoni*, the middle part of frons, dorsum of clypeus, proboscis and head below shining; pleurae, especially anterior half, on the whole, however, more shining and with less bloom; disc of tergite 2 and discal, saddle-shaped, dull blackish patches on at least basal halves of 3-5 also present, but less evident, due to darker colour of abdomen.

*Vestiture* with the hairs as dense and as long as in *stevensoni*, but apparently slightly denser on thorax above; the longer ones on head, sides of thorax, pleurae metanotum, and on tergites 1 and 2 also mainly whitish, though discal ones on thorax more whitish than in *stevensoni*; short hairs on rest of abdomen slightly longer and with a slightly more sericeous yellowish sheen; hairs on coxae and legs slightly longer and denser, especially on coxae, with some distinctly longer ones basally on hind femora, and all these hairs on legs whitish; spines and spicules on legs pallid or whitish.

*Head* with the interocular space on vertex comparatively broader, much broader than length of frons from vertex to antennal bases (about subequal in *stevensoni*); antennae longer than thorax (excluding scutellum); segment 1 not much thickened, about 2.3 to nearly 3 times length of 2; segment 3 long, slender, its apical part only very slightly thickened, distinctly longer than club; latter elongate, thickest beyond middle, gradually narrowed to base, the latter constricted for a short distance, the apical part conically narrowed from a slight girdling ring-like ridge to apical tubercle; proboscis shortish, but distinctly longer than in *stevensoni*, about 2.12-2.44 mm (only about 1.56 mm in *stevensoni*), shorter than vertical length of eyes, also without any longish hairs basally below; palps short, but longer than in *stevensoni*; a few whitish postvertical bristly spines present.

*Wings* greyish hyaline, without the very faint suggestion of a yellowish tint evident in *stevensoni*; veins on the whole darker, more brownish; second submarginal cell comparatively broader apically; first posterior cell tending to be relatively more broadly open apically; discoidal cell shortly stalked; knobs of halteres darker above than in *stevensoni*.

*Legs* with the hind femora comparatively slightly longer, but also distinctly thickened, their double row of spines below from near base; hind tibiae comparatively longer, but also with whitish spicules on tubercles; basal segment of hind tarsi also much longer than claw-segment.

*Hypopygium* differs from that of *stevensoni* in having the lobes of tergite 9 less sharply pointed apically; sternite 9 distinctly much longer, more produced, also conically narrowed apically, apparently more coarsely wrinkled, its processes, in side view (text-fig. 6, middle right), with the slender part distinctly shorter, and in dorsal view slightly broader, more rapidly attenuated apically,

aedeagal part below phallic tubes comparatively stouter.

From 3 ♂♂ (holotype and 1 paratype in the National Museum of Rhodesia at Bulawayo, and 1 paratype in the South African Museum).

Length of body: about 17–18 mm

Length of wing: about 12–12.5 mm

*Distribution*: Rhodesia: Tuli on the Shashi River (B.S.A.P., 2nd–14th May, 1959).

*Afroleptomydas (Crossoprosopus) junodi* Beq.

*Afroleptomydas junodi* Bequaert, 1963: 34, figs 4C, 6(1), 8B and 9.

This south-east African species was described by Bequaert from 2 ♂♂ collected by Junod. It is not represented in the collections before me. From the description it appears to be entirely different from the other species *inhacae*, also from Portuguese East Africa, but which belongs to the *paganus* section and not to the subgenus *Crossoprosopus*.

From Bequaert's comprehensive description it is quite evident that this species is referable to the above mentioned new subgenus. It is apparently characterized by the chestnut brownish body and legs; the yellowish hind margins of the tergites; the delimited, antero-median, semicircular areas of dense golden gleaming pruinosity on tergites 2–6; the chestnut brownish venter, without yellowish hind margins across sternites; the relatively shortish antennae of which the clubs are elongate, conical, apically pointed and attenuated, and distinctly longer than segment 3; the shortish proboscis; the faintly tinged and relatively shortish wings; the comparatively shortish and sparse vestiture which is longish only on head, sides of thorax and on two basal tergites; the rather long and slender processes (side view) of sternite 9; shortish phallic tubes; and the comparatively long dorsal epimere which is apparently longer than in most of the known species.

From the ♂ of *matetsiensis* Beq., which is also mainly pale or light reddish to pale yellowish reddish, it appears to differ in being more chestnut or castaneous brownish, with more brownish bullae, tergite 1 not mainly dark, absence of yellowish whitish hind margins on sternites, distinctly much shorter proboscis, sparser and shorter vestiture, more distinct and delimited discal antero-medial patches of golden gleaming tomentum on tergites 2–6, the distinctly less thickened hind femora of which the base is more slender, the not S-curved processes of sternite 9, relatively shorter phallic tubes, and, relative to these, much longer epimere.

Length of body: about 16 mm

Length of wing: about 10 mm

*Distribution*: Portuguese East Africa: Lourenço Marques (H. Junod, January–March 1914).

*Afroleptomydas* (*Crossoprosopus*) *mauricei* Beq.

*Afroleptomydas mauricei* Bequaert, 1963: 15, fig. 4 A.

This species described by Bequaert from a ♂ and 2 ♀♀, collected by J. Maurice at Ghanzi in Botswana (Bechuanaland), is represented by a long series of ♂♂ and ♀♀ from the Kalahari in the Transvaal Museum. From Bequaert's description of the arrangement of the hairs on the head in front, it belongs to the new subgenus *Crossoprosopus* of which it is here designated as the type-species.

There is no doubt that this species is variable, occurring in distinct colour forms, and the ♂♂ differ markedly from the ♀♀. As the ♂♂ agree in nearly all respects with the ♂ described by Bequaert and as all of them have a distinct shoe-horn-shaped epimere, the absence of this structure, mentioned by Bequaert in the case of his single ♂ specimen, is probably due to mutilation and has either been broken off or worn off.

This species resembles both *stevensoni* and *tuliensis*.

To incorporate the numerous ♂♂ and ♀♀ a supplementary redescription of this species is as follows:

*Body* mainly dark or black, the abdomen in ♂ with much brownish, yellowish brownish, reddish brown to dark castaneous- or reddish brownish, in ♀ mainly very dark or black, but sometimes very dark toffee-brownish to even paler yellowish brownish; sides of vertex in ♀ sometimes dark piceous reddish or blackish red; antennae reddish brownish, blackish brown to black, the clubs in middle parts to a variable extent usually orange yellowish, orange brownish, to dark reddish; clypeus in ♂ yellowish, yellowish brownish to castaneous brownish to a variable extent, the dorsum and lower sides often darkened in ♀, more consistently dark reddish brownish, castaneous brownish to dark piceous reddish; proboscis yellowish reddish, reddish brownish to dark reddish below; humeral tubercles and postalar calli in both sexes, and hind border of scutellum in some ♂♂, yellowish, but humeral tubercles often darkened to a variable extent in some specimens, especially ♂♂; posterior metapleural part behind and below halteres often yellowish or obscurely yellowish to a variable extent; sides basally and to a lesser and variable extent apically of tergite 1, sides of 2 to a variable extent in both sexes, either extensively so to surround bullae, or only along extreme sides, and also along extreme sides of 3-5 (or even 6 and 7) to a variable extent in ♂ yellowish or at least much paler than dorsum, and with the sides of these tergites in ♀ usually black, but occasionally with extreme sides of 2 and 3, or even 2-6, narrowly also yellowish to a variable extent; hind margins of tergites 1-7 in both sexes prominently ring-like and conspicuously yellowish whitish to yellowish, usually slightly broader in ♀, but in ♂ form from Gembok Pan with that of tergite 1 darkened or more brownish and with those of 6 and 7 usually narrower than even in typical Damara Pan form and evident only discally; hind margins of tergites in some ♀♀ from Gembok Pan usually not conspicuously yellowish, but duller or more often more brownish or even reddish; bullae shining black, usually smaller in ♀, and in both sexes usually with some distinct pit-like depressions, more often 4 or more,

behind anterior ridge-like margin; venter pale yellowish brownish to pale brownish in ♂, dark or very dark blackish brown to even black in ♀; hind margins of sternites 2-7 in typical ♂ also conspicuously and broadly yellowish whitish, usually slightly duller or interrupted along middle, and in ♂♂ from Gemsbok Pan more obscure and confined to extreme sides on last two or three sternites; legs in ♂ mainly pale yellowish brownish, the coxae darker brownish, the legs in ♀ darker, more brownish, castaneous brownish to dark brown, the upper surfaces of femora, especially hind ones, darkened to a variable extent in both sexes, the basal parts of hind femora and tibiae usually paler, more yellowish, and claw-segment of tarsi darkened above.

*Integument* of middle part of frons and dorsum of clypeus and head below in ♂, and in ♀ almost entire head in front excepting tomentum on sides, shining and polished; proboscis shining; scutellum in both sexes shining; disc of thorax dull, but with the sides, two broadish submedial streaks and a narrow central one dulled by slightly greyish yellowish tomentum, more evident and sometimes more golden in ♀; pleurae only obscurely shining, dulled by greyish tomentum; abdomen in ♀ highly shining and polished, only tergite 1 discally and to a much lesser extent 2 basally dulled by greyish yellowish to brownish tomentum, in ♂ abdomen mainly dulled by a slightly greyish yellowish to greyish whitish tomentum which discally on tergite 2 and on more than basal halves, or at least basal halves, of 3-5 and basally on 6, are replaced by tomentum which in certain lights appears as saddle-shaped, discal, black patches, but sides of abdomen basally and the ring-like hind margins however shining; venter in ♀ shining and in ♂ also so in at least basal half; last four segments in ♀ transversely wrinkled, more coarsely so on last two.

*Vestiture* with the hairs fairly dense and longish in ♂ on head, thorax, especially sides and basally, on metanotum, pleurae, tergites 1 and 2 and sides of 3, base of venter and on coxae, the vestiture in ♀ very much shorter and sparser, being almost absent from tergites 3-6 and on venter; longish hairs on the parts mentioned mainly snow whitish in both sexes; hairs on thorax above arranged in 5 streaks along the streaks of greyish or greyish yellowish tomentum, the shorter ones along broadish submedial and narrow central streaks discally tinted slightly more sericeous yellowish to yellowish in ♂, but deeper yellowish or even subfulvous in ♀; short decumbent separated ones in punctures on abdomen in ♂ sericeous whitish to sericeous yellowish; reversed ones on last two abdominal segments in ♀ relatively sparse, dark or brownish; hairs on venter in ♂ whitish basally, becoming slightly more sericeous yellowish apically; hairs on legs relatively shortish, even shorter and sparser in ♀, but those below front and middle femora in ♂ fairly dense and longer than rest, and all these hairs whitish; spines and spicules on legs whitish or pallid.

*Head* with the antennae more often longer than thorax (excluding scutellum), but sometimes as long as or even a little shorter; segment 1 not or scarcely thickened, sometimes slightly shorter in ♀, about 2.3-2.6 times length of 2; segment 3 elongate, more than 3 times combined length of 1 and 2, usually a

little longer than club, but sometimes subequal in length to or even very slightly shorter in some ♀♀, and less than its apical third thickened; club elongate, amphoriform, broadest beyond middle, its apical part rapidly conically narrowed, its base slightly constricted; proboscis either shorter than or longer than vertical length of eyes, about 2–2·8 mm long, sometimes with some longish hairs basally below in ♂; palps distinct, usually longer in ♂, but even in ♀ a little longer than antennal segment 2 or at least as long; postvertical spines present, whitish, more perceptible in ♀.

*Wings* in ♂ very faintly, but distinctly, though sometimes scarcely perceptibly, tinted yellowish or greyish yellowish, sometimes slightly more so along veins, in ♀ more infuscated, either uniformly yellowish brownish to brownish or, as in one form, with distinct, conspicuous and consistent clear or clearer areas at base of first basal cell, in front of appendix in first submarginal cell, and along middle of all the cells in hinder half, including second submarginal; veins brownish or reddish brownish, usually darker in hinder half; first posterior cell either fairly widely open apically, or narrowly opening, or sometimes even angularly subtending, on costal margin; base of second submarginal cell of variable width, sometimes even angular, and its appendix also of variable length; discoidal cell usually distinctly stalked apically, sometimes rather longly so; knobs of halteres brownish to dark brownish above.

*Legs* with the hind femora distinctly thickened, less so in ♀, subclavate, their double row of pallid spines below from near base, in some specimens or forms tending to be less numerous and farther spaced; spicules on hind tibiae, especially below, situated on small granules; basal segment of hind tarsi usually distinctly longer than claw-segment; claws in ♂ longer and even strongly developed.

*Oviscape* in ♀ with from 7–10, usually 8 or 9, yellowish brownish to dark brownish spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 triangular, rather sharply angular or subangular apically; sternite 9 rather inflated, bluntly conical, bluntly rounded apically, appearing truncate or subtruncate apically in side view, grooved or sulcate vertically below apically, the surface transversely wrinkled basally below and obliquely longitudinally on sides to a variable extent, its processes, in side view, S-curved, the slender part rather long, gradually narrowed to apex, curved upwards apically, but extreme apex bent downwards, in dorsal view broadish, directed inwards, gradually narrowed apically and apex sharply pointed, slightly depressed above, grooved or furrowed below along inner side; epimere of aedeagal apparatus shoe-horn-shaped, narrowish, only slightly widened apically, quite twice length of phallic tubes.

From 51 ♂♂ and 36 ♀♀ in the Transvaal Museum and the South African Museum.

Length of body: about 12–18·5 mm

Length of wing: about 8–14 mm

*Distribution*: Kalahari in Botswana (Bechuanaland): Damara Pan (Vernay-

Lang Kalahari Expedition, 15th–21st April 1930); Kaotwe (Vernay-Lang Kalahari Expedition, 8th–12th April 1930); Gemsbok Pan (Vernay-Lang Kalahari Expedition, 23rd April–May 1930).

As indicated in the description this species is distinctly variable, represented by the following forms:

(1) A form from Kaotwe and Damara Pan in which both the ♂ and ♀ have conspicuous yellowish hind margins on tergites 1–7, consistent yellowish humeral tubercles, and distinct clear or clearer areas in cells in hinder halves of wings in ♀.

(2) A Gemsbok Pan form in which the hind margin of tergite 1 in ♂ is darker, duller or more brownish, and yellowish hind margins of 6 and 7 narrower, obscure or present only discally, the hind margins of tergites in ♀ usually darker, more brownish or reddish, the humeral tubercles darkened to a variable extent or entirely dark, and wings in ♀ uniformly infuscated, without distinct clearer areas in cells.

(3) A slight transitional form, also from Gemsbok Pan and from Ghanzi, in which the ♀ has distinct yellowish hind margins to tergites, but uniformly infuscated wings, and dark humeral tubercles.

(4) Another slight transitional form, also from Gemsbok Pan, in which the ♀ has darkened tergal hind margins, but slightly clearer areas in cells in wings, and darkish humeral tubercles.

The distribution of these slightly different forms are in agreement with the phenomenon of marked localization of species and varieties of the family in South Africa. The two localities, Kaotwe and Damara Pan, which are not very far apart, constitute an area of the distribution of one form, but nearly 70 miles to the north-west at Gemsbok Pan, with a slightly different type of environment, the Damara Pan form still occurs, but is being replaced by varietal forms of which one, the numerically preponderant one (No. 2), may be looked upon as an incipient species which will eventually replace the other less common transitional forms and evolve into a species distinct from that of Damara Pan.

From the ♂ of the more northern species *stevensoni*, from Rhodesia, which it also closely resembles, the ♂ of *mauricei* may at once be distinguished by the much longer proboscis, comparatively broader interocular space, absence of extensive reddish around humeral tubercles and anterior lateral part of thorax above, relatively broader and more conspicuous hind margins of tergites 3–6, longer hairs on sides of tergite 3, slightly longer processes of sternite 9, and distinctly larger, more inflated sternite 9.

#### *Afroleptomydas (Crossoprosopus) kaokoensis* n.sp.

Two somewhat damaged ♀ specimens from the Kaokoveld in the Transvaal Museum appear to represent the Kalahari species *mauricei* in the north-western part of South West Africa. They are without doubt very near *mauricei*, agreeing and differing from ♀♀ of the latter, especially the form from Gemsbok Pan (No. 3), in the following respects:

*Body* with the abdomen less elongate, proportionally broader; the body similarly coloured; clypeus however much darker, very dark blackish brown to black; yellowish brownish infusion around the pale yellowish brownish humeral tubercles distinctly more extensive; posterior metapleural part below halteres entirely dark or black like rest of pleurae; sides of tergite 1 more reddish brownish only across base and sometimes extreme sides; hind margins of tergites comparatively more narrowly yellowish, tending to be narrower and duller discally than on sides, and that of tergite 7 sometimes wider than in *mauricei*; bullae slightly narrower or smaller, sometimes more brownish across posterior part; venter distinctly darker, as dark as abdomen above, the hind margins of sternites more conspicuously yellowish, especially up to sternite 5, scarcely or more narrowly darkened in middle (very broadly so in *mauricei*); legs with the femora on the whole tending to be slightly darker brownish.

*Integument* with the same parts shining, though tergites 1 and 2 tend to be very slightly duller discally; last two abdominal segments distinctly more feebly and more shallowly transversely wrinkled, tergite 6 scarcely or not wrinkled at all (in *mauricei* 6, and also 5 to a certain extent, usually also wrinkled).

*Vestiture* with the hairs and tomentum developed to the same extent, as short and sparse, also mainly whitish; minute ones on disc of thorax also more yellowish brownish; shortish hairs on sides basally of tergite 1 even shorter than in *mauricei*, not whitish, but more yellowish, yellowish brownish to brownish like rest of minute ones discally on 1 and 2; reversed hairs on last two abdominal segments sparser and slightly shorter, but also dark.

*Head* with the antennae very much shorter, though slightly longer than thorax (excluding scutellum); segment 1 about 2·3 times length of 2; segment 3 proportionally shorter than in *mauricei*, though also subequal in length to club; the latter similarly shaped, but shorter; proboscis distinctly very much shorter than in *mauricei*, very much shorter than vertical length of eyes, only about 1·32–1·6 mm (2–2·8 mm in *mauricei*).

*Wings* uniformly tinted or infuscated yellowish brownish to brownish, without any clearer areas in cells in hinder half, more like the 'Gemsbok Pan form' of *mauricei*; venational characters similar.

*Legs* with the hind femora thickened to the same extent, their double row of spines below whitish; hind tibiae slightly more curved near apex.

*Oviscape* with some of the brownish spines missing in the specimens, but apparently with about 7 or 8 on a side.

Length of body: about 13 mm

Length of wing: about 9·5–10 mm

*Distribution*: South West Africa: Franzfontein in the Kaokoveld (C. Koch, 16th May 1948).

*Afroptomydas (Crossoprosopus) orangiae* n.sp.

A single ♂ specimen from the Orange Free State, with its antennae unfortunately missing, constitutes one of the only two known species of mydaids from

that Province. Superficially it resembles the three species *capicolus*, *stevensoni* and *mauricei*, but appears to be nearer *capicolus*. From the latter it differs in having the clypeus comparatively smaller and even darker; the metanotum entirely black; abdomen above also very dark blackish brownish or dark castaneous brownish, but paler, more yellowish on extreme sides, less contrastingly yellowish, and sides of tergite 2 more extensively darkened, the tergites 3-6 discally with similar dull blackish patches on at least basal halves and with the same golden shining bloom in certain lights; hind margin of tergite 1 much narrower yellowish, and those of 2-7 also distinctly narrower yellowish whitish, their basal margins scarcely, or not, bordered with distinct orange yellowish; venter and hypopygium more yellowish than ochreous yellowish; the vestiture very similar, mainly snow whitish; the wings tinted very slightly more yellowish than sub-opaquely whitish, the veins darker brownish; proboscis comparatively shorter, only about 2 mm long (about 2.4 mm in *capicolus*); the lobes of tergite 9 more sharply angular apically; sternite 9 distinctly less compressed towards apex, without a keel in apical half below, its processes, in side view (text-fig. 6, bottom right), with a comparatively shorter slender part, relatively narrower in dorsal view, with sharper points, and not so distinctly bent outwards apically.

From *stevensoni* it may at once be distinguished by the dark and slightly shorter clypeus; broader interocular space on vertex; longer and more slender proboscis; less extensive yellowish reddish around humeral tubercles; posterior black, not yellowish, metapleural part; much darker abdomen above, the blackish patches slightly more extensive on sides of tergites; fine hairs on abdomen distinctly less dense; less thickened hind femora; more sharply angular apices of lobes of tergite 9; the processes of sternite 9, in side view, more rapidly narrowed to apex, appearing less slender, and the sternite itself distinctly longer; and epimere of aedeagal apparatus slightly broader apically.

From the ♂ of *mauricei* it may also be distinguished by the much darker and shorter clypeus; darker abdomen above, with comparatively narrower ivory yellowish hind margins, especially across tergites 3-5; distinctly sparser short hairs on abdomen, and with fewer or scarcely any long hairs on sides of tergite 3; no puncture-like depressions in bullae; and less slender and comparatively shorter processes of sternite 9.

Holotype in the Transvaal Museum.

Length of body: about 14 mm

Length of wing: about 10 mm

*Distribution*: Orange Free State: Bothaville (A. Roberts).

This ♂, coming from more or less the same geographical areas as the ♀ of *campsomeroïdes*, cannot represent the ♂ of the latter. It apparently has too few structural characters in common with this ♀. Its unknown ♀ would more likely resemble that of *mauricei*.



*Afroleptomydas* (*Crossoprosopus*) *vansoni* n.sp.

This other species from the Kalahari, which I am naming after the entomologist, the late Dr. G. van Son of the Transvaal Museum, who was a member of the Vernay-Lang Kalahari Expedition in 1930, differs from all the other described species of this subgenus in the rather longish vestiture and dense greyish yellowish or creamy yellowish hairs on the thorax above. It is characterized as follows:

*Body* mainly dark castaneous brownish, the frons, thorax above, pleurae, and in ♀ abdomen, slightly darker, and discal part of tergite 2, more than discal halves of 3-5 and bases of 6 and 7 in ♂ saddle-shaped and also appearing very dark and blackish; antennae mainly yellowish brownish, brownish to dark brownish, greater part of clubs however more orange yellowish; clypeus, head below, and greater part of proboscis, excepting its dark labella, pale yellowish brownish to reddish brownish; humeral tubercles yellowish; an infusion around latter, the notopleural fold, extreme sides of thorax above to a variable extent, postalar calli, base of thorax sometimes, greater part of scutellum (excepting dark discal part), sides of metanotum sometimes, more often part of pteropleuron, metapleural part in front of halteres, and posterior metapleural part behind and below halteres reddish brownish; sides basally of tergite 1 and to a variable extent narrowish sides of 2-5 yellowish; hind margins of tergites 1-7 in both sexes conspicuously ring-like yellowish whitish, narrowed on sides in ♂, then broadened again in posterior lateral corners, those of 2-4 (or 5) in ♂ usually broader than rest and that across 7 in ♀ much broadened, halfmoon-shaped and present only discally; last tergite in ♀ yellowish reddish apically above; bullae black, but more often reddish or reddish brownish in hinder part or half; venter in ♂ pale yellowish brownish, usually darkened beyond sternite 5 or in apical part, entirely dark in ♀; sternites 1-7 in ♂ and 1-6 in ♀ yellowish whitish, but broadly darkened in middle; hypopygial structures mainly pale yellowish brownish, the processes of sternite 9 more yellowish reddish; oviscape yellowish reddish; legs mainly pale yellowish brownish, the hind femora in apical half slightly darker, more brownish on upper and outer parts.

*Integument* of vertex in front and middle part of frons, clypeus above, proboscis, head below, and area around humeral tubercles shining; thorax above, metanotum and pleurae mainly dulled by greyish tomentum, the thorax above with the usual 5 streaks of greyish bloom; abdomen in ♀ mainly shining, but discal parts of tergites 2-4 slightly duller, due to fine dark bloom which, in certain lights, appear coppery reddish, the last three segments transversely wrinkled; abdomen in ♂, excepting sides of tergites 1 and 2 and extreme sides of 3-5 or more and certain shiny spots on sides basally of 3-6, mainly dulled by greyish tomentum which on the saddle-shaped darker or more blackish discal parts appear dark, but gleam coppery reddish in certain lights; venter more or less shining in both sexes and transversely wrinkled to a variable extent, more so posteriorly.

*Vestiture* rather long and dense in both sexes, appearing longer and denser

than in some of the other species, more like that of *tuliensis*, slightly longer and denser in ♂ than in ♀, the hairs in streaks on thorax above rather dense, those on sides of metanotum, pleurae, tergites 1 and 2 and sides basally of 3, and even 4, in ♂ long and very dense, almost villose; hairs on thorax above and, in ♂, to a lesser extent also on vertex distinctly dull greyish yellowish to creamy yellowish, not whitish as in most other species; hairs on head in front and below snow whitish, and those on pleurae, metanotum, tergites 1-3, and coxae also whitish; shorter ones on abdomen above and slightly longer ones on venter in ♂ gleaming more sericeous yellowish; reversed hairs on last two abdominal segments in ♀ rather sparse and brownish; hairs on legs denser and longer in ♂, mainly whitish in both sexes; spines and spicules on legs whitish.

*Head* with the antennae usually a little shorter than thorax (excluding scutellum), but sometimes in ♂ subequal in length to it; segment 1 only very slightly thickened, about 2.15-2.3 times length of 2; segment 3 elongate, distinctly longer than club, with a little less than its apical third thickened; club elongate-pyriform, thickest beyond middle, slightly constricted basally, subtruncate towards apex before ending in apical prominence; proboscis markedly short, stoutish, projecting only a little beyond buccal cavity, only about 1.36-1.6 mm and much shorter than vertical length of eyes, its labella ovate; palps distinct, small, at least as long as antennal segment 2; some whitish postvertical spines present.

*Wings* in ♂ distinctly faintly tinted yellowish, darker and more yellowish brownish in ♀ and more so along veins in middle part; veins yellowish brownish, darker in hinder half, the basal parts, costal and first veins yellowish; first posterior cell relatively broad, broadly open; apex of discoidal cell stalked; apex of first submarginal cell closed in one ♂ (holotype), but apparently not a consistent character; halteres and knobs pale yellowish.

*Legs* with the hind femora distinctly thickened in both sexes, their double row of spines below from just before middle; hind tibiae rather stoutish; basal segment of hind tarsi in ♂ subequal in length to, slightly shorter, or a little longer than, claw-segment, in ♀ distinctly longer than claw-segment.

*Genital segment* of ♀ with the last vertical sclerite almost smooth, not rugose, with setiferous punctures only.

*Oviscape* with about 7 yellowish brownish, slender spines on one side and 6 on the other.

*Hypopygium* of ♂ with the lobes of tergite 9 angularly pointed apically; sternite 9 conical, conically pointed, transversely wrinkled basally below, and obliquely longitudinally so on sides to a variable extent, its processes, in side view (text-fig. 6, top right), slightly S-curved, gradually narrowed to apex, the extreme apex slightly bent downwards, in dorsal view shallowly grooved along inner side, fairly sharply pointed apically, the apices slightly divergent; shoe-horn-shaped epimere of aedeagal apparatus narrowish and only slightly broadened apically.

From 5 ♂♂ and 1 ♀ (♂ holotype, ♀ allotype and 3 ♂ paratypes in the Trans-

vaal Museum, and 1 ♂ paratype in the South African Museum).

Length of body: about 13·5–15 mm (stretched—16 mm)

Length of wing: about 9·5–12 mm

*Distribution*: Botswana (Bechuanaland) Lake N'Gami region: Maun (Vernay-Lang Kalahari Expedition, 18/5–7/6/1930) (♂ holotype, ♀ allotype, and 2 ♂ paratypes); N'Gami (Vernay-Lang Kalahari Expedition, 11–16/5/1930) (2 ♂ paratypes).

*Afroleptomydas* (*Crossoprosopus*) *subclausus* (Bezz.) n.comb.

*Leptomydas subclausus* Bezzi, 1924b: 216.

Bezzi referred two somewhat damaged ♀ specimens, one without any locality-label and the other from Spektakel in Namaqualand, to this species, but he was doubtful as to the inclusion of the Namaqualand specimen in this species. In this he was correct for there is no doubt that the latter specimen belongs to an entirely different species which I have described elsewhere in this revision as *Afroleptomydas latipennis*. The species *subclausus* is therefore restricted to the single type specimen without locality-label, and without doubt belongs to the new subgenus *Crossoprosopus*. It is characterized as follows:

*Body* with the head, thorax above, discal apical and middle parts of metanotum, and to a variable extent pleurae, dark or black; antennal segments 1 and 2 (rest missing in specimen), clypeus, and proboscis below, reddish brownish; humeral tubercles, broadish sides of thorax, and two submedial discal posteriorly-abbreviated streaks above, area below wing-bases, sides and discal part basally of metanotum, small area around base of halteres, and extreme sides basally of tergite 1, pale yellowish reddish; most of pleurae dark to dark reddish brownish or blackish brownish, with more reddish along sutures and across hinder part of metasternum; abdomen mainly reddish brownish, more or less shining, the hinder half of tergite 1 yellowish, with the hind margins of 2–5 broadly bone yellowish, and at least apical halves of 6 and 7 also bone yellowish; bullae blackish; venter paler, more yellowish than abdomen above, the hind margins of sternites, especially on sides, also very broadly yellowish whitish; legs mainly yellowish, the coxae more brownish, and apical upper part of hind femora also darkened.

*Vestiture* with the hairs relatively poorly developed, the middle segments of abdomen above almost bare, only those on head longish, and those on sides of thorax above, sides of metanotum, and tergites 1 and 2 shorter, but still distinct, and with all these hairs whitish; reversed ones on last two abdominal segments brownish; hairs on legs shortish, relatively sparse, gleaming pale sericeous yellowish; tomentum on head (where present) and on entire pleurae greyish; spines and spicules on legs very pale yellowish.

*Head* with antennal segment 1 about, or nearly, twice length of 2; proboscis shortish; palps rather well developed, quite as long as antennal segment 2, two-segmented, the apical segment small; postvertical spines not evident in specimen.

*Wings* rather elongate, distinctly tinted yellowish throughout; veins

reddish; knobs of halteres dark brownish or reddish brownish above.

*Legs* with the hind femora only a little thickened; basal segment of hind tarsi elongate, longer than the rather elongate claw-segment.

*Oviscape* with about 7 yellowish reddish spines on a side.

Holotype in the South African Museum.

Length of body: about 16 mm

Length of wing: about 13 mm

*Distribution*: No locality label, but probably from western or north-western Cape.

*Afroleptomydas* (*Crossoprosopus*) *rudebecki* (Beq.) n.comb.

*Leptomydas rudebecki* Bequaert, 1959: 367, figs 10-11.

This species which Bequaert described under *Leptomydas* from a single, rather large, ♂ specimen from the Kaokoveld in South West Africa, is not represented in the collections before me. Judging from the description of the vestiture of the head in front and other characters, which Professor Per Brinck of the University of Lund very kindly verified from the holotype specimen, the species also belongs to the new subgenus *Crossoprosopus*.

Bequaert has given a long and comprehensive description of this ♂ specimen. Two rather important features appear to distinguish it from all the known ♂♂ of the other species assigned to this subgenus. These are the rather marked and conspicuous transverse annulation of the hind femora and tibiae, and the presence of much shorter and feebler spicules on hind tibiae. Another character which appears to separate it from the other ♂♂ dealt with is the extensive orange or orange yellowish on thorax above, the infusion surrounding the pale humeral tubercles, and sides of thorax above being broadly and conspicuously orange yellowish or orange reddish, a character present in none of the ♂♂ of the other species except in *stevensoni* and *tuliensis* where the sides are more obscurely reddish, but in both these the scutellum is much paler, the hind femora proportionally more thickened, and without conspicuous transverse annulation, and hind tibiae also without conspicuous transverse annulation, and with much longer and stronger spicules. Moreover, in *stevensoni* the proboscis is very much shorter and in *tuliensis* the abdomen is very much darker, and both species are smaller.

Holotype in the Zoological Institute of the University of Lund.

Length of body: about 20 mm

Length of wing: about 13.3 mm

*Distribution*: Kaokoveld in South West Africa: Anabib (Orupembe) 100 m west of Ohopoho (Lund University Expedition, June 1951).

**OREOMYDAS** n.gen.

*Leptomydas Bezzi* (*nec* Gerstaecker), 1924b: 204. (n.syn.)

This new genus is erected to accommodate the single montane species *Leptomydas luctuosus* described by Bezzi from Matroosberg in the Ceres division

of the Western Cape and which he referred to a distinct group of *Leptomydas* at the time. Despite the great range of specific variation in the South African genus *Afroleptomydas* (olim *Leptomydas*) certain characters of the species *luctuosus*, which distinguish it from the various other species referred to the two distinct groups and the separate new subgenus *Crossoprosopus*, suggest the erection of a new genus to contain it. The following combination of characters, as based on the species *luctuosus*, distinguish this new genus from the numerous species of *Afroleptomydas* and its new subgenus *Crossoprosopus*:

*Body* markedly bare, the vestiture, even in ♂, sparse and not dense and long on thorax above, pleurae, metanotum, and legs, with only the hairs on head in both sexes, and on tergite 1 and sides of 2 and 3 in ♂, being a little longish and longer than rest of hairs; pteropleuron, which is hairy in all the species of *Afroleptomydas*, is entirely bare.

*Integument* in both sexes mainly dull, covered with tomentum, with only the ocellar ridge, clypeus, proboscis, middle part of head below shining; thorax, scutellum, metanotum, pleurae in both sexes, entire abdomen above in ♂, at least tergites 1-3 and base of 4 in ♀, and the legs in both sexes being dulled, either dull leathery, or covered with tomentum to a variable extent, only the posterior half or part of abdomen above in ♀ and venter in both sexes more or less shining or subshining.

*Head* with the frontal and facial parts markedly narrow, distinctly narrower than even in species of *Afroleptomydas* with narrowish facial part; the interocular space on vertex being distinctly much narrower than axial length of eyes (along middle at level of antennae) plus part of occiput behind them, and only a little broader than interocular space below at narrowest part; the inner margins of eyes markedly convergent towards vertex; vertex itself rather deeply sunk in middle; antennae (cf. text-fig. 8, left) comparatively short, with the apical sensory area of clubs much smaller than in *Afroleptomydas*, reduced, more terminal, appearing sunk in, not conical or rapidly narrowing to terminal protuberance as in latter genus.

*Wings* as in *Afroleptomydas*, with the same venational characters.

*Legs* with the hind femora distinctly much thickened, subspindle-shaped, much like those of the *westermanni* group, also armed below with a double row of spines; spicules on hind tibiae, other than apical spurs, feeble, scarcely evident, or very short, even in ♀.

*Genital segments* of ♀ with the sclerites (oviscape), bearing the crown of spines on each side, distinctly more lobe-like, broadened more lobe-like in middle and relatively shorter; opening below last vertical genital tergite much smaller, narrower, and the pair of lobes in it very much smaller (in ♀♀ of *Afroleptomydas* the oviscape-lobes are more elongate, subspindle-shaped, and relative to length, narrower, and opening below last vertical tergite very broad, triangular, and containing large lobes).

*Hypopygium* of ♂ (cf. text-fig. 8, right) with the preceding tergite (8) and sternite (8) rather short, the former hidden under tergite 7; anal lobes, in the

middle above genital structures, much smaller, markedly narrowish, pointed apically; sternite 9 not conical or conically produced, more rounded, medially slightly grooved, its processes, in side view, straighter, to a certain extent resembling those of the subgenus *Crossoprosopus*, in dorsal view comparatively broadish, depressed above and bluntly rounded apically; aedeagal apparatus similarly three-pronged, but comparatively shorter, the central dorsal epimere comparatively much shorter, more bluntly rounded, not so elongate shoe-horn-shaped and not distinctly grooved or hollowed below as in *Afroleptomidas*, and the phallic tubes proportionally much shorter, more divergent.

From the genus *Nomoneura* Bezz. (emended sense), which also has a narrowish frontal and facial region, shortened or reduced tergite 8 and shortish sternite 8, this genus differs in the much shorter antennae; more inflated pyriform clubs; presence of some hairs on metanotum and mesopleuron; duller head, thorax, pleurae, and abdomen; a first posterior cell which opens broadly on costal margin; broader hind border of wings; discally non-depressed first tergite; more reduced spicules on hind tibiae; very much narrower and shorter, more sharply pointed, anal lobes in ♂; distinctly more rounded, medially slightly carinate and less hairy sternite 9 of ♂; comparatively shorter aedeagal apparatus, with shorter and apically-rounded epimere and shorter, more divergent, phallic tubes; and opening below last vertical genital tergite in ♀ smaller, lodging much smaller lobes.

The type-species and only known species is *Oreomydas luctuosus* (Bezz.)

*Oreomydas luctuosus* (Bezz.) n.comb.

*Leptomidas luctuosus* Bezzi, 1924b: 204.

This species is characterized as follows:

*Body* mainly black; clypeus, to a certain extent proboscis below, antennae in ♀ at least, humeral tubercles, postalar calli, pteropleural area, spot on propleural part, metasternal and posterior metapleural parts, sides of tergite 1, hind margin of tergite 1, a broadish fascia along sides of abdomen in ♂ from tergite 1 to 7 (very broad posteriorly), a narrower and more obscure lateral fascia in ♀ (petering out on sides of 5), hypopygial structures of ♂, venter in ♂, coxae and legs yellowish reddish, reddish brownish to reddish; hind margins of tergites 2-6 in ♂ and 2-5 in ♀ yellowish, more yellowish whitish in ♂; bullae dark reddish brownish, widely separated, larger in ♀.

*Integument* of entire abdomen above in ♂ dull, in ♀ more or less shining on last three or four segments; integument of thorax above dull in both sexes, and to a lesser extent also entire pleurae.

*Vestiture* with the whitish bloom or tomentum dense on head and in form of a characteristic broad, conspicuous, white streak on each side of thorax above; the hairs on body poorly developed, even in ♂ where those on head, sides of thorax above, on pleural part just in front of halteres, on tergites 1-3, and base of venter are however longer and slightly denser than in ♀; all these hairs whitish in both sexes; fine ones in streaks on disc of thorax fulvous brownish,

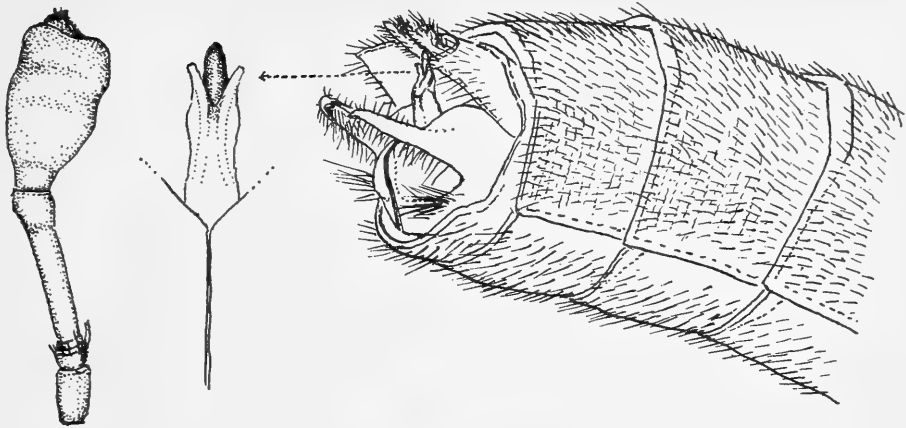


FIG. 8

Left: Inner view of left antenna of ♀ *Oreomydas luctuosus* (Bezz.).

Right: Oblique postero-lateral view of hypopygial structures of ♂ *Oreomydas luctuosus* (Bezz.), showing sternite 9 and its processes and aedeagal apparatus (also separately much enlarged ventral or posterior view of shortish phallic tubes and ventrally non-sulcate epimere).

slightly darker in ♀; fine hairs on abdomen in ♂ whitish; reversed ones on last two segments in ♀ not very dense, brownish or fulvous brownish; hairs on legs very poorly developed and short in both sexes, mainly pale, whitish or with a very slight sericeous yellowish sheen.

*Head* with the interocular space on vertex not much broader than width of eye (front view); antennae (text-fig. 8, left) relatively short, shorter than thorax (excluding scutellum); segment 1 about twice as long as 2; segment 3 stoutish, shorter than club, slightly, but distinctly, thickened apically; club elongate-pyriform, its apical part rather truncate; proboscis only a little shorter than front tibiae, its labella ovate, rather sharply pointed; palps small, nearly or about as long as antennal segment 2; postvertical spines present, pallid or yellowish.

*Wings* rather short, hyaline in ♂, very faintly tinted greyish yellowish in ♀; veins blackish brown; second submarginal cell relatively narrow, its appendix relatively short; apex of discoidal cell with a longish apical stalk, making apical part of third posterior cell about, or nearly, as broad as its base; halteres dark.

*Legs* with the hind femora distinctly thickened in both sexes, spindle-shaped, their double row of spines below yellowish reddish, and from near base; basal segment of hind tarsi subequal in length to, or not much longer than, claw-segment.

*Oviscape* in ♀ with about 6 yellowish reddish, flattened, blunt spines on a side.

*Hypopygium* of ♂ (text-fig. 8, right) with the lobes of tergite 9 rather acutely angular posteriorly, their inner margins together forming a subacute angle; sternite 9 not protruding much, rounded and narrowed posteriorly, medially

linearly grooved, its processes, in dorsal view, broadish, slightly broadly depressed above, their apices rounded and slightly directed inwards, in side view with more than apical halves slender, very slightly curving upwards; aedeagal apparatus (text-fig. 8, middle) as described for genus.

The ♂ holotype and ♀ allotype in the South African Museum.

Length of body: about 12–14·5 mm

Length of wing: about 8–9·5 mm

*Distribution*: West Cape: Matroosberg (4000 ft alt.) in the Ceres division (Lightfoot, January 1917).

#### Genus HETEROLEPTOMYDAS Beq.

*Heteroleptomydas* Bequaert, 1963: 10, text-figs 2 and 3.

This genus was described by Bequaert from a single ♂ specimen collected by Turner at Port St. Johns in Pondoland in the eastern Cape Province.

It is not represented in any of the collections before me. As no representative of it has been taken in the western parts of the Cape, it probably represents an eastern Cape genus which appears to be nearer to the next genus *Nomoneura* (emended sense) than to *Afroleptomydas* with the latter of which Bequaert compared it. From Bequaert's description of it and its type-species, it appears to be characterized chiefly by the very broad head, which is very much broader than the thorax; the entire absence of any hairs on the metanotum; the marked constriction of the abdomen between segments 2 and 3; the broad and rugulose lobes of tergite 9; the rather slender, subparallel, fairly widely separated phallic tubes, which are widely separated also at base; and the peculiar, flattened, broadish and apically truncated epimere (cf. Bequaert: 13, text-fig. 3 A and B).

These characters at once distinguish it from *Afroleptomydas*.

From *Nomoneura* Bezz. *s.str.*, which also has an entirely bare metanotum, it differs in having a very much broader fronto-facial part, a wider interocular space on vertex, which is considerably broader than the space on head below (in *Nomoneura* scarcely much broader above than below), the more distinctly constricted abdomen, and the different type of phallic tubes and epimere, which, in representatives of *Nomoneura*, resemble that of *Afroleptomydas*.

The constricted abdomen is reminiscent of a similar condition in the genera *Mydaselphis* and *Vespiodes*, but in these two genera the tergites are either very coarsely punctured or very densely setiferously punctured, the vestiture on tergite 1 is differently arranged, the head is narrower, the hairs on tibiae are sparser, much shorter, stiffer and situated on distinct small granules, and the phallic tubes are shorter, more divergent and less widely separated, the epimere (if present) is differently shaped, and the processes of sternite 9 are more sinuous and broader.

The type-species is *Heteroleptomydas conopsoides* Beq. (1963: 10) of which Bequaert has given a detailed description and which ought to be easily recognizable.



## Genus NOMONEURA Bezz.

*Nomoneura* Bezzi (in part), 1924b: 223. Séquy (in part), 1928: 134 and 136. Bequaert (in part), 1938: 343. Bequaert (in part), 1961, No. 19: 10, 13 and 14.

The description of this genus given by Bezzi is a composite one in which he included three species (*partitus* Gerst., *callosus* Wied., and *nigra* Macq.) which obviously do not belong to the same genus as his type-species *fasciata* and his other species *paradoxa*. As was stated under *Afroleptomydas* (olim *Leptomydas*) *fasciatus* (Wied.) in this memoir, Bezzi unfortunately mistook a ♂ specimen from Zululand in the South African Museum for the *Midas fasciatus* of Wiedemann and designated it (this supposed species of Wiedemann) as the type-species of *Nomoneura*. As the true *fasciatus*, according to Loew's good redescription, obviously belongs to the genus *Afroleptomydas* Beq. (olim *Leptomydas* from southern Africa), it cannot at the same time serve as the type-species of the new genus *Nomoneura*. This ♂ specimen from Zululand (Bezzi's interpretation of *fasciatus*) must therefore be considered, by his own designation, as the type-species of the latter genus under the specific name of '*Nomoneura fasciata* Bezzi (*nec* Wiedemann)'. In view of this emendation and the geographical restriction of the genera and species of Mydidae in general there is no doubt that this genus has also been wrongly interpreted by subsequent authors, and that species outside Africa referred to *Nomoneura*, more especially those described from the Americas, will most likely be found to belong to entirely different genera. In fact Bequaert (1961a: 13) has already suggested a new genus *Pseudonomoneura* to accommodate North American species formerly placed in *Nomoneura*.

The generic characters of this genus, in a restricted sense, must therefore be based primarily on this species to which the ♂ specimen from Zululand belongs as well as on *paradoxa* Bezz. from the Transvaal and the other new forms described below. In his very short reference to the specimen from Zululand (1924b: 225) Bezzi also states that the species *Cephalocera bellardii* from Inhambane in Portuguese East Africa, described by Bertoloni in 1861 (52, pl. 1, fig. 6), is indistinguishable from *fasciata* (presumably the Zululand specimen). Bertoloni's unsatisfactory description and figure however do not support this contention and there is reason to believe that the real *bellardii* is an entirely different, though closely related, species (see under *bellardii* below). In the collections before me there are, apart from the type-species *fasciata* Bezz. (*nec* Wiedemann) and the species *paradoxa* Bezz., at least three other species, including one which I take to be the *bellardii* of Bertoloni, which are also referable to this genus. This material enables me to define the genus and compare it with the very closely related *Afroleptomydas* Beq. (olim *Leptomydas* of southern Africa). In view of the great variability of the latter genus, *Nomoneura*, which apparently differs from it only in certain details, may even be degraded to the subsidiary status of a subgenus of *Afroleptomydas*.

Collectively the following characters appear to separate *Nomoneura* from *Afroleptomydas*:



- (b) Proboscis much reduced, very much shorter, shorter than 2 mm, either confined to buccal cavity or with only tip of labella projecting, its labella subequal in length to or scarcely shorter than short basal stem; body distinctly more shining, without any or much dull tomentum, the head in front, pleurae, metanotum, and abdomen conspicuously shining; abdomen and body relatively less elongate, less slender; wings very darkly and uniformly infuscated or with conspicuous and broadish fuscous borders along veins; sternite 9 much shorter, more dorso-ventrally depressed, more scoop-like, the hairs towards apex forming a dense tuft or brush, its lateral processes much broader, with more distinct, coarser, setiferous puncturation on sides, in side view not or scarcely S-curved, their ventral hollow part directed more upwards and inwards, propeller-blade-like near apices .. .. . 4
3. (a) Proboscis shorter, less than 3 mm; clypeus, base of thorax above, scutellum, metapleural part in front of halteres yellowish or yellowish reddish; bullae black; legs pale yellowish; wings greyish hyaline, without any distinct faint fuscous borders along veins; hairs on head in front tinted slightly yellowish and shortish ones on abdomen above and hinder half of venter distinctly less dense, more fulvous or yellowish; tergites 2-6 above discally and basally without any or scarcely any distinct dull tomentum; hind tibiae stouter, with stouter, longer spicules; lateral processes of sternite 9 more angular apically  
♂ *fasciata* Bezz.
- (b) Proboscis longer, reaching 3 mm.; clypeus, base of thorax, scutellum, and metapleural part dark; bullae more reddish brownish or ferruginous; legs ferruginous; wings with the veins in anterior half from base of 3, and anal vein, distinctly bordered with faint yellowish brownish; hairs on head in front snow whitish and shorter ones on abdomen above and hinder half of venter distinctly much denser, darker, darker brownish to almost black; tergites 2-6 above discally and basally with distinct patches of dull darkish tomentum; hind tibiae more slender, with feebler, fewer, shorter spicules; lateral processes of sternite 9 more broadly rounded apically  
♂ *bellaridii* (Bert.) (= *fasciata* Beq. nec Bezz.)
4. (a) Hairs on head, sides of thorax, base of abdomen and on hind coxae and legs distinctly much longer, relatively denser and entirely pale or whitish; those on abdomen very much sparser, even posteriorly where the puncturation is also much sparser, less scabrous, and apical tuft on sternite 9 whitish; hairs on hind tibiae mainly dark or gleaming silvery on outer sides; clypeus usually paler or more brownish, more convex, larger; antennal club orange yellowish or yellowish across middle; bullae reddish; hind margin of tergite 7 yellowish whitish; wings relatively narrower, usually without very conspicuous fuscous borders along veins; hind femora less thickened, more slender; spicules on tibiae, and their apical spurs, distinctly longer, more slender; processes of sternite 9 relatively broader, and lateral lobes of tergite 9 blunter, less sharply pointed  
♂ *paradoxa* Bezz.
- (b) Hairs on these parts distinctly shorter, less dense and entirely very dark or blackish; those on abdomen very much denser, even more so posteriorly where the setiferous puncturation is distinctly coarser, more scabrous, and all hairs on sternite 9 very dark or black; hairs on hind tibiae mainly reddish golden; clypeus smaller, less convex, darker; clubs yellowish or orange in apical half; bullae black; hind margin of tergite 7, and sometimes also of 6, dark or black; wings relatively broader, more consistently with rather conspicuous fuscous borders along veins; hind femora distinctly more clavately thickened; spicules on tibiae, and their apical spurs, distinctly much shorter, stouter; processes of sternite 9 relatively narrower, and lobes of tergite 9 more sharply angularly pointed .. .. . ♂ *caffra* n.sp.
5. (a) Proboscis distinctly much longer, longer than 2 mm, projecting for a considerable distance beyond buccal cavity; antennae relatively shorter, markedly stoutish, segment 3 stout, only a little, or scarcely, longer than club, and apical sensory area of latter more truncately sunk in; abdomen above less shining, without any coarse setiferous puncturation, the last, or last two, segments not markedly paler than rest of dark abdomen; legs relatively longer, more slender .. .. . 6
- (b) Proboscis much reduced, very short, usually less than 2 mm, either confined to buccal cavity, or with only the tip projecting; antennae relatively longer, more slender, segment 3 more slender, distinctly longer than club, the apical sensory area of latter more

- oblique, less sunk in; abdomen above more shining, with distinct, though sparse, coarse puncturation, its last, or last two, segments paler more yellowish or reddish than dark rest of abdomen; legs relatively shorter . . . . . 7
6. (a) Smaller, more slender species, only about 16 mm long; body not entirely dark, without distinct violaceous reflections; dorsum of tergites 2-4, and discal part of 5, ochreous yellowish, the rest brownish; hind margins of tergites 2-4 whitish on sides; antennae pale yellowish, segment 3 slightly, but distinctly, longer than club; legs pale yellowish; hairs on frons in front and on clypeus more yellowish brownish, shorter; proboscis about 2.2 mm long, with much feebler spinules; hind femora with relatively fewer spines below, these pale reddish . . . . . ♀ *barbertonensis* n.sp.
- (b) Larger and stouter species, quite 20 mm long; body mainly dark purplish brownish, with distinct violaceous reflections; dorsum of abdomen unicolorous; hind margins of tergites entirely dark, only extreme sides of 2 very narrowly dirty yellowish; antennae more yellowish brownish, segment 3 subequal in length to club; legs dark purplish brownish like rest of body; hairs on frons anteriorly and on clypeus darker, purplish brownish, longer; proboscis slightly longer, about 2.8 mm, with more distinct and longer, more evident spinules; hind femora with more numerous dark purplish reddish spines below . . . . . ♀ *violacea* n.sp.
7. (a) Body with much yellowish or yellowish reddish, the clypeus, humeral tubercles, sides of thorax, sometimes two submedial discal streaks, base of thorax, scutellum to a variable extent, metanotum (or extensive sides of latter) yellowish or yellowish reddish; middle part of antennal club yellowish or orange; hind margins of tergites 2-4 more extensively whitish, even if only on sides; bullae reddish; abdomen above more sparsely punctured; clypeus distinctly longer, more convex; wings less darkly infuscated, without or scarcely any distinct fuscous borders along veins; hairs slightly more developed, those on vertex anteriorly, basally on sides of tergite 1 and on outer sides of hind coxae slightly longer, more conspicuous, whitish; fine hairs on legs, especially femora, hind tibiae and tarsi mainly dark; vertical sclerite of genital segment more punctured on each side of carina  
♀ *paradoxa* Bezz.
- (b) Body on the whole darker, clypeus, humeral tubercles, sides of thorax, disc and base of thorax, scutellum and metanotum very dark or very dark reddish brownish like rest of body; apical part or half of club orange yellowish; hind margins of tergites darker, more reddish brownish, only those of extreme sides of 2 and 3 yellowish whitish; bullae black; abdomen above distinctly more closely punctured; clypeus smaller, less convex; wings very darkly infuscated brownish, especially as extensive borders along veins; hairs relatively shorter, less dense, those on vertex and entire head, the very short ones on sides basally of tergite 1 and on hind coxae entirely dark or blackish; fine ones on legs mainly reddish golden; vertical sclerite punctate-striate on sides of carina  
♀ *caffra* n.sp.

*Nomoneura fasciata* Bezz.

*Nomoneura fasciata* Bezzi (*nec* Wiedemann), 1924b: 225.

As was stated under *Afroleptomydas fasciatus* (Wied.) and in the comments under *Nomoneura*, this species, which Bezzi designated as the type-species of *Nomoneura*, was wrongly identified by Bezzi as the *Midas fasciatus* of Wiedemann. It is however an entirely different, and in some ways a peculiar, species and has no resemblance to *Afroleptomydas* (olim *Midas* and *Leptomydas*) *fasciatus* s.str. whatsoever. The South African Museum is in possession of only the single ♂ specimen from Zululand mentioned under the generic description of *Nomoneura* and which is characterized as follows:

*Body* mainly very dark, blackish brownish to black; antennae reddish brownish, apices of clubs more orange; the following parts reddish, reddish brownish or yellowish brownish: clypeus, proboscis below, broadish sides of

thorax above, a narrow, submedial, discal streak on each side of thorax above, beginning anteriorly in an infusion on inner sides of humeral tubercles, a large basal medial infusion in front of scutellum, scutellum itself, pteropleural part below wing-bases, metapleural part in front of halteres, anterior basal part of tergite 1, hind margin discally of tergite 1, extreme base anteriorly of 2, to a variable extent very obscurely and more darkly so along the extreme sides of 2-4 or 5, more or less obscurely on apical half of 7, greater visible part of 8, and the lateral lobes of tergite 9, and processes of sternite 9; humeral tubercles yellowish; hind margins of tergites 2-6, and that less delimited across 7, yellowish, 3 and 4, especially 3, being broader than posterior ones; bullae shining black, bordered along their basal margins with yellowish reddish, the space between them discally narrower than vertical length of a bulla; venter mainly dark or dark reddish brownish, darker posteriorly, bases of sternites 2-4 tending to be paler, more yellowish reddish, and hind margins of 2-4 yellowish on sides, dark in middle; legs pale yellowish, the coxae and trochanters dark reddish brownish.

*Integument* of frontal part in front, thorax above, and metanotum mainly dull, the thorax above with only very fine microsculpture; head below and pleural parts only feebly subshining; abdomen above slightly more shining, but duller across bases of tergites 3-7.

*Vestiture* relatively sparse, longer and denser on head, in streaks on thorax, those along sides, though sparse, longer than those along submedial streaks; metanotum and greater part of pleurae bare, only a few, sparse, longish hairs on propleural part, and shorter, sparse ones on metapleural part; tergites 1 and 2 with sparse, longish hairs, and rest of abdomen with sparse, shortish, decumbent ones; hairs on head pale yellowish, even those on head below scarcely paler; those on thorax, pleurae and tergites 1 and 2 slightly paler, more yellowish whitish; rest of shorter hairs on abdomen becoming more reddish golden or reddish fulvous posteriorly and on hypopygium; a narrow band of yellowish whitish tomentum present along inner margins of eyes, much broader along those of occiput, and some very fine, more silvery tomentum on posterior half of pleurae; hairs on coxae very sparse and short on front and middle ones, longer and denser, more yellowish on hind ones; hairs on legs short, mainly yellowish, though gleaming more whitish on tibiae; spines and spicules reddish.

*Head* with the interocular space on vertex markedly narrow, scarcely broader than space between eyes just below buccal cavity, very much narrower than in some other genera, the inner margins of eyes thus markedly converging above and below antennae; antennae (pl. 1, fig. 3) relatively stoutish, longer than thorax (excluding scutellum), with segment 1 about  $2\frac{2}{3}$  times length of 2, segment 3 stoutish, becoming slightly thickened apically, longer than club, the latter elongate, only gradually thickening apically, there almost truncate, and a little more than its basal  $\frac{1}{4}$  constricted off neck-like; proboscis projecting much beyond buccal cavity, but much shorter than thorax and also shorter than vertical length of an eye; palps distinct, quite as long as antennal segment 2;

postvertical spines present.

*Wings* rather broadish, greyish hyaline, but distinctly tinted very slightly yellowish; veins yellowish brownish, more yellowish in hinder half; appendix at base of second submarginal cell relatively short; posterior veins of first and third posterior cells relatively near hind border, this space much narrower than these cells, and junction between these two veins only very obtusely angular; apical stalk of first posterior cell very short and that of anal cell also relatively short; halteres and their knobs brownish.

*Legs* with the hind femora only slightly thickened, armed below with a row of spines beginning just before middle and becoming double in apical part; hind tibiae stoutish, almost straight; basal segment of hind tarsi also stoutish, very much longer than claw-segment, the latter markedly short.

*Hypopygium* (pl. 1, fig. 6) more like those of the ♂♂ of *Afroleptomydas*; lateral lobes of tergite 9, though not sharply angular posteriorly, relatively longer than in other species of this genus; processes of sternite 9 with a little more than apical third rather flattened dorso-ventrally, tongue-shaped, bluntly rounded apically, the dorsal depression rather shallow, in side view rather rapidly narrowed to middle, then more straight, the shallow-grooved ventral surface directed ventrally or downwards as in species of *Afroleptomydas*, the apex of processes not bending towards each other tongs-like; sternite 9 relatively large, flattened lobe-like, fairly densely hairy.

Length of body: about 17·5 mm

Length of wing: above 12 mm

*Distribution*: Zululand: Mfongosi (W. Jones, December 1911).

#### *Nomoneura barbertonensis* n.sp.

A single yellow-legged ♀ specimen, with a partly yellowish abdomen, in the collections before me obviously belongs to the *fasciata* section of this genus and there is some suspicion that it may represent the unknown ♀ of *fasciata* Bezz. It is characterized as follows:

*Body* mainly reddish brownish; frontal part of head and head below darker, more blackish brownish; clypeus and proboscis above paler, more reddish brownish; a broadish, somewhat indistinct, central, dorsal streak on thorax above, becoming evanescent at about middle, and an indistinct, submedial, broadish band on each side of thorax above, from about middle to near base and on to postalar calli, as well as a broadish, medial streak on metanotum and metapleural boss above posterior spiracle also slightly more darkened, more blackish brownish than rest of reddish brownish thorax; proboscis below more yellowish; antennae (excepting the more reddish brownish base of club and terminal tubercle), the extensive dorsal discal parts of tergites 2-4 and central, discal part of 5, sternites 2-4, lower parts of middle and hind coxae, to a certain extent lower hinder part of anterior and middle trochanters, entire hind trochanters and the entire legs pale yellowish, the antennae and legs being strikingly so, the apical part of claws however blackish; tergite 8 and genital

segments slightly paler, more yellowish reddish than rest of reddish brownish abdomen; hind margins on sides of tergites 2-4 conspicuously pale yellowish whitish; bullae small, somewhat bean-shaped, shining black, very widely separated above.

*Integument* of head and thorax mainly dull, the middle ocellar part slightly more shining; tergite 1 and sides of 1-5 and especially entire 6-8 and genital parts as well as hinder darkened half of venter also shining more than the yellowish dorsum and more so than dull thorax; thorax above, metanotum and pleurae with dull leathery texture; abdomen with micro-areolate texture on tergites 1-5, less evident from 6 to apex, with scattered or sparse setiferous puncturation to end of 6, and with the terminal segments transversely shallowly grooved.

*Vestiture* very poorly developed; the greater part of the body being bare; shortish hairs on vertex and frons greyish yellowish, appearing dark in certain lights; those on clypeus more yellowish and slightly longer ones on head below brownish, appearing even darker in certain lights; short hairs on antennal segments 1 and 2 reddish brownish; short and sparse ones on thorax above brownish and slightly longer sparse ones on sides in front of wing-base yellowish brownish or greyish brownish; those on propleural tubercle brownish; shortish and sparse ones on sides basally of tergite 1 greyish; minute scattered hairs on abdomen above dark; longer reversed ones on last two segments and on genital segments blackish brownish; fine shortish hairs on anal lobes greyish yellowish; short ones on coxae blackish brownish; hairs on legs very short, reddish brownish, appearing more reddish in certain lights, more yellowish in others, those on front and middle tibiae more golden and those on hind ones more reddish; narrow streaks of tomentum along inner margin of eye on face and behind eyes greyish whitish; fine, but relatively sparse, tomentum on pleurae, sides basally of tergite 1 and on hind coxae greyish; spines on hind femora below and spicules on hind tibiae and tarsi yellowish reddish, those on front and middle ones slightly paler, more yellowish.

*Head* with the interocular space on vertex narrow, about as broad as space on head below; antennae stoutish and thick, very slightly longer than thorax (excluding scutellum), segment 1 not thickened, quite 2·3 times length of 2, segment 3 stoutish, scarcely thickened apically, longer than club, the latter constricted bottle-neck-like at base, thickest at about middle, with an equatorial row of 3 short setae on inner side at about middle and 2 dorsally (one at about middle), with the apical sensory area rather truncately sunk in on inner side, the outer apical side occupied by the rather conspicuous, crater-like tubercle; proboscis about 2·2 mm long, about as long as vertical length of eye, with the apex of its labella slightly curved down; palps distinct, short, a little longer than antennal segment 2.

*Wings* tinged reddish brownish; veins dark reddish; halteres entirely dark reddish brownish; squamal margin whitish.

*Legs* slender, rather long, the hind femora only very slightly thickened,

rather elongate, armed below with about 7-9 shortish, separated, reddish spines along inner row and 4 in apical part along outer row; tibiae, including hind ones, with numerous spicules apart from apical spurs; basal segment of hind tarsi distinctly much longer than claw-segment, quite subequal in length to combined length of segments 2-4.

*Oviscape* with about 7 slender, reddish spines on a side.

From a ♀ holotype in the South African Museum.

Length of body: about 16 mm

Length of wing: about 12.5 mm

*Distribution*: Transvaal: Barberton (J. S. Taylor, 28th September 1926).

From the ♂ *fasciata*, which also has a longish proboscis, thickish antennae, a similarly shaped club, slender and longish yellowish legs and reddish veins in the wings, and of which it may prove to be the unknown ♀, it however differs in not having yellowish humeral tubercles and in having darker, not pale or more yellowish reddish, mesonotal sides. In view of the geographical localisation of most species of Mydidae and the morphological and colour differences between ♂♂ and ♀♀ of some mydoid genera, it is not advisable to assign the sexes of species without having taken them together at the same locality and at the same time of the year.

It is easily distinguished from ♀♀ of *paradoxa* Bezz. and *caffra* n.sp., described farther on, by the much longer proboscis, the ochreous yellowish discal parts of tergites 2-4 and 5, and the longer legs.

*Nomoneura bellardii* (Bert.) n.comb.

*Cephalocera bellardi* Bertoloni, 1861: 52, pl. 1, fig. 6.

*Nomoneura fasciata* Bezzi (*nec* Wiedemann), 1924b: 225. (n.syn.)

*Nomoneura fasciata* Bequaert (*nec* Wiedemann, *nec* Bezzi), 1938: 343. (n.syn.)

Even though Bertoloni's description is very short and inadequate and his figure of *Cephalocera bellardi* not very satisfactory, there appears to be little doubt that a ♂ specimen, with ferruginous legs, from Rhodesia in the National Museum of Rhodesia, identified by Bequaert in 1938 as *Nomoneura fasciata* (Wied.) and which he based on Bezzi's wrong identification (1924b) of Wiedemann's species, is the *bellardi* of Bertoloni. It agrees with the latter's description in the few important characteristics mentioned by this author.

This ♂ specimen also does not belong to the same species as that of the ♀ specimen in the South African Museum wrongly identified and unsatisfactorily described by Bezzi as *fasciatus* Wied. (see under *Nomoneura* and the preceding species *fasciata* Bezz.) and which he also maintained was specifically identical with *bellardii* Bert., thus suggesting that the latter is a synonym of the former. For the reason stated above this ♂ specimen is therefore provisionally referred to and here described as *bellardii* of which the ♂ is characterized as follows:

*Body* rather slender, the abdomen markedly elongate, cylindrical and in side view rather thickened at segments 6 and 7; body mainly dark, the head (except clypeus), dorsum of thorax, disc of scutellum, metanotum, tergites 1 and 2, and to a great extent pleurae and coxae appearing more blackish than



rest of surface which appears more dark piceous or reddish brownish; antennae dark reddish brownish, the apical and basal parts of club darker; clypeus also reddish brownish; proboscis yellowish below; humeral tubercles yellowish; area around latter, sides of thorax above, postalar calli and excavation on sides of scutellum ferruginous reddish, inclining to yellowish reddish; area below base of wings and pleural sutures also ferruginous; hind margin of tergite 1 obscure reddish, those of 2-7 whitish, but bordered narrowly orange brownish on basal side; bullae reddish brownish, appearing darker across apical part; venter reddish brownish up to base of sternite 5; hind margins of sternites 2-5 whitish on sides, the rest more obscure, dirty yellowish; hypopygial parts, especially processes of sternite 9, more ferruginous or reddish brownish, apical part of sternite itself more yellowish reddish; legs, as stated by Bertoloni, mainly ferruginous, the claws also ferruginous, but tipped blackish.

*Integument* of central part of frons, to a certain extent clypeus, proboscis, tergite 1, apical halves of 2-6, to a lesser extent 7, band-like bases of 3-6 and venter more or less shining; metanotum dulled by greyish tomentum and pleurae much dulled by greyish whitish tomentum; integument of abdomen, especially on more shining parts, with very faint, though distinct, purplish reflections; basal discal parts of tergites 2-6 and obscurely across 7 dulled by distinct dark tomentum which in certain lights appears greyish brownish.

*Vestiture* rather poorly developed, longish, but sparse, only on head, tergite 1, sides of 2 and to a lesser extent sides of 3, on sternites 2-4, on posterior metasternal part, sides of hind coxae and on inner sides basally of hind femora; all these hairs greyish whitish; hairs on thorax above also whitish, slightly longer on sides in front of wings and on each side submedially anteriorly, those on disc short, very sparse and almost absent; shortish, sparse ones on abdomen above from tergite 3, denser and slightly longer posteriorly on 6 and 7 as well as fairly dense bristly ones on venter on sternites 5-8 (especially 7 and 8), those on hypopygial structures and below sternite 9 blackish brown; those on apical and latero-apical part of sternite 9 more fulvous; hairs on legs very fine and short, but with sparse, longish whitish ones on inner sides of hind femora, mainly dark on femora above, paler below; fine ones on hind tibiae and on outer or anterior surfaces of middle ones as well as on tarsi dark, the rest on front and middle tibiae paler, more whitish; spines and spicules on legs reddish.

*Head* with the antennae distinctly longer than thorax (excluding scutellum); segment 1 relatively long, quite 3.6 times length of 2; segment 3 stoutish, a little longer than club, only slightly thickened apically; the latter elongate, more or less gradually broadened towards apex, being more rapidly thickened and thickest in less than apical third and constricted in little more than basal fifth; proboscis relatively long, a little shorter than thorax (excluding scutellum), about 3 mm long, its labella rather large, ovate; palps small, about as long as antennal segment 2; postvertical spines present, bristly.

*Wings*, relative to abdomen, rather shortish, greyish hyaline, but with apical half of costal cell, very faint borders along veins 3 and 4, the veins bounding

second submarginal cell, base of first posterior cell, apical vein of discoidal cell and to a feebler extent apical cross vein of second basal cell faintly tinted yellowish brownish; veins reddish brownish; basal appendix of second submarginal cell longish; knobs of halteres dark brownish above.

*Legs* slender; hind femora only very slightly clavately thickened, armed below with relatively few spines, about 8 or 9 in two rows of 4 or 5 in each in apical half only; hind tibiae with only short and few spicules.

*Hypopygium* with apices of lateral lobes of tergite 9 rounded; processes of sternite 9 in side view slightly S-curved, the apical part curved slightly upwards, in dorsal view broadish, rounded apically, hollowed out below, shallowly grooved above, non-punctuate above apically; phallic tubes of aedeagus relatively short, slender, widely separated; sternite 9 dorso-ventrally depressed, tip-of-tongue-like, densely haired.

Length of body: about 20 mm

Length of wing: about 12.5 mm

*Distribution*: Rhodesia: Hope Fountain (Neville Jones, 21st October 1922).

This species differs from *fasciata* Bezz. in having more slender antennae, darker clypeus, very much longer proboscis, whitish and not yellowish hairs on head in front, black scutellum, black base of thorax, more yellowish brownish tinted wings, at least along veins, more reddish brownish bullae, much darker, not fulvous or golden, and denser hairs on tergites 3-7 and on venter posteriorly, more distinct, basal, discal patches of dull tomentum on tergites, darker, more ferruginous legs, smaller and more densely-haired sternite 9, and more bluntly-rounded processes of latter.

#### *Nomoneura paradoxa* Bezz.

*Nomoneura paradoxa* Bezzi, 1924b: 224.

This slightly atypical and distinctly variable species from the Transvaal was described by Bezzi from a single ♀ specimen in the South African Museum. A ♂ specimen in the South African Museum from the same locality was unfortunately not submitted to Bezzi at the time. This ♂ I am now incorporating in the redescription of the species below as the 'allotype'. In addition there are in the collections before me two other ♀♀ and eight other ♂♂ from the Transvaal Museum.

From all these specimens it is quite evident that the species is slightly variable and that, when compared with the type-species ♂ *fasciata*, it is atypical in certain respects. The species has no relationship to the genera *Halterorchis* and *Mydaselpis* as maintained by Bezzi. It is characterized as follows:

*Body* mainly brownish, reddish brownish to dark blackish brown, the posterior part of ♀ sometimes more yellowish or mud-coloured to a variable extent, and the medial ocellar ridge, sides of frons, especially in ♂, disc of thorax, metanotum in ♂ and in both sexes to a variable extent basal part of abdomen or even greater part or entire abdomen above more blackish than

brownish; antennae yellowish or reddish brownish, brownish to blackish brown, the middle part of clubs more often yellowish or orange; clypeus reddish brown, dark reddish brownish to blackish brown, sometimes slightly paler in ♀; humeral tubercles pale yellowish brownish or reddish brownish to a variable extent, sometimes dark in ♂; area around humeral tubercles, sides of thorax (more broadly in ♀), postalar calli, sometimes narrowish base of thorax in ♂, broadish base of same in ♀, two submedial discal streaks of variable extent in ♀, and scutellum in ♀ yellowish, yellowish reddish or reddish, the sides of thorax and scutellum in ♂ sometimes entirely dark; metanotum in ♀ usually mainly pale yellowish brownish to mud-coloured; tergite 1 in both sexes sometimes more reddish brownish, its hind margin reddish; hind margins of tergites 2-7 in ♂ yellowish whitish, conspicuous, fairly broadish, more narrowly, less conspicuously so in ♀ and only evident on sides of 2-4 or 5, being dark discally; bullae reddish to dark reddish, vertically longer in ♂, more narrowly separated dorsally in ♂; hind margins of sternites 2-5 or 6 conspicuously or more broadly yellowish whitish or whitish on sides of ♂, narrower in ♀; legs pale yellowish in ♀ and in some ♂♂, but femora in ♂ darkened or more brownish to a variable extent or even mainly blackish brownish, the coxae in both sexes darker, but very dark in ♂♂ with darkened femora, the apical parts of hind tibiae and hind tarsi sometimes darkened to a variable extent in dark-legged ♂♂.

*Integument* of greater part of head and body, including coxae, rather conspicuously shining, only disc of thorax above dulled to a variable extent; abdomen above in ♀ with sparse, scattered, setiferous puncturation, in ♂ slightly denser, denser posteriorly in both sexes, the last two tergites in both sexes with transverse striation, denser in ♂.

*Vestiture* relatively poorly developed in both sexes, more so and shorter in ♀, those on head, anteriorly on thorax, tergite 1, coxae and femora in ♂ and lower parts of hypopygium in ♂ longish and conspicuous, very short in ♀, those on disc of thorax even in ♂ sparse and shortish, and those on abdomen above in ♀, apart from shortish ones on tergite 1 and reversed ones posteriorly, very short; hairs on vertex, sides of frons, sides and lower parts of clypeus, head below, on thorax above in ♂, sides of thorax in ♀, pleurae in both sexes, on tergite 1 in ♂, sides anteriorly of tergite 1 in ♀, those on sternite 9 of ♂ and longish ones on femora in ♂ greyish whitish; hairs on frons on each side anteriorly in both sexes, some on clypeus above in ♂, on entire face and clypeus in ♀, those discally on thorax and on tergite 1 in ♀ brownish; those on antennal segments 1 and 2 in both sexes also dark; short hairs on abdomen above in both sexes, as well as those on venter in ♂, also dark; very short, sparse hairs on femora in ♀, short ones on front and middle femora above and on upper outer and lower apical aspects of hind femora in ♂, those on hind tibiae in both sexes (much shorter in ♀), on apical parts of front and middle ones above in ♀ and those on tarsi in both sexes dark or blackish; hairs on front and middle tibiae and on coxae in ♂ and greater part of hind coxae in ♀ whitish; spines and spicules on legs yellowish to yellowish reddish.

*Head* with the antennae longer than thorax above, though sometimes relatively shorter in ♀; segment 1 scarcely or not much thickened, shortish, about 2 to nearly 3 times length of 2; segment 3 elongate, subequal in length to or more often longer than club, its apical part well marked off, though very slightly or scarcely thickened; club elongate, slightly longer in ♂ than in ♀, amphoriform, its basal third or fourth in ♂ and less than basal fourth in ♀ constricted bottle-neck-like, its apical part conical or subtruncated on lower part, ending in a crater-like tubercle, and with a girdle of dark separated hairs beyond middle; clypeus rather convex; proboscis markedly short, confined to length of buccal cavity, or only extreme tip slightly projecting, relatively stumpy, its labella subequal in length to or scarcely shorter or longer than basal part and pointed apically; palps minute; postvertical spines slender, bristle-like.

*Wings* uniformly tinted yellowish brownish to a variable degree, though usually paler in ♀, and in ♂ often with conspicuous darker fuscous borders along veins; veins yellowish or pale yellowish brownish, sometimes pallid in hinder half in ♀; apex of discoidal cell shortly stalked to a variable extent, the apex of third posterior cell more often tending to be angular or subangular; hind border of wings in apical half narrower than cells; knobs of halteres dark brownish above.

*Legs* slender; hind femora only very slightly thickened, slightly more so in ♂, armed below with a double row of rather separated spines from just before middle; hind tibiae slightly curved before apex; basal segment of hind tarsi relatively elongate, even longer than penultimate segment plus claw-segment; claws longer in ♂ and less curved down apically than in ♀.

*Oviscape* in ♀ with 7 to 9 fulvous yellowish to yellowish brownish spines on a side.

*Hypopygium* of ♂ with the lateral lobes of tergite 9 rather sharply angular or subangular apically; processes of sternite 9 elongate, markedly broadish, slightly twisted propeller-blade-like, hollowed out below, bluntly rounded apically, but inner margin in apical part more rapidly narrowed towards apex than the outer one, its outer or lateral face with relatively coarse, elongate punctures and its upper face apically also with some coarse punctures; sternite 9 itself somewhat atypical in being more dorso-ventrally depressed or flatter than in *fasciata*, more scoop-like, narrowed apically, densely covered with hairs, but more so, more tuft-like on sides apically; phallic tubes of aedeagus with rather conspicuous gonopores and epimere narrowish, pointed apically.

Length of body: about 13–17.5 mm

Length of wing: about 9–12.25 mm

*Distribution*: Transvaal: Pretoria (August–October). Types from Fairy Glen in Pretoria (Munro, 19th September 1915).

*Nomoneura caffra* n.sp.

A variable Eastern Province representative of *paradoxa*, unfortunately represented only by ♂♂ in the series from the type localities before me. One ♂

specimen in the Transvaal Museum was labelled by Lichtwardt as '*Cephalocera nigra* Macquart', a species with which it has no relationship and which does not belong to *Cephalocera* but to a new genus described elsewhere. Superficially this species is almost indistinguishable from *paradoxa*. The ♂ however differs from the ♂ of the latter in the following respects:

*Body* similarly coloured, with the same parts on thorax above reddish brownish or yellowish brownish, but in a varietal form humeral tubercles and postalar calli are very dark piceous reddish or almost black, and sides of thorax black; antennal clubs with more than apical halves to a variable extent orange yellowish, not with only the middle parts so as in *paradoxa*; clypeus more consistently darker, more dark piceous reddish or brownish; metanotum also reddish or reddish brownish on sides or sides basally to a variable extent, though not extensively yellowish brownish on sides as in some ♂♂ of *paradoxa*; hind margin of tergite 1 more consistently darker or black; those of only tergites 2-5 or 6 yellowish whitish and then sometimes with those of 5 and 6 darker, more reddish brownish than whitish or yellowish, with that of 7 consistently black, not yellowish whitish; bullae black; only sides of sternites 2-3 or 4 whitish; legs similarly coloured and to the same variable extent, the femora sometimes darkened to the same extent and sometimes even extensively darkened, only the apical parts of front and middle ones and less than basal halves of hind ones being more yellowish like the tibiae and tarsi.

*Integument* with the same parts shining but abdomen above with distinctly much denser, setiferous puncturation which becomes denser posteriorly and transversely subscabrous or 'nadelrissig' on last two segments, also with the extreme sides of tergites 2-7 more densely punctured; venter also with much denser, subscabrous, setiferous puncturation, especially in hinder half.

*Vestiture* on the whole very much shorter, that on head, though longer than on thorax and rest of body, distinctly much shorter and sparser than in *paradoxa*; hairs on thorax above much shorter, sparser, and individual hairs more seta-like; those on tergite 1, especially sides, and on outer sides of hind coxae much shorter than in *paradoxa*; those on abdomen above and below distinctly very much denser; hairs on hypopygium about as long and as dense as in latter species; hairs on legs, except for some longish ones on hind femora below, all short, without any longish ones on femora and tibiae as in *paradoxa*; all the hairs on head, thorax, abdomen, hypopygium, coxae and femora very dark, blackish brownish to black, those on head sometimes appearing more dark fulvous brownish; fine ones on tibiae and tarsi mainly reddish golden or fulvous reddish; spines and spicules on legs deeper reddish.

*Head* with the antennae much longer than thorax, though relatively slightly shorter than in *paradoxa*; segment 1 also rather shortish, only slightly thickened, about 2.3-2.8, or even a little more than 3, times length of the rather shortish segment 2; segment 3 distinctly stouter than in former species, only a little longer than, sometimes subequal in length to, club, its apical fourth or a little less scarcely or only slightly thickened, but as in *paradoxa* marked off by a

slightly raised ring; club distinctly more slender, its constricted basal part appearing stouter, less delimited; clypeus distinctly smaller, shorter, less convex or tumid; proboscis very similar, also short, stumpy, only about 1-1.28 mm, but appearing longer than in latter, due to shorter buccal cavity and smaller clypeus, its labella similar, also tending to be pointed apically; postvertical elements also bristle-like.

*Wings* relatively slightly broader, otherwise similar, also deeply tinted yellowish brownish, but apparently more often with darker fuscous borders along veins which are sometimes very dark and extensive, rendering the wings very dark brown to blackish brown; veins tending to be darker brownish; knobs of halteres very dark above.

*Legs* similar, but hind femora tending to be relatively more thickened, more subclavate, with a double row of relatively shorter and stouter spines below; spicules on tibiae, apical spurs of latter, and spicules on tarsi distinctly shorter, less slender; basal segment of hind tarsi also relatively elongate.

*Hypopygium* very similar, but lobes of tergite 9 tending to be more sharply pointed apically and processes of sternite 9 relatively narrower.

From 5 ♂♂ (holotype and 3 paratypes in the Transvaal Museum and 1 paratype in the South African Museum).

Length of body: about 12-25-13.5 mm

Length of wing: about 9-11 mm

*Distribution*: Eastern Cape: Resolution in Albany district (Walton, 19th January 1929) (holotype and 3 paratypes); Algoa Bay (Dr. Brauns, 25th January 1908) (1 paratype).

A single ♀ specimen from Willowmore in the Transvaal Museum, wrongly labelled as '*Cephalocera nigra* Macq.' is described here provisionally as the ♀ of *caffra* even though it differs in colour details which would not be expected in ♀♀ of the same species as the latter. It is characterized and also differs from ♀♀ of *paradoxa* as follows:

*Body* also mainly dark or very dark piceous reddish or reddish brownish as in ♂, especially pleurae and tergites 1 and 2, but humeral tubercles entirely dark and sides of thorax also dark or obscurely and narrowly dark reddish, not yellowish reddish or yellowish as in ♂; postalar calli very dark reddish blackish; clypeus also darker, almost black like rest of head; antennae dark reddish brownish, only apical halves of clubs yellowish as in ♂; proboscis paler yellowish brownish; metanotum not yellowish or pale coloured as in ♀ *paradoxa*, but very dark reddish brownish, even darker than in ♂ *caffra*; hind margins of tergites 2-5 dark reddish, though sides of 2 and 3 more yellowish whitish; last tergite extensively yellowish reddish discally, and one before it slightly paler reddish than rest of the dark reddish brownish surface above; hind margins and basal margins of sternites 1-5 paler and more dirty yellowish than rest of venter, though extreme sides of 2 and 3 more yellowish whitish; bullae also black as in ♂; legs, excepting dark coxae, very pale and contrastingly yellowish.

*Integument* with the same parts shining as in ♂ and in *paradoxa*; abdomen

above slightly more closely punctured above than in ♀ *paradoxa*, last tergite with much shallower transverse grooves, but one before it more densely and deeply grooved than in latter ♀; venter more coarsely punctured.

*Vestiture* very short and sparse, the thorax, pleurae and basal part of abdomen almost bare, all the hairs on body as in ♂ *caffra* entirely dark or blackish; hairs on last two abdominal segments distinctly denser than in *paradoxa*; fine, short hairs on coxae dark as in ♂; fine ones on entire legs also reddish golden; spines and spicules reddish as in ♂, shorter than in *paradoxa*.

*Head* with the clypeus smallish and narrowish as in ♂; antennae very similar; proboscis very short, less than 1 mm long, its labella rather sharply pointed apically.

*Wings* as in ♂ *caffra*, though apparently darker brownish, due to extensive dark fuscous borders along veins.

*Genital segment* with the last vertical sclerite striated and punctured on sides of the vertical central carina, not merely punctured as in *paradoxa*; oviscape with about 6 reddish spines on a side.

Length of body: about 16 mm

Length of wing: about 11 mm

*Distribution*: South-eastern Karoo: Willowmore (Dr. Brauns, 5th January 1920).

#### *Nomoneura violacea* n.sp.

This Eastern Province species, known only from a single ♀ specimen in the South African Museum, cannot be confused with any of the other species. It is characterized as follows:

*Body* mainly dark, reddish or purplish brownish, with violaceous reflections, especially on abdomen, the venter paler brownish; middle part of frons, narrow apices of antennal segments 1 and 2 and more than apical third of club more blackish; rest of antennae yellowish brownish; clypeus reddish brownish; sides of thorax above and two submedial, discal streaks appearing more black, separating paler, more obscurely yellowish ones; metanotum also with a central, broadish, more blackish streak as well as a faint and obscure submedial one on each side, the sides of metanotum however darker; bullae shining black, more narrowed towards dorsal end than towards ventral end, broadly interrupted dorsally; entire abdomen above and below without any yellowish hind margins; legs reddish brownish, apices of coxae, the trochanters, extreme apices of femora, extreme bases of tibiae, extreme apices of tibiae, apices of tarsal segments, and more than apical halves of claws black.

*Integument* of body rather dullish, only subshining; central part of frons and greater part of pleurae more shining; thorax above with a broadish sub-lateral streak on each side and a broad central one (separated by a narrow central, shining streak) dull, due to fine leathery or shagreen-like microsculpture; last two abdominal tergites more or less transversely wrinkled.

*Vestiture* rather poorly and sparsely present, the greater part of body and

greater middle part of abdomen bare; sparse longish hairs on head in front and below entirely dark brownish; sparse and much shorter ones on sides of thorax above and even the still shorter, sparse, decumbent ones along the more shiny streaks on disc, as well as sparse ones on metapleural prominence in front of halteres and the sparse ones on sides of tergite 1, also dark brownish; those in a small patch in front of postalar calli black; reversed and stiffish hairs on last two abdominal segments very dark, blackish brown or black; short, decumbent hairs on legs black, slightly denser on tibiae and tarsi; spines and spicules on legs reddish brownish, those on tarsi above black; fine, silvery greyish tomentum or pubescence present along eye-margins of face, behind eyes, along extreme sides of thorax above, in front of postalar calli, on sides in anterior half of metanotum, and more obscurely on posterior half of pleurae.

*Head* with the interocular space on vertex rather narrowish, subequal in width to space between eyes on head below across lower margin of buccal cavity, the inner margins of eyes converging above and below level of antennae; antennae rather stoutish, shorter than thorax (excluding scutellum); segment 1 about  $2\frac{1}{2}$  times length of 2; segment 3 stoutish, becoming slightly thickened apically, a little shorter than club, the latter elongate, amphoriform, a little less than a fourth of its base constricted segment-like; proboscis shorter than vertical length of an eye, but in comparison with the two preceding species long, projecting much beyond buccal cavity, covered with rather conspicuous hair-like spinules, especially below; palps well developed, nearly twice length of antennal segment 2; postvertical spines present, bristle-like and blackish.

*Wings* uniformly tinted yellowish brownish throughout; veins yellowish brownish; hind border of wings narrower than first and third posterior cells; apex of discoidal cell shortly stalked; hind margin of squamae whitish; halteres and their knobs brown.

*Legs* with the hind femora slightly thickened, armed below with a row of spines, from near base, becoming duplicated apically; basal segment of hind tarsi somewhat thickened, much longer than claw-segment.

*Oviscape* with 5 or 6 reddish or fulvous spines on a side.

Length of body: about 20 mm

Length of wing: about 15 mm

*Distribution*: Eastern Cape: Queenstown (V. Whitehead, January 1950).

#### NEOLAPAROPSIS n.gen.

Two ♀ specimens from Zululand in the collections before me, which have a superficial resemblance to species of the asilid genus *Neolaparus*, appear to have certain characters in common with *Mydaselpis*, *Nomoneura* and *Arenomydas*, but apparently more so with the latter two genera. To accommodate them a new south-east African genus *Neolaparopsis* is proposed and which agrees and differs from the other south-east African genus *Nomoneura s.str.* and the new genus *Arenomydas* from the semi-arid western Cape in the following respects:

*Head* (cf. pl. 2, fig. 3) markedly flattened behind, more so than even this



tendency in *Arenomydas*, the occipital part dorsally and dorso-laterally flattened behind the eyes, not so convex as in *Nomoneura*; interocular space on vertex broad, very much broader than space on head below, not consistently narrowish and scarcely broader than space below as in *Nomoneura*, the inner margins of eyes thus converge much more towards head below than towards vertex and the interantennal space is relatively much broader than in latter genus, more like that of *Arenomydas*; clypeus less convexly prominent in side view than in both the other two genera; antennae distinctly more slender, not stoutish and thickened as in *Nomoneura*, with segment 1 markedly short, broader than long, usually distinctly longer or much longer than broad in both the other two genera, without any distinct hairs, segment 3 more gradually thickened from narrow base to broadish apex as is evident to a lesser extent in some forms of *Arenomydas*, but not stoutish and rod-like as in *Nomoneura*; proboscis projecting beyond buccal cavity.

*Thorax* markedly short, tending to be quadrate or subquadrate, much like that of *Arenomydas*, only a little, or scarcely, broader than long, not distinctly much longer than broad as in *Nomoneura*, also sculptured vermicellately rugulose above as in most forms of *Arenomydas*, with a distinctly broader anterior area on sides behind shoulders between upper margin of mesopleuron and extreme depressed side of thorax than in any of the other two genera; postalar calli rather convexly prominent or boss-like as in *Arenomydas*; metanotum relatively short as in some forms of the latter, but as in both these genera also entirely bare except for tomentum; mesopleuron and greater part of rest of pleurae also entirely bare.

*Wings* very similar to those of the other two genera and, as in *Arenomydas*, with the first posterior cell opening apically in apical part of costal cell, thus distinctly, though very shortly, stalked apically on costal margin; first basal cell tending to be more rounded apically; base of second submarginal cell also with an appendix; hind border of wings opposite posterior cells, unlike that of *Arenomydas*, narrower than the cells themselves (as in *Nomoneura*); alula distinctly narrower less lobe-like than in the other two genera.

*Abdomen*, unlike that of the other two genera, distinctly slightly narrowed waist-like at junction of second and third segments, but to a very much lesser extent than in *Mydaselpis* and *Heteroleptomydas*; tergites and sternites, unlike those of *Nomoneura* and *Arenomydas*, somewhat densely and coarsely punctured, reminiscent of *Mydaselpis*, though less so posteriorly; segment 1 relatively short, transversely convex, not depressed medially as in *Nomoneura*; bullae vertically elongated, narrowish; last vertical tergite in ♀♀ also centrally carinate, the carina longer than in *Arenomydas*, and hind margins of this tergite on each side not meeting in a sharp angle; oviscape segment on each side armed with a row of spines; opening below last vertical sclerite and oviscape segments relatively narrower than in *Nomoneura*, the anal lobes in it distinctly smaller than in latter genus.

*Vestiture* (in ♀♀ at least) also poorly developed as in the other two genera,

with very short postvertical bristles, without any hairs on metanotum, mesopleuron and greater part of rest of pleurae, including metapleural tubercle in front of halteres (which in the case of the other two genera has some hairs); hairs on thorax above, especially on sides, and sides basally of tergite 1, distinctly shorter and sparser, and those on last, or last two, abdominal segments distinctly shorter and relatively sparser than in the other two genera; hairs on legs shorter than in *Arenomydas*, more like those of *Nomoneura*.

*Legs* relatively shorter, especially shorter than those of *Nomoneura*, stouter, the hind femora distinctly shorter, relatively stouter, more distinctly clavately thickened, also armed below with a double row of spines, situated on proportionally larger tubercles; tibiae also with fairly numerous spicules; tarsi proportionally shortened, relatively shorter than in the other two genera, and basal segment of hind ones proportionally much shorter than in either of the other two genera, only a little, or scarcely, longer than claw-segment, distinctly much longer in the other two genera.

As far as the mixed characters of this genus are concerned it may be looked upon as the eastern geographical representative of the western *Arenomydas* which has evolved in more or less the same direction as the other eastern genus *Nomoneura*, and within a similar type of biological environment. The type-species of this genus is *Neolaparopsis puncturatus* n.sp. described below.

#### *Neolaparopsis puncturatus* n.sp.

The ♀♀ are characterized as follows:

*Body* mainly dark; head, propleural prominence, lower half of pleurae, anterior and middle coxae, segments 1-3 (or 4) of abdomen, base and extreme sides of tergites 5-7 and to a lesser extent extreme sides of sternites 5-7 mainly dark, blackish brownish or almost black; antennae pale yellowish brownish, the apical part of segment 3 and basal half or more of club darkened, the apical part of latter more yellowish; proboscis pale yellowish brownish; thorax above, humeral tubercles, scutellum, metanotum, mesopleuron and upper half of pleurae yellowish reddish, but a broadish central streak on thorax above, extending to near scutellum, and a small rugulose area basally on each side of metanotum blackish; tergite 4 discally to a variable extent and rest of tergites 5-8 (excepting extreme dark sides and base and to a variable extent sternites 5-8) paler than basal part of abdomen, more pale yellowish brownish; bullae also pale yellowish brownish: hind margins of tergites 2-4 rather broadly yellowish, those of 1 and 5-7 appearing dark; hind coxae reddish brownish; legs mainly yellowish, the hind femora however more reddish brownish in slightly more than apical half, the hind tibiae also more reddish brownish, and apical half of claws also darkened.

*Integument* of frons and clypeus mainly shining, the former with scattered setiferous puncturation and the latter somewhat shallowly transversely grooved dorsally and setiferously punctured on sides; thorax above somewhat shiny, vermicellately rugulose, more transversely so across anterior part of the broad

medial black streak where there is also sometimes an indication of a slight central carinate line, with the submedial anterior part on each side of central dark streak less densely, more longitudinally rugulose, the extreme sides of thorax also more obliquely and less densely rugulose, and base in front of scutellum smoother, more shining like the postalar calli; scutellum smooth, more or less shining; metanotum covered with silvery-shining tomentum; pleurae mainly shining, with oblique striation on mesopleuron posteriorly, longitudinal striation on pteropleuron, and vertical striation on anterior part of hypopleuron; posterior metapleural and metasternal parts, as well as sides basally of tergite 1, covered with silvery-shining tomentum; integument of abdomen mainly shining, somewhat aciculary punctured on tergite 1, more coarsely and more deeply across middle before broad smoothish hind margin, densely and coarsely, somewhat aciculary, punctured on tergites 2-7, the punctures becoming less dense, shallower and less acicular on posterior tergites and replaced by transverse grooves on last tergite, with the transverse depression across base of tergite 2 and the broadish hind margins of the tergites smooth, not punctured; venter also punctured, but slightly less densely so than above, and smooth across base and hind margin of sternites, and tending to be more densely punctured on sternites 6 and 7, but also transversely grooved on 8; integument of legs also somewhat shining, the hind femora with a feeble indication of transverse annulation from a little before middle.

*Vestiture* very poorly developed, the thorax and abdomen almost bare; hairs on head the longest, relatively sparse and situated in the setiferous punctures, whitish on vertex and frons, slightly more sericeous yellowish on frons anteriorly, on clypeus and head below, with only short yellowish postvertical bristles and scattered, short, pale hairs on occiput, the sides of latter behind eyes mainly covered with whitish tomentum, with a narrow streak of whitish tomentum also along inner margins of eyes in facial region, and without any discernible hairs on antennal segments 1 and 2; hairs on thorax above minute, scarcely discernible, yellowish; metanotum with silvery tomentum; pleurae mainly bare, with sparse pale hairs on propleurae, minute scattered yellowish ones on metapleural prominence, indications of greyish tomentum on sterno- and hypopleural parts, some shortish, bristly, yellowish brownish hairs on metasternal part as well as greyish or silvery tomentum on metapleural and metasternal parts; hairs on abdomen almost absent, very short and dark and only detectable on tergites 1 and 2, becoming slightly longer, more whitish on silvery tomented lateral basal part of tergite 1; reversed hairs on last abdominal segment relatively shortish, sparse, gleaming golden yellowish like the short hairs on anal lobes; hairs on legs very short, the short dark ones on coxae bristly, those on femora not very dense, dark or brownish, more fulvous reddish on tibiae and tarsi; spines on hind femora reddish and spicules on tibiae and tarsi more fulvous reddish.

*Head* (pl. 2, fig. 3) with the proportions between interocular space on vertex, widest part of head in front, and space on head below as 30:39:25 or

27:47:23; antennae very much longer than the thorax, segment 1 markedly short, slightly broader nearer apex than long, about, or a little less than, 2 times length of 2, segment 2 transverse, broader than long, segment 3 gradually broadening to apex, a little more than apical third thickened, shorter than club, the club elongate, thickest beyond middle, a little less than its basal sixth constricted, slightly narrowed beyond middle, its sensory area obliquely terminal and its terminal prominence fairly large; clypeus not very prominent in side view, appearing rather deeply sunk in, somewhat flattened dorsally; proboscis about 1.52–2 mm long, equal or subequal to vertical length of eye, with minute and scattered spinules, its labella fairly large; palps small.

*Wings* infuscated blackish brownish throughout, with a faint purplish tint, the apical half of costal cell and greater part of marginal cell however darker; veins blackish brownish; discoidal and third posterior cells meeting at a point apically; halteres brownish.

*Legs* relatively shortish, the hind femora somewhat clavately thickened, armed below with a double row of spines on rather prominent tubercles, about 8 in inner row from just before middle and 6–7 in outer row more or less only in apical part or half; middle tibiae with more numerous spicules than anterior ones, spicules being also present on outer (anterior) face (not on front face); hind tibiae also with a large number of spicules along lower or anterior face, more numerous and longer in apical part; basal segment of hind tarsi only a little longer than claw-segment.

*Oviscape* with 8–10 rather slender, fulvous reddish spines on a side.

From 2 ♀♀ (holotype in the South African Museum and paratype in Natal Museum).

Length of body: about 14 mm (in natural attitude) 16–17 mm (straightened)

Length of wing: about 11–11.25 mm

*Distribution*: Zululand: Ndumu Reserve, Ingwavuma district (B. and P. Stuckenberg, 1st–10th December 1963).

#### NOMONEUROIDES n.gen.

This new genus is established to accommodate certain south-east African species of Mydidae which cannot be included in *Nomoneura* as redefined in this revision, nor in the other new genus *Arenomydas* described farther on. It is obviously very near both of these and to a certain extent also near *Neolaparopsis* and *Afroleptomydas* Beq. With *Nomoneura* and *Neolaparopsis* it agrees in having an entirely bare metanotum and pteropleuron; apex of first posterior cell in wings either shortly stalked or angularly subtending on costal margin; and in having rather elongate antennal clubs.

It however differs from *Nomoneura* in having the interocular space on vertex relatively much broader, much or very much broader than that on head below; in having relatively broader antennal clubs, even if these be also elongate; no visible or differentiated postvertical spines; some hairs always present across

hind margin of mesopleuron; wings usually darker, the apex of first posterior cell tending more to subtend or to open directly on costal margin (as in *Afro-leptomidas*), the hind border of wings not markedly or consistently much narrower than first and third posterior cells; central carina on last perpendicular sclerite in ♀♀ relatively shorter, less keel-like, more arched, and anal lobes below and between oviscape distinctly much larger; anal lobes in ♂♂ narrower, each more pointed apically; lateral lobes of tergite 9 in ♂♂ (cf. pl. 2, fig. 4) broader, shorter, posteriorly less sharply produced or pointed, more broadly rounded; processes of sternite 9 in ♂♂ more callipers-like, more curved inwards and downwards apically; aedeagal apparatus (cf. pl. 2, fig. 4) not three-pronged, but composed of two long, curved, separated, extrusible, phallic tubes, each of which is composed of two tubes (connected by membrane) fused together apically, the outermost one of these (the true phallic tubes) ending in a gonopore, and the innermost or anterior or dorsal one ending apically in an inwardly-curved, flattened, blade-like (pruning-knife-blade-like) process on outer side of each gonopore; epimere long, flattened and slightly curved up (or down) in apical part; sternite 9 itself smaller, smoother, and vertically keeled posteriorly, the keel itself semi-membranous (cf. side view in fig. 4, right, pl. 2).

From the genus *Neolaparopsis*, apart from differences such as wing-characters, absence of hairs on mesopleuron and a longer central carina on last perpendicular sclerite in ♀♀ which the latter shares with *Nomoneura*, it may at once be distinguished by the less flattened occiput, the less quadrate thorax, and the abdomen which is not distinctly narrowed waist-like and is not densely and coarsely punctured.

From the other new genus *Arenomydas*, which it also resembles in the structure and shape of the processes of sternite 9 in ♂♂, it differs in not having the mesonotal part of thorax above relatively coarsely sculptured; in having more hairs in ♂♂; hairs across hind margin of mesopleuron; fewer and usually shorter spicules on hind tibiae, especially along outer sides; in having apex of first posterior cell not so consistently stalked; hind margins of tergites, in known ♂♂ at least, usually more distinctly whitish or yellowish; processes of sternite 9 in ♂♂ usually less callipers-like, narrower; aedeagal apparatus different, in form of three separate processes as described above and shown in pl. 2, fig. 4, and not as shown in pl. 2, fig. 2, and composed of a tubular process ending in a shortish, central, dorsal epimere and a ventral process ending apically in two phallic tubes or tubules; and in having markedly larger anal lobes in ♀♀.

Representatives of this genus, as in the case of both *Nomoneura* and *Neolaparopsis*, appear to occur only in south-eastern and eastern Africa (see Map 2, No. 3).

The type-species of this genus is *Nomoneuroides natalensis* n.sp.

The known species of *Nomoneuroides* may be separated as follows:

I. (a) Males .. .. .	2
(b) Females .. .. .	3

2. (a) Vestiture on the whole longer, that on abdomen distinctly longer and denser, with longish hairs also on tergites 3 and 4, and those on 5-7 also rather long, and all hairs on abdomen and legs gleaming sericeous or silvery whitish; wings relatively less darkly infuscated, without any or with faint or scarcely perceptible fuscous borders along veins; processes of sternite 9 in side view broader at base and less than apical half slender, at first curving slightly downwards, then slightly upwards and straight to apex where it curves inwards . . . . . ♂ *natalensis* n.sp.
- (b) Vestiture relatively slightly shorter, that on abdomen distinctly shorter and sparser, with distinct longish hairs only on tergites 1 and 2, those on 3-7 very much shorter, and hairs on abdominal segments 3-7, on hypopygial structures, and on tibiae and tarsi dark or black; wings more darkly infuscated, all the veins with distinct, conspicuous, darker, fuscous borders; processes of sternite 9 in side view relatively narrower at base, with more than apical half slender, and almost straight from base to apex, only curving very slightly upwards and inwards apically . . . . . ♂ *melas* n.sp.
3. (a) Body mainly black, only clypeus sometimes, undersides of head, humeral tubercles, sides of thorax, two submedial discal streaks, postalar calli, metanotum or sides of it, infusion on propleurae, part of mesopleuron, pteropleuron, infusions on metapleural parts, hind margin of, or extreme sides of, tergite 1, extreme sides of abdomen to a variable extent, base of venter, sometimes hind margins of sternites, genital structures, sometimes hinder lateral parts of coxae, and greater part of legs reddish brownish or yellowish brownish; tergite 1 not so markedly depressed medially above; all veins in wings darker or blackish, and sometimes with darker or more conspicuous fuscous borders . . . . . 4
- (b) Body mainly, or at least with more extensive, reddish brownish or yellowish brownish, only top of head, sides of frons (or frons), apical part of antennal segment 1, segment 2, labella of proboscis, a broadish, central, discal streak on thorax, depressed junctions between metanotum and tergite 1 and tergites 1 and 2, narrow hind margins of tergites, especially discally, extreme sides of tergites, hind margins of sternites, greater part of pleurae and to a variable extent apical parts of middle and hind coxae, to a variable extent knees and apical parts of tarsi darkened or blackish; tergite 1 centrally distinctly more markedly depressed; veins in more or less anterior half of wings paler, more yellowish, and with much fainter, or sometimes scarcely evident, fuscous borders . . . . . 5
4. (a) Wings on the whole less darkly tinted, due to less dark or fainter fuscous borders along veins in anterior half; clypeus entirely dark or black; frons entirely black; scutellum more extensively, or entirely, yellowish brownish; middle of metanotum not or more narrowly black or dark; hind margins of tergites 1 and 2, even discally, broadly yellowish brownish, and rest obscurely dark reddish brownish; extreme sides of abdomen more distinctly, more conspicuously yellowish brownish; hind margins of sternites distinctly, or even broadly, reddish brownish; upper surfaces of femora entirely darkened; hairs on femora more fulvous; fine ones below basal segment of hind tarsi sparser, darker; fine hairs on tergites 1 and 2 distinctly longer and denser . . . . . ♀ *natalensis* n.sp.
- (b) Wings on the whole distinctly darker, the veins, even in anterior half, more broadly and conspicuously dark-bordered; clypeus pale yellowish- or reddish brownish; frons anteriorly and transversely tending to dark reddish; scutellum either entirely, or more extensively, black; middle of metanotum more broadly darkened; hind margins of tergites dark discally; extreme sides of abdomen from tergite 2 mainly black, only narrowly reddish brownish posteriorly; hind margins of sternites from 3 mainly black; femora only darkened apically above; hairs on femora dark; fine ones below basal segment of hind tarsi denser, more fulvous; fine hairs on tergites 1 and 2 shorter and sparser . . . . . ♀ *melas* n.sp.
5. (a) Frons medially with much or extensive reddish; pleurae only yellowish brownish along middle parts; abdomen above on the whole paler, paler yellowish brownish; hairs on last two abdominal segments slightly darker or deeper yellowish, more fulvous; hairs on coxae and legs mainly dark or with more dark ones; hairs below tarsi mainly fulvous; wings tinted deeper yellowish brownish, due to darker, more conspicuous, fuscous borders along veins in apical and hinder half . . . . . ♀ *brunneus* n.sp.

- (b) Frons entirely dark; pleurae more extensively yellowish brownish, latter occupying even much of its lower and upper parts; abdomen above on the whole slightly darker brownish, only last segment conspicuously yellowish reddish; hairs on last two abdominal segments paler, more yellowish than fulvous; hairs on coxae and legs, especially femora and tibiae below, mainly pale or with more pale ones; hairs below tarsi darker; wings tinted slightly paler yellowish, without any or with much fainter fuscous borders along veins in apical and hinder halves .. .. . ♀ *brunneus* var. *fuscifrons* n.

*Nomoneuroides natalensis* n.sp.

A characteristic dark or black Natal species which is characterized as follows:

*Body*, especially in ♂, mainly black, in ♀ with much yellowish brownish on thorax above, pleurae and sides of abdomen; antennae very dark blackish brown to black, in ♀ more dark reddish or reddish brownish, the clubs in ♂ sometimes more reddish subapically and in ♀ reddish in basal half or more; humeral tubercles in ♂ black, yellowish in ♀; postalar calli in ♂ obscurely dark piceous or reddish brownish; the following parts in ♀ reddish brownish to yellowish brownish: clypeus sometimes, lower parts of proboscis, infusion around humeral tubercles, broad sides of thorax, even much broader opposite wing-bases, a narrower submedial discal streak on each side from anterior infusion to middle or beyond middle, sometimes joining broad reddish brownish sides opposite level of wing-bases, base of thorax, scutellum, metanotum (except for dark central line), propleurae, greater middle parts of pleurae or their greater upper parts including metapleurae, sides basally, extreme sides and hinder parts on sides of tergite 1, or sometimes across its discal part as well, sides of rest of abdomen intramarginally to a variable extent, and venter to a variable extent up to end of sternite 5 or 6 or along sides of rest; coxae and legs in ♂ mainly black though front and middle tibiae more reddish brownish on outer hinder faces, in ♀, including coxae or at least front and middle ones, mainly reddish brownish or yellowish brownish, only the upper faces, especially apically of femora, and to a certain extent the knees blackened; hind margin of tergite 1 dark reddish brownish in ♀, darker or black in ♂, those of 2-7 in ♂ dirty yellowish whitish, in ♀ less conspicuously so and only on sides of 2-6; bullae dark blackish brownish, rather smallish in both sexes, more so in ♀, widely separated above; hinder parts on sides of last tergite in ♂ sometimes also yellowish; apices of processes of sternite 9 in ♂ yellowish reddish; hind margins of sternites, especially 1-4 or 5, obscurely yellowish, even more so in ♀.

*Integument* of head in front, except on sides, pleurae, except for tomented tubercle in front of halteres and metasternal parts, and most of abdomen, especially in ♀, shining; thorax above discally and metanotum dull; integument of abdomen above in ♂ transversely 'nadelrissig' or striate, more so on sides and posteriorly, with separated setiferous punctures, that in ♀ with minute, sparse, setiferous punctures, transversely wrinkled posteriorly, more distinctly so on tergite 7 and more coarsely so on 8; extreme sides of 2-5 in ♀ fairly densely subrugosely punctured.

*Vestiture* relatively longish and dense, especially in ♂, even on abdomen, shorter in ♀; that on thorax above in 4 streaks; hairs on abdomen in ♂ longish on tergites 1, 2 and sides of 3, and to a lesser extent 4, and as dense as puncturation; all the hairs on head and body greyish whitish, but reversed ones on last two segments in ♀ more greyish yellowish; hairs on legs longer and denser in ♂, with longish and dense ones on coxae and inner and lower sides of hind femora, very short and sparse in ♀, mainly greyish whitish in ♂, but slightly more yellowish or greyish yellowish in ♀; spines on hind femora dark brownish to blackish brown and spicules on tibiae almost black.

*Head* with the antennae distinctly longer than thorax (excluding scutellum), rather stoutish; segment 1 slightly thickened, about 2·6–3 times length of 2; segment 3 rather stoutish, especially in ♀ where it is relatively shorter than in ♂, in both sexes subequal in length to or only a little shorter than club, its apical fourth, or more, more or less thickened segment-like; club elongate, amphoriform, its basal part constricted, its apical part subconical to rather large crater-like tubercle, its thickest part from beyond middle in ♂, from about middle in ♀; clypeus rather short; proboscis shortish, stout, much shorter than vertical length of an eye, about 1·6–2 mm, its labella large, oval, subequal in length to stumpy base (excluding theca); palps minute, but distinct; distinct stoutish postvertical spines not evident.

*Wings* infuscated smoky brownish throughout, the infuscation sometimes darker as borders along veins; veins dark brownish to blackish brown; second submarginal cell with a tendency to be much narrowed apically; apex of first posterior cell angularly subtending on costal margin and very narrowly open; apex of discoidal cell shortly stalked to a variable extent; halteres dark, with almost black knobs.

*Legs* with the hind femora slightly, but distinctly, thickened in both sexes, armed below with a double row of spines from just before middle; tibiae relatively stoutish, their spicules well developed, though not long; basal segment of hind tarsi longer than claw-segment.

*Genital segment* in ♀ with the last vertical sclerite (tergite) punctured on sides of carina; oviscape with 8 or 9 reddish brownish to brown spines on a side; lobes below oviscape rather well developed, large, lobe-like rounded, punctured.

*Hypopygium* of ♂ (pl. 2, fig. 4) with the lateral lobes of tergite 9 broadish, subtruncate apically, covered with the coarse, separated, setiferous punctures and markedly long hairs; sternite 9 large, shining, laterally compressed apically in form of a distinct, vertical, pale, keel-like semi-membranous carina; processes of sternite 9 rather long, curving inwards apically, gradually narrowed apically, bluntly rounded apically, in side view at first curving slightly downwards, then slightly upwards and again downwards apically, a little less than apical half slender, hollowed below; aedeagal apparatus as described for genus and as figured and, when exerted, the apparatus is in form of three long upwardly curved rods.

From 5 ♂♂ and 2 ♀♀ (♂ holotype, ♀ allotype and 4 ♂ paratypes in the



South African Museum, and 1 ♀ paratype in the Transvaal Museum).

Length of body: about 13·5–19·5 mm

Length of wing: about 10·5–14·5 mm

*Distribution*: Natal: Durban (C. Booth, January–March 1959) (♂ holotype, ♀ allotype and 3 ♂ paratypes); Durban (G. van Son, 1st–6th March 1960) (1 ♀ paratype); Umhlanga Rocks (E. McC. Callan, January 1955) (1 ♂ paratype).

*Nomoneuroides melas* n.sp.

This black and dark-winged species, which appears to be the Delagoa Bay representative of *natalensis*, may be easily recognized by the following characters:

*Body* with the entire integument more or less shining; ♂ mainly black, including antennae, clypeus, proboscis, greater part of humeral tubercles, pleurae and legs, but lower part of humeral tubercles yellowish and front and middle tibiae as well as inner and lower faces of front femora sometimes more brownish; ♀ with the antennae from base of segment 3 reddish brownish, and following parts pale yellowish brownish or reddish brownish; middle part of face, clypeus, head below, middle part of proboscis, humeral tubercles, broad sides of thorax, an anterior infusion on inner sides of humeral tubercles on each side, extending posteriorly as a short, submedial, discal line, the propleurae in part, upper parts of pleurae, metanotum up to middle on each side, sides anteriorly and extreme sides of tergite 1, base laterally of 2, outer and hinder faces of coxae and the legs, excepting the dark upper apical parts of front and middle femora, bases of tibiae and upper parts of tarsi; hind margins of tergites 2–7 in ♂ and 2–6 in ♀ yellowish; bullae shining black; extreme sides of tergites in ♀ with reddish yellowish to a variable extent, especially posteriorly; venter in both sexes mainly dark, but hind margins of sternites 1–4 more dirty yellowish; posterior face of genital segment in ♀ reddish brownish.

*Vestiture* in ♂ rather sparse, but longer and denser than in ♀; that on head and sides of tergites 1 and 2 denser, the sparse ones on thorax above concentrated on sides and in two submedial discal streaks, separated by bare streaks; pleural parts bare, except for a sparse tuft across hinder part of mesopleuron and on tubercle in front of halteres; sparse hairs on antennal segments 1 and 2 black; rest of hairs on head, thorax, pleurae, tergites 1 and 2, on venter basally across prosternum and metasternum whitish; short ones on rest of abdomen above and longer ones from sternite 4 to apex dark or black; those on hypopygium posteriorly and below processes of sternite 9 more pale yellowish brownish; hairs on legs in ♂ not very long and dense, black on coxae in front, dark or black on femora above, pale on hind ones below and dark on all the tibiae and tarsi; spines on legs reddish; vestiture in ♀ very poorly developed, very short and sparse, the body almost bare, the hairs however coloured as in ♂, the hairs on head much shorter and sparser than in ♂, those on abdomen above minute and sparse up to tergite 6, longer and denser, more fulvous brownish on terminal

segments; hairs on legs in ♀ shorter and sparser than in ♂, entirely black, excepting the reddish golden spinules on tarsi below and reddish spines and spicules on rest of legs.

*Head* with the antennae shorter than thorax (excluding scutellum); segment 1 about 4–4.8 times length of relatively short segment 2; segment 3 thickened segment-like apically, a little longer than club; latter elongate, amphoriform, much longer than broad, narrowed bottle-neck-like basally, its apical fourth, or a little less, narrowed, more so on inner lower aspect, covered with dense minute hairs and ending in a truncated, crater-like tubercle; proboscis short, rather stoutish, ending in a rather broad, oval labella, quite as long as stem of proboscis up to theca; palps distinct, short, thumb-shaped; clypeus short and narrow.

*Wings* distinctly tinted smoky brownish throughout, with black veins and rather conspicuous fuscous borders along veins (broader along bases of second submarginal and first posterior cells in ♀); membrane of wings markedly crinkled; first posterior cell apically rather narrowly touching costal margin; halteres dark, with black knobs.

*Legs* with hind femora slightly thickened, armed below with a double row of spines from a little before middle; hind tibiae rather stoutish and in ♀ with rather numerous spicules below in apical half; basal segment of hind tarsi relatively thick, longish, densely brush-like hairy below.

*Oviscape* in this single ♀ specimen with 11 spines on left and 9 on right.

*Hypopygium* of ♂ with the lobes of tergite 9 broad, obtusely and subtruncately rounded posteriorly; sternite 9 laterally compressed in its apical half where it also has a semi-membranous, pallid, medial keel ventrally and posteriorly; processes of sternite 9 long, more than apical half slender, broadish, bluntly rounded apically and directed inwards and slightly downwards, and in side view almost straight; aedeagal apparatus in form of a slender, dorsal epimere and two separated, sharply pointed, phallic tubes.

From 2 ♂♂ and 1 ♀ in the South African Museum.

Length of body: about 15–20 mm

Length of wing: about 12–15 mm

*Distribution*: Portuguese East Africa, Delagoa Bay: Inhaca Island (E. McC. Callan, December 1954) (types and paratype).

This species differs from *natalensis* in having the lower part of humeral tubercles in ♂ obscurely yellowish, facial part and clypeus in ♀ reddish brownish, darker scutellum, broader, dark, central fascia on metanotum in ♀, less yellowish brownish on extreme sides of abdomen in ♀, less conspicuous yellowish hind margins to tergites, darker discal parts of hind margins in ♀, much darker hind margins of sternites in both sexes, relatively shorter hairs, especially in ♀, shorter ones on tergites 3 and 4 in ♂, shorter hairs in ♂ on rest of abdomen, darker ones on abdomen posteriorly in ♂, darker hairs on femora in ♀, slightly darker wings with more conspicuous and striking fuscous borders along veins, relatively longer first antennal segments, more apically pointed lobes under

oviscape in ♀, and slightly longer slender part of processes of sternite 9 in ♂.

*Nomoneuroides brunneus* n.sp.

Still another species belonging to the *natalensis* and *melas* section, but unfortunately represented by ♀♀ only in the collections before me. The ♀♀ are characterized as follows:

*Body* mainly yellowish to ochreous brownish, the humeral tubercles, propleural tubercles, and legs slightly paler, more yellowish, the following parts dark, dark blackish brownish or blackish: apical part or half of antennal segment 1, segment 2, apical parts of clubs, vertex, sides of frons, an infusion or spot behind antennae, sides of face, greater part or labella of proboscis, a broadish central streak on thorax, becoming narrower posteriorly, upper part or half of mesopleuron behind humeral tubercles to a variable extent, prosternal part, lower half of sternal part of pleurae, posterior and anterior parts of metapleural tubercle in front of halteres, knobs of latter, narrow front margin and broader hind margin of tergite 1, broadish front margin of tergite 2, bullae, hind margins discally of tergites 2-7, extreme sides of tergites to a variable extent, hind margins of sternites, apical margins of coxae, hinder parts of trochanters, extreme apices of femora to a variable extent, extreme bases and apices of tibiae, apical halves or more, or even entire, front and middle tarsi, apical part of hind ones, apices of claws, and pulvilli; hind margins of tergites 2-5 or 6 on sides dirty yellowish whitish.

*Integument* of frons, clypeus, pleurae and to a large extent abdomen above shining; that of thorax above duller, also on anterior half of scutellum and on metanotum; abdomen above with a central groove or depression on tergite 1.

*Vestiture* poorly and sparsely developed as in ♀ of *melas*, that on head, sides of thorax, in two submedial discal streaks on thorax, on propleurae, hinder part of mesopleuron, metapleural tubercles, extreme sides basally of tergite 1, hind margin of metasternum and outer sides of hind coxae slightly longer, more evident and silvery whitish; abdomen above almost bare, with sparse, minute hairs discernible only on tergites 1 and 2, also whitish; hairs on antennal segment 2 dark; reversed hairs on last two abdominal segments slightly denser, longer, fulvous; spines of oviscape yellowish brownish and hairs on genital lobes pale yellowish; hairs on femora very short, relatively sparse, entirely dark as are also those on coxae, tibiae and upper parts of tarsi; denser ones on tarsi below more fulvous yellowish.

*Head* with the antennae as in *melas*; segment 3 however only a little longer than elongated, amphoriform club; proboscis also short, stoutish, about 1.6-1.8 mm long, its oval labella subequal in length to or only a little shorter than basal stem; palps minute, but distinct.

*Wings* tinted yellowish brownish throughout and veins in apical and hinder half with conspicuous, dark, fuscous borders; veins mainly yellowish.

*Legs* with the hind femora only slightly thickened, armed below with a double row of yellowish reddish spines from a little before middle; basal seg-

ment of hind tarsi rather long, longer than claw-segment.

*Oviscape* with about 9–10 spines on a side.

From 2 ♀♀ in the South African Museum.

Length of body: about 16–18 mm

Length of wing: about 12–13 mm

*Distribution*: Portuguese East Africa, Delagoa Bay: Inhaca Island (E. McC. Callan, December 1954) (holotype and paratype).

*Nomoneuroides brunneus* var. *fuscifrons* n.

Two other ♀ specimens from Natal are also provisionally referred to *brunneus* as a special variety *fuscifrons*. They differ from the typical form in having the entire frons and antennal segment 1 dark; the pleurae more extensively ochreous brownish, only the hinder upper corner of mesopleuron being dark, much of the lower parts of pleurae also ochreous; abdomen above on the whole slightly darker, only last segment conspicuously yellowish reddish; hairs on last two abdominal segments paler, more yellowish than fulvous, those on coxae and legs, especially femora and tibiae below, mainly pale or with more pale ones; hairs below tarsi darker, not fulvous; claws tending to be darker; wings tinted slightly paler yellowish, without any or with much fainter borders along veins in apical and hinder half.

Holotype of variety in the Transvaal Museum and paratype in Natal Museum.

Length of body: about 17–17.5 mm

Length of wing: about 12–13 mm

*Distribution*: Natal: Mtunzini (Bell Marley, 4th April 1926) (holotype); Winkelspruit (Bell Marley, 26th March 1922) (paratype).

**ARENOMYDAS** n.gen.

*Midas* Wiedemann, 1828: 580.

*Cephalocera* Macquart, 1838: 14. Gerstaecker, 1868: 80–81.

*Nomoneura* Bezzi (in part), 1924b: 226. Séguy (in part), 1928: 134 and 146. (n.syn.)

This new genus is erected to accommodate the species *Midas callosus* Wied., *Cephalocera partita* Gerst., and *Cephalocera nigra* Macq., as well as a few other new South African forms which cannot be allocated to any of the other known genera. The three former species were placed in the genus *Nomoneura* by Bezzi in 1924. As stated under *Nomoneura* Bezz. *s.str.* in this revision these three species cannot be retained in that genus. Their genital structures, especially the aedeagal characters, differ from those of *Nomoneura* to such an extent that they merit inclusion in a separate genus which appears to resemble the North African genus *Syllegomydas* Beck., to a certain extent in the apically stalked first posterior cell.

Representatives of this new genus agree with the genus *Nomoneura* Bezz. *s.str.*, as redefined in this paper, in the poor development of hairs on the body, especially in ♀♀; entire absence of hairs on the metanotum and usually also on pteropleuron, and along hind margin of mesopleuron; the distinctly apically stalked

first posterior cell in the wings; and the often rather elongate, more amphoriform antennal clubs.

They, however, differ in the following assemblage of characters: the consistently shorter, more shell-like lobes of tergite 9 in ♂♂ which are more broadly rounded posteriorly; the often rather much developed sternite 8 which may almost cover sternite 9; the usually more callipers-like processes of sternite 9, curving inwards or touching apically, their dorsal parts more convex, usually directed more laterally and grooved parts below directed more inwardly and then directly ventrally; aedeagal apparatus not typically three-pronged (the three elements directed in the same way) as in *Afroleptomydas* and *Nomoneura*, but in form of a single ventral aedeagal process below the dorsal epimere (the latter lobe-like or tongue-shaped, and often short) which apically splits into two divergent, outwardly, or even downwardly, curving phallic tubes, fork-like or anchor-like (cf. pl. 2, fig. 2 and text-figs 9-13); sternite 9 itself smaller, smoother, but also vertically carinate below apically and usually slightly laterally compressed apically; distinctly and relatively shorter vertical carina on last vertical sclerite above oviscape in ♀♀; hind tibiae usually with longer, more conspicuous and more numerous spicules, especially on outer sides; mesonotal part or disc of thorax above in most species more coarsely sculptured in form of streaks of fine and coarser rugulose sculpture; hind margins of tergites usually not conspicuously whitish or yellowish whitish (though in some species of *Nomoneura* these are also absent); discal parts of some of the tergites, or in some cases entire abdomen above, especially in ♀♀, often ochreous or yellowish; first posterior cell in wings usually with a longer, more consistent, apical stalk; usually broader interocular space on vertex; antennal club not invariably elongated amphoriform, sometimes more elongate-pyriform; post-vertical spines not always differentiated or distinctly spine-like; and silvery or pale tomentum wanting or relatively poorly developed or scarcely evident.

From the genus *Nomoneuroides* it differs in the marked sexual dichroism and to a certain extent also dimorphism of some of the species; in having no hairs along hind margin of mesopleuron; different type of aedeagal apparatus in ♂♂; a usually longer, more consistent, apical stalk to first posterior cell; usually more numerous spicules on hind tibiae; and in having the disc of thorax above usually more sculptured.

From the North African *Syllegomydas* Beck., it may at once be distinguished by the longer proboscis, the more coarsely sculptured thorax above, less developed hair, entirely bare metanotum and pteropleuron, more strongly developed, or more numerous, spicules on hind tibiae, and the different type of aedeagal structure in ♂♂.

In their geographical distribution (see Map 2, No. 4) the species of this new genus appear to occur only in the south western and western semi-arid parts of South Africa, more particularly along the coastal belt from Cape Town northwards to Namaqualand and Bushmanland. They seem to prefer the sandy and dune-sand type of environment and the sclerophyll-type of scrub covering

this coastal belt. Another characteristic of this genus is the marked dichroism exhibited by some of the species; the ♂♂, or sometimes the ♀♀, showing marked colour differences.

The type-species of this new genus is *Midas callosus* Wied. (1828). The known species of this genus may be separated as follows:

1. (a) Pleurae and abdomen, or greater part of it, usually distinctly more shining, the fine areolar microsculpture less conspicuous, and abdomen, if much dulled by fine leathery or areolar microsculpture, usually with more reddish or dark reddish hind margins or with some yellowish or ochreous discally above; apical sensory area of antennal clubs more obliquely truncate or sloping more conically to terminal tubercle; clypeus more normally convex, relatively smaller; hind tibiae usually with more numerous spicules and usually with more numerous ones along outer face; first posterior cell in wings usually with a longer apical stalk; processes of sternite 9 in known ♂♂ relatively shorter, less S-curved; epimere of eadeagal apparatus in ♂♂ usually longer, sometimes as long as the ventral aedeagal process bearing the phallic tubules . . . . . 2
- (b) Pleurae and abdomen, or greater part of it, less shining, much duller, due to more conspicuous, fine, areolar microsculpture, and abdomen usually with tergites 1-3 or 4 much duller, even more shagreened in appearance, and entirely black, without any reddish hind margins or ochreous discally; apical sensory area of antennal clubs distinctly more sharply or more concavely truncate below terminal tubercle; clypeus either larger, more prominent, or more markedly convex, protuberant or inflated; hind tibiae with relatively few spicules, either without any or with only very insignificant ones, or with much fewer, along outer sides; first posterior cell with a shorter apical stalk or even angularly subtending directly on costal margin; processes of sternite 9 in known ♂♂ relatively longer, more slender, more S-curved; epimere of aedeagal apparatus much shorter than ventral part bearing the two phallic tubules . . . . . 10
2. (a) Hind tibiae, with more numerous spicules and with many of these also along their outer faces, and hind femora often with additional spines (1-5) dorso- or latero-apically; claws stouter in both sexes and even in ♀♀ more rapidly curved down apically, the pulvilli in ♀♀ not markedly shortened; antennal club more elongate, conical, more club-shaped, not much inflated or, in profile, bell-shaped and apically usually more obliquely sloping up to terminal prominence; sides of thorax above without any or with more widely spaced oblique rugae; abdomen, even if black, without distinct or conspicuous bluish or violaceous reflections, its integument, apart from the transverse striae or wrinkles posteriorly in ♀♀, either finely 'nadelrissig' punctate in part or to a variable extent, or with very fine areolar microsculpture, the individual setiferous punctures usually more transverse . . . . . 3
- (b) Hind tibiae with distinctly or relatively fewer spicules, with fewer or none of these along their outer faces, and hind femora without any dorso- or latero-apical spines; claws distinctly more slender, relatively longer in ♂♂ and though more rapidly curved down apically in ♂♂ than in ♀♀, less so than in preceding group, the pulvilli in ♀♀ distinctly or markedly shortened; antennal club proportionally shorter, more inflated, in profile bell-shaped or subpyriform, apically more sharply truncate or subtruncate below prominence; sides of thorax with more or denser oblique rugae; abdomen either entirely black or piceous brownish or dark reddish brownish (with darker hind margins), with distinct or more conspicuous bluish or violaceous reflections, its integument, apart from the usual transverse striae or wrinkles posteriorly in ♀♀, smoother in both sexes, more shining, without any distinct microsculpture, the individual setiferous punctures usually more rounded . . . . . 9
3. (a) More plump and bulky or stoutish species, with plumper, stouter and proportionally shorter abdomen, the latter, if orange yellowish or with some orange yellowish, usually so mainly in ♂♂, the ♀♀ usually being entirely dark or black; hind margins of tergites not, or scarcely, reddish; integument of abdomen, especially in ♀♀, more shining, in both sexes either leathery or with the sculpture transversely striate or 'nadelrissig' in part or on sides of some segments, the individual setiferous punctures being more transverse,

- the last two segments in ♀♀ being more densely transversely striate; hind femora, especially in ♂♂, more distinctly thickened and apically in both sexes usually with from 1-5 dorso- or latero-apical spines; wings relative to abdomen, much longer .. 4
- (b) Relatively more slender species, with more slender abdomen which is more often more distinctly curved down apically, and middle tergites 2-4 and 5 in ♂♂ and 2-5 and 6 in ♀♀ infused discally to a variable extent with ochreous yellowish or yellowish brownish, more broadly so in ♀♀; hind margins of these tergites yellowish reddish or reddish to a variable extent; integument of abdomen in both sexes less shining, due to very fine areolar microsculpture, especially on tergites 1-4 or 5, the last two segments in ♀♀ usually more coarsely and more sparsely wrinkled, and individual setiferous punctures, if any, minute or rounded; hind femora in both sexes less thickened, without any dorso- or latero-apical spines; wings relative to abdomen much shorter .. .. . 8
4. (a) Smaller forms, only about 10-15 mm; ♂♂ with the abdomen either mainly orange or ochreous yellowish, or entirely dark or black; wings tinted darker, more smoky brownish, brownish black to almost black; antennae relatively much shorter, not, or scarcely, or only a little, longer than width of head across eyes; hairs on abdomen distinctly less dense, relatively shorter, those on tergites 1 and 2, especially 2, and rest of abdomen and on venter in ♂♂ much shorter and sparser, and in ♀♀ very poorly developed or almost absent; hairs on femora in ♂♂ distinctly much shorter; legs in ♀♀ darker or even mainly black .. .. . 5
- (b) Larger species, about 15.5-21 mm; ♂ with the abdomen yellowish to orange yellowish, only base being black and posterior part sometimes darkened to a variable extent, that of ♀ more consistently black, rarely infused with yellowish brownish above; wings yellowish to pale yellowish brownish; antennae relatively longer, much longer than width of head; hairs on abdomen distinctly denser, longer, especially in ♂, even on tergite 2, rest of tergites and on venter, and, though short, also more distinct and denser in ♀ on tergites 1-3 or 4; hairs on femora of ♂ distinctly longer and denser; legs in ♀ paler, yellowish .. .. . ♂ ♀ *partitus* (Gerst.)
5. (a) Thorax above with three broadish streaks of dense, fine or coarser rugulose sculpture, separated submedially above on each side by a narrower streak of setiferous granules; wings on the whole darker, more smoky brownish to almost black, especially in ♀♀, with a greater tendency for base of second submarginal cell to be narrowed; legs in ♀♀ much darker or mainly black, in ♂♂ either mainly dark or yellowish; disc of thorax in ♀♀ usually entirely black or, if with two reddish submedial streaks, these are obscure or indistinct; abdomen, especially in ♀♀, relatively longer, more slender, usually projecting much beyond wings, the transverse striation tending to be more confined to last two segments .. .. . 6
- (b) Thorax above dull, mainly smooth, without any rugulose sculpture, the dull streaks also separated by two submedial streaks of minute setiferous granules; wings distinctly more brownish than blackish, with base of second submarginal cell more often normally broad; legs in ♀ paler, more consistently brownish; disc of thorax in ♀ with two broader, more conspicuous, reddish, submedial streaks, and sides of thorax sometimes also reddish; abdomen in ♀ at least rather broad and short, not, or scarcely, projecting beyond wings, the transverse striation tending to be more extensive, extending also across tergite 6 or even sides of 5 .. .. . ♀ *sentipes* n.sp.
6. (a) Abdomen and legs in ♂♂ either mainly orange yellowish to a variable extent, or abdomen above infused with piceous or dark reddish brownish to a variable extent, and legs mainly yellowish brownish; hairs on head in front in ♀♀ very short or minute, entirely dark, only those below longish and greyish whitish; shortish hairs on abdomen in ♂♂ slightly longer and denser; last two abdominal segments in ♀♀ more coarsely striate; anal lobes in ♂♂ relatively much longer, each more sharply pointed .. .. . 7
- (b) Abdomen in both sexes entirely black, and legs in both sexes much darker, the femora mainly blackish; hairs on head in front in ♀ distinctly very much longer, more ♂-like, entirely greyish whitish to white; shortish hairs on abdomen in ♂ slightly shorter and sparser; last two abdominal segments in ♀ more closely and densely striate; anal lobes in ♂ very much shorter, each more rounded apically .. .. . ♂ ♀ *niger* (Macq.)

7. (a) Abdomen and legs in ♂ mainly orange yellowish, that of ♀ black though last segment sometimes shining through piceous brownish; wings smoky brownish in ♂, darker, more blackish or black in ♀, their apices more contrastingly clearer or whitish; hind margins of tergite 7 in ♂ and 8 in ♀ without any or with finer puncturation discally across; hairs in streaks on thorax above in ♂ paler, more fulvous or fulvous reddish, and those on abdomen appearing more yellowish; legs in ♂ stouter, the hind femora slightly thicker; spines on ovicape in ♀ fulvous or reddish . . . . . ♂ ♀ *callosus* (Wied.)
- (b) Abdomen in ♂ very much darker, almost black, but showing through dark piceous reddish, and femora darker, more brownish; wings very dark, almost black, in both sexes, their apices distinctly less contrastingly clearer or whitish; hind margins of tergite 7 in ♂ and 8 in ♀ with distinctly coarser puncturation discally across; hairs in streaks on thorax in ♂ darker, more dark fulvous brownish, and those on abdomen appearing more blackish; legs in ♂ thinner, the hind femora less thickened; spines on ovicape in ♀ distinctly darker . . . . . ♂ ♀ *callosus* var. *thorni* n.
8. (a) Legs paler, more yellowish or mainly yellowish, only hind femora above sometimes brownish to a variable extent; abdomen above duller, in ♂ entirely dark or with tergites 2-4 only obscurely infused with reddish brownish discally, in ♀ with extensive, conspicuous, ochreous yellowish, discal infusions on tergites 2-5 or 6; hind margin of scutellum reddish; thorax above in ♀ with a more distinct reddish yellowish infusion on each side anteriorly, extending backwards as a submedial reddish streak of variable extent; hairs on head, thorax above, pleurae, abdomen, coxae and femora dark or more brownish in both sexes; hind border and middle of cells in hinder half of wings less contrastingly clearer . . . . . ♂ ♀ *namaquensis* n. sp.
- (b) Legs darker, more dark brownish or castaneous brownish, the femora above even more blackened; abdomen above more shining, in ♂ with tergites 2-4 discally more extensively yellowish or yellowish brownish, in ♀ with less extensively yellowish discal infusions, being only evident across hinder parts and narrowly along middle of tergites 2-4; hind margin of scutellum darker or black; thorax above in ♀ without distinct reddish discal lines; hairs on head, body, coxae and femora in ♂ entirely whitish, but short and dark in ♀; hind border and middle of cells in hinder half of wings more contrastingly clearer or hyaline . . . . . ♂ ♀ *lightfooti* n. sp. (= *niger* Bezz. nec. Macq.)
9. (a) Abdomen darker, entirely black, with distinct dark bluish reflections; legs on the whole darker, the femora more castaneous brownish, even darker above, and hind ones thicker; wings tinted slightly darker, more uniformly brownish, the apex of first posterior cell less angular; hairs on abdomen in ♂ relatively shorter, less dense . . . . . ♂ ♀ *caerulescens* n. sp.
- (b) Abdomen and to a certain extent pleurae more piceous to reddish brownish with hind margins of tergites appearing darker, with more violaceous reflections; legs, including femora, distinctly paler, more yellowish, and hind femora less thickened; wings tinted paler, more yellowish, the base being even more hyaline, with apex of first posterior cell tending to be more angular; hairs on abdomen in ♂ relatively longer and denser  
♂ ♀ *caerulescens* var. *aridicolus* n.
10. (a) Proboscis very much longer, longer than antennae or thorax, quite 3.2 mm; antennae more slender, segment 3 longer, the clubs more elongate-pyriform; clypeus longer, more conical apically above, more brilliantly shining, and with much fewer hairs on it; pleurae duller, with relatively coarser microsculpture, and with a conspicuous yellowish whitish, conspicuously whitish-tomented spot or infusion posteriorly; metanotum with distinctly coarser rugulose sculpture; hairs on head above, relatively longish ones on thorax, and fine ones at base of abdomen more whitish; wings relatively narrower, the basal third or less of first basal cell more conspicuously clearer; apex of discoidal cell stalked; lower vein of anal cell markedly sinuous; hind femora thickened, but with shorter slender base, less clavate, with darker spines; hind tibiae with a few longish spicules also along outer face . . . . . ♀ *pleurostictus* n. sp.
- (b) Proboscis reduced, very short, stumpy, confined to buccal cavity or scarcely projecting beyond it; antennae stouter, segment 3 proportionally stouter, slightly shorter, the clubs distinctly more elongate-trapezoidal; clypeus shorter, broader, more transversely tumid or inflated lip-like, with more hairs on it; pleurae more subshining, the microsculpture



less shagreened, without any tomented pale spot; metanotum with finer sculpture; hairs on head above, much shorter ones on disc of thorax, on pleurae and base of abdomen darker; wings relatively broader, the base of first basal cell scarcely or not much less clearer; apex of third posterior, not discoidal, cell stalked; lower vein of anal cell less conspicuously sinuate; thickened hind femora with a longer slender basal part, more clavate, with more reddish spines; hind tibiae without any distinct spicules along outer faces .. .. . ♂ ♀ *bunochilus* n.sp.

*Arenomydas callosus* (Wied.) n.comb.

*Midas callosus* Wiedemann, 1828: 580. Wiedemann, 1829: 55, pl. 54, fig. 22.

*Cephalocera callosus* Westwood, 1841: 55. Gerstaecker, 1868: 80.

Some ♂♂ and ♀♀ in the South African Museum collections agree with Wiedemann's description and are to be referred to *callosus* which, together with the series of species described below, belong not to *Nomoneura* as was maintained by Bezzi but to the new genus *Arenomydas* as defined in this revision. In his paper on the Mydidae of South Africa Bezzi (1924b: 226) confused an entirely different species, described farther on, with the *callosus* of Wiedemann.

The true *callosus*, as based on the material in the South African Museum, is here redescribed and is characterized as follows:

*Body* in ♂ with the front part mainly dark or black and abdomen mainly yellowish; antennae up to end of segment 3 brownish to dark blackish brown, the clubs for the greater part orange yellowish, but their apices dark; clypeus black; pleurae mainly black to blackish brown, the metasternal and often the posterior episternal parts more yellowish; tergite 1 often broadly darkened discally; sides of yellowish abdomen from sides of tergite 3 usually infused with reddish or reddish brownish, which almost occupy entire 6 and 7; venter paler yellowish, sometimes becoming darker posteriorly; bullae yellowish brownish to dark brownish, narrowly dark-margined, bean-shaped, but more pointed towards dorsum, separated by a space narrower than vertical length of a bulla; apical part of lobes of tergite 9, outer parts of anal lobes and bases of processes of sternite 9 darkened or blackened to a variable extent; legs, including coxae, mainly yellowish, though bases of latter darkened to a variable extent, and apices or apical parts of hind femora, and sometimes extreme bases of hind tibiae above also obscurely darkened, more brownish.

*Body* in ♀ entirely or mainly dark or black, the apical two-thirds or less of antennal clubs dark reddish; base of proboscis and palps more reddish brownish; two submedial discal streaks on thorax above, becoming fainter posteriorly and extending broadly around inner side of humeral tubercles sometimes obscurely dark reddish to a variable extent; hind margins of tergites 1-3 obscurely dark reddish; bullae yellowish, much smaller than in ♂ and farther apart; last tergite and sides of 7 also more or less showing through obscurely reddish; legs mainly dark or blackish brown, the apical parts of coxae, to a variable extent lower parts of trochanters, and extreme apices of femora, yellowish brownish, the front and middle tibiae sometimes also more yellowish brownish, extreme bases of hind ones of the same colour, and all the tarsi also yellowish brownish.

*Integument* of middle parts of frons, clypeus, head below, pleurae and sides of metanotum, and in ♀ also greater part of head in front, shining; that of thorax above duller, with three discal, dull, bare streaks, finely rugulose, the middle one finer, separated by streaks of fine separated granules or aciculated punctures, bearing the hairs, the postalar calli and scutellum smoother, more shining; abdomen above in ♂ more or less shining, but covered with setiferous punctures and transversely 'nadelrissig' on tergites 2 and 3 and to a lesser extent on 4 and 5, and tergite 7, and to a certain extent sides of 6, slightly transversely wrinkled; abdomen in ♀ more shining, with sparse puncturation, especially on tergites 3-8, becoming slightly denser posteriorly as well as on sides, and with tergites 7 and 8 transversely striated, more coarsely on 8; integument of femora, especially hind ones, rather transversely wrinkled.

*Vestiture* relatively poorly developed, longer and denser in ♂, the ♀ almost bare, with very much shorter and sparser hairs; longish hairs on head, extreme sides of thorax above, on propleural part, tuft in front of halteres, sides of tergite 1 and in part on sides of metasternum and hind coxae in ♂ snow whitish; those at apex of palps in ♂ fulvous reddish; those along two submedial streaks on thorax above and along inner margin of the white lateral ones in ♂ reddish fulvous to purplish brownish; shortish decumbent hairs on rest of abdomen above in ♂ brownish or dark, appearing more brownish or reddish fulvous in certain lights; hairs on hypopygial parts and last two sternites dark, except for yellowish ones at apices of anal lobes and some on inner sides apically of processes of sternite 9; fine hairs on venter in ♂ mainly fulvous reddish as are also fine ones on coxae.

*Vestiture* in ♀ not only very poorly developed, but to a certain extent also coloured differently, the sparse short ones on vertex and head in front black and longish sparse ones on head below and on occiput on sides behind eyes greyish whitish; short, sparse, decumbent ones along streaks on thorax above dark or blackish, those along the two submedial streaks however sometimes slightly dark fulvous brownish; very short and sparse hairs in front of halteres and on abdomen above dark or black, and longer reversed ones on last two segments also black; fine, short, sparse ones on coxae fulvous brownish; hairs on legs shorter than in ♂, those on front and middle legs more dark fulvous brownish and not so yellowish as in ♂, and those on hind femora mainly dark as in ♂; hairs on inner aspect of hind tibiae shorter than in ♂ where they are either yellowish or dark; spines and spicules on legs reddish in both sexes.

*Head* with the antennae distinctly longer than thorax (excluding scutellum); segment 1 comparatively short, about 2.6-3 times length of 2; segment 3 slightly variable in length, relatively shorter in some ♂♂ than in ♀♀, but in others longer than in ♀♀, its apical fourth or fifth slightly thickened; club elongate, also variable in length, relatively and proportionally longer in ♀, more often slightly longer than segment 3, a little less than its basal third in ♀ constricted bottle-neck-like, less so in ♂; proboscis in ♂ usually a little shorter than vertical length of eye, in ♀ as long as, or even a little longer than, this

length; palps distinct, a little longer than antennal segment 2; postvertical spines not distinctly differentiated.

*Wings* tinted smoky brownish, darker and more blackish in ♀ and in ♀ also more so anteriorly and along veins in hinder half, with the greater part of first posterior cell and apex appearing contrastingly clearer or whitish, especially in ♀; veins brownish to dark brownish; second submarginal cell tending to be much narrowed apically, sometimes even angularly closed or even shortly stalked on second vein; first posterior cell relatively broad; apex of discoidal cell shortly stalked; apical stalk of anal cell rather long; knobs of halteres yellowish brownish to dark brownish above.

*Legs* stouter in ♂ than in ♀; hind femora in ♂ distinctly thickened, scarcely so or only very slightly so in ♀, armed below with a double row of reddish or fulvous reddish spines from just before middle and also with some distinct spines along upper lateral or dorsal part in apical part, more so in ♂; basal segment of hind tarsi longer than claw-segment, relatively longer in ♀.

*Oviscape* in ♀ armed with 7 or 8 slender, reddish spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 obtusangular apically; sternite 8 rather large, often containing and projecting beyond 9; processes (text-fig. 9, left) of sternite 9 callipers-like, directed inwards, their apices touching or even slightly crossing, bent downwards apically, slightly depressed or hollowed above in basal half, slightly more than apical half punctured above and on sides, the lower surface deeply hollowed out and outer edge of this fairly densely haired; aedeagal apparatus (text-fig. 9, right) conical, narrowed apically, there with the ventral aedeagal process ending into two shortish, divergent, phallic tubules which are longer than the dorsal epimere.

Length of body: about 11·5–13·5 mm (a ♀ the longest)

Length of wing: about 9–10·5 mm

*Distribution*: Western Cape Province: Strandfontein in Cape Peninsula (C. Thorn, November 1960); Cape Flats (J. Theron, November 1947); Hopefield (South African Museum, September 1960).

The species appears to be subject to slight variability. Some ♂♂ from the Hopefield area have the discal part of tergite 1 darkened to a variable extent. The ♀ from the same locality has two submedial, dark reddish streaks discally on thorax in anterior half, and the second submarginal cell in specimens from the same locality tends to be sometimes less markedly narrowed apically than in the Cape Peninsula specimens.

*Arenomydas callosus* var. *thorni* n.

A mainly dark or black, also slightly variable, geographical variety of *callosus* merits a separate varietal status on account of the little sexual dichroism that exists between ♂ and ♀. It differs from the more typical form and its aberrations in the following respects:

*Body* in ♂ mainly dark, though the abdomen is infused with obscure dark piceous reddish, and legs in ♂ also slightly darker or with at least the coxae dark

and femora slightly more brownish than yellowish.

*Body* in ♀ coloured as in typical ♀, entirely black, though last abdominal segment is also entirely black, not showing through piceous brownish or reddish; spines on oviscapae darker, blackish brown to black.

*Integument* of the head and body with the same parts shining, the sculpture on thorax above, and puncturation and striation on abdomen, similar to those of the more typical ♂♂ and ♀♀, though hind margins of tergite 7 in ♂ and 8 in ♀ with apparently more and coarser puncturation discally across.

*Vestiture* very similar, but hairs in streaks on disc of thorax in ♂ darker brownish fulvous, and hairs on abdomen darker, appearing more blackish; hairs on legs in ♀ very similar, in ♂ slightly less dense and on the whole darker.

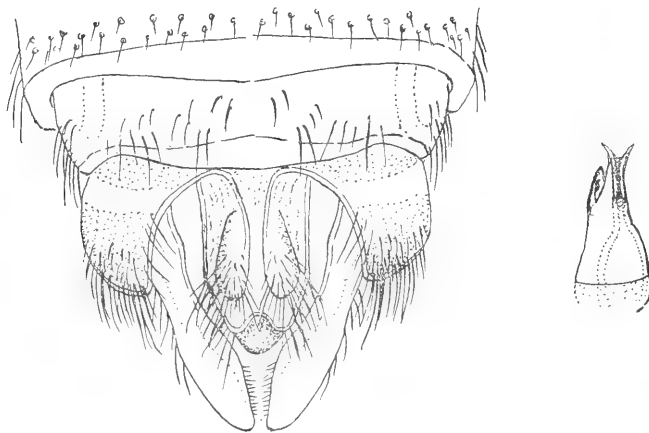


FIG. 9. Hypopygial structures of ♂ *Arenomydas callosus* (Wied.)

Left: Dorsal view of dorsal anal lobes, lobes of tergite 9 and calliper-like processes of sternite 9.

Right: Oblique side view of isolated aedeagal apparatus, showing the two phallic tubes and shortish dorsal epimere.

*Head* with the antennae variable in length, usually longer than thorax (excluding scutellum) in ♂, but in ♀ definitely shorter; segment 1 relatively shorter than in typical form, more consistently only about 2.5 times length of segment 2; segment 3 variable as in typical form, shorter than club; the latter similar; proboscis either as long as, or a little shorter, or a little longer than, vertical length of eye.

*Wings* very dark, tinted blackish in both sexes as in ♀ *callosus s.str.*, but apex distinctly much less contrastingly whitish; venational characters the same.

*Legs* in ♂ distinctly less stoutish, thinner, in ♀ similar to typical form; hind femora in ♂ comparatively less thickened.

*Oviscapae* of ♀ with 8-9 darker spines on a side.

*Hypopygium* of ♂ identical, differing only in being darker.

From 1 ♂ and 3 ♀♀ in the South African Museum.

Length of body: about 11–16.5 mm

Length of wing: about 9–10.5 mm

*Distribution*: Western Cape: Ysterfontein near Saldanha Bay (South African Museum, September 1960) (♀ holotype and ♂ allotype in copulation and 2 ♀ paratypes).

Named after the late Mr. C. Thorn of the South African Museum who collected it first at the Ysterfontein camping site.

*Arenomydas niger* (Macq.) n.comb.

*Cephalocera nigra* Macquart, 1838: 14, pl. 1, fig. 3.

There is no doubt that a ♀ specimen in the South African Museum from the Saldanha Bay area belongs to this species which Macquart described from a ♀ specimen in 1838. It agrees with his very short diagnostic statement and the

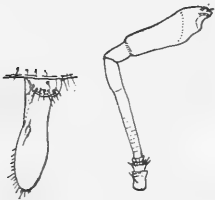


FIG. 10

Left: Dorsal view of right process of sternite 9 of ♂ *Arenomydas niger* (Macq.) and also smallish right lobe of tergite 9.

Right: Dorso-inner view of left antenna of ♀ *Arenomydas niger* (Macq.).

illustration given, especially as regards the longish white hairs on the clypeus which he also figures in profile and which are not common in ♀♀ of this genus. From the above-mentioned ♀ it is also evident that Bezzi misidentified this species and confused it with two ♂ specimens of an entirely different species from Bushmanland (Bezzi 1924b: 226) which I am redescribing as another and new species of *Arenomydas* farther on. From the same locality as that of the ♀ specimen there is also a ♂ specimen which I take to be the as yet undescribed ♂ of *niger*. A comparison of the ♂ specimen of this species and also of a ♀ of *callosus* (Wied.) with Macquart's ♀ type and some notes on the latter, very kindly supplied by Dr. L. Tsacas of the National Museum in Paris, where the type specimen is housed, corroborate my supposition that this species is the *nigra* (*niger*) *s.str.* of Macquart. Macquart's comparison of his *nigra* with *longicornis* (an error in transcription for *longirostris*, mentioned on the previous page 13) is, however, entirely unjustified because his *Cephalocera longirostris* is not a *Cephalocera* but a species of *Ectyphus* (see under *Ectyphus pinguis* Gerst.).

Both the ♂ and ♀ specimens mentioned above are almost indistinguishable superficially from the variety *thorni* of *callosus*. They however differ from the latter in the following respects:

*Body* in ♂ entirely black, the abdomen also entirely black, and the legs very much darker, even tibiae darker; body in ♀ also entirely black, and tibiae also darker than in ♀ *callosus* var. *thorni*.

*Integument* in both sexes with the same parts shining, but abdomen in ♂ above more sparsely punctured, distinctly less densely 'nadelrissig', and last two tergites distinctly less transversely wrinkled; integument of thorax above as in *callosus*; that of abdomen in ♀ above even more sparsely punctured, the last two tergites distinctly more finely and more densely transversely striate, and with fewer or less dense puncturation across hind margin of last tergite.

*Vestiture* with the hairs in ♂ very similar to those of var. *thorni*, but fine ones on abdomen relatively sparser and slightly shorter; hairs on head in ♀ distinctly much longer, mainly pale, less dark, and those on clypeus markedly longer, denser and whitish as stated by Macquart, in this respect differing from most other ♀♀ of this genus; rest of hairs on body similar, but reversed dark ones on last two abdominal segments comparatively shorter; hairs on legs in both sexes similar and similarly coloured.

*Head* with the antennae (text-fig. 10, right) relatively shorter, but also longer than thorax, and with the segments having more or less the same proportions, but 3 only a little, or scarcely, shorter than club; latter relatively more slender, slightly more conspicuously broadly yellowish across its middle; proboscis relatively shorter, slightly shorter than vertical length of eye.

*Wings* on the whole more darkly tinted, almost blackish, due to more distinct fuscous borders along veins in hinder half; veins darker, usually more blackish; other venational characters the same.

*Legs* very similar and also armed with reddish spines and spicules which are similarly arranged; basal segment of hind tarsi comparatively shorter (the tarsus itself relatively shorter), though also longer than claw-segment.

*Oviscape* of ♀ with fewer, only about 6 or 7, more reddish spines on a side.

*Hypopygium* of ♂ with the anal lobes relatively shorter and broader, their apical margins together more rounded, less indented, each lobe being more rounded, less pointed; other hypopygial structures very similar to those of ♂ *callosus*, but the processes (text-fig. 10, left) more rounded apically.

Length of body: about 10·25–11 mm

Length of wing: about 8·5 mm

*Distribution*: Western Cape: Ysterfontein near Saldanha Bay (South African Museum, September 1960) among the endemic sclerophyll-type of vegetation occurring there near the sea coast.

### *Arenomydas sentipes* n.sp.

A smallish, rather plump, dark species belonging to the *callosus* section, but unfortunately represented by ♀♀ only in the South African Museum collections. It is characterized as follows:

*Body* with the abdomen rather broadish; colour mainly or almost entirely

dark or black, though the vertex and frons on each side, clypeus, proboscis below, humeral tubercles, postalar calli, pleural parts, and sometimes the abdomen above, and usually base of venter, reddish brownish or piceous brownish to a variable extent, occasionally body may be mainly brownish or piceous brownish; antennae usually dark reddish brownish, the clubs usually orange yellowish towards apices or in apical halves, or sometimes entirely so; an infusion on thorax anteriorly on inner side of humeral tubercles, extending backwards to a variable extent as a submedial streak more consistently yellowish or reddish, and in pale specimens sides of thorax similarly coloured; hind margin of tergite 1 usually reddish brownish and in specimens with more piceous or brownish abdomen hind borders of tergites are dark or black; bullae variable, dark reddish brownish to orange yellowish, black margined, usually smallish and widely separated; legs brownish to reddish brownish, more yellowish in more brownish specimens, the apices of femora above, especially hind ones, darkened, and the tibiae, especially front and middle ones and tarsi, usually paler, more yellowish.

*Integument* of middle parts of frons, clypeus, pleural parts, coxae and abdomen shining; that of tergites 3 and 4 on sides and more so on 5-8 discally transversely 'nadelrissig', becoming coarser and denser, more striate on last two segments, especially last one; integument of disc of thorax above dull, but unlike that of *callosus* and other species of *Arenomydas*, not rugulose, but unsculptured dull, the metanotum however more transversely rugulose.

*Vestiture* poorly and sparsely developed, that on head short and sparse, except on head below and in occipital hollow; shortish and sparse ones on head in front yellowish to brownish, the longish, somewhat sparse ones on head below and those on head behind, and sparse ones on propleural tubercles, greyish whitish; shortish, decumbent hairs on sides of thorax above and in discal streaks fulvous brownish; fine, short, scarcely perceptible ones on pleurae and on sides of tergite 1 also yellowish brownish; abdomen above with scarcely any short hairs, but more distinct reversed ones on last two segments also fulvous brownish; hairs on legs fulvous brownish, short and sparse, more so on coxae, and those on tibiae longer and denser, especially along inner lower parts; spines and spicules on legs fulvous to fulvous reddish.

*Head* with the antennae usually shorter, or much shorter, than thorax; segment 1 short, about 2-2.5 times length of 2; segment 3 slightly, but distinctly, thickened apically; club elongate, subspindle-shaped, narrowed apically and constricted at base, much longer than segment 3; proboscis shortish, its labella relatively small, the proboscis either slightly shorter than, as long as, or slightly longer than, vertical length of eye; palps distinct, a little longer than antennal segment 2, golden-haired.

*Wings* tinted greyish yellowish to faintly brownish, more brownish along veins, especially in anterior half, the apex and hinder half clearer; veins yellowish brownish; first posterior cell rather arched outwards; base of second submarginal cell tending to be more consistently acute or angular; apex of

discoidal cell shortly stalked; squamal margin yellowish brownish to brownish; halteres dark brownish to almost black.

*Legs* with the hind femora (text-fig. 11, left) slightly thickened, armed with a double row of spines below from just before, or at about, the middle and invariably with some (2-5) distinct spines on outer apical aspect; tibiae curved, and hind ones armed with rather numerous, longish and conspicuous spicules along outer and lower parts (as in *callosus*), the apical ones rather long and bristle-like; tarsi rather shortish, the basal segment of hind ones distinctly longer than claw-segment.

*Oviscape* with 8-11 slender, fulvous spines on a side.

From 10 ♀♀ in the South African Museum.

Length of body: about 10-12 mm

Length of wing: about 8-10 mm

*Distribution*: Western Cape: Between Leipoldtville and Elands Bay (Museum Expedition, October 1947) (holotype and paratypes).

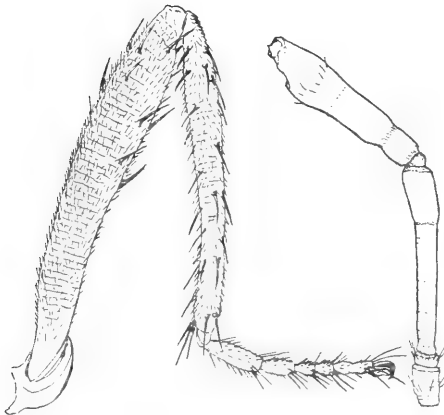


FIG. 11

Left: Outer side of left hind leg of a ♀ of *Arenomydas sentipes* n.sp. to show spines on femur and rather numerous spicules on tibia.

Right: Dorsal view of right antenna of *Arenomydas partitus* (Gerst.).

This species, unlike other species of *Arenomydas*, visits flowers and most of the specimens were taken on the flowers of the Hottentot's fig (*Carpobrotus edulis*) and the sour fig (*Carpobrotus acinaciformis*).

*Arenomydas partitus* (Gerst.) n.comb.

*Cephalocera partita* Gerstaecker, 1868: 80.

*Nomoneura partita* Bezzi, 1924b: 226.

This fairly large and striking sexually dichroic, but variable, species was originally described from a ♂ specimen by Gerstaecker. Since then it remained unrecorded, and Bezzi who referred it to his new genus *Nomoneura* did not see this species. A long series of both ♂♂ and ♀♀ in the South African Museum collections enable me to redescribe it and to include the as yet undescribed and mainly dark or black ♀. As stated by Gerstaecker it resembles *callosus* super-



ficially, but the differences are evident in the following redescription:

*Body* in ♂ usually with the head, thorax, scutellum, metanotum, tergite 1 and greater part, or entire, coxae black, and greater part or entire abdomen or at least its middle part, as well as the greater part of antennae and the legs, orange yellowish, but the last few abdominal segments (6 and 7 or 5-7 or sometimes even apical half 4-7) darkened to a variable extent or even black, or only so on sides, in some specimens; antennal segment 1 and sometimes base of 2, junction between 3 and club, and apical part of latter usually darkened to a variable extent; clypeus in some ♂♂ yellowish on sides to a variable extent; base and rest of proboscis below yellowish reddish to a variable extent; hind margin of scutellum often obscurely reddish; bullae shining reddish brownish to shining blackish brown or even black, pointed above and below, separated above by a variable space, as wide as, or narrower, or slightly wider than, vertical length of a bulla.

*Body* in ♀ entirely or mainly dark or black, rarely mainly dark reddish brownish, though occasionally with the middle segments of abdomen (tergites 3-5 or apical part of 2 and 3-6 or even 7) discally yellowish or yellowish brownish to a variable extent; tergite 8 apically and laterally, or sometimes entirely, often reddish brownish or yellowish brownish to a variable extent even if rest of abdomen is entirely black; antennae as in ♂; proboscis more extensively yellowish below; an infusion anteriorly on inner sides of humeral tubercles, sides of thorax anteriorly and two submedial, abbreviated, discal streaks and postalar calli sometimes reddish to a variable extent, and sides of metanotum occasionally obscurely infused with reddish; bullae reddish brownish to black, more widely separated than in ♂ and usually smaller; legs mainly yellowish as in ♂.

*Integument* of middle part of frons, clypeus, greater part of pleurae, postalar calli, and abdomen from tergite 2 in both sexes more or less shining, especially on head, pleurae, junction between tergites 1 and 2 and sides of abdomen, and usually with tergites 5 to apex, especially in ♀, more shining than rest of tergites above; integument of ♀ with feeble bluish reflections in certain lights; integument of thorax above in both sexes dulled by a broad central and two lateral streaks of fine, rugulose sculpture, separated submedially on each side by a streak of setiferous granules, and extreme sides of thorax smoother in ♀, but in ♂ with numerous setiferous granules, and in both sexes with oblique rugae opposite wings; integument of scutellum and metanotum also rugulose, and that of tergite 1 transversely, finely and irregularly 'nadelrissig' and sparsely punctured; integument of rest of abdomen in ♂ transversely, finely 'nadelrissig' and punctured, finer on tergites 2 and 3, coarser or more widely spaced on 4 and 5, becoming coarser, almost transversely wrinkled posteriorly, the abdomen in ♀ sparsely punctured, more so on tergites 4 and 5, and posteriorly coarsely transversely striate.

*Vestiture* relatively poorly developed, as in *callosus*, the ♀ almost bare, with very much shorter hairs than in ♂; fairly dense and longish ones in ♂ on head,

in front of halteres, across hind margin of metasternum, on sides of hind coxae basally, on tergite 1 (especially sides), on basal part of venter, and shorter ones on sides of tergites 2 and 3, whitish; shortish ones on streaks and on sides of thorax in ♂ also whitish, or becoming slightly more yellowish or even slightly more fulvous beyond middle; fine hairs on abdomen in ♂ on disc of tergite 2 and rest of tergites yellowish, becoming more fulvous and slightly longer posteriorly, and those on last 4 sternites also more fulvous; hairs in ♀ short and sparse on head and even shorter on rest of body, those on head mainly dark, fulvous brownish, but longish ones on head below paler, greyish or greyish whitish; short, decumbent ones in streaks on thorax and even shorter and sparser ones on pleurae and tergite 1 in ♀ fulvous brownish; very short and sparse ones on middle parts of abdomen dark, and longer reversed ones on last two segments blackish brown to black; hairs on legs longer and denser in ♂, paler in ♀, more yellowish whitish to sericeous yellowish, slightly deeper yellowish to fulvous brownish in ♀, those towards apices of coxae in ♂ and on greater part of coxae in ♀ fulvous; longish hairs on inner sides of hind tibiae in both sexes (longer in ♂) appearing darker; spines and spicules on legs fulvous reddish.

*Head* with the antennae (cf. text-fig. 11, right) relatively long, much longer than thorax (excluding scutellum); segment 1 relatively short, slightly thickened, more so in ♂, about 2–3 times as long as 2; segment 3 long, its apical fourth, or more or less, slightly thickened; club elongate, about as long as, or often slightly longer than, segment 3, its basal part narrowed bottle-neck like; proboscis relatively slender, much longer than vertical length of eye, but shorter than thorax, its labella smallish; palps distinct, longer than antennal segment 2.

*Wings* tinted yellowish brownish, usually more darkly so in ♀ and infusions along veins in ♀, especially in hinder half, also more evident; veins yellowish, deeper so or more reddish in front half; appendix at base of second submarginal cell rather long; first posterior cell broadish, usually broader than hind border at about its middle; apex of discoidal cell more consistently shortly stalked; apical stalk of anal cell longish; hind margin of squamae yellowish brownish to brown; halteres yellowish brownish, often darker in ♀.

*Legs* with the hind femora slightly thickened, slightly more so in ♂, armed below with a double row of reddish spines on tubercles from just before middle, and with 1 or 2, or a few, spines also on dorso-lateral or dorsal aspect in apical parts; hind tibiae relatively stoutish, often slightly curved, armed with rather numerous spicules both below and laterally; basal segment of hind tarsi longer than claw-segment, more so in ♀.

*Oviscape* in ♀ with about 8–10 reddish, rather sharp-pointed, spines on a side.

*Hypopygium* of ♂ (pl. 2, fig. 2) much like that of *callosus* (cf. text-fig. 9), with the anal lobes rather narrowish and relatively short, the combined hind margin of the two together indented or bifid; sternite 8 also rather large, covering or

almost covering 9; lobes of tergite 9 shortish, bluntly rounded, with rather longish, bristle-like hairs in punctures; sternite 9 slightly compressed, slightly keeled medially posteriorly, smoothish, but with some punctures dorso-laterally, its processes, as in case of *callosus*, blunt apically, hollowed below, with stiffish brush-like hairs below, each process directed inwards, touching apically, but their apices slightly divergent, pointing downwards and punctured above; aedeagal apparatus with the ventrally situated aedeagus itself bifid apically, ending into the two phallic tubes, each curving outwards, and the dorsal epimere tongue-shaped.

Length of body: about 15.5–21 mm

Length of wing: about 11–15.5 mm

*Distribution*: Namaqualand: Klipplei near Garies (Museum staff, November 1931).

### *Arenomydas namaquensis* n.sp.

*Nomoneura callosa* Bezzi (*nec* Wiedemann), 1924b: 226. (n.syn.)

As was stated under *callosus*, Bezzi mistook some specimens in the South African Museum for the real *callosus* of Wiedemann, a species of which he had no representatives at the time and therefore failed to recognize, but which is easily recognizable from Wiedemann's description and which cannot be confused with the above-mentioned specimens. The latter belong to an entirely different species which I am referring here to a separate and new species which obviously belongs to the new genus *Arenomydas* and which is characterized as follows:

*Body* mainly dark or black, but the head above, frons and face in ♀, the pleurae to a variable extent in both sexes, the darker parts of abdomen in ♀ and to a variable and obscure extent segments 2–4 of abdomen in ♂ more dark reddish brownish to reddish; antennae mainly reddish brownish to dark reddish brownish, the clubs more orange yellowish; clypeus reddish to reddish brownish; proboscis also mainly reddish brownish; humeral tubercles, especially in ♀, reddish; an infusion on inner sides of humeral tubercles, extending discally on thorax as a submedial streak on each side to beyond middle in ♀ and to a lesser extent sides of thorax, reddish; postalar calli and hind margin of scutellum, as well as to a variable extent sides of metanotum, reddish in both sexes; broad discal parts of tergites 2–5 or 6 in ♀ strikingly orange yellowish, the last three tergites in some ♀♀ reddish like sides and venter; hind margins of tergites 1–4 in ♂ and 1–5 in ♀ appearing reddish, and the rest darker reddish; middle tergites of abdomen above in ♂ sometimes with an indication of a faint and obscure central yellowish line; bullae narrowish, yellowish reddish; hypopygium of ♂ mainly yellowish; last segment in ♀ sometimes paler reddish than rest of darker red on abdomen; legs, except coxae, mainly yellowish brownish, the hind femora somewhat darkened along upper and inner upper aspect.

*Integument* of middle part of frons, clypeus, much of pleurae, narrow anterior margin of tergite 1, depression between 1 and 2 in both sexes shining;

that of abdomen, especially in ♂, with very fine areolar microsculpture, but sides of abdomen, last two or three segments, and venter in ♀ however also more or less shining, and last three segments in ♂ also somewhat shining, the rest being dulled by the fine microsculpture; integument of thorax above dull, due to fine rugulose sculpture in three broadish streaks, separated submedially on each side by a narrower streak of setiferous granules and coarser rugae posteriorly, the sides of thorax smoother, with more widely separated oblique rugae; tergite 1 rather markedly depressed medially and, in ♀, last two segments somewhat transversely wrinkled; integument of legs dull.

*Vestiture* poorly developed, even in ♂; longish hairs on head in front in ♂ and shorter and sparser ones in ♀ reddish brownish; short ones in streaks on thorax above more fulvous to fulvous brownish; sparse, longish ones on propleural knob, and short, sparse, scarcely discernible ones in front of halteres and sides of tergite 1 also fulvous brownish, shorter in ♀; fine and short hairs on rest of tergite 1 dark or brownish, sparser in ♀; rest of fine ones on abdomen in ♂ also fulvous brownish, sparser, but becoming longer on last three segments and hypopygium, almost absent on segments 4-6 in ♀, but longer and darker, more chocolate brownish on last two segments and genital segments; hairs on legs short, sparse and dark, slightly paler reddish or fulvous on tibiae; spines and spicules on legs reddish to reddish fulvous.

*Head* with the antennae rather long, very much longer than thorax (excluding scutellum); segment 1 about 2.5-2.8 times length of 2; segment 3 elongate, only slightly thickened apically; club (text-fig. 12, left) elongate and together with articulating segment-like junction scarcely shorter than, or about as long as, 3 and with less than its basal fourth constricted, also slightly narrowed beyond middle before broadened apical part; proboscis slender, shorter than thorax, but slightly longer than vertical length of eye; palps distinctly longer than antennal segment 2.

*Wings* tinted yellowish brownish, darker and more brownish in ♀, the apex and hind border in both sexes slightly clearer; veins reddish brownish, more yellowish in hinder half; apex of discoidal cell shortly stalked; hind margin of squamae brownish; halteres reddish brownish to dark brownish.

*Legs* with the hind ones rather long; hind femora slightly, but distinctly, thickened, armed below with a double row of spines from just before middle, without any spines on sides above apically; front and middle tibiae rather curved, more so in ♂, the hind ones curved beyond middle; basal segment of hind tarsi distinctly longer than claw-segment.

*Oviscape* in ♀ with about 9 or 10 fulvous reddish spines on a side.

*Hypopygium* of ♂ (cf text-fig. 12, middle) with the anal lobes shortish, their combined apical margin rather deeply and angularly indented; lobes of tergite 9 broadly and truncately rounded, apically mainly smooth; sternite 9 relatively large, smooth, keeled centrally posteriorly, its processes mainly smooth, somewhat flattened or slightly depressed above.

From 2 ♂♂ and 2 ♀♀ in the South African Museum.

Length of body: about 13-15 mm

Length of wing: about 9-11 mm

*Distribution*: Namaqualand: Springbok (Lightfoot, October 1890) (♀ holotype and ♂ allotype); Springbok (Lightfoot, November 1890) (♂ paratype); Okiep (Lightfoot, September 1890) (♀ paratype).

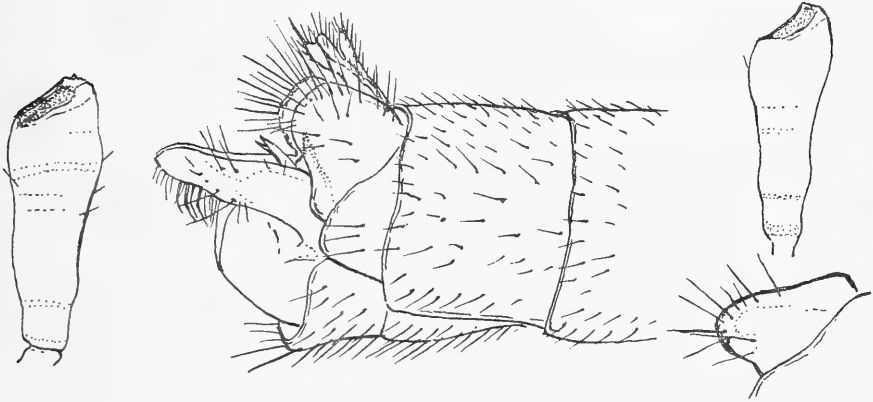


FIG. 12

Left: Inner view of right antennal club of ♀ *Arenomydas namaquensis* n.sp.

Middle: Side view of hypopygium of ♂ *Arenomydas namaquensis* n.sp., showing the anal lobes, somewhat truncated lobes of tergite 9, sternite 9 and its processes, lower (posterior) process of aedeagal apparatus ending in two slightly divergent phallic tubes and the epimere (in dotted outline).

Right (above): Inner view of right antennal club of ♀ *Arenomydas lightfooti*, n.sp.

Right (below): Isolated right lobe of tergite 9 of ♂ *Arenomydas lightfooti* n.sp.

### *Arenomydas lightfooti* n.sp.

*Nomoneura nigra* Bezzi (*nec* Macquart), 1924b: 226. (n.syn.)

As was stated under *Arenomydas niger* two ♂ specimens from Bushmanland in the South African Museum collections were referred to, and partly described, as the *Cephalocera nigra* of Macquart by Bezzi. As these ♂♂, together with a ♀ specimen (not seen by Bezzi), cannot be made to agree with Macquart's diagnostic remarks and illustrations of *nigra s.str.* and as I have been able to identify the latter from more recently collected material, these ♂♂ and ♀ must be referred to a separate and new species which also comes under the new genus *Arenomydas*. It resembles the preceding species *namaquensis*, but is characterized as follows:

*Body* also mainly dark or dark blackish brown, but with the broad hinder discal parts of tergites 2-4 in both sexes to a variable extent, or sometimes in ♂ with entire discal parts of these tergites, orange yellowish or ochreous yellowish as in ♀ of *namaquensis*; abdomen posteriorly in ♀ very dark reddish brownish; vertex on each side, clypeus, especially in ♀, head below, proboscis below, humeral tubercles in ♀ and an infusion on anterior part of thorax above on

inner sides of humeral tubercles in ♀ as well as an obscure and abbreviated submedial streak on each side in ♀, postalar calli, especially in ♀, hinder parts of pleurae to a variable extent, extreme sides of tergite 1 and hind margins of 1-6 to a variable extent dark reddish; antennae mainly yellowish brownish to reddish brownish, the clubs more yellowish or orange yellowish; bullae reddish to dark reddish brownish to almost black, rather small and narrowish in both sexes, very broadly separated in ♀; venter more yellowish up to end of sternite 4 in ♂ and 3 in ♀; hypopygial structures reddish brownish, sternite 9 paler, with more yellowish; legs mainly reddish brownish, the femora darker above and the tibiae and tarsi somewhat paler reddish or yellowish reddish.

*Integument* of middle part of head in front, clypeus, greater part of pleurae, junction between tergites 1 and 2, more especially last three segments of abdomen in ♂, and last four in ♀, more or less shining; integument of thorax above rugulose, finer in a broadish streak along sides (not extreme sides) and along middle as in *namaquensis*; integument of abdomen very finely areolar-microsculptured, and in ♀ last two segments obscurely transversely wrinkled; femora also shallowly transversely annulate.

*Vestiture* slightly longer and denser than in *namaquensis*, the hairs on head, pleurae and sides of tergite 1 being slightly longer and denser; hairs on these sites sparser and shorter in ♀ than in ♂; those on head, thorax, pleurae and greater part of abdomen in ♂ whitish, those from tergite 3 to apex sparse; hairs on these sites in ♀ more fulvous brownish to brown, but almost absent on tergites 3-6; reversed hairs on last two segments in ♀ blackish brownish; hairs on hypopygium fulvous brownish; those on legs sparse and short in both sexes, paler or whitish in ♂, more yellowish brownish or brown in ♀; spines and spicules on legs fulvous yellowish.

*Head* with the antennae proportionally shorter, though also much longer than thorax; segment 1 relatively short, scarcely thickened, about 2.2-2.4 times length of 2; segment 3 slender, proportionally shorter than in *namaquensis*, apically only slightly thickened, slightly longer than club itself, but slightly shorter than club plus articulating part; club (text-fig. 12, top right) rather thickened knob-like beyond middle, more rapidly so than in *namaquensis*, its base constricted; proboscis slender, slightly longer than thorax (excluding scutellum); palps distinct, quite as, or nearly as, long as antennal segment 1.

*Wings* relatively shortish and broad, more so than in *namaquensis*, tinted brownish, slightly darker in ♀ and in hinder half more evident as infusions along the veins, the cells in this part appearing clearer in middle and apex and hind border also much clearer; veins brownish to dark reddish brownish; apex of first posterior cell rather angularly narrowed, much more so than in *namaquensis*; apex of discoidal cell very shortly stalked or sometimes meeting third posterior cell at a point; halteres dark brownish.

*Legs* relatively shorter than in *namaquensis*, with the hind femora slightly clavately thickened, armed below with a double row of spines on tubercles from just before middle, without any dorso-apical or latero-apical ones; tarsi

rather shortish; basal segment of hind tarsi much longer than claw-segment; apices of claws more rapidly curved down in ♂ than in ♀, more obviously so than in *namaquensis*.

*Oviscape* in ♀ with 7 or 8 slender fulvous spines on a side.

*Hypopygium* of ♂ very much like that of *namaquensis* (cf. text-fig. 12, middle), but anal lobes relatively narrower, the lobes of tergite 9 more rounded apically, not so truncately rounded (cf text-fig. 12, right below); the other structures very similar.

Length of body: about 11–15 mm

Length of wing: about 7.5–10 mm

*Distribution*: Bushmanland: Jackals Water (Jakkalswater) (Lightfoot, October 1911) (types and paratype).

### *Arenomydas caerulescens* n.sp.

This mainly black species with slight bluish reflections and with inflated, subpyriform antennal clubs is characterized as follows:

*Body* almost entirely very dark or black, the vertex and frons on each side, pleurae, and to a variable extent abdomen above in ♀ sometimes obscurely dark piceous brownish or very dark reddish brownish; antennae blackish brown, sometimes more brownish or yellowish brownish in ♀, the clubs in both sexes orange yellowish; an infusion on thorax anteriorly on inner sides of humeral tubercles in ♀ sometimes reddish brownish and extending posteriorly streak-like on each side for a short distance; postalar calli and sometimes hind margin of scutellum in ♀ sometimes obscurely piceous; hind margins of tergites obscurely dark reddish or reddish brownish to a variable extent, more so discally in some specimens; bullae relatively long and narrow, shining black; venter entirely dark, but hind margins of sternites usually slightly paler; apices of lobes of tergite 9 and apical halves of processes of sternite 9, and sometimes sternite 9, in ♂ yellowish to a variable extent.

*Integument* of middle part of frons and clypeus shining, and that of pleurae and abdomen also shining, but with distinct, dark bluish reflections, in ♀ sometimes more violaceous; integument of sides of frons more rugulose striate than in other species; that of thorax above finely and densely rugulose in three broadish streaks, separated submedially on each side by a narrower streak of coarser rugae and without any distinct setiferous granules, the sides of thorax with denser, or at least more, oblique rugae than in other species; integument of coxae shining, that of femora transversely wrinkled.

*Vestiture* with the hairs dense only on head, shorter in ♀; those on rest of body relatively poorly developed as in other species belonging to this new genus; hairs on head greyish whitish in both sexes; shortish ones along two submedial streaks and on sides of thorax, those on pleurae and sides of tergite 1 also greyish whitish in both sexes, but much shorter and sparser in ♀; sparse hairs on rest of abdomen in ♂ also greyish, becoming more greyish yellowish to yellowish posteriorly; abdomen in ♀ almost bare, only reversed hairs on last two segments

distinct, brownish or fulvous brownish; hairs on hypopygium of ♂ more yellowish or fulvous like those on lobes below oviscape in ♀; hairs on legs short and sparse in both sexes, very sparse on coxae, longish ones only along inner lower parts of hind tibiae in ♂, with all the hairs on legs greyish yellowish to sericeous yellowish; spines and spicules on legs fulvous yellowish to reddish.

*Head* with the antennae distinctly shorter than thorax (excluding scutellum); segment 1 short, about 2–2.3 times length of 2; segment 3 relatively short, slightly thickened apically, shorter than following articulation plus club, subequal in length to or even shorter than club alone; the latter inflated, subpyriform, nearly or about half as thick at broadest part as long, its base constricted bottle-neck-like; proboscis stoutish, usually longer than vertical length of eye, but sometimes subequal in length to it; palps distinct, longer than antennal segment 2.

*Wings* tinted brownish in both sexes, but tending to be darker in some ♂♂, sometimes becoming clearer or more milky whitish apically and along hinder half and in anal and axillary cells; veins yellowish brownish, more brownish anteriorly; first posterior cell rather broadish, at broadest part usually broader than hind border; apex of discoidal cell shortly stalked; axillary lobe markedly broad, relatively broader than in *namaquensis* and *lightfooti*; squamal margin whitish; halteres dark brownish.

*Legs* with the hind femora slightly clavately thickened, scarcely less so in ♀ than in ♂, armed below with a double row of spines on slight tubercles from just before middle, without any dorso- or latero-apical ones; hind tibiae rather stoutish; basal segment of hind tarsi distinctly very much longer than claw-segment; claws, especially hind ones, longer in ♂ and more rapidly curved down apically than in ♀, and pulvilli in latter reduced, slightly shorter.

*Oviscape* in ♀ with 8 or 9 fulvous reddish spines on a side.

*Hypopygium* of ♂ not differing much from those of the preceding two species.

From 4 ♂♂ and 4 ♀♀ in the South African Museum.

Length of body: about 11–14.5 mm (21.5 mm in 1 large ♀).

Length of wing: about 8–11.5 mm (14 mm in 1 large ♀).

*Distribution*: Western Cape: Papendorp, mouth of Olifants River (Museum Expedition, October 1950) (♂ holotype, ♀ allotype and paratypes). Namaqualand: Droërivier between Van Rhynsdorp and Nieuwoudtville (Museum Expedition, 30th September 1966) (1 ♂ and 1 ♀ paratypes).

*Arenomydas caeruleus* var. *aridicolus* n.

Two specimens, a ♂ and a ♀, in the South African Museum collections appear to represent a distinct, more xerophilous variety of *caeruleus* and which differs from the typical form in the following respects:

*Body* with the pleural parts, abdomen, and in ♀ also clypeus and to a certain extent sides of frons, more reddish brownish; two submedial, discal, reddish streaks in ♀ more distinct; legs with femora, tibiae, and tarsi entirely yellowish, the hind femora slightly less, or scarcely, thickened, and with apparently fewer



spines below; hypopygium of ♂ more extensively yellowish, the entire lobes of tergite 9 and processes of sternite 9 being yellowish.

*Integument* of abdomen with less distinct bluish reflections, being more violaceous.

*Vestiture* very similar, similarly coloured, but hairs on abdomen in ♂ apparently slightly longer and denser; those on tibiae in ♂, especially along outer lower parts of front and middle ones, denser.

*Head* with the antennae very similar, only a little longer than thorax, but segment 1 proportionally shorter, only about twice length of 2; segment 3 proportionally slightly longer; club itself subequal in length to segment 3, appearing shorter, more pyriform, not longer than segment 3 as in typical form; proboscis relatively more slender, but in ♂ specimen quite shorter than vertical length of eye.

*Wings* tinted slightly paler, more yellowish; veins, especially in anterior half, also paler; apex of first posterior cell in the two specimens slightly more angularly acute.

*Hypopygium* of ♂ with the lobes of tergite 9 apparently slightly more broadly subtruncately rounded apically.

Length of body: about 12–15.5 mm

Length of wing: about 8–11.5 mm

*Distribution*: Knersvlakte in southern Namaqualand (Museum staff, October 1959) (♀ holotype) and Museum Expedition, October 1950 (♂ allotype).

#### *Arenomydas bunochilus* n.sp.

A remarkable, entirely dark or black, though slightly variable, Karoo species; with very short, reduced proboscis and rather prominent, inflated or tumid clypeus, and which, if some of the other aberrant characters are also taken in consideration in which it differs from all the other known species of *Arenomydas*, may almost be referred to a special group or even subgenus of the latter genus. It is characterized as follows:

*Body*, including legs, usually entirely black, though in one ♂ specimen it is mainly dark brownish; antennae and clypeus in ♀ sometimes also brownish; knees more reddish brownish, and tarsi paler brownish; bullae reddish brownish, relatively small and narrowish in both sexes, more or less carinate along the vertical length, very widely separated in both sexes.

*Integument* of middle part of frons, clypeus, extreme base of tergite 1, transverse depression between tergites 1 and 2, anterior part of pleurae, to a certain extent posterior episternal and metasternal parts, coxae and, in ♀, last two abdominal segments, more shining than rest of surface; integument of almost entire body, scutellum, metanotum, pleurae, abdomen, coxae, femora and tibiae with very fine areolar microsculpture, rendering most of these parts, apart from the more evident and coarser sculpture on some of them, duller than in most other species; integument of thorax above more extensively dulled by dense rugulose sculpture, more or less in streaks of fine and coarser sculpture,

and with the sides, unlike those of the other species, also densely covered with rugulose sculpture; the more shiny last two abdominal segments in ♀ transversely wrinkled as in most other forms, and last one more coarsely so.

*Vestiture* even in ♂, rather poorly developed, being sparser on head than in other species, and that on disc of thorax also relatively shorter, and hairs on legs sparser; the longer, more conspicuous hairs on head and propleurae dark brownish to almost black in both sexes; short, decumbent ones in streaks on thorax above slightly more fulvous brownish; rest of sparse hairs on metapleurae and short, scarcely discernible, ones on metasternal part and sides of tergite 1 in both sexes also dark brownish or black; short and sparse ones in ♂ on middle parts of abdomen and the slightly longer and denser ones posteriorly, especially last segment, dark brownish; reversed hairs on last two abdominal segments in ♀ blackish brown or black; hairs on lobes of tergite 9 and processes of sternite 9 in ♂ more fulvous; hairs on legs in both sexes dark; spines and spicules on legs reddish to fulvous reddish.

*Head* (text-fig. 13, left) with the interocular space on head below scarcely narrower than, or as wide as, or even slightly wider than, interocular space on vertex; clypeus markedly prominent, protuberant, transversely inflated or tumidly lip-like, more inflated than in all the preceding species, usually medially incised or notched apically; buccal cavity rather broad; proboscis much reduced, short, stoutish, stumpy, scarcely or not projecting beyond buccal cavity, its labella small and short; palps distinct, longer than antennal segment 2; antennae rather stoutish, usually shorter than thorax; segment 1 slightly thickened, shortish, about 2.3–2.4 times length of 2; segment 3 slightly longer than club, its apical fourth or less distinctly thickened knob-like; club elongate, subtriangular, conical, broadened apically, trapezoidal, there sharply, almost concavely truncate below the slightly forked terminal prominence.

*Wings* tinted brownish to dark blackish brown, usually more so along course of veins, the middle of first posterior cell and hind border usually clearer and apex the clearest, almost hyaline; veins brownish to dark brown; apex of first posterior cell rather very shortly stalked or even angularly subtending on costal margin, apparently less distinctly stalked than in preceding species; apex of third posterior cell (rather than apex of discoidal cell as in other species) shortly stalked or even meeting apex of discoidal cell at a point; squamal margin dark; halteres very dark to almost black.

*Legs*, especially hind ones, rather long; hind femora slightly thickened, less so in ♀, armed below with the usual double row of spines from near base or just before middle, without any dorso- or latero-apical ones; tibiae rather stoutish, especially hind ones, the latter with distinctly fewer spicules than in most of the other species, the lateral ones wanting or minute; basal segment of hind tarsi distinctly much longer than claw-segment; claws slender, relatively more so and longer in ♂, also more rapidly curved down apically in ♂ than in ♀.

*Oviscape* in ♀ with 7 or 8 reddish spines on a side.

*Hypopygium* of ♂ (text-fig. 13, right) with the anal lobes broader, larger

than in other species, not so very sharply pointed apically; processes of sternite 9 comparatively longer, more slender, distinctly more sinuous or S-curved than in other species, their apices more curved down; central, dorsal (anterior) epimere of aedeagal apparatus very much shorter than ventral (posterior) aedeagal process which ends in two phallic tubes, relatively shorter than in other forms, in form of a short stump in front of base of aedeagus.

From 2 ♂♂ and 2 ♀♀ in the South African Museum.

Length of body: about 12–16 mm

Length of wing: about 8–11 mm

*Distribution*: Koup Karoo: Dikbome, Merweville (Museum Expedition, October 1952) (♂ holotype, ♂ paratype and ♀ paratype); Mynaardskraal, Letjiesbos near Beaufort West (Museum Staff, October 1941) (♀ allotype).

The ♂ paratype is either a slight form or a teneral and differs from the ♂ holotype in being slightly smaller, entirely more yellowish or mud-coloured, the sides and two submedial streaks on thorax above more reddish brownish, in having more yellowish or ochre-brownish legs, and its more yellowish brownish wings. In other respects it does not differ. The ♀ paratype on the other hand has the antennae and clypeal part of face malformed.

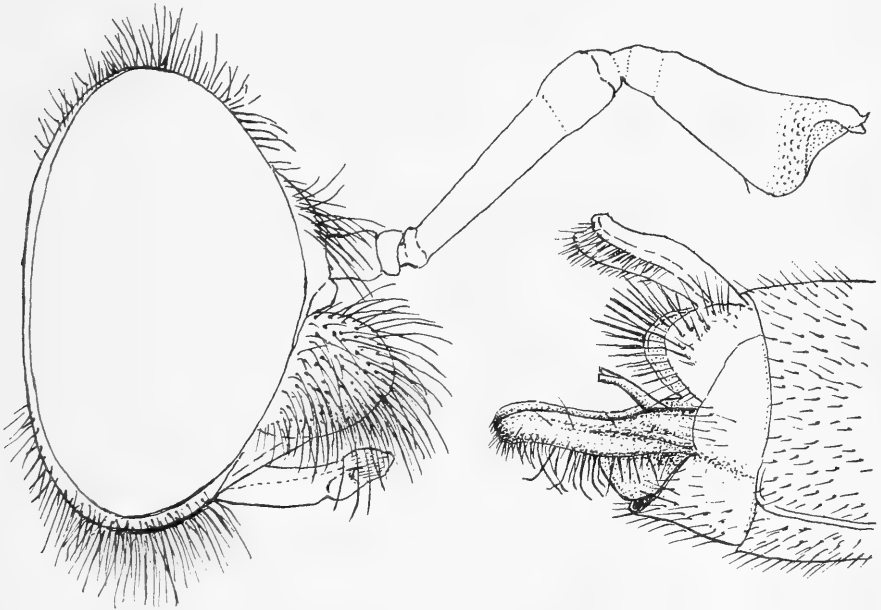


FIG. 13

Left: Side view of head of ♂ *Arenomydas bunochilus* n.sp., showing the prominent tumid clypeus, and characteristic conical antennal club.

Right: Side view of hypopygium of ♂ of the same species, showing the strongly developed processes of sternite 9, the aedeagus ending in two phallic tubes (epimere not shown, very short, in form of short stump at base of aedeagus anteriorly) and the rather long anal lobes.

*Arenomydas pleurostictus* n.sp.

Another interesting black and black-winged Namaqualand species, unfortunately represented in the collections by only a single ♀ specimen, which appears to show transitional characters in having affinities both with the Bushmanland species *lightfooti* and the peculiar aberrant Koup Karoo species *bunochilus*, but in certain respects more with the latter, though at the same time having certain distinguishing characters of its own. It is characterized as follows:

*Body* almost entirely black, but with a conspicuous yellowish whitish infusion on each side of hinder part of pleurae, occupying the area below hinder part of pteropleuron, below metapleural tubercle in front of halteres, below halteres, upper part of metasternum and anterior lateral basal angle of tergite 1, this infusion appearing whitish due to conspicuous whitish tomentum which also extends on to dorsal (hinder) half of hind coxae; anterior lateral and posterior lateral parts of tergite 1 and base on sides and extreme lateral margin of tergite 2 also obscurely yellowish brownish, and lower faces of front and middle femora, as well as under-surfaces of hind femora, and hind tibiae infused with dark reddish brownish; hind margin of tergite 1 also obscurely dark reddish brownish, but those of rest of tergites however dark like rest of abdominal surface; bullae dark or blackish.

*Integument* of the head in front, especially clypeus, shining, and tergites 5-8, especially latter, also shining; rest of body, including pleurae, dull; integument of greater part of body and legs covered with minute, areolar microsculpture as in *bunochilus*, less evident on shining parts; that of thorax above vermicellately rugulose as in other species, also in streaks of finer and coarser ones, the sides of thorax above also rugulose, but with slightly more numerous oblique rugae than in *bunochilus*, more like those of *lightfooti*; pleurae distinctly duller, with more evident rugulose microsculpture than in the other two species; metanotum distinctly more coarsely rugulose than in the other species, and tergites 1-3 and base of 4 finely shagreened in appearance, slightly more so than in *bunochilus*; last two abdominal segments transversely wrinkled; proboscis duller, due to microsculpture and with more numerous oblique rugae than in *lightfooti*; integument of legs mainly dull, due to microsculpture as in *bunochilus*, the femora with slightly denser, more evident, transverse annulation than in the other two species.

*Vestiture* as poorly and sparsely developed, the longer hairs on head however slightly longer, snow whitish on vertex and sides of frons basally, more yellowish brownish on each side of frons anteriorly and on antennal segments 1 and 2; hairs on clypeus markedly sparse, the latter almost bare, but the few above and on sides along basal part also yellowish brownish; those on palps and head below also appearing more greyish yellowish or yellowish brownish in certain lights; postvertical, almost bristly, spines yellowish whitish, and rest of hairs on occiput more yellowish brownish; hairs on thorax above in 4 streaks, distinctly longer, but sparser than in *lightfooti* and much longer than in *bunochilus*, entirely silvery white as are also sparse ones on propleurae, the very few on hinder part

of pteropleuron and sparse ones on metapleural tubercle in front of halteres; sparse hairs on tergites 1 and 2 also whitish, longer anteriorly basally on sides; reversed ones on last two abdominal segments and genital parts dark, appearing more fulvous brownish or brownish in certain lights, but more blackish on genitalia; sides of sternites 1-4 or 5 appearing greyish, due to some distinct greyish or silvery tomentum; sparse and short hairs on femora whitish, appearing more yellowish on sides of hind ones, and denser, relatively longer ones on tibiae mainly pale, but longer ones along inner sides of hind ones darker; spines and spicules on legs dark or blackish.

*Head* with the interocular space on vertex relatively narrower than in *lightfooti* and much narrower than in *bunochilus*, though the space between eyes on head below is narrower than above, it is broader than in *lightfooti*, but narrower than in *bunochilus*; antennae longer than thorax (excluding scutellum), considerably longer than in *bunochilus*, more like those of the other species; segment 1 about 3 times length of 2; segment 3 elongate, relatively longer and stouter than in *lightfooti*, longer than club; the latter shaped more like that of *lightfooti*, however more concavely truncate apically as in *bunochilus*, though not so trapezoidal in shape, thickened in apical half from just before middle and constricted basally; clypeus rather prominent, relatively large, larger than in all the other species, brilliantly shining, relatively longer than and not so shortly tumid as in ♀ *bunochilus*, its apex above more conically pointed; proboscis relatively long, longer than that of *lightfooti*, longer than either the antennae or the thorax, about 3.2 mm long, not reduced as in *bunochilus*, its labella large and ovate; palps minute, but distinct.

*Wings* very darkly infuscated blackish brownish, almost black, slightly less intense or paler in hinder half, with a little less than basal third of first basal cell, middle parts of second submarginal and first posterior cells, alula and hind border (beyond fuscous borders of posterior veins) clearer; apex of first posterior cell angularly subtending on costal margin or only very shortly stalked; apex of discoidal cell stalked; lower vein of anal cell rather markedly sinuous; halteres blackish brown.

*Legs* with the hind femora thickened, less clavately so than in the other two species, the basal part less slender or with a shorter slender part, armed below with a double row of shortish spines; hind tibiae stoutish, but, unlike those of *bunochilus*, armed along outer lateral part with some distinct spicules in addition to those below; basal segment of hind tarsi subequal in length to claw-segment, not longer as in the other two species; claws relatively stouter, especially hind ones, which are also more sickle-shaped.

*Oviscape* with about 7 blackish brown spines on a side.

From 1 ♀ holotype in the Transvaal Museum.

Length of body: about 15 mm

Length of wing: about 11.5 mm

*Distribution*: Namaqualand: 15 miles north of Steinkopf (G. van Son, 11th August 1961).

**AGAPEREMIUS** n.gen.

Two ♂ specimens in the South African Museum from the dry north-western Cape represent a form which differs in certain features from all the other South African genera with a stalked first posterior cell, such as *Nomoneura*, *Neolaparopsis*, *Nomoneuroides*, *Arenomydas*, *Halterorchis*, and the *Syllegomydas* group, but which appears to be nearer to the new genus *Arenomydas* than to any of the others. With the latter it agrees in the entire bare metanotum, pteropleuron and mesopleuron and the very similar type of hypopygial structures, especially the processes of sternite 9. As it however differs in certain distinct features, I am referring it to a new and separate genus which differs from *Arenomydas* in the following combination of characters:

*Body* with the head, thorax above, especially sides, metapleural part, metasternal part, basal half of abdomen (tergites 1-3 and to a lesser extent 4) and legs with markedly dense and longish, villose vestiture, denser than in any other South African genus except the new genus *Cephalocerodes* described under the new tribe *Cephalocerini*.

*Head* with the interocular space on head below markedly broad, subequal in width to width of interocular space on vertex, the inner margins of eyes thus subparallel, much as in the aberrant species *Arenomydas bunochilus*.

*Thorax* above not dull, but shining, without rugulose microsculpture, its integument only with acicular setiferous puncturation; integument of postalar calli, scutellum, metanotum and entire pleurae smooth, polished and brilliantly shining.

*Wings* more extensively hyaline, not uniformly or extensively tinted or infuscated.

*Legs* with the hind femora slightly clavately thickened, with relatively fewer spines and only in apical halves below, without any dorso- or latero-apical spines; hind tibiae with much fewer and shorter spicules, more or less confined to apical half and with fewer apical spicules (spurs); bristles on tarsi relatively long, bristle-like; claws rather long and slender.

*Hypopygium* of ♂♂, as shown in text-fig. 14, right, with the anal lobes short, posteriorly together deeply and angularly indented; sternite 9 relatively larger more strongly keeled medially, and produced apically, its processes straight or straighter, in profile not sinuous; aedeagal apparatus with the aedeagal process, posterior to epimere, not simply forked (that is ending in two slightly divergent phallic tubes as in species of *Arenomydas*), but with the phallic tubules curving backwards, upwards and outwards on each side somewhat like the horns of an antelope, and with no distinct upwardly projecting epimere (the latter represented by a step-like epimeral part anterior to phallic tubes).

The type-species of the new genus is *Agaperemius hirtus* n.sp.

*Agaperemius hirtus* n.sp.

*Body* in ♂ mainly black, but with the following parts yellowish: antennae (except black terminal tubercle), palps, humeral tubercles, a spot on postalar

calli, hind margins of tergites, hinder half and more than apical half of sides of tergite 4, greater part of tergites 5-7 (except for dark blackish brown sides basally and to a variable extent lateral margins), almost entire hypopygial structures, greater part of venter, and the legs (excepting dark coxae and a broad dark brownish or blackish brown annulation of variable extent in apical half of hind femora).

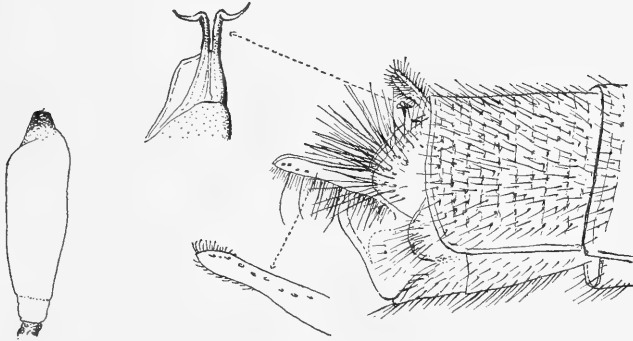


FIG. 14

Left: Dorsal view of right antennal club of ♂ *Agaperemius hirtus* n.gen. et n.sp.

Right: Side view of hypopygium of ♂ of the same species, showing the shortish anal lobes, the longish almost straight processes (also separately dorsal view of left one) of sternite 9, and the aedeagus ending in two slightly backwardly and upwardly curved phallic tubes (also shown separately and enlarged in oblique posterior view, with the epimeral part not ending in a distinct process).

*Integument* of middle part of frons, postalar calli, scutellum, metanotum, pleurae, and depressed base of tergite 2, as well as black bullae, highly polished, brilliantly shining; integument of thorax above and rest of abdomen above also shining, but with acicular setiferous punctures which become more 'nadelrissig' from tergite 3; that of legs also more or less shining.

*Vestiture* with the hairs dense, long and villose as described for the genus, mainly snow whitish, but shorter ones on disc of thorax above and tergites 5-7 sometimes slightly tinted a little more yellowish; hairs on legs also mainly or entirely snow whitish, though the shorter ones on hind femora above also sometimes tinted more yellowish; those on apical part of coxae below sometimes even more fulvous; hairs on hind femora below markedly dense and long, and those along inner part of hind tibiae also longish.

*Head* with the interocular space on vertex not or scarcely broader than, or as broad as, interocular space on head below; antennae distinctly longer than thorax above (excluding scutellum); segment 1 about 1.6-2.3 times length of 2; segment 3 distinctly thickened club-like apically, shorter than club; latter (text-fig. 14, left) elongate, obliquely subtruncate apically, sometimes broadest just beyond middle, then slightly narrowed; proboscis longer than vertical

length of eye; palps distinct, subglobular or oval, not much longer than antennal segment 2.

*Wings* mainly hyaline, but costal part slightly more yellowish, the apical parts of costal, marginal and submarginal cells tinted yellowish brownish, and basal veins of second submarginal and first posterior cells, apical veins of discoidal cell, junction of first posterior, discoidal and third posterior cells and apical vein of anal cell also margined with faint yellowish brownish; veins yellowish; squamal margin pallid; stump at base of second submarginal cell rather short; apex of discoidal cell very shortly stalked, meeting apex of third posterior cell almost at a point; knobs of halteres mainly yellowish.

*Legs* with the hind femora distinctly, though slightly, thickened, clavate, armed below with a double row of yellowish spines from about middle or slightly beyond middle; apical spurs of tibiae, especially hind ones, rather long; tarsi with rather longish, bristle-like spicules; basal segment of hind tarsi much longer than claw-segment; claws markedly long and slender, in these ♂♂ curved rather rapidly apically; pulvilli proportionally long and broadish.

*Hypopygium* as shown in text-fig. 14 (right), with rather longish bristly hairs apically on lobes of tergite 9, and with some coarse punctures on processes of sternite 9.

Holotype and paratype in the South African Museum.

Length of body: about 17-19 mm

Length of wing: about 12-13.5 mm

*Distribution*: Bushmanland: Onseepkans near Orange River (Museum staff, October 1939) (holotype). North-west Cape: Putsonderwater in Gordonia, north of Kenhardt (Museum staff, October 1939) (paratype).

#### **NOTOBATES** n.subgen. of SYLLEGOMYDAS Beck.

*Syllegomydas* Bequaert (*nec* Becker), 1938: 333 and 341.

The genus *Syllegomydas* which Becker (1906: 277) established to accommodate certain north African and southern Palaearctic species of Mydaiidae appears not to be represented in South Africa south of Rhodesia. In the north-western part of South Africa and in South West Africa it appears to be replaced by closely related forms which, apart from the reduced or vestigial proboscis, show a combination of characters which exclude them from *Syllegomydas s.str.* as described and defined by authors in literature and as is also evident from a comparison of a ♂ and a ♀ of *Syllegomydas algiricus* var. *tripolitanus* Beq. from Tripoli, kindly loaned to me by Dr. Bequaert, with the South African material. The only species from southern Africa which can at present be placed provisionally in this genus are the two known species *rhodesiensis* and *arnoldi* described from Rhodesia by Bequaert in 1938, and of which the types have also been kindly lent to me. These two species, apart from their vestigial proboscis, the more consistent tendency for the first posterior cell in the wings to be stalked apically or to subtend angularly on the costal margin, and certain other characters, however show a combination of minor characters which appear to



exclude them from the north African *Syllegomydas*, and which they appear to share with representatives of the variable genus *Afroleptomydas*. As they are not strictly referable to *Syllegomydas s.str.*, a new and southern subgenus *Notobates* is erected to accommodate them, with the species *rhodesiensis* as the type-species.

A third species, *brincki*, from South West Africa, which Bequaert (1959: 363) also described as a *Syllegomydas*, however, has entirely different cephalic and aedeagal characters and obviously belongs to an entirely different genus which is described as *Notosyllegomydas* farther on.

The Rhodesian subgenus *Notobates* of *Syllegomydas*, as based on the two species described by Bequaert, differs from *Syllegomydas s.str.*, as based on *Syllegomydas algiricus* var. *tripolitanus* Beq., as follows:

*Body* elongate as in *Syllegomydas*, more slender in ♂♂ than in ♀♀.

*Integument* of the medial frontal and lower parts of head, greater part of pleurae and, in ♀♀, greater part of abdomen above more shining.

*Vestiture* very much denser, longer, even in ♀♀, more shaggy, with much denser and longer hairs on metanotum; hairs on thorax above more distinctly arranged in 5 streaks, the broad central bare streak having only a very narrow central streak or line of hairs (the middle streak in *S. algiricus* var. *tripolitanus* with more numerous, scattered hairs, and the bare streaks only strictly delimited submedially on sides); hinder border of mesopleuron with fewer and sparser hairs; hairs on legs much denser and longer, with more numerous and longer ones along inner sides of hind tibiae.

*Head* with the antennae very much longer, in the two species under consideration much longer than thorax (excluding scutellum); segment 3 longer, much longer than club; latter elongate, not dilated or inflated pyriform, the apical sensory area much larger, occupying more of the apical conical part (more like that of representatives of *Afroleptomydas*), not so terminal or appearing somewhat sunk in, rendering the apical part subtruncate or truncate as in *Syllegomydas*; buccal cavity very distinct, larger, deeper; proboscis, though rudimentary, still perceptible in miniature, the basal stem and labella present, not entirely vestigial and minutely knob-like; postvertical spines not distinctly differentiated.

*Wings* very similar, with the venation similar, but vein between anal and axillary cells more undulating.

*Legs* with the hind femora distinctly less thickened, sometimes scarcely thickened, more clavately so, with feebler, more bristle-like spines below; tibiae with much longer spicules and longer apical spurs; and tarsi with longer, more bristle-like spicules.

*Genital segments* in ♀♀ with the right and left hind margins of last vertical tergite on each side of central carina together forming a more acute angle, the opening below them being much smaller, and the lobes in it much smaller, not very broad and triangular as in *S. algiricus*.

*Hypopygium* of ♂♂ very similar, but the central, dorsal process (epimere) of the aedeagal apparatus distinctly much shorter.

The two species may be separated as follows:

- (a) Hind margins of tergites in both sexes more narrowly whitish, ivory yellowish or yellowish, not markedly broadened discally, the ♀ without ochreous or chrome yellowish across apical halves of tergites 2-7; bullae orange brownish, not broadly surrounded by yellowish; scutellum dark or black; sides of thorax above and base in ♂ dark, in ♀ yellowish reddish and also submedially on each side in anterior half; sides of tergites more obscurely, more narrowly reddish brownish; fine hairs on abdomen above in ♂ darker, more fulvous brownish to brownish; hairs on head, especially thorax above in ♀, relatively longer; antennae relatively shorter 3.14-3.3 mm; first posterior cell in wings usually only angularly subtending on costal margin . . . . . ♂ ♀ *rhodesiensis* Beq.
- (b) Hind margins of tergites in both sexes markedly and conspicuously broadly yellowish, especially discally, the ♀ with more than hinder halves of tergites 2-4 and above more discally on 5-7 conspicuously and contrastingly chrome or ochreous yellowish; bullae black, broadly surrounded by yellowish; scutellum entirely, or at least in basal half, yellowish brownish or reddish brownish; sides of thorax, base and two submedial discal streaks in both sexes yellowish reddish, more broadly so in ♀; fine hairs on rest of abdomen above in ♂ pale or more whitish; hairs on head and especially thorax above in ♀ relatively shorter, also shorter than in ♂; antennae relatively longer, about 3.7-3.82 mm; first posterior cell usually more consistently shortly stalked apically ♂ ♀ *arnoldi* Beq.

*Syllegomydas (Notobates) rhodesiensis* Beq.

*Syllegomydas rhodesiensis* Bequaert, 1938: 333, figs 1-6. Bequaert, 1961b: 2.

The late Dr. Arnold of the National Museum of Rhodesia has very kindly lent me Bequaert's types and paratypes of this species. With these he also sent another ♀ specimen of *rhodesiensis* from the same locality and date as the ♀ type, but labelled as '*Syllegomydas cinctus* Macq.' by Oldroyd in the British Museum. As *cinctus* is a north African species there is no question of it occurring so far south. Moreover it does not agree with descriptions given of *cinctus* by Séguy and others. As Bequaert has given a very good and comprehensive description of this species, I can add nothing to supplement his diagnosis and can only refer the reader to that publication.

The species is slightly variable and is chiefly characterized by its yellowish brownish to brownish clypeus, yellowish humeral tubercles, yellowish sides of thorax in ♀, yellowish anterior basal part on sides of tergite 1, yellowish brownish hind margin of tergite 1 (more yellowish in ♀), ivory yellowish hind margins of rest of tergites (broader in ♀), orange yellowish bullae, mainly yellowish brownish venter and extreme sides of tergites, yellowish brownish legs of which the femora are more darkened on inner sides below in ♂ than in ♀; the long snow whitish hairs on front part of body including tergites 1 and 2, and in streaks on thorax, the short, more yellowish, fulvous brownish ones on rest of abdomen in ♂, paler ones on venter in ♂ (sometimes however also darkened), the dark hairs on last three segments in ♀ and not very long pale or whitish ones on legs; greyish wings, more tinted yellowish in ♀, with yellowish brownish veins; and with genitalia as illustrated by Bequaert.

In the National Museum of Rhodesia and in the Transvaal Museum.

Length of body: about 14-19 mm

Length of wing: about 10.5-14.2 mm

*Distribution*: Rhodesia: De Beers, Umgusa River; Helenvale; Khami Ruins (May and June).

*Syllegomydas (Notobates) arnoldi* Beq.

*Syllegomydas arnoldi* Bequaert, 1938: 341, fig. 3b.

The unique ♂ type of this species was also kindly submitted to me by Dr. Arnold. In addition there are two other ♂ specimens in the Transvaal Museum, one from Bulawayo and a mouldy specimen from Beira in Portuguese East Africa. Among the material from the Transvaal Museum there is also a ♀ specimen from Bulawayo collected at the same time and by the same collector as the above-mentioned ♂ specimen and which I think is without doubt the as yet undescribed ♀ of *arnoldi*. Bequaert has given a detailed description of the ♂ holotype which makes it easily recognizable.

The ♂ of this species is chiefly characterized by the yellowish brownish or brownish clypeus, yellowish humeral tubercles, yellowish sides of thorax and two yellowish submedial discal streaks, yellowish brownish or yellowish reddish scutellum, broadish yellowish brownish sides of tergites and venter, rather conspicuous markedly broad yellowish hind margins of tergites of which that on tergite 2 also surrounds the bullae, large black bullae, mainly yellowish brownish to brownish legs, rather dense snow whitish hairs, also in streaks on thorax above, yellowish or yellowish reddish-veined, greyish hyaline wings, and yellowish brownish or almost yellowish knobs of halteres.

The solitary ♀ specimen which is much larger and bulkier and superficially resembles a scoliid-wasp, has most of the coloured parts similarly coloured like those of the ♂, but, apart from the much broader yellowish hind margins of tergites, has more than apical halves of tergites 2-4 above and apical halves discally of 5-7 pale ochreous or chrome yellowish, contrasting conspicuously with the black basal and lateral parts, the ochreous discal spot on 7 being the smallest; tergite 8 dark toffee brownish; legs similarly coloured to those of ♂; wings distinctly more tinted, more or deeper yellowish; vestiture slightly shorter and less dense, especially that on disc of thorax where the two discal bare streaks and two much broader submedial bare ones (the latter broken up posteriorly into a large roundish spot) contrast conspicuously with the greyish tomented streaks and sides of thorax separating them; hairs on last two abdominal segments dark brownish; genital segment and oviscapae yellowish reddish, with 7 yellowish reddish spines on a side.

The ♂ holotype in the National Museum of Rhodesia and the ♀ allotype and 2 ♂♂ in the Transvaal Museum.

Length of body: about 15-18.8 mm (♂) 20 mm (♀)

Length of wing: about 11.25-13.3 mm (♂) 16 mm (♀)

*Distribution*: Rhodesia: Mulungwane Mountains (September 1924) (♂ holotype); Bulawayo (R. Stevenson, June 1923) (♀ allotype and 1 ♂). Portuguese East Africa: Beira (Krantz, August 1903) (1 ♂).

## NAMADYTES n.gen.

Two ♀ specimens from South West Africa in the collections before me have, as in the case of *Syllegomydas*, a very much reduced proboscis, but as they differ in some important respects from ♀♀ of the latter genus (as based on a ♂ and a ♀ of *Syllegomydas algiricus* var. *tripolitanus* Beq., lent to me by Bequaert, and on the subgeneric form *Notobates* of it), they cannot be included in that genus. Unfortunately the ♂♂ are unknown and the aedeagal structures cannot therefore be used to differentiate them generically from either *Syllegomydas* (*Notobates*) or from the other related South West African new genus *Notosyllegomydas*. They are here referred provisionally to a distinct South West African genus of which the ♀♀ agree and differ from *Syllegomydas* and its subgenus *Notobates* in the following respects:

*Body* with the abdomen in ♀♀ rather broadish, pointed apically, its dorsum on certain tergites infused to a variable extent with yellowish or yellowish ochreous, and with tergite and sternite 8 markedly shortened, shorter than in both *Syllegomydas* and its southern subgenus.

*Integument* of head, thorax, metanotum and pleurae mainly dulled by greyish whitish tomentum as in *Syllegomydas algiricus*; that of thorax above dull, leathery, but hinder half of scutellum shining; sides of metanotum sometimes also more or less shining; that of abdomen above shining in part, duller apically, the terminal segments transversely, markedly, coarsely, rugulosely striate; femora distinctly transversely striate.

*Vestiture* rather poorly developed, very similar to that of *Syllegomydas algiricus* var. *tripolitanus*, but more reduced then in the subgenus *Notobates*; hairs on thorax, posterior margin of mesopleuron, pteropleuron, metapleural and metasternal parts, and on tergites 1 and 2, short and sparse; those on metanotum very short, sparse, present only on sides; hairs on legs slightly denser and longer than in var. of *algiricus*, but shorter than in *Syllegomydas* (*Notobates*).

*Head* relatively broad, markedly broadish across eyes; interocular space broad, broader than is usual for ♀♀ of *Syllegomydas*, being nearly, or only a little less than, twice distance between vertex and antennae, the inner margins of eyes from level of antennae to vertex subparallel or less convergent; vertex almost straight or only slightly depressed in middle; ocellus on frontal ridge narrow; postvertical spines wanting or not differentiated as in *Syllegomydas* (*Notobates*); antennae (cf. text-fig. 15, left) shortish as in *Syllegomydas algiricus*, but shorter than in *Notobates*, segment 3 usually rather shortish, about as long as, or distinctly much shorter than, club, the latter more dilated beyond middle, more elongate-pyriform like that of *Syllegomydas* and unlike that of its subgenus *Notobates*, its apical sensory area also terminal, subtruncate or truncate and not so conical as in *Notobates*; proboscis (cf. text-fig. 15, left), though very much reduced and even more so than in ♀♀ of the subgenus *Notobates*, still more perceptible in miniature than in *Syllegomydas algiricus*; buccal cavity not so reduced as in latter; palps minute.

*Wings* as in subgenus *Notobates* and genus *Afroleptomydas*, infuscated in

middle parts, especially along veins, the apices of wings rather sharply pointed; base of axillary lobe rather subtruncately rounded, broadish; alula broad; first posterior cell at apex not consistently stalked as in *Syllegomydas*, either opening narrowly on costal margin (cf. text-fig. 15, upper right), or much narrowed and angularly subtending on it.

*Legs* longer than in *Syllegomydas algiricus*, the hind femora longer, proportionally less thickened, more clavately so, their double row of spines below longer, more slender, more like those of subgenus *Notobates*; spicules on hind tibiae longish, more bristle-like; hind tarsi relatively short, shorter than in *Syllegomydas (Notobates)* and, excluding claws, about or only a little more than half length of hind tibiae; basal segment of hind tarsi rather thickened, proportionally long, very much longer than claw-segment; pulvilli distinctly reduced, scarcely extending beyond middle of claws, whereas in *Syllegomydas* they almost or do reach apices of claws.

*Genital segments* in ♀♀ with the last vertical genital segment markedly shortened, with a much shorter vertical carina which is much shorter than half length of lower margin of the sclerite; opening below the last tergite much smaller than in *Syllegomydas algiricus*, and lobes in it much smaller, less triangular; spines on oviscape comparatively longer, distinctly more pointed apically than in latter genus.

The ♀♀ of this genus appear to differ from the ♀ of *Notosyllegomydas* (n.gen. to accommodate *Syllegomydas brincki* of Bequaert), described farther on, in the relatively broader interocular space on vertex, the non-granulate and non-striate thorax above which has 4 bare streaks and 5 streaks of fine hairs or tomentum, ochreous yellowish colouration on abdomen above, more acuminate abdomen, not entirely bare metanotum, less distinctly stalked first posterior cell, relatively shorter tarsi, especially hind ones, and not entirely vestigial pulvilli.

The only two species of *Namadytes* known occur in South West Africa, and the type-species of the genus is *Namadytes vansoni* n.sp.

The two species may be separated as follows:

- (a) Dorsum of abdomen discally on tergites 3-5 broadly and extensively ochreous yellowish and to a lesser extent also discally on 2 and with the central discal part of 6 reddish; hind margins of tergites 1-3 and 4 and 5 discally yellowish whitish; last tergite more coarsely grooved; antennal segment 3 much shorter, it, together with 1 and 2, as long as club, the latter more rapidly thickened from base; proboscis more vestigial, represented only by small globular labella; infusion in wings less conspicuous along veins; apex of first posterior cell narrowly open; oviscape on each side with about 9 spines; slightly larger, about 18 mm  
♀ *vansoni* n.sp.
- (b) Dorsum of abdomen less extensively ochreous yellowish, only so discally on hinder two-thirds of tergites 3-5; hind margins of 1-4 and 5 and 6 discally more whitish, the latter only centrally; last tergite less coarsely grooved; antennal segment 3 much longer, only a little shorter than club, the latter more gradually thickened to beyond middle; proboscis rudimentary, but with a distinct short stem and small labella; infusion in wings more evident in middle part and there darker, more blackish brownish or conspicuous along veins; apex of first posterior cell angularly subtending or sessile on costal margin; oviscape with only about 6 or 7 spines on a side; slightly smaller form, about 15 mm long .. ♀ *prozeskyi* n.sp.

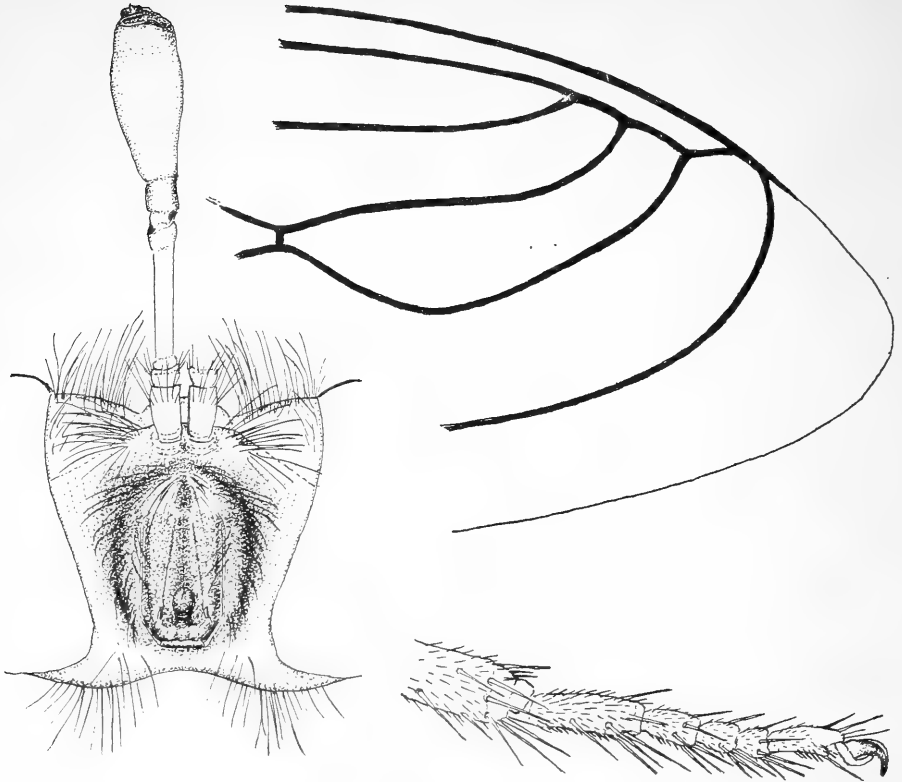


FIG. 15

Left: Fronto-facial part of head of ♀ *Namadytes vansoni* n.gen. et n.sp., showing the vestigial proboscis and right antenna.

Upper right: Apex of wing of same ♀.

Lower right: Left hind tarsus of same ♀.

*Namadytes vansoni* n.sp.

*Body* mainly dark, the pleurae, especially pteropleural part, appearing more dark reddish brownish, the dark sides of abdomen also slightly more dark reddish brownish or castaneous brownish than black; antennae dark reddish brownish, the clubs paler, more reddish to orange reddish, especially towards apices; clypeus dark; rudimentary proboscis and base of buccal cavity reddish brownish; humeral tubercles dull reddish yellowish or reddish brownish; postalar calli reddish brownish; tergite 2 patchy ochreous yellowish discally; tergites 3-5 broadly ochreous yellowish discally and 6 more reddish yellowish only along central part discally; hind margins of tergites 1-5 yellowish whitish, very broadly so on 1-3 and broader discally, only discally on 4 and 5; bases on extreme sides of 2-6 also yellowish whitish; bullae small, black; venter yellowish brownish, becoming darker on sternites 5 and 6 and almost black posteriorly, the hind margins not yellowish; legs dark castaneous brownish or reddish

brownish, the knees and extreme apical margins of tibiae yellowish; apical part or half of claw-segments of tarsi and basal halves of claws also yellowish.

*Integument* of front part of vertex, middle part of frons and clypeus shining, the rest covered with dense greyish whitish tomentum like head behind; thorax above dull, but with 4 broadish streaks and a very narrow, central line of greyish whitish tomentum, the submedial two of which are confluent basally; scutellum shining on hinder two-thirds; metanotum also with greyish whitish bloom like most of pleurae; integument of abdomen shining above, especially discally to tergite 6, the rest dull, the extreme sides of 2-5 rugulose punctured, their sides also transversely somewhat wrinkled, but 6 more so and 7 and 8 rather densely, transversely, rugulose striate, 8 being very coarsely grooved; venter also punctured on extreme sides of sternites 2-4 and transversely wrinkled on sides, 7 and 8 more coarsely so and 8 also distinctly grooved along centre; integument of hind trochanters distinctly transversely grooved behind, that of femora transversely striate and covered with feeble setiferous granulation, and that of hind tibiae also somewhat setiferously granulate and obscurely transversely striate.

*Vestiture* with the somewhat sparse longish hairs on head very faintly greyish yellowish on vertex, whitish on rest of head; very short and sparse ones in streaks on thorax above mainly whitish, but faintly tinted sericeous yellowish along anterior discal part of two submedial streaks; shortish sparse hairs on pleurae, sides of metanotum and tergites 1 and 2 also mainly whitish; reversed ones on last two abdominal segments short, fulvous, rather dense on tergal part; those on genital segment fulvous yellowish; hairs on legs shortish, stiffish, more setae-like, mainly whitish; spines and spicules pale yellowish or pallid.

*Head* (text-fig. 15, left), with the interocular space on vertex broad, only a little less than twice distance from vertex to antennae, but quite twice this at level of antennae; vertex slightly sagged down at middle, the ocellar ridge being prominent there; inner margins of eyes along frons slightly convergent towards vertex; oblique sutural line on each side just above antennal level rather distinct; antennae much shorter than thorax (excluding scutellum); segment 1 not much thickened, a little more than twice length of 2; segment 3 relatively short, distinctly shorter than club, in fact segments 1, 2 and 3 combined about as long as club, apical sixth of 3 thickened almost knob-like, more so than in species of *Syllegomydas*; clubs subspindle-shaped or elongate pyriform, relatively rapidly thickened to thickest just beyond middle from its bottle-neck-like constricted base, feebly constricted again in apical part; clypeus not very prominent above, grooved sagittally; proboscis very rudimentary, confined to extreme base of buccal cavity, only its labellar part prominent as a small, slightly striated knob; palps minute or vestigial.

*Wings* rather pointed apically, more or less uniformly or diffusely tinted yellowish brownish in middle parts, being darker along veins, the base, costal cell, apex and hind border with a milky whitish tint in certain lights; veins brownish; first posterior cell (text-fig. 15, upper right) open on costal margin

to a certain extent, the apical part not narrowed but roundly touching the margin; apex of discoidal cell shortly stalked; axillary lobe subtruncate basally, broadest there; alula normally large, lobe-like; halteres yellowish whitish.

*Legs* with the hind femora only very slightly thickened, armed below with a double row of spines on slight tubercles from about middle; spicules on hind tibiae on outer lower apical part and apical spurs, as well as spicules on tarsi, rather long and conspicuous; hind tarsi (text-fig. 15, lower right) relatively shortish, scarcely more than half length of tibiae, the basal segment rather thickened, considerably longer than claw-segment; pulvilli shortened, extending not much beyond basal half of claws.

*Oviscape* with 9 brownish spines on each side; yellowish lobes below oviscape with longish hairs.

From a single ♀ specimen (holotype) in the Transvaal Museum.

Length of body: about 18 mm

Length of wing: about 14.5 mm

*Distribution*: South West Africa: near Seeheim in Great Namaqualand (G. van Son, May 1933).

In superficial appearance and colour of dorsum of abdomen this species resembles certain species of *Ectyphus*, such as *flavidorsalis* and *bitaeniatus*.

#### *Namadytes prozeskyi* n.sp.

Another ♀ specimen from South West Africa which also belongs to this new genus is very near the type-species *vansoni*, but, apart from being smaller, differs in the following respects:

*Body* also mainly dark, similarly coloured, but dorsum of abdomen darker, the yellowish ochreous being less extensive, only a little more than apical halves of tergites 3-5 being less extensively yellowish ochreous discally; venter on the whole much darker, even the paler basal half darker brownish; sides of clypeus more brownish; a slight area around yellowish brownish humeral tubercles also being yellowish, not dark as in *vansoni*; both postalar calli as well as hinder half of scutellum pale yellowish brownish; hind margins of tergites 1-6 conspicuously more whitish, that across 1 very much narrower, that across 5 not reaching sides, that on 6 confined to only central discal part, and that across 2 the broadest; legs similarly coloured.

*Integument* with the same parts shining; that of abdomen very similar, but with less coarse and more obscure transverse wrinkles on sides, the last two segments, especially last, being distinctly less coarsely, transversely, rugulose striated; integument of legs slightly finer transversely striated, with less evident setiferous granulation.

*Vestiture* and tomentum very similar, but hairs on vertex and entire head more whitish; rest of hairs on body and legs similarly coloured, though those on legs distinctly slightly less dense.

*Head* with the inner margins of eyes along frons subparallel from antennal level to vertex; antennae also shorter than thorax, but proportions of segments



entirely different, segment 1 about 2.6 times length of 2; segment 3 however distinctly much longer than in *vansoni*, by itself slightly or scarcely shorter than club, its apical fifth thickened; clubs relatively much shorter than in *vansoni*, more gradually thickened to beyond middle; proboscis, though much reduced and small, with its stem and labella separately perceptible, though in miniature, the labella even with minute spinules; clypeus slightly more convexly prominent.

*Wings* distinctly more darkly infuscated, less uniform or diffuse in middle parts, but due to darker, more conspicuous, more blackish brown borders along veins in middle parts, the same parts however milky whitish; veins darker brownish; first posterior cell angularly subtending on costal margin; other venational characters similar; knobs of halteres with a darker spot above.

*Legs* proportionally slightly shorter; hind femora also slightly thickened, but apparently with fewer pallid spines below in apical half; hind tarsi, though also shortish, distinctly a little more than half length of hind tibiae, the basal segment also much longer than claw-segment; pulvilli similarly reduced.

*Oviscape* with only about 7 more pointed spines on each side.

From a single ♀ specimen (holotype) in the Transvaal Museum.

Length of body: about 15 mm

Length of wing: about 11.3 mm

*Distribution*: South West Africa: Arechadamab in Game Reserve (O. Prozesky, 11th May 1959).

#### NOTOSYLLEGOMYDAS n.gen.

*Syllegomydas* Bequaert (*nec* Becker), 1959: 363. (n.syn.)

Bequaert described a ♂ and a ♀ specimen from South West Africa in 1959 as *Syllegomydas brincki*. From the description and illustrations it is quite evident that, notwithstanding the vestigial proboscis and stalked first posterior cell, these specimens cannot be referred to the north African *Syllegomydas s.str.* of Becker. Not only does the reduced aedeagal apparatus but also certain other characters, such as the markedly broad interocular space on head below and the entirely bare metanotum, distinguish them from species of *Syllegomydas*. For these specimens I propose a new genus *Notosyllegomydas* which according to Bequaert's description and text-figures shows the following characteristics distinguishing it from other South African genera with vestigial proboscis and stalked first posterior cell:

Facial region very broad, the interocular space across base of buccal cavity on head below markedly broad, even broader than space across vertex; dorsum of thorax finely granular or striate, without 3 or 4 distinct or conspicuous streaks of hairs; vestiture on head, body and legs markedly sparse, shortish; metanotum entirely bare; aedeagal apparatus in ♂ in form of a reduced globular structure bearing two phallic tubules and an equally long, central, dorsal process or epimere (these structures in other South African genera, with a vestigial proboscis, are either three-pronged or in form of a longer, cylindrical process

with two longer, phallic tubes and a longer, dorsal epimere or apophysis, or as in the new genus *Namamydas* in form of a long, stoutish, triquetrous process, composed of two parallel, contiguous, ventral, phallic tubes attached to a dorsal rod or epimere); a very distinct disparity between the shape and length of the hind claws of the ♂ and ♀; and the very much reduced or vestigial pulvilli of the ♀ in comparison with ♀♀ of related genera where they are only slightly shortened and not vestigial.

At present represented by only the one species *Syllegomydas brincki* described by Bequaert.

*Notosyllegomydas brincki* (Beq.) n.comb.

*Syllegomydas brincki* Bequaert, 1959: 363, figs 6-9.

This type-species can be easily identified from the good and comprehensive description and text-figures of Bequaert.

Length of body: about 14-19 mm

Length of wing: about 12-14 mm

*Distribution*: Kaokoveld in South West Africa (June).

**NAMAMYDAS** n.gen.

This new genus, represented in the collections before me by a single ♂ specimen from Namaqualand, appears to be related to the north African *Syllegomydas* according to descriptions given of the latter by authors, agreeing with species of it in the much reduced and vestigial proboscis and the shortly stalked first posterior cell, but may at once be distinguished by the markedly narrow interocular space (cf. text-fig. 16) just below the buccal cavity, the entirely bare metanotum, the distinctly foveately depressed sternites 6 and 7,

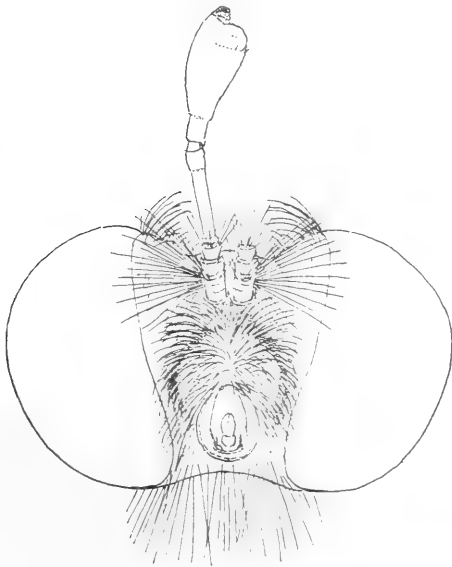


FIG. 16

Ventral view of head of ♂ *Namamydas maculiventris* n.gen. et n.sp. to show fronto-facial region, much reduced proboscis, right antenna, and comparatively large eyes.

the presence of only 3, not 4, bare streaks on disc of thorax of which the lateral submedial ones are present only in hinder half and the central one not divided by a narrow, central line or streak of fine hairs or tomentum.

Still more distinctive is its peculiar, triquetrous, apically-truncated, aedeagal apparatus (cf. text-fig. 17), composed of two parallel, contiguous, ventral (posterior) aedeagal or phallic tubes fused or intimately attached to a dorsal (anterior) part or epimere, evident apically in the truncated part as a rod-like structure as shown in the text-figure.

Other generic differences may be gauged from the description of the type-species *Namamydas maculiventris* described below.

*Namamydas maculiventris* n.sp.

This species with its spotted abdomen is characterized as follows:

*Body* with the head, thorax and basal dorsal part of abdomen black; the sides basally of tergite 1 and rest of abdomen mainly yellowish, but following parts however dark, blackish brown or blackish: discal part of tergite 2, a spot on side of 2, a large and apically-narrowed discal spot on 3, a smaller one on 4, a still smaller one basally on 5, a large spot on each side of tergites 3-7, and medial spots on the sternites (large on 5-7, smaller on 2, and absent on 8); hind margins of tergites whitish, narrower and only discally on 1; bullae black, shining; humeral tubercles and area below base of wings also yellowish; postalar calli and hind margin of scutellum reddish brownish; antennae reddish brownish; legs with the front and middle femora dark castaneous brownish, their apices yellowish, the hind femora to a certain extent also dark castaneous brownish to blackish brown, but more than basal third, their outer lower surfaces and their apices yellowish like all the tibiae and tarsi.

*Integument* of middle part of frons, postalar calli, scutellum, tergite 1 above, to a lesser extent 2 and 3 discally, and to a lesser extent also integument of femora, shining; that of rest of abdomen above duller, due to rather dense, transverse, 'nadelrissig' puncturation; that of thorax above dull, due to leathery microsculpture, and pleurae also dull with similar microtexture.

*Vestiture* with rather dense and longish, whitish hairs on head, sides of thorax, propleurae, along hind, and to a certain extent also anterior, margins of mesopleuron, on metapleurae in front of halteres, on tergites 1 and 2 and to a lesser extent on sides of 3; shorter and sparser hairs on disc of thorax also whitish, absent from a narrow central streak and from a broader, submedial patch beyond middle on each side; shortish, decumbent ones on rest of abdomen above rather dense, also whitish, slightly longer on sides of tergites; hairs on venter also rather dense, gleaming whitish on sternites 5-7; hairs on hypopygial structures whitish, long on hind margin of lateral lobes of tergite 9; those on legs also fairly dense and long, longer on femora, whitish, but with feeble sericeous yellowish gleams; spines and spicules on legs yellowish.

*Head* (text-fig. 16) rather broadish, very much broader than broadest part of thorax; interocular space on vertex much broader than that on head below;

antennae relatively short, shorter than thorax (excluding scutellum); segment 1 thickened, about 2·3 times length of 2; segment 3 distinctly thickened (segment-like) apically, distinctly much shorter than club; the latter elongate pyriform, its extreme base narrowed bottle-neck-like, its apical prominence rather broadish, obliquely crater-like; proboscis very short, rudimentary or vestigial, the entire structure including base shorter than antennal segment 1, the proboscis-stem itself shorter than labellar part; palps minute, scarcely evident.

*Wings* rather markedly short, entirely glassy hyaline; veins yellowish reddish; apex of discoidal cell with a rather longish stalk; squamal margin and halteres pale yellowish.

*Abdomen* with sternites 6 and 7 markedly depressed or hollowed medially.

*Legs* relatively short; hind femora only slightly thickened, armed below with a double row of relatively slender spines from about middle; tibiae slightly curved; basal segment of hind tarsi much longer than claw-segment.

*Hypopygium* (text-fig. 17) with the combined anal lobes well developed, broadish, deeply incised apically, the individual lobes slightly curved inwards; tergite 9 rather visible tergite-like, its hind margin and those of the two lateral lobes combined subtruncate, not angularly indented or incised at middle as in most other genera and species, the hind margins of the lobes with markedly long, bristly hairs on sides; sternite 9 inflated, rounded apically, medially slightly grooved and not keeled apically, the processes on sides not projecting

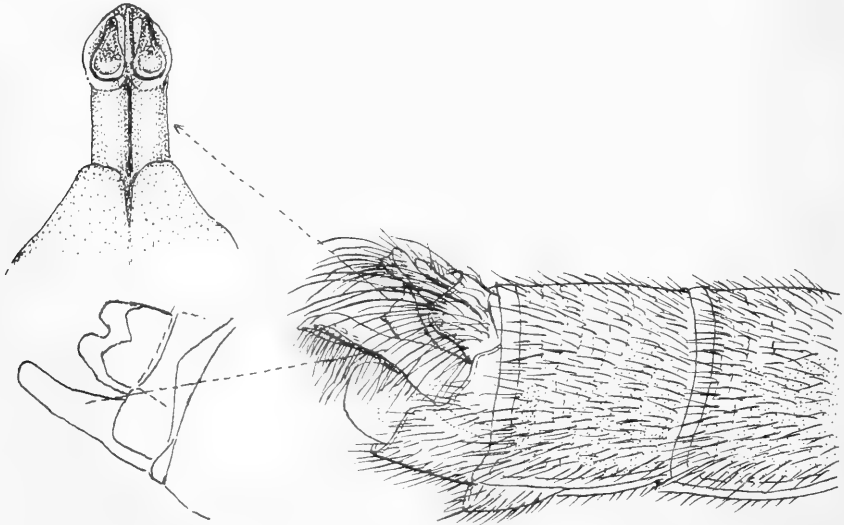


FIG. 17

Side view of hypopygium of ♂ *Namamydas maculiventris* n.gen. et n.sp., showing also separately dorsal view of anal lobes, right lateral lobe of the not deeply incised tergite 9, right process of sternite 9, and more enlarged oblique posterior view of aedeagal apparatus, consisting of two contiguous phallic tubes obliquely truncated apically (resembling the tip of an elephant's trunk) into a gonoporal part which also shows the dorsal (anterior) epimeral rod-like part.

much beyond anal lobes, blunt apically and slightly curving inwards apically; aedeagal apparatus in form of an apically-truncated, triquetrous process, in the truncated part, resembling the apex of an elephant's trunk, of which there are visible the two gonoporal structures of the two parallel, contiguous, phallic tubes and dorsally (anteriorly) to these the central, rod-like apophysis or epimere as shown in text-figure.

Holotype in the South African Museum.

Length of body: about 15 mm

Length of wing: about 9.5 mm

*Distribution*: Vioolsdrif in the Richtersveld of north-west Namaqualand (Museum staff, March 1935).

#### GENUS HALTERORCHIS Bezz.

*Halterorchis* Bezzi, 1924b: 217.

This is a very remarkable South African genus, known only from the female sex. It may however be easily distinguished from all other South African genera of Mydidae in the following respects:

*Body* rather smallish; abdomen proportionally broad and bulky, with a peculiar pattern of two discal, yellowish, crescent- or  $\square$ -shaped spots on tergites in at least basal half of abdomen.

*Integument* above and below mainly dull, even pleurae dull.

*Vestiture* with the individual hairs on head, thorax, pleurae, and base of abdomen at least more granular or microscopically ctenate than in other genera; hairs on these parts, as well as on legs, even in ♀♀, rather well developed and relative to body rather longish; those on tergites 2-6, though shorter and sparser, nevertheless distinct, and those terminally in ♀♀ denser and apparently not granular.

*Head* (pl. 2, fig. 1, above) with the interocular space on vertex relatively broad, broader than an eye; sides of vertex less tumidly convex or prominent than in other genera; sides of frons and face tending to be subparallel or parallel, the head below relative to vertex also very broad; antennae (cf. pl. 2, fig. 1 and text-fig. 18, left below) markedly short, shorter than transverse diameter of head and also much shorter than width of thorax in front of wing-bases, with segment 3 remarkably short, only subequal in length to, or only a little longer than, segments 1 and 2 combined, much shorter than club, its apical dilated part very short; club greatly swollen or inflated, as long as or longer than antennal segments 1, 2 and 3 combined; proboscis very much reduced, vestigial in form of a scale-like rudiment.

*Wings* (cf. text-fig. 18A) markedly narrow, appearing pedunculate, due to small or narrowish alula; apical cross-vein of costal cell (or stalk of first posterior cell) almost non-existent, the costal cell sharply acute apically, and outer or posterior vein of first posterior cell ending in its apex or immediately before it (first posterior cell actually opening on apical part of extreme apical part of second vein); base of second submarginal cell either truncate and with an

appendix or acute and without an appendix; outer or posterior vein of first posterior cell at a higher level than posterior vein of third posterior cell.

*Abdomen*, in ♀♀ at least, with the bullae very small or minute; tergite 8 smaller and narrower than in most genera and retractable into 7; oviscape smallish, with a row of stoutish spines on each side as in most other genera.

*Legs* (cf. pl. 2, fig. 1, below) with both front and middle femora armed with a row of slender, bristle-like spines on outer side below; hind femora not thickened, clavate, and are not unarmed as stated by Bezzi, but are armed with either a single row of slender, bristle-like spines below, or also with a second row on outer side (cf. text-fig. 18A, right below); tibiae armed with rather numerous spicules; pulvilli reduced, relatively shorter or smaller, not reaching apices of claws.

The type-species of the genus is *inermis* Bezzi which is represented in the South African Museum by a solitary ♀ specimen. I have since collected a ♀ specimen of still another species. Both species occur in very dry and semi-arid regions. Bezzi's species was collected in Namaqualand and the other in the Koup Karoo. The males of both are still unknown. The two known species may be separated as follows:

- (a) Antennal club about as long as antennal segments 1, 2 and 3 combined; clypeus, sides of thorax, disc of thorax, postalar calli, metanotum dark or black; hind margins of last two tergites not very broadly pale or yellowish; basal yellow crescentic patches present on each side only on tergites 2-4; last three sternites more brownish; bullae relatively larger, about as long as knobs of halteres; base of second submarginal cell more truncate and with an appendix; first posterior cell broadish apically; hind femora with only a single row of bristle-like spines below . . . . . ♀ *inermis* Bezzi.
- (b) Antennal club much longer than rest of antennal segments combined; clypeus, sides of thorax, an antero-lateral infusion, two submedial streaks on disc of thorax, postalar calli and sides of metanotum pale yellowish reddish to a variable extent; hind margins of last two tergites also broadly pallid or very pale yellowish; pale yellowish, basal crescentic patches present on each side of tergites 2-5 and indicated also on 6; last three sternites also mainly yellowish discally; bullae minute, more puncture-like; base of second submarginal cell distinctly acute; without an appendix; first posterior cell distinctly more narrowed apically, more subacute; hind femora with a second row of bristle-like spines on outer side  
♀ *karooensis* n.sp.

#### *Halterorchis inermis* Bezzi.

*Halterorchis inermis* Bezzi, 1924b: 217.

This species described by Bezzi is briefly characterized as follows:

*Body* with the clypeus brownish, the sides of thorax, postalar calli, scutellum and metanotum mainly dark or black; crescent-shaped, yellowish patches present on dorsum basally on each side of tergites 2-4 and indistinctly on 5; last three sternites more brownish yellowish; pleurae mainly dark; front and middle femora darkened above, the hind ones not or scarcely so.

*Vestiture* mainly whitish and as described for genus.

*Head* (pl. 2, fig. 1, above) with the club of antennae subequal in length to or as long as antennal segments 1, 2 and 3 combined; segment 3 a little longer than 1 and 2 combined.

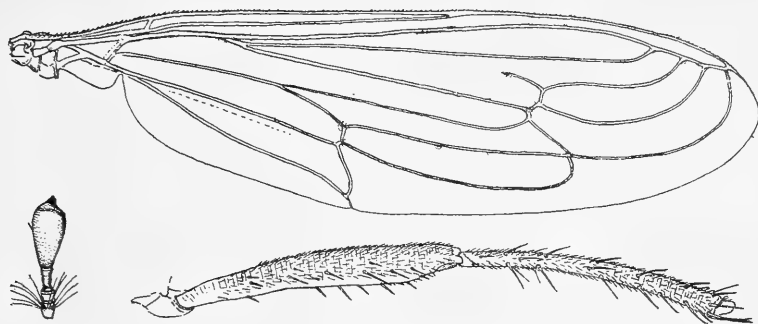


FIG. 18A. Right wing of ♀ *Halterorchis inermis* Bezz.

Below left: Dorsal view of left antenna of ♀ *Halterorchis karoensis* n.sp.

Below right: Side view of left hind femur and tibia of same species, showing the slender lateral and ventral spines on femur and rather numerous longish spicules on tibia.

*Wings* (text-fig. 18A) with the base of second submarginal cell truncate, and with a distinct appendix; first posterior cell broad apically, only a little or scarcely narrower apically than second submarginal.

*Abdomen* with the bullae about as long as knobs of halteres; hairs on last three tergites very pale fulvous yellowish brownish.

*Legs* (pl. 2, fig. 1, below) with only a single row of very slender, bristle-like spines below on hind femora; pulvilli shortish, just about reaching middle of claws.

Length of body: about 9 mm

Length of wing: about 7.88 mm

*Distribution*: Namaqualand: Okiep.

### *Halterorchis karoensis* n.sp.

The ♀ of this second species from the Koup Karoo resembles *inermis* very closely, but may at once be distinguished as follows:

*Body* with the clypeus, humeral tubercles, sides of thorax, postalar calli, two longitudinal, submedial, discal streaks on thorax, and sides of metanotum pale yellowish reddish; tergites 2-5 with crescent-shaped yellowish patches; tergite 6 with a yellowish streak on each side discally; sides of tergites more or less with a yellowish streak in apical halves and hind margins of 1-6 more broadly yellowish, and even 7 narrowly so; entire venter mainly yellowish, the sternites with a darkish streak on each side; pleurae with more yellowish on propleural part above coxae, and also in pteropleural part below wing-bases.

*Head* with the antennal clubs (text-fig. 18A, left below) relatively longer, much longer than rest of antennal segments combined; segment 3 markedly short, subequal in length to segments 1 and 2 combined.

*Wings* with the base of second submarginal cell acute, appearing stalked, farther away from apex of first basal cell, without an appendix; first posterior

cell distinctly more narrowed apically, subacute, much narrower apically than second submarginal.

*Abdomen* with the bullae minute, punctiform; hairs on tergites 7 and 8 slightly darker, more fulvous brownish or golden brownish.

*Legs* with two rows of slender, bristle-like spines on hind femora (text-fig. 18A, right below), the second row along lower outer face; pulvilli distinctly longer, extending a little beyond middle of claws.

Single ♀ holotype in the South African Museum.

Length of body: about 12 mm

Length of wing: about 9 mm

*Distribution*: Koup Karoo: Voëlfontein in the Prince Albert division (A. J. Hesse, March–April 1929).

#### NOTHOMYDAS n.gen.

A single ♂ specimen, in the category of the division with a double aedeagus and collected on the South West African side of Violsdrif along the Orange River, obviously belongs to a remarkable new genus which differs from all the other known South African genera, with the exception of *Haplomydas*, in the presence of only 7 tergites and sternites and the structure of its hypopygium. In some of its characters it shows some affinities with the genera *Haplomydas*, *Halterorchis* and *Cephalocera*. Taxonomically it is to be accommodated in the tribe Syllegomydai.

It is characterized by the following combination of characters:

*Head* broader than thorax, somewhat flattened antero-posteriorly, the occipital part not very convex; interocular space on vertex much broader than that below; eyes large; vertex rather sunk in medially; ocellus scarcely visible, vestigial or wanting; antennae (cf. text-fig. 18B, top left) markedly short, segment 1 longer than 2, segment 3 relatively short, much shorter than club, the latter inflated, pyriform, subequal in length to, or a little longer than, rest of segments combined, its sensory area terminal; clypeus relatively small; proboscis comparatively long and slender as in *Cephalocera*, longer than thorax, its labella elongate oval, in side-view, rather broad; palps distinct; postvertical spines not evident.

*Thorax* quadrangular; humeral tubercles comparatively small.

*Wings* relatively narrowish, venation much as in *Afropleptomydas*; first posterior cell however opening on second vein, narrowly or broadly; base of second submarginal cell without or with a very short or rudimentary appendix; apex of discoidal cell stalked; alula well developed, lobe-like.

*Abdomen* cylindrical, tapering slightly posteriorly, remarkable in having, apart from the hypopygial structures, only 7 tergites and sternites, not 9 tergites and 8 sternites as in ♂♂ of other genera, tergite 8 and basal part of 9 and sternite 8 being hidden, not externally visible, or wanting; tergite 2 conspicuously transversely depressed some distance away from its base; posterior lateral lobes of tergite 9 (cf. text-fig. 18B, below left (IX.T.) and below right (IX.T.)) how-



ever, unlike the usual triangular, non-modified, lobe-like extensions of all other South African genera, modified to take part in the copulatory act, projecting as an arched, broadish, flattened, straplike process on each side from below hind margin of tergite 7 (VII) to the hypopygial sternite 9 (IX.S.), its base broadened and its apical part truncate (cf. enlarged tip to left of text-fig. 18B, below right) and on each side twisted more obliquely vertical to rest on apical indentation of sternite 9; anal lobes isosceles-triangle-like, markedly narrowed basally (cf. dorsal view in text-fig. 18B, right below); tergite 1 slightly depressed above; bullae rather small, widely separated above.

*Hypopygium* itself (cf. text-fig. 18B, below left, below right and top right) with sternite 9 navicular, scoop-like, its apical part indented V-shaped (cf. text-fig. below middle), the edge of the indentation (or what corresponds to the rim of the scoop) on each side raised carinately, and slightly externally to this the apical part of the sternite is produced posteriorly on each side into a flattened, bluntly pointed process or prong, slightly hollowed below and, on inner side, continuous with the carinately raised edge beginning at apex of apical indentation of the sternite; aedeagus (text-fig., top right) ending in two phallic tubes, the apical part of each of which is curved forwards and slightly outwards, and without any visible epimere.

*Legs* comparatively shortish; front and middle femora with shortish, bristle-like spines along inner surfaces below; hind femora only slightly clavately thickened, with a row of shortish spines along outer lower surfaces which become longer towards apex and also double near apex; front and middle tibiae slightly curved, the hind ones less so, in apical part, non-carinate below, without an apical process, and with a row of spicules along outer apical half; front and middle tibiae with a crown of about 4 spurs apically and hind ones with about 8 of which the medial ones below are the longest; claws slender, curved hook-like apically; pulvilli well developed, broad, extending to curve of claws.

*Integument* of greater part of head dull, excepting shining boss-like sides of vertex, centro-frontal ridge, clypeus, head below, and first antennal segment; integument of thorax above, scutellum, metanotum, greater part of abdomen above, pteropleural and posterior pleural parts also dull; that of tergite 1, sides and lateral articulating surfaces of rest, bullae, venter and legs more or less shining.

*Vestiture* not very well developed, not very dense, with the individual hairs finely serrate or ctenate, those on vertex, anterior part of frons, clypeus, sparsely on head below, and across upper part of occiput longish, the rest of head densely covered with tomentum, except along central frontal ridge; hairs on thorax above shortish, not very dense, slightly longer and denser on humeral tubercles and along notopleural part and postalar calli; metanotum bare; pleurae with a tuft of longish hairs on posterior upper part of mesopleuron, on pteropleuron and metapleural part in front of halteres, the rest of pleurae bare except for sparse tomentum in posterior part; hairs on tergite 1, especially on sides, also longish; those on sides of tergite 2 and to a certain extent 3 sparse and a little

longer than relatively less dense and shorter ones on rest of segments; more than apical halves of tergites up to 5 dulled by tomentum and 6 and 7 entirely tomented discally; sternite 9 (hypopygial part) with longish hairs on sides, its processes also with hairs laterally below; hairs on legs not very dense, with some longish ones on inner basal part and along lower surface of hind femora and sparse longish ones along inner lower parts of hind tibiae; tibiae however with denser shortish hairs, but those along hinder outer parts of front and middle ones longer than rest, the front tibiae with denser shortish ones below.

From the aberrant genus *Haplomydas*, of which the ♂♂ also have only 7 visible tergites, no visible tergite 8 and partially modified lobes of tergite 9, this new genus may at once be distinguished by the distinctly much more modified lobes of tergite 9, differently-shaped processes of sternite 9, the absence of even a vestige of sternite 8, the much longer proboscis, a posterior cell which does not open on costal margin, non-incrassate hind femora, etc.

From *Halterorchis*, of which only ♀♀ are known, which has similar short antennae, it differs in the very much longer proboscis, absence of an ocellus, more uniformly distributed hairs on thorax above, longer metanotum, characteristic transverse depression across tergite 2 some distance away from base, broader wings, much shorter basitarsi, etc.

From *Cephalocera*, in the next tribe, which it resembles superficially in general appearance and in the relatively long proboscis, it may however at once be distinguished by the posterior vein of third posterior cell in wings which does not originate in the anal cell, by the absence of visible tergites 8 and 9 and sternite 8, and by the entirely differently-shaped lobes of tergite 9 and different type of hypopygium.

The type-species of this new genus is *Nothomydas gariepinus* n.sp. described below. The specific name is derived from the old Hottentot name 'Gariep' for the Orange River.

#### *Nothomydas gariepinus* n.sp.

The ♂ specimen is characterized as follows:

*Body* elongate, asilid-like, mainly dark or black; antennae dark blackish brownish; postalar calli reddish brownish; anterior thoracic spiracular area, posterior sutural part of mesopleuron and area below base of halteres reddish brownish; area of hind margin of tergite 2 below bullae tinted obscurely yellowish brownish; hind margins of tergites 4–6 dirty yellowish whitish, with a slight touch of reddish brownish, the sides apically of these tergites, especially 7, also tinted obscurely reddish brownish (showing through dark tomentum); hind margins of sternites 5–7 also obscurely somewhat reddish brownish; sternite 9 and its processes mainly yellowish brownish; bullae shining black, elongate-oval; legs with the femora dark or blackish brownish, paler below, their bases, trochanters, and hinder part of posterior coxae more yellowish brownish, the knees of femora and extreme lower apical parts more yellowish, the tibiae slightly paler than femora, more yellowish brownish, and the tarsi,

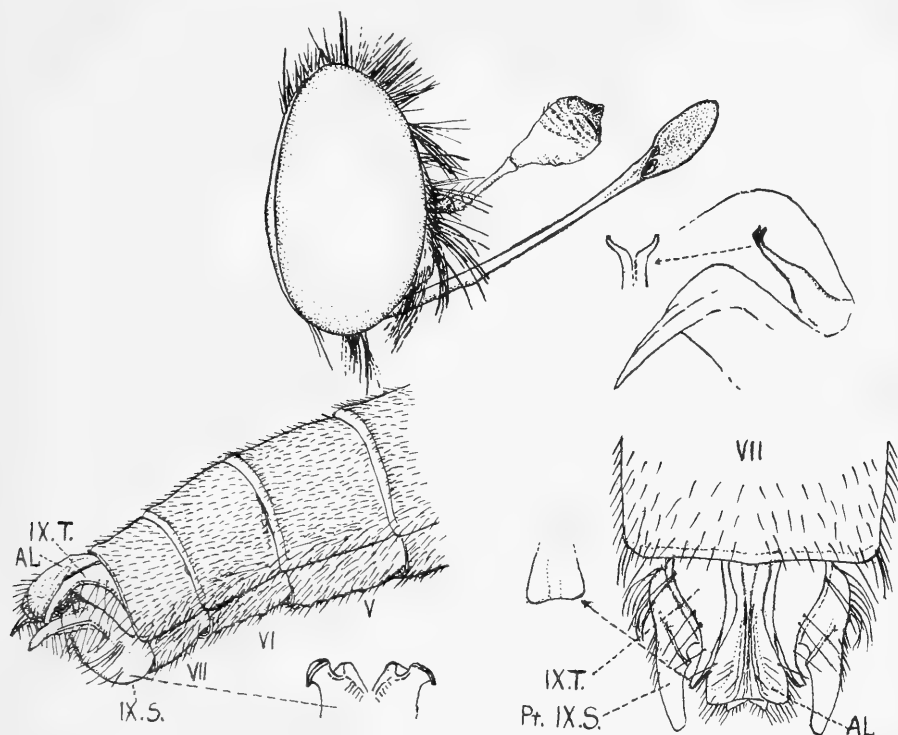


FIG. 18B

Top left: Side view of head of ♂ *Nothomydas gariepinus* n.gen. et n.sp.

Below left: Posterior oblique view of posterior half of abdomen and hypopygium of same species.

Below middle: Posterior view of apical part of sternite 9 showing V-shaped apical indentation.

Below right: Enlarged dorsal view of hypopygium and, on left, apex of process (lobe) of tergite 9.

Top right: Side and ventral views of aedeagus and two phallic tubes.

(AL = anal lobes; IX.S = sternite 9; IX.T = lobe or process of tergite 9; Pr.IX.S. = process of sternite 9; V, VI, VII = abdominal segments 5-7.)

especially front and middle ones, even paler, more yellowish; curved apical part of claws blackish.

*Integument* with the dull and shining parts as described for genus; dull, matt thorax above and metanotum finely leathery in appearance; dull discal parts of tergites of abdomen due to dark dull tomentum; integument of abdomen transversely striate, more evident on less dull and more shining sides of tergites and on venter; shining integument of legs also with fine transverse striae.

*Vestiture* mainly pale; longish hairs on each side of vertex, on frons anteriorly, clypeus and sparsely on head below entirely snow whitish; fine shortish ones on disc of thorax gleaming silky or even silvery in certain lights; longer, more apparently serrated, ones on sides of thorax, notopleural part, base of thorax, on postalar calli, scutellum, posterior part of mesopleuron, on pteropleuron, in front of halteres, on tergite 1 (especially sides) and on posterior

coxae also entirely snow whitish; more slender longish hairs on sides of tergite 2 and sides basally of 3 also whitish; very short, fine, decumbent ones on rest of tergal surfaces gleaming slightly more sericeous yellowish, slightly longer along extreme sides; hairs on venter sparser than above, more whitish basally, but gleaming more pale sericeous yellowish posteriorly; hairs on sides of sternite 9 and below laterally on its processes longish, more sericeous yellowish; longish hairs on legs snow whitish, the shorter ones, especially on tibiae and tarsi, gleaming more yellowish, but appearing sericeous whitish in certain lights; dense tomentum on head greyish yellowish, that discally on tergites dark, and that on posterior half of pleurae sparse and greyish; spines on femora and spicules on tibiae and tarsi yellowish.

*Head* with the proportions of interocular space on vertex to that on head below as 30:20; antennae (text-fig. 18B, top left) with segment 1 only slightly thickened, quite twice length of 2; segment 3 about twice length of 1 and very much shorter than club, its apical part thickened, well marked off from the rest; club inflated, pyriform, broadest beyond middle, not visibly constricted basally, subequal in length to rest of segments combined, its integument roughened, more or less transversely shallowly grooved and scabrous in more or less apical half, its sensory area gleaming slightly silvery in certain lights, occupying almost entire terminal part (except for a narrowish lateral part), more sunk in and hollowed out in lower aspect; clypeus with its dorsal length subequal to that of antennal segment 3; proboscis about 3 mm long; palps a little longer than first antennal segment.

*Wings* not reaching apex of abdomen, reaching to about apex of tergite 6, entirely clear hyaline; veins brownish, more yellowish at base of wings; apical part of second submarginal cell narrower than that of first submarginal; squamal margin yellowish whitish; halteres yellowish, the knobs yellowish whitish above.

*Legs* with a row of 4-6 distinct, spicule-like spines along inner lower aspect from about middle to apex on front femora; hind femora with a row of 8 or 9 shortish spines on feeble tubercular prominences along outer lower aspect from near base to apex, those towards base shortest, and also with about 3 or 4 apically along inner aspect; hind tibiae with about 4 or 5 spicules along outer lower aspect in apical half; basal segment of hind tarsi a little longer than claw-segment, but those of front and middle tarsi considerably shorter.

*Hypopygium* (text-fig. 18B, below left, below right and top right) as described for genus.

The unique holotype in the South African Museum.

Length of body: about 10.8 mm

Length of wing: about 6.25 mm

*Distribution*: North-west Cape: right bank of the Orange River at Vioolsdrif (South African Museum Expedition, October 1966).

Genus and species of *Syllegomydai* not identified*Midas dispar* Lw.

*Midas dispar* Loew, 1862: 3, pl. 1, figs 2 and 3.

*Leptomydas dispar* Bezzi, 1924b: 214.

*Syllegomydas dispar* Séguy, 1930: 653.

*Syllegomydas (Leptomydas) dispar* Bequaert, 1938: 332.

This species, described from Inhambane in Portuguese East Africa by Loew in 1862, is not present in any of the collections before me. Without seeing the types or representatives of the species it is impossible to place it in its true genus. Bezzi referred it to *Leptomydas (Afroleptomydas)*. Séguy on the other hand referred it to *Syllegomydas* and in this he was followed by Bequaert who listed it in the same genus. From Loew's description of the proboscis, of that of the ♂ at least, it is however quite evident that it cannot be included in the north African *Syllegomydas* nor in my new subgenus *Notobates*, both of which have only a vestigial or rudimentary proboscis. The apex of the first posterior cell, according to Loew's figures, too, is only angularly subtending on the costal margin, and is not shown as distinctly or even shortly stalked.

According to the description and the figures it can either be referred to *Afroleptomydas* (olim *Leptomydas*) as Bezzi maintained, or it can be placed in either of the two genera *Nomoneura* Bezz. and my new genus *Nomoneuroides*. If variability at the apex of the first posterior cell be ignored and the comparatively short proboscis be taken into account as well as the only slightly thickened hind femora, inclusion in the genus *Afroleptomydas* becomes doubtful and the choice must lie between *Nomoneura* and *Nomoneuroides*.

Without an examination of the metanotum, pteropleuron and mesopleuron for the presence or absence of hair, and a study of the aedeagal structures of the ♂, it is however impossible to state to which of the latter two genera it belongs if it is not referable to the former.

The abdominal pattern described by Loew, especially that of the ♀, ought to render the species easily recognizable. From the description of the two sexes there is however also a suspicion that the ♂ and ♀ do not belong to the same species.

**Cephalocerini** n.tribe

To this new tribe of the subfamily *Syllegomydinae* the two genera *Cephalocera* Latr. and a new genus *Cephalocerodes*, are referred. Both these genera are characterized by the anomalous origin of the posterior vein of the third posterior cell in the wings, which vein in both the other two tribes, the *Mydaselpini* and *Syllegomydai*, has its origin in the apical cross-vein of the second basal cell, but in these two genera it arises from the distal or apical part of the cubital vein or posterior vein of the second basal cell.

Other supplementary characters, which these two genera have in common and by which they differ from other genera, are the long, stethoscope-like, inwardly-curved, phallic tubes of the aedeagus of which the basal part is

situated in front of a medial, shield-like, posterior sclerite in the scoop-like ninth sternite; the latter sternite itself being usually dorso-ventrally flattened, navicular or scoop-like.

#### Genus CEPHALOCERA Latr.

*Cephalocera* Latreille, 1829: 480. Macquart (in part), 1838: 13. Westwood (in part), 1841: 55. Walker (in part), 1854: 372-376. Gerstaecker (in part), 1868: 77. Kertész (in part), 1909: 43. Bezzi, 1924b: 194 and 227. Séguy, 1928: 134 and 146. Bequaert, 1961a, 37 (No. 19): 4, 10 and 14. Bequaert, 1963: 55.  
*Midas* Wiedemann (in part), 1829, 15: 53, pl. 54, fig. 21. Wiedemann (in part), 1830, 2: 630.

This genus, which appears to be more or less restricted to the western and north-western, and to a lesser extent southern, parts of South Africa, and which has not been recorded from the far eastern Cape and eastern parts of the Republic, is easily recognizable by the venation in the wings. In this respect representatives of it cannot be confused with any other South African genus except the new genus *Cephalocerodes* described farther on. Briefly it is characterized as follows:

*Body* elongate, the abdomen elongate, and in ♂♂ slender and cylindrical.

*Integument* of head in front and pleural parts usually shining; that of thorax above and of metanotum more usually dull or vermicellately rugulose to a variable extent.

*Vestiture* on head, body and legs usually well developed, or even long and dense, more so in ♂♂, rarely mainly bare, even in ♀♀; metanotum, mesopleuron and pteropleuron bare.

*Head* with the proboscis characteristic, very slender, horny, usually long, much longer than in other genera, projecting straight forwards, usually much longer than antennae, its labella small and horny; palps, though small, distinctly perceptible as short, finger-like structures; antennae usually long, with elongate, elongata-conical, or elongate-pyriform clubs, but occasionally shortish and with inflated or more pyriform clubs; median ocellus very narrow, rudimentary, scarcely perceptible.

*Wings* rather shortish in some species, very characteristic in that the posterior vein of the third posterior cell originates from anterior vein of anal cell in its apical part posterior to apical cross-vein of second basal cell, not from apical cross-vein of latter cell as in all other genera, except the next genus *Cephalocerodes*; third posterior cell thus tending to be broad or much broadened basally; outer or posterior vein of first posterior cell joining second vein near its apex as in *Nomoneura*, *Neolaparopsis*, *Arenomydas* and *Syllegomydas* and not consistently the costal margin as in *Afroleptomydas*, the first posterior cell thus closed and distinctly stalked apically; base of second submarginal cell usually broadish, not narrowed and angular, with an appendix; apical part of third posterior cell rarely not very broad on first posterior cell.

*Legs* with the hind femora thickened or even markedly incrassate to a variable extent in ♂♂, less so in ♀♀ and sometimes only slightly so, armed below with two rows of spines, sometimes situated on rather prominent tubercles (in

some species the hind femora in ♂♂ also have some spines or bristle-like spines along side apically); tibiae with the hind ones usually shortened, much shorter than femora, all the tibiae with relatively few spicules, only the apical spurs being distinct, and on hind ones a few small ones apically below; hind tibiae sometimes with a very slight prominence apically below, but usually with a slight carinate ridge below, developed to a variable extent, or at least present in basal half.

*Genital segments* in ♀♀ as in most other genera, with the last perpendicular sclerite centrally sharply carinate, the second part or lobe of this oviscaple sclerite on each side also with a row or half circlet of broadish, stoutish, flattened, blunt spines as in most other genera; last horizontal tergite (8) in ♀♀ apically slightly arcuately rounded, its hind margin slightly thickened medially.

*Hypopygium* of ♂♂ with sternite 9 not covered by 8, in form of a dorsally hollowed out scoop-like, spoon-like or boat-shaped structure of which the hind rim or margin is medially incised to a variable extent, sometimes deeply indented V-shaped, and the posterior half or less is usually also sutured or grooved along the middle; processes of sternite 9 (cf. text-figs. 19, 20, 21, 22, 23) shortish, broad, curved inwards and downwards, broadened spoon-like apically to a variable extent, their apices touching or nearly touching along midline, and in some species the process is bilobed or forked apically or has an apical lobe and a ventral, somewhat angular, projection; aedeagal apparatus characteristic, in form of two curved, stethoscope-like, phallic tubes, sometimes slightly laterally compressed, projecting upwards from the bottom of the scoop-like sternite 9 and each curved inwards at an elbow-like part, the one usually crossing the other at level of processes of sternite 9 and each ending in a slight funnel-shaped gonopore; basal part of this aedeagal apparatus, or the phallic tubes, hidden by a distinct, medial, shield-like, posterior sclerite (when viewed from behind).

The type-species of the genus is *Midas longirostris* Wied. *s.str.* and not the 'longirostris' figured in Cuvier's 'Règne animal (n.ed.) Insectes, Atlas 2, pl. 172, fig. 1' of 1829, which latter species does not appear to belong to the genus *Cephalocera* at all.

The genus is fairly well represented in South Africa and 28 species are dealt with in this revision. These known species may be separated in the following key as follows:

1. (a) Thorax above distinctly or more coarsely vermicellately rugulose, often somewhat shining, with either a submedial streak or line of coarser, sometimes more longitudinal, rugae, extending on each side from humeral tubercle to base, or with a distinct depressed line or groove extending from humeral part to beyond middle; extreme sides of thorax in notopleural part rather broadish and conspicuous, especially in ♀♀; hairs on thorax above arranged in only 4 longitudinal streaks, the broad bare central one without any hairs and the submedial bare streak on each side without any, or with much fewer and sparser hairs; metanotum usually also more coarsely rugulose, or vermicellately rugulose discally and usually more coarsely convergently striate on sides . . . 2 (♂♂) 10 (♀♀)
- (b) Thorax above smooth, dull, more leathery, or with only very fine microsculpture, without a very distinct or well-defined, submedial streak of coarser rugae or a depressed

- line on each side from humeral part; extreme sides of thorax in notopleural part narrower, less conspicuous, even in ♀♀; hairs on thorax above usually denser, arranged in at least 5 streaks, being also present to a variable extent in a narrow central line or streak along the broad central bare streak, and the broadish submedial bare streak on each side distinct only in hinder half, its front part behind humeral tubercle also occupied by fairly dense hairs; metanotum usually smoother, or with distinctly less coarse sculpture . . . . . 16 (♂♂) 30 (♀♀)
2. (a) Sternite 9 not deeply and widely indented or gaping V-shaped in apical part, its apical part on each side without any inwardly-projecting dentate and lobe-like process; the normal process on each side not distinctly forked, bilobate or bidentate apically; anal lobes depressed and dull above; clypeus usually larger, longer dorsally, usually much longer than combined length of antennal segments 1 and 2; thorax above more finely vermicellately rugulose, the submedial narrowish streak of slightly coarser, or more longitudinal, rugae on each side behind humeral tubercles not, or not distinctly, replaced in more than anterior half by a depressed line or groove; hind margins of most, or all, tergites from 2 to apex whitish or yellowish, even if only discally; bullae usually paler . . . . . 3
- (b) Sternite 9 deeply and widely gaping or indented V-shaped in apical part, its apex on each side ending in a distinct inwardly and slightly upwardly projecting dentate and lobe-like process; the normal processes distinctly forked or bidentate or indented apically; anal lobes depressed and shining above; clypeus usually smaller, shorter dorsally, usually scarcely, or not, longer than antennal segments 1 and 2 together; thorax above distinctly and markedly more coarsely vermicellately rugulose or rugose, with a distinct longitudinal furrow or depressed line on each side from humeral tubercles to beyond middle; hind margins of tergites from 2 to apex not all whitish or yellowish; bullae usually darker . . . . . 7
3. (a) Infuscation in wings, if present, much paler, more yellowish brownish, either occupying more or less anterior half or slightly more up to third posterior cell, or sometimes appearing more bifasciate, the first submarginal cell being clear in its apical half; veins in apical part without any fuscous borders, except at extreme base of some of them; anal cell and usually also second basal cell clear; anterior and posterior veins of third posterior cell without fuscous borders; discoidal cell without a conspicuous central clear streak; sides of abdomen more usually more extensively pale or yellowish and, if not, wings only tinted in anterior half; rings of greyish tomentum across hind margins of tergites usually broader; hind femora less extensively darkened, their bases, lower surfaces and apices usually paler, more yellowish; antennal clubs relatively shorter, much or very much shorter than segment 3, less distinctly constricted basally, more pyriform or elongate pyriform, their sensory area proportionally smaller, usually occupying less than apical third . . . . . 4
- (b) Infuscation in wings very characteristic, very dark blackish brown, appearing trifasciate, the base, costal, marginal, first and second and anal cells darkly infuscated, the apical half of first submarginal cell and the discoidal cell centrally clear or clearer; veins in apical and hinder parts with fuscous borders; sides of tergites 1-5 more narrowly whitish on extreme sides; rings of greyish whitish tomentum across hind margins of tergites confined to the narrowish whitish hind margins; hind femora and greater part of hind tibiae very dark or blackish; clubs relatively longer, more elongate, more subspindle-shaped, a little shorter than segment 3, more distinctly constricted at base, their sensory area larger, occupying at least apical third . . . . . ♂ *micheneri* n.sp.
4. (a) Antennae much longer, segment 3 much more than half length of thorax, sometimes only a little shorter than length of latter, the clubs more elongate or elongate-pyriform; proboscis slightly longer; clypeus on the whole paler, not entirely black, and humeral tubercles, sides of thorax above, sides of metanotum to a variable extent, more extensive sides of abdomen, hind part of metapleurae, and greater part of, or entire, legs yellowish; hairs on vertex and thorax above entirely snow whitish like rest of hairs on body and legs; integument of thorax above more finely vermicellately rugulose; wings usually with the anterior half up to base of second submarginal cell tinted yellowish or yellowish



- brownish to a variable extent, even if only faintly; legs longer, more slender, and hind femora longer, more clavately thickened, with a longer slender basal part . . . . . 5
- (b) Antennae very much shorter, segment 3 much shorter, only about, or scarcely longer than, half length of thorax, the clubs relatively shorter, broader, more pyriform; proboscis relatively shorter; clypeus, humeral tubercles, sides of thorax above, metanotum and metapleurae entirely black, extreme sides of abdomen less extensively yellowish and only so in basal part, and femora mainly or more extensively darkened; hairs on vertex and thorax above discally more yellowish or yellowish brownish than snow whitish hairs on rest of body and legs; integument of thorax above appearing slightly more coarsely, more areolately, rugulose; wings greyish hyaline, not tinted in anterior half; legs relatively shorter, and hind femora shorter, thickened more subspindle-like, with a shorter basal part . . . . . 6
5. (a) Body with the yellow or yellowish reddish parts more extensive; sides of clypeus more extensively yellowish; humeral tubercles and sides of thorax more broadly yellowish; sides of metanotum with a much larger yellowish infusion; front and middle femora more extensively yellowish, scarcely darkened above . . . . . ♂ *longirostris* (Wied.)
- (b) Yellow and yellowish reddish parts slightly less extensive; sides of clypeus more extensively darkened; humeral tubercles and sides of thorax entirely dark, or former only obscurely yellowish; metanotum either almost entirely dark or yellowish on sides less extensive and indistinct; front and middle femora, and even hind ones apically, tending to more darkened above . . . . . ♂ *longirostris* (Wied.) (form of)
6. (a) Wings only greyish hyaline, not tinted; venter paler, more yellowish in basal half; bullae relatively larger, more bean-shaped, the space between them narrower, only about vertical width of bullae; rings of greyish tomentum across hind margins of tergites relatively narrower, less conspicuous; legs relatively more slender, the hind femora more subspindle-shaped, more narrowed apically, the legs on the whole paler, especially front and middle tibiae; hairs on disc of thorax and along notopleural part distinctly more fulvous yellowish and shorter ones on femora and tibiae slightly more yellowish or fulvous; processes of sternite 9 smoother, their lower apical angle more sharply produced . . . . . ♂ *propinqua* n.sp.
- (b) Wings distinctly tinted smoky brownish in anterior half; venter entirely dark; bullae relatively smaller, more oval, the space between them broader, much broader than their vertical length; rings of greyish tomentum across hind margins of tergites relatively broader, more conspicuously silvery; legs relatively stouter, the hind femora more clavately thickened, broader apically, the legs on the whole darker, more brownish, especially front and middle tibiae; hairs on disc of thorax paler, more pale greyish yellowish and those along notopleural part more contrastingly whitish, and shortish hairs on femora and tibiae also more whitish; processes of sternite 9 more coarsely punctured, their lower apical angle distinctly less sharply produced . . . . . ♂ *decepta* n.sp.
7. (a) Processes of sternite 9 distinctly bidentate or bilobate apically, hollowed below, projecting some distance posterior to the inwardly projecting dentate process at apex on each side of V-shaped indentation; anal lobes and lateral lobes of tergite 9 much longer; abdomen not bicolorous, mainly or entirely dark, the whitish hind margins of tergites 2-4 or 5 very conspicuous; bullae black, separated above by a distance much less than their vertical length; antennae distinctly longer than thorax, segment 3 very much longer than interocular space on vertex; larger forms, more than 12 mm long . . . . . 8
- (b) Processes of sternite 9 only slightly indented or emarginate apically, much flattened, lying against or touching the inwardly projecting apical dentate process on each side of V-shaped indentation of sternite 9; anal lobes and lateral lobes of tergite 9 markedly short; abdomen bicolorous, orange yellowish on greater part of tergite 1 and on 2-4, the hind margins of 2-4, more yellowish whitish, less conspicuous; bullae more reddish brownish, separated above by a space subequal to their vertical length; antennae much shorter, subequal in length to, or only a little longer than, thorax, segment 3 shorter than interocular space; shorter species, about 12 mm long . . . . . ♂ *xerophila* n.sp.
8. (a) Wings, relative to body, markedly short and broad, very darkly infuscated blackish brownish almost throughout; posterior vein of second submarginal cell markedly curved

- backwards near base; hairs on head, body and legs entirely dark or black; thorax above distinctly more coarsely vermicellately rugulose, this sculpture extending up to scutellum, the disc of thorax without distinct reddish streaks; pleurae with coarser sculpture; abdomen slender, more so in middle, tergite 1 distinctly more transversely wrinkled on sides; hind margins of tergites 6 and 7 not dulled by tomentum; anal lobes and lateral lobes of tergite 9 distinctly shorter . . . . . ♂ *nigerrima* n.sp.
- (b) Wings either normally long or, if shortened, not intensely very darkly infuscated; posterior vein of second submarginal cell not markedly curved backwards near base; hairs on head, body and legs not entirely dark, those on head and thorax at least snow whitish; thorax above usually less coarsely rugulose, the sculpture becoming finer or ceasing before scutellum, the disc of thorax with distinct reddish streaks; pleurae scarcely or less coarsely sculptured or striated; abdomen either stouter or, if slender, less markedly so in middle, tergite 1 not so coarsely striate on extreme sides; hind margins of tergites 6 and 7 dulled by tomentum; anal lobes and lateral lobes of tergite 9 relatively longer . . . . . 9
9. (a) Smaller, more slender species, the abdomen more slender; wings, relative to body, shorter, clearer, except for some brownish infuscation in basal halves of marginal and first submarginal cells and apical half of first basal cell; veins darker; central discal part of thorax black and metanotum entirely black; abdomen more coarsely and fairly densely punctured on tergites 6 and 7, and most of the hairs paler; antennae much shorter, less stout, segment 3 very much shorter, much less than 2 mm; proboscis longer, about 4·52 mm; legs much darker, more slender, the hind femora relatively less incrassate, and hind tibiae more slender, only a little shorter than femora . . . . . ♂ *caffrariensis* n.sp.
- (b) Larger, bulkier species, the abdomen stouter; wings distinctly longer, markedly broadish, entirely subopaquely faintly greyish yellowish; veins paler, pale yellowish; central discal part of thorax, as well as the two submedial streaks, reddish, and sides of metanotum also partly reddish; abdomen more sparsely punctured posteriorly, and most of the hairs from tergite 3 above and below dark; antennae very much longer, stouter, segment 3 markedly long and stoutish, quite 2 mm. long; proboscis shorter, only about 3·6-4 mm long; legs paler, with more yellowish, stouter, the hind femora relatively more incrassate, and hind tibiae stouter, distinctly much shorter than the femora . . . . . ♂ *macrocera* n.sp.
10. (a) Thorax above more finely vermicellately rugulose, the submedial narrowish streak of coarser rugae on each side behind humeral tubercle not replaced in more than anterior half by a distinct depressed line or furrow-like groove; metanotum yellowish or reddish on sides to a variable extent; bullae usually paler . . . . . 11
- (b) Thorax above distinctly more coarsely rugose or vermicellately rugulose, usually with a distinct longitudinal narrow furrow or depressed line on each side from humeral part to beyond middle; metanotum entirely dark or black; bullae usually darker and, if pale, thorax is coarsely sculptured . . . . . 13
11. (a) Antennae longer, segment 3 being considerably longer than interocular space on vertex, the clubs more elongate; hairs on vertex and thorax above whitish; thorax above more extensively yellowish reddish around humeral tubercles, shoulders, along sides and across base, usually also with two submedial discal streaks; yellowish hind margins of tergites 2-4 broader, more conspicuous; yellowish sides of tergites 1-3 usually more extensive; bullae larger, paler, pale yellowish brownish or ochreous; hind legs entirely yellowish like rest, or scarcely darkened apically above, with more yellowish spines on hind femora below; wings longer, nearly or about as long as abdomen, yellowish brownish in anterior half up to end of first submarginal cell and to third posterior cell, the middle of discoidal cell without a conspicuous clear central streak, and veins in apical and hinder parts without conspicuous fuscous borders . . . . . ♀ *longirostris* (Wied.)
- (b) Antennae shorter, segment 3 not, or scarcely, much longer than interocular space, the clubs shorter, though more elongate-pyriform; hairs on vertex and thorax above darker, more brownish; thorax above with narrower, less extensive, yellowish around shoulders, along sides and across base, and without any submedial streaks; yellowish or whitish on sides of tergites 1-4 narrower, less extensive, and yellowish whitish hind margins of 2-4 very much narrower; bullae smaller, more orange to reddish brownish; hind legs

- with the femora darker, either more brownish above or entirely dark, their spines below darker, and hind tibiae darkened apically; wings relatively shorter, shorter or much shorter than abdomen, either characteristically infuscated very dark blackish brown or tinted yellowish brownish to end of costal cell and posterior vein of third posterior cell, sometimes with a conspicuous central clear or whitish streak in discoidal cell and the veins in apical and hind parts (except posterior vein of anal cell) with very dark, conspicuous fuscous borders (if not other characters conform) . . . . . 12
12. (a) Wings only tinted pale yellowish brownish in anterior half up to end of costal cell and posteriorly to third posterior cell, the veins in apical and hind parts without apparent fuscous borders; hairs on thorax above, metapleural part, sides of tergites 1 and 2, coxae and femora distinctly longer, the hind femora with numerous, conspicuous, longish ones along inner and upper inner aspect; sides of abdomen basally more extensively yellowish; bullae reddish brownish; legs distinctly paler, more yellowish, the hind femora only darkened above from about middle; antennae proportionally slightly longer, about 3.24 mm . . . . . ♀ *nigrojubata* n.sp.
- (b) Wings characteristically infuscated very dark blackish brown, with a conspicuous clear, whitish central streak in discoidal cell, the veins in apical and hind parts with very dark and conspicuous fuscous borders; hairs on thorax above, metapleural part, sides of tergites 1 and 2, coxae and femora relatively short, the hind femora without numerous longish ones along inner and inner upper aspect; sides of abdomen basally more narrowly yellowish whitish; bullae orange; legs distinctly darker, the upper parts of front and middle femora and greater part or entire hind ones very dark brownish to blackish brown; antennae proportionally shorter, only about 2.6-3 mm . . . . . ♀ *micheneri* n.sp.
13. (a) Abdomen not entirely dark or black, either tergites 2 and 3 or 1-4 contrastingly ochreous yellowish or orange yellowish to a variable extent, even if only discally; metanotum smoother in hinder part and its extreme sides with finer converging rugae; posterior veins in wings not, or at least not all of them, with distinct fuscous borders; border at apex of wings distinctly broader than broadest part of first posterior cell . . . . . 14
- (b) Abdomen, excepting certain whitish hind margins of tergites, entirely very dark blackish brown or dark piceous brownish; metanotum distinctly, even if only finely, rugulose or sculptured also in hinder part or half, and its extreme sides with coarser converging rugae; all posterior veins with more distinct fuscous borders; border at apex of wings distinctly narrower than broadest part of first posterior cell . . . . . 15
14. (a) Larger species, more than 12 mm long, with longer abdomen, its base, more than hinder half discally of tergite 2 and discal part of 3 ochreous yellowish; clypeus, humeral tubercles and an infusion near inner side of latter, extending backwards as a submedial discal streak on each side, sides of thorax and postalar calli yellowish reddish; antennae very much longer, stouter, segment 3 stouter, much longer than interocular space on vertex, much longer than the distinctly elongate club; hairs on head, body and legs mainly whitish; apical half of first submarginal cell and middle streak in discoidal cell clearer than rest of infuscated anterior half of wings; hind tibiae, apart from apical spurs, with more numerous and stouter spicules apically . . . . . ♀ *brunnipes* n.sp.
- (b) Smaller form, only about 11-12 mm long, with shorter, more cylindrical abdomen, of which the greater part of tergite 1, almost entire 2 and sides above of 3 and 4 are ochreous yellowish; clypeus castaneous brownish, and only humeral tubercles and postalar calli dark piceous reddish; antennae much shorter, more slender, segment 3 shorter, slender, shorter than width of interocular space, only a little longer than the more conical, or subpyriform, club; hairs on frons anteriorly, face, base of abdomen, pleurae and to a certain extent on hind femora tinted more yellowish or yellowish brownish; wings slightly more extensively and uniformly infuscated in anterior half, the apical part of first submarginal and middle of discoidal cells not much clearer than rest of infuscated parts; hind tibiae with fewer and smaller spicules in apical part . . . . . ♀ *xerophila* n.sp.
15. (a) Humeral tubercles, sides and base of thorax, as well as two submedial discal streaks to about middle, more distinctly reddish; abdomen more cylindrical, less coarsely transversely wrinkled apically; bullae reddish brownish; antennae relatively shorter, less stout, segment 3 less stout, only a little longer than width of interocular space on vertex; vestiture much longer and denser, that on head in front snow whitish like rest of hair on

- thorax and base of abdomen, those on tergite 2, sides of 3 and even sides of 4, and those on sternites 2-4 longish, as well as long ones on hind femora, mainly dark; wings more uniformly dark brownish in anterior half and also in second basal cell, without, or scarcely any, clearer streaks in this area; hind femora more spindle-shaped, with only the extreme base and extreme base of hind tibiae yellowish whitish ♀ *nigerrima* n.sp.
- (b) Humeral tubercles very dark blackish reddish, and thorax above without any distinct reddish, or with only indistinct dark reddish on sides, mainly black; abdomen more flattened dorso-ventrally, apically more coarsely wrinkled; bullae shining black; antennae distinctly much longer, markedly stoutish, segment 3 stout, much longer than width of interocular space; vestiture much shorter, sparser, that on frons anteriorly and on clypeus brownish, without any longish hairs on tergite 2 and sides of 3 or on sternites 2-4, and the long ones on hind femora mainly whitish; wings less uniformly infuscated, the second basal cell, middle of discoidal cell and middle streak in first submarginal cell, and apically in marginal cell, distinctly clear; hind femora more clavately thickened, with nearly basal half, as well as basal half of hind tibiae, yellowish whitish ♀ *disparilis* n.sp.
16. (a) Hind femora with only the normal double row of spines below and without spines or bristle-like spines on outer side . . . . . 17
- (b) Hind femora with some, or irregularly arranged, spines or bristle-like spines on outer apical part or half in addition to the normal double row of ventral spines . . . . . 24
17. (a) Wings relatively longer, narrower, with a distinct, often conspicuous, infuscation, in the form of a distinct pattern, appearing more or less longitudinally bifasciate or even almost trifasciate, with either a clear or clearer streak through at least apical half of first submarginal cell and also through anterior part of second basal cell and middle of discoidal cell, or only through latter, or through all of them to a variable extent . . . . . 18
- (b) Wings tending to be relatively shorter and broader, either mainly or entirely, hyaline, or if slightly tinted, more uniformly so, without a distinct and conspicuous bifasciate or trifasciate pattern, and without a contrasting clearer streak through discoidal cell . . . . . 23
18. (a) Hairs on thorax above and sometimes also on vertex pale yellowish, yellowish, fulvous to fulvous reddish; sides of thorax above not, or only more narrowly, yellowish reddish; central dark infusion on metanotum more extensive, broader, not linear or line-like . . . . . 19
- (b) Hairs on head, thorax above and on rest of body and legs entirely uniformly snow whitish; sides of thorax above relatively more broadly or more distinctly yellowish reddish; central dark infusion on metanotum usually narrower, more linear or line-like . . . . . 22
19. (a) Wings longitudinally infuscated bifasciately, only the marginal and first basal cells to base of first posterior cell being entirely infuscated, the middle apical half of first submarginal cell being clear, and costal cell, hinder half (including discoidal and second basal cells) and apical part of wings also mainly or entirely clear, excepting only some obscure fuscous borders along apical cross-vein of second basal cell and adjoining parts of veins extending from it; sides and base of thorax above more extensively yellowish reddish; hind femora more extensively darkened above and laterally; longish hairs on legs mainly, or entirely, snow whitish; broadened, spoon-like, apical part of processes of sternite 9 relatively broader . . . . . ♂ *fascipennis* Macq. s.str.
- (b) Wings infuscated more extensively or more or less trifasciately, the costal cell, entire or greater part of second basal cell and along veins bounding third posterior cell being also infuscated to a variable extent, the only clear areas being middle apical part of first submarginal cell to a variable extent, middle parts of discoidal and third posterior cells, anal cell, hind border and apical part of wings; sides and base of thorax above not yellowish reddish or only obscurely so on sides; hind femora almost entirely yellowish or luteous or, if darkened above and on sides, less extensively so; longish hairs on legs tinted more yellowish and, if white, wings more extensively infuscated and also in second basal cell and at base of third posterior cell; broadened apical part of processes of sternite 9 relatively narrower . . . . . 20
20. (a) Metapleural part, sides of tergites 1-5 more broadly and extensively yellowish; legs much paler yellowish or luteous, the femora less extensively darkened above; bullae much

larger, more convex, separated above by a much shorter space, not much broader than vertical length of bullae; abdomen above more sparsely punctured, tergites 1 and 2 discally with finer and sparser punctures, and rings of greyish whitish tomentum across hind margins broader, extending basally over whitish hind margins; hind femora more clavately incrassate, their bases more slender; discoidal cell apically usually as broad as, or narrower than, third posterior cell; antennal clubs proportionally shorter, usually much shorter than front tarsi, their length to that of segment 3 less than 17:20; processes of sternite 9 not distinctly depressed indented below before lower apical angle (in dorsal oblique view) .. .. . 21

- (b) Metapleural part, sides of tergite 1 (except narrowish lateral part of hind margin) black, sides of 2-5 more narrowly whitish; legs darker, more yellowish brownish, the femora and tibiae distinctly more extensively darkened or brownish above and hind ones more extensively dark; bullae much smaller, less convex, more broadly separated above by a space about twice vertical width of bullae; abdomen above relatively more densely aciculate punctured, tergites 1 and 2 discally with denser aciculate puncturation, and rings of greyish tomentum narrower, confined to whitish hind margins; hind femora distinctly less clavate, their bases less slender; discoidal cell apically much broader than third posterior cell; clubs proportionally longer, their length to that of segment 3 about as 17:20, usually subequal in length to front tarsi; processes of sternite 9 distinctly slightly depressed indented before lower apical angle (in dorsal oblique view)

♂ *mimica* n.sp.

21. (a) Infuscated parts in wings less extensive, more brownish, the second basal cell and along anterior vein of third posterior cell more faintly tinted; alula slightly smaller; clypeus more castaneous brownish; postalar calli darker; metanotum more broadly blackened medially and on sides; sides of tergites 1-4 less extensively yellowish; legs not almost entirely yellowish or luteous, the hind coxae and greater upper and lateral parts of hind femora blackish brown, the latter less thickened; vestiture slightly shorter, less dense, and that on tergites 1 and 2 and legs relatively shorter, less dense, entirely whitish; proboscis shorter, about 3.4 mm; antennae relatively shorter, about 2.75 mm

♂ *fascipennis* Macq. (form of)

- (b) Infuscated parts in wings distinctly more extensive, more reddish brownish to chocolate brownish, the costal cell, entire second basal cell and greater part of discoidal and third posterior cells, excepting their clearer middle part, as darkly infuscated as anterior part of wings, and even hind border posterior to third posterior cell sometimes faintly tinted yellowish; alula larger, more lobe-like; clypeus paler yellowish; postalar calli distinctly more extensively paler yellowish reddish; metanotum more narrowly blackened medially; sides of tergites, especially 1-4, very broadly and extensively yellowish; legs almost entirely luteous, or very pale contrastingly yellowish, the hind femora sometimes only darkened above apically, the latter relatively more thickened; vestiture relatively much denser, longer, markedly so on sides of tergites 1 and 2 and on femora, usually tinted more yellowish to deep yellowish or fulvous; proboscis relatively longer, more than 3.4 mm; antennae distinctly longer than 2.75 mm .. ♂ *fascipennis* var. *luteipes* n.

22. (a) Proboscis longer, longer than 2.4 mm; wings with the infuscation more restricted, less extensive and darker, the second basal cell, posterior part of discoidal cell and base of third posterior cell not infused to the same extent, even if darker; apex of second submarginal cell broader, not narrowed, usually about as broad as that of first posterior cell; apex of discoidal cell usually with a longer stalk; hind tibiae with much longer hairs along inner and lower part

♂ *albida* Beq. n. comb. (= *umbrina* var. *albida* Beq.)

- (b) Proboscis shortish, only about 2.4 mm long; wings with a more diffused, less delimited, more extensive and paler infuscation, the entire second basal cell, posterior part of discoidal cell, and to a certain extent base of third posterior cell, being infused to a greater extent; apex of second submarginal cell much narrowed, narrower than that of first posterior cell; apex of discoidal cell very shortly stalked; hind tibiae with distinctly shorter hairs along inner and lower part

♂ *meridionalis* n.sp. (= *fascipennis* Bezzi nec Macquart)

23. (a) Wings distinctly longer, extending to near apex of abdomen; abdomen with hind margin of tergite 1 dark, those of 2-6 or 7 broadly and conspicuously yellowish reddish; bullae dark or blackish; bands of whitish tomentum across hind margins of tergites 3-7 triangular; legs pale yellowish brownish, the hind femora only darkened above; base of abdomen with longish greyish yellowish hairs; broadened apical part of processes of sternite 9 more bluntly hook-like below . . . . . ♂ *catalus* Gerst. (ex descr.)
- (b) Wings markedly shortish, extending to, or only a little beyond, hind margin of tergite 4, falling far short of apex; hind margin of tergite 1 yellowish, those of 2-4 (or 5 or 6) narrowly whitish; bullae yellowish brownish or orange brownish; bands of silvery whitish tomentum across hind margins of tergites 3-7 band-like; legs on the whole darker yellowish brownish to brownish, the front and middle femora darkened above, and hind ones extensively blackish brownish; hairs at base of abdomen snow whitish like rest of long ones on abdomen and femora; broadened apical part of processes of sternite 9 only produced subangularly below . . . . . ♂ *brachyptera* n.sp.
24. (a) Wings tending to be narrower, with a very distinct dark brownish bifasciate or almost trifasciate pattern, the marginal cell, at least basal half of first submarginal cell, entire first basal cell to beyond in basal part of first posterior cell, and along basal cross-veins and anterior vein of third of third posterior cell being darkly infuscated; bullae on the whole darker, more orange brownish to dark reddish brownish; hairs on thorax above more rufous or fulvous reddish; hind femora with more numerous spines and bristly spines laterally in apical half, and with the shortish hairs between long ones deeper yellowish or more fulvous, or even with some dark ones apically above; lobes of tergite 9 relatively longer . . . . . 25
- (b) Wings tending to be broader, mainly clear hyaline or with scarcely any indication of an infuscation, or only faintly tinted in marginal and first basal cells, distinctly without any infusion or fuscous borders along basal and anterior veins of third posterior cell; bullae usually paler, more yellowish or pale yellowish brownish; hairs on thorax above paler, paler yellowish or greyish yellowish; hind femora with relatively fewer spines and spine-like bristles laterally in apical half, and with their shortish hairs paler, more whitish; lobes of tergite 9 relatively smaller, shorter . . . . . 26
25. (a) Abdomen above and below almost entirely dull, only tergite 1 shining, relatively thicker, with the sides of 2-4 more broadly yellowish and those of 5-7 more reddish on extreme sides, the hind margins of 2-5 and sides of 6 and extreme postero-lateral angles of 7 more broadly whitish (postero-lateral angles of 2-6 more broadly whitish), bullae dark reddish brownish; clypeus larger, broader, more orange yellowish; humeral tubercles pale yellowish and area around them and sides of thorax above more distinctly reddish; pleural parts in front and below halteres more extensively reddish; front and middle legs, base of hind femora and basal half of hind tibiae paler yellowish; long hairs on hind coxae and femora more dull yellowish, without any short dark ones apically on latter; short decumbent hairs on abdomen above relatively denser, appearing more yellowish; clubs more pyriform, much shorter than antennal segment 3; infuscated parts in wings more dark reddish brownish; halteres pallid . . . . . ♂ *umbrina* Gerst.
- (b) Abdomen above and below distinctly shining, only dulled across hind margins of tergites 3-7 by bands of silvery whitish tomentum, with only sides of 2-4 yellowish whitish, the hind margins of 2-4, sides of 5, and extreme postero-lateral angles of 6 more narrowly whitish (postero-lateral angles of 2-5 less extensively whitish); bullae more yellowish brownish; clypeus smaller, narrower, more brownish; humeral tubercles more brownish, the area around them more obscurely very dark reddish; pleural parts in front of halteres black, that below them more obscure brownish; front and middle legs more brownish, the femora more darkened above, the hind ones almost entirely dark and hind tibiae more dark reddish brownish; long hairs on coxae and femora whitish like those at base of abdomen, the hind femora with distinct, shortish, dark hairs apically above; short decumbent hairs on abdomen above relatively sparser, appearing paler; clubs more elongate-conical, only a little shorter than segment 3; infuscated parts in wings more smoky brownish; halteres brownish . . . . . ♂ *imitata* n.sp.
26. (a) Wings relatively narrower, the marginal and first basal cells and base of first posterior cell very faintly, but distinctly, tinted slightly yellowish; anterior margin of declivity of

thorax in front and to a certain extent area around the yellowish humeral tubercles distinctly reddish; sides of metanotum more extensively reddish; sides of tergites 1-5 more broadly yellowish reddish; hind margins of tergites 2-5 and sides of 6 more broadly yellowish and their postero-lateral angles more broadly and extensively whitish; bullae smaller, yellowish brownish, more widely separated above; hind margins of tergites without any bands of distinct tomentum; basal half of venter paler, yellowish brownish, the hind margins of sternites more broadly whitish; front and middle legs, base of hind femora and basal half or more of hind tibiae paler, more yellowish or yellowish reddish; proboscis shorter, about 3.6 mm long . . . . . ♂ *devia* n.sp.

- (b) Wings distinctly broader, clear hyaline, faintly milky whitish, without any distinct infuscation in marginal and first basal cells; area around yellowish humeral tubercles black; sides of metanotum less extensively, only obscurely dark reddish; sides of tergites 1-3 less broadly yellowish brownish; hind margin of tergite 1 reddish brownish; those of 2-5 and obscurely of 6, and extreme sides of 7 more narrowly whitish, their postero-lateral angles not so broadly whitish; bullae much larger, more ochreous yellowish, more narrowly separated above; hind margins of tergites with more distinct bands of greyish tomentum; venter mainly dark, the hind margins of sternites only obscurely whitish across 1-3 and mainly on sides; front and middle legs darker, more yellowish brownish, more darkened above, and hind femora and tibiae, excepting the knees, mainly dark; proboscis slightly longer, quite 4 mm . . . . . ♂ *riparia* n.sp.

27. (a) Wings, relative to body, much shorter, more darkly tinted or infuscated in anterior half; antennae on the whole longer, segment 3 relatively much longer, nearly or quite 4 times combined length of 1 and 2, and club elongate-conical, much shorter than segment 3; metanotum more coarsely sculptured, more ridged on sides; hairs on thorax above paler, paler yellowish and, if darker, antennal segment 3 is long; incrassate hind femora more shortly spindle-shaped; processes of sternite 9 without a distinct indentation below near apex and thus not appearing with a long upper lobe and a shortish prominence below . . . . . ♂ *dysmachoides* n.sp.

- (b) Wings, relative to body, usually longer, scarcely, or only very slightly, tinted in anterior half, or entirely more hyaline; antennae shorter, segment 3 relatively shorter, either not, or not much more than 3 times combined length of segments 1 and 2, and club subglobular, more berry-shaped, either as long as, or longer than, scarcely shorter than, segment 3; metanotum smoother, or with finer microsculpture, its sides not coarsely ridged; hairs on thorax above usually darker, more brownish, reddish brownish to dark brownish; incrassate hind femora more elongate-spindle-shaped; processes of sternite 9 with a distinct emargination or indentation below near apex to produce a longish upper apical lobe and a shortish prominence below, appearing almost bilobate . . . . . 28

28. (a) Antennae relatively shorter, segment 3 shorter, only a trifle more than twice combined length of 1 and 2; silvery whitish tomentum on abdomen above narrower, confined as narrowish bands across the whitish or yellowish whitish hind margins; hairs on sides of thorax snow whitish, contrasting much with the dark brownish or fulvous ones on disc; legs, especially upper surface of femora and greater part of hind femora, darker, more dark castaneous brownish; hind femora relatively more incrassate . . . . . 29

- (b) Antennae relatively longer, segment 3 longer, quite 3 times combined length of 1 and 2; whitish tomentum on abdomen broader, arranged in a discal triangle across and just in front of the rather broadish yellowish reddish hind margins of tergites 3-7; hairs on sides of thorax above more golden yellowish and those discally reddish brownish; legs on the whole paler, more pale yellowish brownish, and hind femora only darkened above; hind femora relatively less incrassate . . . . . ♂ *catalus* Gerst. (ex descr.)

29. (a) Hairs on thorax above and short ones discally above on tergites dark, dark blackish brown; metanotum entirely dark; hind margins of tergites relatively more broadly yellowish; bullae smaller, dark reddish brownish, more broadly separated above by a space broader than vertical length of bullae; costal cell in wings clear like rest of wings; discoidal cell, though narrowed apically, still relatively broadly truncate; hind tibiae relatively much longer, ending nearer base of femora; front and middle femora and tibiae darker, more brownish; lobes of tergite 9 more pointed apically; apical lobe of processes of sternite 9 less curved downwards . . . . . ♂ *brachycera* Bezz.

- (b) Hairs on thorax above and short ones discally on tergites whitish, some pale fulvous brownish ones also present discally on thorax, the very fine ones in streaks on thorax being pale greyish yellowish; metanotum extensively yellowish on sides; hind margins of tergites, though dull yellowish, with silvery gleaming tomentum, extending a little over their basal margin, and only their extreme margins yellowish whitish; bullae much larger, shining black, bean-shaped, more narrowly separated above by a space much narrower than vertical length of bullae; costal cell very faintly tinted yellowish; discoidal cell more narrowed, acutely pointed apically; hind tibiae markedly shorter, ending farther away from base of femora; front and middle femora more extensively yellowish below, their tibiae pale yellowish; lobes of tergite 9 distinctly more rounded apically; apical lobe of processes of sternite 9 distinctly more curved downwards
- ♂ *namaquensis* n.sp.
30. (a) Hind tibiae, apart from the apical spurs, without any or with only minute, scarcely distinguishable, spicules in apical part below, and middle tibiae without any, or much fewer, or with only fine hair-like, inconspicuous or indistinguishable spicules below . . . 31
- (b) Hind tibiae, apart from apical spurs, with distinct, strongly developed, or at least distinguishable, spicules in apical part, apical third or more below, and middle tibiae below also with more numerous, distinct, conspicuous, stoutish or bristle-like, easily distinguishable spicules . . . . . 36
31. (a) Hairs on thorax, pleurae, tergites 1 and 2 and on legs very much shorter, those on disc of thorax not so conspicuously fulvous or reddish; sides of thorax and base more extensively yellowish reddish or reddish; wings relatively shorter, broader, distinctly more, or more darkly, infuscated in anterior half; antennae much longer, segment 3 very much more than 3 times combined length of 1 and 2 . . . . . 32
- (b) Hairs on thorax, pleurae, tergites 1 and 2 and on legs dense and long as in a ♂, those discally on thorax fulvous or fulvous reddish; sides of thorax and its base either not, or more narrowly and obscurely, yellowish or reddish; wings relatively narrower, longer, tinted only faintly greyish yellowish; antennae much shorter, segment 3 being only a little more than 3 times combined length of 1 and 2 . . . . . ♀ *trichogyna* n.sp.
32. (a) Hind tibiae carinate below to only a little beyond middle or to some distance away from apex, not produced apically below into a short prominence or process; vertex and frons normally broad; bullae paler, yellowish brownish, ochreous or reddish brownish; clear streak through middle of discoidal cell in wings distinctly broader, the cell itself more spindle-shaped; sides of abdomen, either on sides of tergites 1 and 2, or of 2 only, or on sides of some others, extensively or more broadly, paler, or yellowish brownish; hind legs either mainly pale, or with the base of femora and that of tibiae more extensively or conspicuously yellowish . . . . . 33
- (b) Hind tibiae carinate below to near, or very near, apex and produced below into a distinct, though short, apical prominence or process; vertex and frons rather narrowish; bullae black and shining; clear streak through discoidal cell much narrower, more linear, the cell itself less spindle-shaped; sides of abdomen distinctly less extensively, less broadly, pale or yellowish brownish; hind legs more uniformly darker castaneous brownish, their base and that of hind tibiae less extensively or broadly pale or yellowish
- ♀ *dysmachoides* n.sp.\*
33. (a) Antennae distinctly longer, more than 2·5 mm; proboscis much longer, much more than 3 mm; infuscation in wings not, or scarcely, extending into extreme apex of second submarginal cell and not at all into that of first posterior cell, and confined only to basal part or basal third of posterior vein of second submarginal cell; sides of tergites 1 and 2, and sometimes also some of the others, distinctly more broadly or extensively yellowish brownish; bullae smaller or very small, yellowish or ochreous brownish; hind femora more extensively yellowish or pale basally and below, or even mainly yellowish; hairs on head, thorax (especially on extreme sides) and on basal abdominal segments distinctly longer and denser . . . . . 34
- (b) Antennae shorter, only about 2·52 mm long; proboscis much shorter, only about 3·2 mm long; infuscation in wings extending apically also into extreme apical parts of second submarginal and first posterior cells and also for a longer distance along posterior

\* In this section also unknown ♀♀ of *brachycera*, *namaquensis* and *catalus*.



vein of second submarginal cell; sides of tergites 1 and 2 more narrowly reddish brownish; bullae larger, reddish brownish; hind femora more uniformly reddish brownish; hairs on head, thorax (especially sides) and basal two segments of abdomen distinctly very much shorter, less dense . . . . . ♀ *simulata* n.sp.

34. (a) Wings distinctly less extensively infuscated, the upper half or most of second basal cell clearer or less dark than anterior part, and borders of anterior vein of third posterior cell, or greater part of cell itself, scarcely, or more faintly, infuscated, or not at all, the anal cell and alula entirely clear, and middle apical part of first submarginal cell (at base of second submarginal cell) also clearer, giving the wings a more bifasciate appearance; hind legs distinctly more extensively darkened on femora above and in apical part or half of hind tibiae, and hairs on femora distinctly denser and also with longer ones intermixed and all these mainly whitish; hairs on rest of body also slightly longer, those on clypeus denser, slightly longer, entirely snow whitish; sides and base of thorax more broadly yellowish reddish . . . . . 35
- (b) Wings distinctly more extensively infuscated, the entire second basal cell and borders of both anterior and posterior veins of third posterior cell, or sometimes the cell itself also darkly infuscated, with the anterior margin of anal cell and entire alula also infused, sometimes with even hind border of wings behind third posterior cell tinted, and without, or with a much fainter, clearer part apically in first submarginal cell, the infusion thus not appearing bifasciate; legs on the whole and also hind ones extensively luteous, the hind femora either not, or with only apical part above, slightly darkened, and hairs on femora sparser, shorter, without longish ones, and mainly yellowish or golden; hairs on rest of body relatively shorter, those on clypeus less dense, shorter, sometimes slightly tinted yellowish; sides and base of thorax distinctly more narrowly reddish  
♀ *fascipennis* var. *luteipes* n.
35. (a) Proboscis longer, about 4-5 mm; clypeus paler, more yellowish; sides and base of thorax more broadly yellowish; metanotum with a much narrower central black streak; hind margins of tergites 2-4, apart from more reddish one across 1, distinctly yellowish and 5 obscurely so, or only on sides; bullae larger; abdomen above with much sparser and shallower punctures and finer transverse striae posteriorly; vestiture on the whole shorter, less dense, especially on thorax above, tergites 1 and 2 and on hind femora, and that on thorax more whitish or greyish yellowish . . . . . ♀ *fascipennis* Macq.
- (b) Proboscis shorter, only about 3-3.6 mm; clypeus darker, more brownish; sides and base of thorax more narrowly yellowish; metanotum with a much broader central dark infusion; hind margins of tergites 2-5, apart from yellowish brownish hind margin of 1, distinctly yellowish; bullae very small; abdomen above with coarser and slightly denser punctures and coarser striae posteriorly; vestiture on the whole distinctly, though slightly, longer, especially on thorax above, tergites 1 and 2 and on hind femora, and that on thorax slightly deeper yellowish . . . . . ♀ *fascipennis* Macq. (form of)
36. (a) Abdomen above either more densely or more coarsely punctured, the punctures, even if sparse and scattered, distinctly coarser; wings usually with the more darkly infuscated parts in anterior half darker, more brownish, appearing more bifasciate due to the contrasting clearer apical part or half of first submarginal cell; hairs on thorax above, base of abdomen and hind femora distinctly longer and denser . . . . . 37
- (b) Abdomen above smoother, more shining, distinctly either much more sparsely punctured, or with scarcely any puncturation on middle segments; wings with the infuscated parts distinctly paler, faintly tinted yellowish or pale yellowish brownish, not appearing so bifasciate, the clearer part in first submarginal cell and streak through discoidal cell being not much clearer than the faintly tinted parts; hairs on thorax above, base of abdomen and hind femora shorter, sparser . . . . . 39
37. (a) Vestiture distinctly much shorter, that on thorax above, pleurae and base of abdomen markedly shorter; proboscis shorter, less than 4.4 mm; antennal clubs more elongate-conical or elongate-pyriform; wings distinctly longer, more than 10 mm, up to 12.5 mm, usually more distinctly tinted brownish, more bifasciately, or very distinctly brownish in marginal and first basal cells, the infusion extending much, or farther, into base of first posterior cell; knobs of halteres paler, more yellowish; yellowish reddish on sides and base of thorax broader, more extensive; metanotum with a more distinct,

- or even broadish, central dark or black infusion; puncturation on abdomen finer, or finer and denser .. .. . 38
- (b) Vestiture distinctly much longer, denser, especially that on thorax above, pleurae and tergites 1-3; proboscis very much longer, about 4.4-4.9 mm; clubs relatively shorter, broader, more pyriform; wings distinctly and relatively shorter, not more than 10 mm, usually more faintly tinted pale yellowish brownish in anterior half, the infusion, if distinct, not extending much into first posterior cell; halteres darker above; yellowish reddish on sides and base of thorax relatively narrower or obscure; metanotum without any distinct, central, dark infusion; puncturation on abdomen distinctly coarser  
♀ *brachyptera* n.sp.
38. (a) Abdomen duller, due to very much denser and finer acicular puncturation on tergites 1-4 and puncturation and fine or leathery areolar microsculpture on 5-7; metanotum with a broader, more distinct and extensive, central, dark infusion; hind margins of tergites 1-3 and extreme sides of 4 yellowish whitish; bullae smaller, more reddish brownish; wings narrower, with a more distinct and darker bifasciate infusion in anterior half; first posterior cell not markedly narrowed apically; fine hairs in streaks on thorax above relatively shorter, sparser, more fulvous reddish or brownish, and hairs from tergite 4 to apex distinctly denser; hind femora less thickened, with finer and sparser hairs and fewer spines; hind tibiae pallid in nearly basal half ♀ *umbrina* Gerst.
- (b) Abdomen distinctly more shining, with slightly sparser, less acicular puncturation on tergite 2, much fewer on 3 and with only scattered ones on the smooth integument of 4-6; metanotum with a slightly narrower, more obscure, central infusion; hind margins of tergites 1-4, and to a more obscure extent 5, yellowish whitish; bullae larger, more yellowish; wings markedly broader, with a less distinct yellowish brownish infuscation in anterior half, less bifasciate, the infusion in first basal cell more distinct than in marginal cell; first posterior cell markedly narrowed apically; fine hairs on thorax above relatively denser, slightly longer, more fulvous yellowish, and hairs from tergite 4 posteriorly much sparser; hind femora distinctly more clavately thickened, with more numerous spines below and with denser hairs; hind tibiae yellowish only at extreme base .. .. . ♀ *euryptera* n.sp.
39. (a) Thorax above with the yellowish on sides and across base much broader, and also with two conspicuous submedial yellowish discal streaks; metanotum more extensively yellowish, with only a faint, central, line-like, dark infusion; hind margins of tergites 1-4 and sides of 5 yellowish; hind legs more extensively pale yellowish basally and apically and darker part only pale yellowish brownish, and with more than basal half of hind tibiae straw-coloured; sides of face with less dense greyish bloom; wings relatively long and broader, more extensively, though faintly, tinted yellowish, excepting clearer apical part, middle of discoidal cell, anal cell and to a lesser extent hind border; veins pale yellowish .. .. . ♀ *flavilineata* n.sp.
- (b) Thorax above with the yellowish reddish on sides and across base much narrower, without any distinct yellowish submedial streaks; metanotum darkened on sides and along middle; hind margins of only tergites 1-3 yellowish; hind legs more uniformly reddish brownish or brown, only extreme base of hind tibiae yellowish; sides of face very densely and conspicuously covered with greyish whitish bloom; wings relatively shorter, narrower, only slightly, or scarcely, faintly tinted yellowish or yellowish brownish, more so in marginal and first basal cells and base of first posterior cell, the rest of wings more hyaline; veins more yellowish brownish .. .. . ♀ *riparia* n.sp.

*Cephalocera longirostris* (Wied.)

*Midas longirostris* Wiedemann, 1829: 37. Wiedemann, 1830: 630.

*Cephalocera longirostris* Westwood, 1841: 55. Walker, 1854: 373. Gerstaecker, 1868: 77. Bezzi, 1924b: 229. Bequaert, 1961a: 13, 14, fig. 13.

This is the commonest and most widely distributed species of Mydidae in the western Cape, Namaqualand and part of the north-western Cape, and

which differs from all the other known species of *Cephalocera* by its distinctly less thickened and comparatively longer hind femora and to a certain extent the markedly broad, transversely grooved sides, or notopleural part, of thorax in front of the wing-bases. As is to be expected from a species so widely distributed it is variable in size, the colour of its clypeus, the presence or absence of reddish on sides of thorax and sides of abdomen basally, the darkening of the legs, especially the femora, and the intensity of the infuscation in the wings, especially in the ♂♂. Females of this species have been collected on flowers by members of the South African Museum staff.

The species is characterized as follows:

*Body* mainly dark or black; middle part of face (clypeus) either entirely, or on sides to a variable extent, yellowish, yellowish brownish to reddish brownish, sometimes entirely dark or black; sides of vertex, especially in some ♀♀, reddish or dark reddish; following parts yellowish or yellowish reddish; humeral tubercles to a variable extent, broadish sides of thorax, postalar calli, base of thorax, two submedial streaks on disc of thorax (especially in ♀, but sometimes evanescent or absent in both sexes), sides of metanotum to a variable extent (sometimes much reduced, only spot-like or even absent), area in front of halteres, posterior metapleural part to a variable extent or not at all, sides of tergites 1 and 2 or 3 broadly in both sexes (in some forms), to a variable extent extreme narrow sides of rest of tergites or infusions at their posterior angles laterally, especially in some ♂♂ (sometimes entire sides of abdomen dark or black in both sexes), greater part of or entire venter, or only its basal half to a variable extent in ♂♂, and ventral part of genital segment; hind margins of tergites 2-5 (or 6), and sometimes of 7 obscurely or even of both 6 and 7, in ♂ and 2-4 (or sometimes also 5) in ♀ broadly and conspicuously yellowish whitish or yellowish, usually more whitish, base bordered with some orange, often with 2 and 3 very conspicuous, or in some cases with the hind margins even obscure, darkened or yellowish whitish only on sides; hind margin of tergite 1 sometimes also narrowly or obscurely yellowish; bullae fairly large, broad, oval, yellowish- or ochreous brownish to brownish; legs, excluding reddish brownish, dark or blackish coxae, more often mainly or even entirely yellowish, but femora and tibiae darkened to a variable extent in some forms even mainly dark in ♀♀ of some forms, only their bases and knees being yellowish.

*Integument* of head in front, postalar calli, to a variable extent extreme sides of thorax above, scutellum, pleurae, abdomen and coxae shining; disc of thorax dulled by three broadish streaks of vermicellate rugulose sculpture, separated by two submedial streaks of coarser rugulose sculpture, the extreme sides of thorax in notopleural part, posterior to anterior spiracle, markedly broad, especially in ♀, broader than in the other species with non-sculptured thorax, shining and rather conspicuously transversely grooved; metanotum dull rugulosely sculptured; hind margins of all tergites in ♂ from 2 with broadish and conspicuous bands of silvery tomentum which is more intense across the

extreme hind margins; abdomen in ♀ with the last two segments and to a variable extent sides of some of the others transversely wrinkled or striate, the last one being coarsely so, and with some scattered setiferous punctures, often visible discally on 4-6.

*Vestiture* distinctly denser and longer in ♂, that on tergites 1 and 2, especially in ♂, also longish, with all the hairs mainly snow whitish in both sexes, but those on last two abdominal segments in ♀ slightly more sericeous yellowish, or sometimes even yellowish; hairs on legs longish, much denser in ♂, the hind femora in ♀ with relatively few longish ones and these mainly above, and hind tibiae with some longish hairs only along inner aspect, much fewer and sparser in ♀; the hairs on legs also mainly snow whitish, but short ones on hind femora in ♀

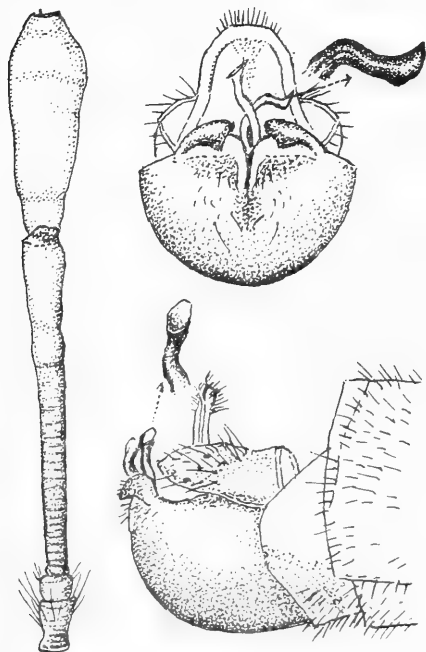


FIG. 19

Left: Side view of right antenna of ♂ *Cephalocera longirostris* (Wied.).

Right: Side view (bottom) and posterior view (top) of hypopygium of ♂ *Cephalocera longirostris* (Wied.), showing the boat- or shell-shaped sternite 9 and its processes and extruded two phallic tubes (also much enlarged the elbow-like bent apical part and funnel-like gonopore of the left tube).

and on apical parts or halves of hind tibiae in both sexes tinted yellowish or fulvous to a variable extent; spines and spicules on legs yellowish, yellowish reddish, to dark reddish, the spines on hind femora in some ♀♀ sometimes even dark or blackish brownish.

*Head* with the antennae (text-fig. 19, left) much longer than thorax and scutellum together; segment 1 not much or scarcely thickened, about 2-2.3 times length of 2; segment 3 elongate, slightly thickened apically, much longer than club; latter elongate-pyriform, constricted at base; proboscis subequal in length to, or sometimes even slightly longer than, antennae, its labella rather coarsely transversely rugulose; palps distinct, longer than antennal segment 2.

*Wings* distinctly tinted yellowish brownish to brownish to a variable extent

in little more than anterior half to opposite level of apex of marginal or first submarginal cells, though in some ♂♂ sometimes scarcely indicated, extending apically also along basal part or half of upper vein of first posterior cell, including base of latter, and in ♀ the infusion in costal cell often extending to its apex, with the hinder half more greyish hyaline or faintly greyish yellowish; the infusion often more intense along veins in tinted part, especially in ♀, in which it is often very much darker or even blackish brown, leaving in both sexes, but especially in ♀, the middle parts of cells, especially lower apical part of first submarginal cell, clear, which latter cell in some specimens, especially some ♂♂, is often entirely clear, giving the infusion in wings an apically bifurcate or forked appearance (as described by both Wiedemann and Macquart); apex of wings usually slightly milky whitish; veins yellowish to even dark brownish; apex of third posterior cell broader than that of discoidal cell; halteres yellowish.

*Legs* with the hind femora only slightly, not conspicuously, thickened, differing in this respect from other South African species, thickest slightly beyond middle, their upper surfaces more or less straight, their double row of spines below from just before middle or from near base; tibiae without distinct spicules along lower faces, but hind ones in ♀ with a few near apex.

*Oviscape* in ♀ with 7-11 yellowish reddish to fulvous spines on a side.

*Hypopygium* of ♂ (text-fig. 19, right) with the lower part of broadened apical part of the processes of sternite 9 distinctly sharply angular, not rounded; aedeagal apparatus and phallic tubes stethoscope-like as described for *Cephalocera*, the tubes with an elbow-like bend near apex.

From a long series of both sexes in the South African Museum and the Transvaal Museum.

Length of body: about 11-17 mm

Length of wing: about 7-13 mm

*Distribution*: Western Cape from about level of Citrusdal along the broad coastal part and Olifants River valley to Namaqualand, and eastwards into southern Bushmanland, during September to November. (One specimen in the South African Museum from French Hoek Pass in the Villiersdorp division may have been wrongly labelled.)

The following two more or less distinct forms are distinguishable:

(1) A paler coastal form, more common along the coastal parts from Het Kruis to Namaqualand in which the clypeus is entirely or more extensively yellowish; the sides and base of thorax more extensively yellowish or reddish, and with two submedial yellowish or reddish discal streaks of variable extent; the scutellum with more reddish brownish; metanotum usually more extensively yellowish; posterior metapleural part and sides of abdomen more broadly or extensively yellowish; legs either entirely or more extensively yellowish, or the femora less darkened above; and the wings almost entirely hyaline.

(2) A darker form, mostly from the Olifants River valley from Citrusdal to Van Rhyns Pass, Nieuwoudtville, to Loeriesfontein in southern Bushmanland,

characterized by a less extensively yellowish and darker clypeus; variable and narrower, or more obscure, reddish on sides of thorax, without any, or scarcely indicated, reddish, discal, submedial streaks; darker or even black scutellum; less extensively yellowish, or even entirely dark, metanotum; darker or less yellowish sides of abdomen, the yellowish hind margins of medial tergites in some ♀♀ even darkened discally or obscure; more darkened femora; and distinctly more darkened or even blackish brownish wings in some ♀♀.

Both these forms are however by no means stable or consistent and show either individual or local variability by means of which they may even be further subdivided into local or deviating colour forms.

*Cephalocera brunnipes* n.sp.

This species, which is unfortunately represented in the collections by a single ♀ specimen only, resembles the ♀ of *longirostris* very closely, differing from it only in the following respects:

*Body* with the integument of dorsum of thorax distinctly more coarsely rugulose, with an indication of a submedial groove discally on each side; that of metanotum on the other hand less coarsely rugulose, more shining; antennal segments 1-3 pale yellowish brownish; reddish on sides of thorax narrower; metanotum entirely black; hind margin of tergite 1 much broader yellowish and tergites 2 and 3 entirely and conspicuously yellowish discally above; legs distinctly more brownish or reddish brownish, only the knees and bases of hind femora yellowish.

*Vestiture* on head, sides of tergites 1 and 2 longer, denser, but that on femora comparatively shorter and less dense; hairs on abdomen posteriorly more whitish.

*Wings* similarly infuscated, but middle parts of marginal and first submarginal cells more broadly and more distinctly clearer, and posterior vein of third posterior cell with more distinct, though faint, fuscous borders; knobs of halteres brownish above.

*Legs* relatively shorter, the hind femora not only shorter, but comparatively slightly more rapidly thickened in apical part, being more clavate.

In other respects it is indistinguishable from ♀♀ of *longirostris* and their various colour-forms.

Holotype in the South African Museum.

Length of body: about 15.5 mm

Length of wing: about 11 mm

*Distribution*: Namaqualand: Okiep (L. Péringuey, 20th November 1885).

*Cephalocera nigrojubata* n.sp.

Another single ♀ specimen in the collections before me which has some superficial resemblance to the ♀ of *longirostris*, but agrees and differs from the latter as follows:

*Body* mainly dark or black, with more or less the same parts yellowish

reddish, but the humeral tubercles entirely yellowish, the sides of thorax above more obscurely and more narrowly yellowish, the infusion anteriorly on inner side of tubercles not or scarcely evident, and without any discal, submedial, reddish streaks; yellowish on sides of basal abdominal segments less extensive; hind margin of tergite 1 paler, and yellowish whitish ones of 2-4 much narrower; bullae smaller, slightly darker brownish; legs similar yellowish, but hind femora more brownish above and on sides in apical half, with much darker spines below.

*Integument* similar to that of *longirostris*, the same parts shining or dull, but disc of thorax with slightly finer microsculpture.

*Vestiture* distinctly longer and denser, especially on thorax above, pleurae, sides of abdomen basally, and on legs; hairs on vertex yellowish brownish, not whitish, and those on disc of thorax also darker, distinctly more brownish; reversed ones on abdomen posteriorly on the other hand comparatively less dense and slightly shorter, though also whitish; fine ones towards apex of hind tibiae darker.

*Head* with the antennae distinctly much shorter, only about 3.2 mm; segment 3 being not or scarcely much longer than interocular width on vertex (in *longirostris* it is considerably longer); club distinctly and proportionally shorter, more pyriform; proboscis about 3.72 mm.

*Wings* comparatively shorter, more faintly tinted yellowish brownish in anterior half, extending more into basal part of first posterior cell; veins paler yellowish; first posterior cell rather much narrowed apically; alula tending to be smaller.

*Legs* comparatively shorter, with the hind femora about equally thickened, but their base comparatively less slender; hind tibiae in apical part without long spicules (apart from the spurs).

*Oviscape* with about 7 spines on a side.

The holotype in the South African Museum.

Length of body: about 15.5 mm

Length of wing: about 10 mm

*Distribution*: Western Cape: between Mowers and Robertson (Museum Expedition, October 1952).

### *Cephalocera micheneri* n.sp.

A ♂ and 2 ♀♀ caught at Robertson by a visiting entomologist, Dr. C. D. Michener of the Department of Entomology, University of Kansas, Lawrence, Kansas, U.S.A., represent a new species which I am naming after the collector and which has some resemblance to *longirostris* and even more so to *nigrojubata*.

These specimens agree and differ from *longirostris* in the following respects:

*Body* mainly dark or black, with more or less the same parts pale, but more yellowish reddish or yellowish brownish than yellowish, the sides of thorax in ♂ not yellowish and those of ♀ more narrowly so and without two submedial,

discal, yellowish streaks in anterior part; yellowish on sides of basal abdominal segments distinctly less extensive, very narrow in ♂ and confined to extreme sides; hind margin of tergite 1 distinctly paler in both sexes and whitish ones across 2-5 in ♂ and yellowish whitish ones of 2-4 in ♀ distinctly much narrower; bullae much smaller, more orange brownish, usually with some impressions, even with vermicellate sculpture in ♂; venter less lividly yellowish in basal half, on the whole much darker in ♂; legs with the femora on the whole much darker above and hind ones almost entirely dark in ♂ and much more extensively darkened in ♀ than in ♀ of *nigrojubata* and some forms of *longirostris* with darkened femora.

*Integument* similar to that of *longirostris*, the same parts shining or dull, but disc of thorax with distinctly finer microsculpture; abdomen in ♂ with slightly more numerous and coarser setiferous punctures and even the sparse and minute ones in ♀ more evident; transverse striation on last two or three tergites in ♀ slightly coarser; that across femora more conspicuous in both sexes.

*Vestiture* more or less similar to that of *longirostris*, but distinctly shorter on body and legs than in *nigrojubata*; hairs on disc of thorax distinctly darker, more yellowish brownish to brownish, not snow whitish, even those on vertex in ♀ sometimes more yellowish brownish; fine hairs towards apex of hind tibiae darker; spines on hind femora below distinctly much darker, dark brownish to black.

*Head* with the antennae distinctly very much shorter and even relatively shorter than in *nigrojubata*, only about 2.6-3 mm; segment 3 not or scarcely much longer than interocular width on vertex (in *longirostris* it is considerably longer); club distinctly and proportionally shorter, more subspindle-shaped in ♂, with a larger, more extensive sensory area apically below; proboscis about 2.8-3.36 mm long.

*Wings* comparatively shorter, characteristically darkly infuscated blackish brown, differing from the pattern in most other species, and that of ♂ also slightly different from that of ♀; the costal, marginal, first and second basal cells uniformly dark, and middle parts of first submarginal and discoidal cells clearer, much more so in ♂ than in ♀, the clear middle part of discoidal cell in ♀ narrow, conspicuously streak-like, with the anal cell in ♂ slightly more infused than in ♀, with fuscous borders along all the rest of the veins in both sexes, except anal vein in ♀; hinder part of wings in ♀ feebly tinted greyish yellowish, but clearer in ♂; veins very dark reddish brownish (hinder and apical parts of wings in *longirostris* much clearer in both sexes and all veins in these parts without fuscous borders); alula smaller; halteres also whitish.

*Legs* comparatively shorter; hind femora more thickened in both sexes, less clavate than in *longirostris*, their bases distinctly less slender; hind tibiae, apart from the spurs, with much shorter spicules in apical part; basal segment of hind tarsi comparatively shorter, subequal to, or only a little longer than, claw-segment, not markedly longer as in *longirostris*.

*Oviscape* in ♀ with about 7 yellowish spines on a side.



*Hypopygium* of ♂ with the lower apical part of broadened apical part of processes of sternite 9 blunter or more bluntly rounded, not so sharply angular or pointed as in *longirostris*.

Holotype, allotype and paratype in the South African Museum.

Length of body: about 11–15 mm

Length of wing: about 8–9 mm

*Distribution*: South-western Cape: Robertson (C. D. Michener, 9th October 1966).

Apart from some differences mentioned in the description above, the ♀ of this species differs from the ♀ of *nigrojubata* in the very characteristic blackish brown pattern in the wings, the much darker hind femora, the more orange (not reddish brownish) bullae, the much shorter hairs on disc of thorax, on metapleurae and sides of tergite 1, and the absence of numerous long hairs along inner and inner upper aspect of hind femora.

### *Cephalocera propinqua* n.sp.

Two rather smallish ♂♂ caught by Mr. Stuckenberg in a patch of flowers just off the national road north-east of Touws River are also referable to the *longirostris* section in which the disc of the thorax is distinctly vermicellately rugulose. They are characterized as follows:

*Body*, including clypeus and humeral tubercles, usually black, without any reddish or yellowish on sides of thorax above; metanotum also entirely black; pleurae entirely black; antennae blackish brown, more than basal half of clubs dull dark yellowish brownish; sides of tergite 2 and extreme sides of 3 and 4, and sometimes also of 5, yellowish whitish; hind margins of tergites 2–5 conspicuously whitish and those of 6 and 7 more greyishly whitish, but evidently whitish in posterior lateral angles; bullae yellowish brownish or ochreous brownish to brown; venter ochreous brownish to end of sternite 4, the hind margins of sternites 2–4 with a dull whitish, oval, scale-like patch on each side and sometimes with a similar spot on each side in the middle of sternite 2; sternite 9, or its ventral, posterior and apical parts, yellowish brownish; legs with the coxae black, the femora brownish, the hind ones darker, more blackish brownish, the extreme base and apical part of front and middle ones and base and apex of hind ones more yellowish, the tibiae and tarsi also yellowish, but the upper surface of front and middle ones more brownish as is also the claw-segment of tarsi, the pulvilli above and apex of claws darker or blackish.

*Integument* of vertex, raised middle ocellar part of frons, postantennal part of frons, clypeus and head below shining; thorax above dull, finely vermicellately rugulose or somewhat areolately sculptured, with a narrowish submedial streak of coarser rugae, extending on each side from just above humeral tubercle to base, with a central longitudinal carinate line to beyond middle, and the extreme sides in front of wing-base more scabrously rugulose; postalar calli and narrow base of thorax smoother, more shining; scutellum shining, with fine centripetal striation, and over its middle longitudinal striation; metanotum

dull, more coarsely and more areolately sculptured than disc of thorax, basally submedially and on extreme sides more convergently rugulose; pleurae mainly polished and shining, the pteropleuron more longitudinally striate in more or less hinder half, the rest of pleurae also very finely striate in certain lights, the metapleural parts in front of and below halteres dulled by whitish tomentum; abdomen mainly shining, but with a broadish band across hinder part of tergites (broader discally than on sides and including whitish hind margin) of greyish tomentum, very conspicuous in certain lights; legs, especially coxae and femora, also shining, the hind femora transversely annularly striate.

*Vestiture* fairly long and dense on head, sides of tergites 1 and 2, coxae and femora; hairs on vertex, those in 4 longitudinal streaks on thorax above, on humeral tubercles and in front of wing-base pale yellowish to fulvous; rest of longish hairs on head, body and legs snow whitish; pleurae mainly bare, but sparse tufts on propleurae and on metapleural part in front of halteres also snow whitish like the denser hairs on metasternal part; fine, short and sparse ones (in punctures) on rest of abdomen above, as well as relatively sparse ones on hypopygium, gleaming slightly fulvous; sparse longish hairs on sternites 1-3 snow whitish and sparse, shortish ones on rest of venter more fulvous; hairs on femora fairly dense and longish, becoming shorter towards apex, those on base, inner dorsal aspect and along inner side of hind femora long and also snow whitish, the shorter, decumbent ones on their outer aspect more fulvous; hairs along anterior and hinder parts, especially the latter, on front and middle tibiae markedly long, whitish, and the slightly shorter ones along inner aspect of hind tibiae also whitish, the short decumbent ones on all the tibiae more yellowish or fulvous; hairs on tarsi also more fulvous; greyish whitish tomentum, apart from that present on metapleural and metasternal parts and across hind margins of tergites, also present in depressions in frons, along inner margin of eyes and on propleural part.

*Head* with the antennae distinctly very much shorter than those of *longirostris*, about 2-2.28 mm (including basal theca), subequal in length to thorax (minus scutellum), with segment 1 thickened apically, about twice length of 2, with some longish white hairs, with segment 3 longer than club, its apical third distinctly thickened, the club pyriform not so elongate-pyriform as in *longirostris*, more rapidly broadened to broadest part beyond middle; proboscis longish, about 3-3.48 mm, but comparatively shorter than in *longirostris*; palps distinct, about, or nearly, as long as first antennal segment.

*Wings* greyish hyaline, not tinted in anterior half; veins dark brownish; alula lobe-like; broadish hind margin of squamae whitish; halteres light reddish or reddish whitish.

*Legs* relatively shortish, the hind femora distinctly thickened, subspindle-shaped, slightly curved outwards, especially near base, armed below with from 16 to 24 backwardly-directed dark brownish to blackish brown spines on distinct tubercles in two rows, the inner ones beginning nearer base; front and middle tibiae without any distinct spicules and hind ones with a few shortish,

feeble spicules along inner apical part; spicules of tarsi yellowish or luteous; basal segment of hind tarsi subequal in length to, or about as long as, claw-segment.

*Hypopygium* much like that of *longirostris*, with the lateral lobes of tergite 9 short, lobe- or tongue-shaped; anal lobes rather smallish; sternite 9 not indented broadly V-shaped apically, its processes not bilobed apically, the broadened apical part rather sharply and angularly produced apically below, very much like that of *longirostris*; phallic tubes of aedeagal apparatus rather stoutish, their gonopore funnel-shaped as in *longirostris*.

Holotype in the Natal Museum, paratype in the South African Museum.

Length of body: about 10·5–11 mm

Length of wing: about 7·76–8·2 mm

*Distribution*: Southern Koupe Karoo: along national road to Laingsburg and Beaufort West, 23 miles north-east of Touws River (B. Stuckenberg, 4th October 1964).

There is no doubt that this species is very near *longirostris* and, apart from the antennal differences mentioned, the ♂♂ differ from ♂♂ of the latter species in being smaller, in having a black clypeus, black humeral tubercles, thorax and metanotum, less extensive yellowish on sides of abdomen, entirely clear wings, more fulvous hairs on vertex and thorax above, shorter legs, darker femora and shorter, more spindle-shaped hind femora.

### *Cephalocera decepta* n.sp.

A single ♂ specimen caught by Mr. Gess a little south-west of Matjiesfontein is almost indistinguishable from the preceding species *propinqua*, but as its processes of sternite 9 are distinctly different it can only be considered as a distinct species. In most of its morphological characters, its colour, integument and nature of its vestiture it agrees entirely with the ♂ *propinqua*, but differs from the latter in the following respects:

It is distinctly larger; venter is entirely dark, not ochreous brownish in basal half; antennae entirely dark, relatively longer, quite 2·4 mm long; bullae smaller, more oval, not so bean-shaped, the space between them broader, much broader than their vertical length; legs relatively stouter, the femora and tibiae, especially front and middle ones, darker, the hind femora more clavately thickened, less narrowed apically (not subspindle-shaped); wings distinctly tinted smoky brownish in anterior half (entirely clear in *propinqua*); halteres more whitish; hairs on disc of thorax only slightly greyish yellowish, not so fulvous yellowish, those in front of wing-bases entirely and contrastingly whitish; shortish hairs on femora and tibiae more whitish, not slightly fulvous; broadish rings of tomentum across hind margins of tergites more conspicuously silvery whitish in certain lights; lobes of tergite 9 more broadly rounded apically; processes of sternite 9 not so smooth, but distinctly more punctured and their lower apical angle distinctly less sharply produced.

This species, like *propinqua*, also differs from *longirostris* in the shorter

antennae, black clypeus, much darker legs, shorter and more thickened hind femora, and the slightly less sharp and produced lower apical angle of processes of sternite 9.

The holotype in the South African Museum.

Length of body: about 13.5 mm

Length of wing: about 8 mm

*Distribution*: Southern part of the Koup Karoo: 7 miles south-west of Matjiesfontein (South African Museum Expedition, 15th October 1966).

*Cephalocera nigerrima* n.sp.

This and the following four species, owing to the characteristic structure of sternite 9 and its processes in the ♂♂, constitute a very distinct section which suggests a separate generic status, but as they agree in most other characters with *Cephalocera*, which itself is variable, they are provisionally retained in a special section of this genus.

This dark or blackish, slender-bodied species, with its black-haired and markedly short-winged ♂ and whitish-haired ♀ cannot be compared with the other known species of this genus. Though the ♀ specimen is white-haired, it agrees in most of its characters with the ♂ specimen, and I have no hesitation in referring it to the same species, which is dichroic as far as the vestiture of the sexes is concerned.

The species is characterized as follows:

*Body* rather slender, the abdomen in both sexes, but more so in ♂, slender, cylindrical, its apical part naturally bent downwards, with the thorax relatively quadrate, relatively a little longer in ♀ than in ♂, the body mainly very dark or blackish, the pleurae and abdomen very dark blackish brown or very dark piceous brownish; tubercles on vertex very dark blackish reddish; antennae dark blackish brown; clypeus in both sexes dark reddish brownish; humeral tubercles and postalar calli in ♂ deep dark reddish, in ♀ more yellowish reddish, but in ♀ also with sides and base of thorax above, as well as an infusion on inner side of humeral tubercles on each side, extending submedially and discally as a streak, yellowish reddish; hind margin of tergite 1 yellowish reddish, and those of 2-4 whitish in both sexes; bullae markedly large, bean-shaped, shining black in ♂, very narrowly separated above, in ♀ smaller, dark reddish brownish; venter more or less yellowish brownish in ♀ and toffee brownish in ♂ up to sternite 4, the rest darker; genital segment below in ♂ also toffee brownish; legs pitchy brownish to dark piceous brownish, the femora in ♀ slightly paler, but femora in both sexes slightly darker above, with the base of hind ones, knees of all legs and basal part of hind tibiae very pale yellowish.

*Integument* of frons, clypeus, humeral tubercles, extreme sides of thorax behind shoulders, postalar calli, scutellum, pleurae (especially mesopleuron), entire or greater part of abdomen (less so from tergite 6 in ♀), and legs shining; that of thorax above rather coarsely vermicellately rugulose, with two sub-medial, discal, groove-like depressions from humeral tubercles to beyond middle

and converging posteriorly; scutellum more longitudinally vermicellate; metanotum sculptured as thorax, but sides with converging rugae; integument of pleurae more coarsely striate than in most other species, the metapleural part behind halteres and metasternal part and hind coxae being even more coarsely grooved; integument of tergite 1 sparsely punctured discally, more densely and somewhat scabrously on sides basally. in ♀ slightly more densely discally and on sides in apical half; rest of tergites in ♂ very smooth and shining, but with even and sparse, small, setiferous punctures, in ♀ with 3-5 almost bare and 6-8 transversely striate, coarser on 8.

*Vestiture* fairly dense and longish on head, shorter and decumbent on thorax above, relatively dense on hinder parts of pleurae, dense and longish on tergite 1, basal two-thirds of 2, especially on sides, with some sparse longish ones on sides of 3, short and sparse on rest of abdomen, denser posteriorly, longish and fairly dense on venter, becoming shorter and stiffer posteriorly, rather dense, long and conspicuous on hind trochanters and femora, and longish and sparse along inner hinder face of hind tibiae; hairs on entire body and legs blackish brown in ♂, except for greyish ones on occiput, in ♀ mainly snow whitish, excepting brownish or brownish fulvous ones on antennal segment 1, palps, tergites 6-8, and on most of hind legs (except for whitish ones at base of femora).

*Head* with the antennae very much longer than thorax (excluding scutellum); segment 1 about 2.3-2.8 times length of 2; segment 3 elongate, much longer than club; the latter elongate, rather stoutish, even at base, from there only slightly and gradually thickened; proboscis about 3.36-3.88 mm, much longer than thorax (excluding scutellum).

*Wings* markedly short and broadish in ♂, slightly longer in ♀, more or less uniformly infuscated blackish brown in ♂, excepting slightly clearer hind border, including hinder part of auxillary lobe and sometimes middle or hinder part of first posterior cell as well; in ♀ also blackish brown in greater anterior part, but middle part of anal and third posterior cells, greater part of first posterior cell, apical part of second submarginal cell and hind border clearer, or even with base of first basal cell clearer, the discoidal cell with a faint clearer streak; veins brownish; halteres blackish brown.

*Legs* with the front and middle femora slightly S-curved in ♂, and their tibiae more curved in ♂ than in ♀; hind femora markedly incrassate, slightly more so in ♂, almost spindle-shaped, thickest slightly beyond middle, but more narrowed basally, slightly laterally compressed and, in dorsal view, slightly curved outwards from base, armed below from just before middle with a double row of rather closely-set, reddish brownish, short spines on prominent tubercles; hind tibiae only a little shorter than femora and, in ♂, as in case of front and middle ones, without any distinct longish spicules, apart from apical spurs, but in ♀ with a few distinct, shortish ones apically below; basal segment of hind tarsi a little longer than claw-segment.

*Oviscape* in ♀ with 9 reddish yellowish spines on a side; last vertical tergite

above oviscape with fine, rugulose sculpture.

*Hopopygium* of ♂ (text-fig. 20, top and bottom left) with the lobes of tergite 9 lobe-like, narrowed and bluntly rounded apically; sternite 9 rather deeply indented (or V-shaped) in posterior half, the indented part apically on each side with an inwardly projecting dentate process or lobe below base of process (cf text-fig. 20, top); processes of sternite (bottom left) curving inwards, hollowed below, forked or bidentate apically, the upper tooth more horizontal in position and slightly shorter; tergite 8 not markedly depressed or hollowed dorsally.

From 2 ♂♂ and 1 ♀ (♂ holotype and ♀ allotype in the Transvaal Museum and 1 ♂ paratype in the South African Museum).

Length of body: about 12–14.5 mm

Length of wing: about 8–9 mm (♂♂), 9.5 mm (♀)

*Distribution*: Southern Karoo: Modderfontein, Willowmore (Dr. Brauns, 25th November 1922 (♂ holotype), and 4th December 1920 (1 ♂ paratype)). Southern Cape: Avontuur, Uniondale (Dr. Brauns, 24th December 1922) (♀ allotype).



FIG. 20

Top: Posterior view of V-shaped indentation of sternite 9 of ♂ of *Cephalocera nigerrima* n.sp. showing the inwardly projecting apical dentate process or lobe on each side below base of process (only base shown).

Bottom left: Postero-dorso-lateral view of right lobe of tergite 9 and right process of sternite 9 of ♂ of *Cephalocera nigerrima* n.sp.

Bottom middle: Postero-dorso-lateral view of left lobe of tergite 9 and left process of sternite 9, of ♂ of *Cephalocera macrocera* n.sp.

Bottom right: Postero-ventral view (more particularly left side) of sternite 9 of ♂ *Cephalocera xerophila* n.sp. showing ventral view of the left phallic tube, posterior basal shield (centre) of aedeagal apparatus, ventral view of process of the sternite and under it the somewhat angularly-produced, posterior (apical) inner part of the sternite.

*Cephalocera caffrariensis* n.sp.

A single ♂ specimen, from near Grahamstown, collected by Dr. Michener, obviously belongs to the section of *Cephalocera* in which the thorax is coarsely sculptured and the processes of sternite 9 in the ♂♂ are bilobed. It shows some relationship to *nigerrima* and apparently represents the far eastern limit in the geographical distribution of the genus *Cephalocera* in South Africa. Specifically it is characterized as follows:

*Body* rather smallish; thorax short, quadrate; abdomen elongate, cylindrical, with a tendency to be narrowed at middle; colour mainly black; clypeus dark reddish brownish; humeral tubercles, area above these, two submedial, discal, posteriorly-convergent streaks, sides of thorax above (more broadly) in front of wing-bases, basal part in front of scutellum, sides of tergites 1-5 (more or less intramarginally), and to a more obscure extent sternites 1-3 yellowish brownish; pteropleuron and to an obscure extent metapleural part below halteres very dark reddish or blackish reddish; bullae shining black, separated above by a space narrower than their vertical length; hind margins of tergites 2-4 and sides of 5 (and obscurely its narrower discal part) whitish, more broadened on sides where they are partially interrupted by a dark spot and discally medially also interrupted along 2-4 by a central dark line; hind margins of sternites without any whitish; legs very dark blackish brownish to black, only the knees of front and middle femora, basal parts of hind femora, and bases of hind tibiae pale yellowish.

*Integument* of greater part of head, body and legs shining, only sides of fronto-facial parts and occiput dulled by greyish whitish tomentum; integument of thorax above vermicellately rugulose, more transversely so along slightly depressed, submedial, reddish brownish streaks, finer along sides, and obsolescent basally, the postalar calli however smooth; scutellum smooth, shining; metanotum more transversely rugulose on sides towards sides of scutellum, the extreme sides more striate; pleurae mainly shining, polished, the pteropleuron however longitudinally striate; propleural parts partly dull and metasternal part dull; abdomen with tergite 1 transversely striate, the rest of surface above punctured, sparsely on tergites 2-5, more densely and more coarsely on 6 and 7, especially on latter, but the setiferous puncturation from 2 to apex slightly coarser on apical parts of all the segments; narrow hind margins of 5-7 dulled by greyish tomentum; sides of tergites 2-7 with some transverse striae, denser across hinder part of 6 and across entire 7; venter also with sparse setiferous puncturation, but sternites 5-8 more or less transversely striate, more coarsely so across 7 and 8.

*Vestiture* not very dense, mainly snow whitish; hairs on disc of thorax shortish, decumbent, more or less in 4 streaks (apart from the denser and longer ones along notopleural part); metanotum entirely bare; hairs on abdomen longish and dense on sides of tergite 1 and basally of 2, sparser, decumbent on rest of tergites, those discally darker, more brownish; those on venter sparse, longer towards base; hairs on hypopygium not very long or dense; those on

hind coxae, and especially hind femora, rather dense and long, especially along upper inner and lower inner surfaces of latter; those on apical half of hind tibiae becoming darker; spines and spicules on legs and the claws dark.

*Head* across eyes much broader than thorax; clypeus rather smallish, not much longer than combined length of antennal segments 1 and 2; antennae comparatively long, rather stoutish, much longer than thorax; segment 1 not much thickened, about 2·3 times length of 2; segment 3 longer than interocular space on vertex, much longer than club, with more than its apical third thickened; club elongate, gradually and equally broadening to broadest part near apex, its terminal prominence very prominent, nipple-like, its base not distinctly constricted; proboscis longish, about 4·52 mm long.

*Wings* rather shortish, mainly clear, only basal half of marginal cell, lower part of costal cell up to end of subcostal vein, cloudiness along posterior vein of first submarginal cell, and apical half of first basal cell brownish; veins brownish; discoidal cell markedly narrow, with a long stalk apically; knobs of halteres blackish.

*Legs* shortish; hind femora distinctly thickened, subspindle-shaped, their bases slender and short, armed below with a double row of backwardly-projecting, stoutish spines on tubercles, the inner row of about 7 beginning in advance of the outer row of about 6–8 just before the middle; hind tibiae with the carinate line below in basal half scarcely evident, armed in apical part with some minute spicules.

*Hypopygium* rather prominent, similar to that of *nigerrima*; anal lobes relatively long, also depressed and shining above; lobes of tergite 9 well developed, tongue-shaped; sternite 9 somewhat flattened below, sulcate centrally below and broadly gaping V-shaped apically below, its apex on each side, as in *nigerrima* (cf. text-fig. 20, top), with an inwardly-directed dentate process, the lower (anterior) part of which extends flange like and is semi-membranous; process of the sternite on each side strongly developed, curving inwards and apically bidentate and hollowed below; phallic tubes relatively long, curved forwards, then hindwards and crossing each other under the anal lobes.

Unique holotype in the South African Museum.

Length of body: about 13·25 mm

Length of wing: about 8·5 mm

*Distribution*: East Cape: 12 miles north-west of Grahamstown (C. D. Michener, 21st November 1966).

From *nigerrima* this species differs in not having any black hairs on head and body, much clearer wings, much narrower discoidal cell, less coarsely sculptured thorax and metanotum, longer proboscis, more punctured abdomen, slightly less incrassate hind femora, longer anal lobes, etc.

#### *Cephalocera macrocera* n.sp.

This species, unfortunately represented by a single ♂ specimen in the collections, with its rather coarsely sculptured thorax, rather long and stoutish



antennae, and markedly shortish clypeus, is easily recognized and characterized as follows:

*Body* mainly dark or blackish, the pleurae more yellowish brownish, and the abdomen and coxae more dark piceous reddish than black; antennae and proboscis blackish brownish, three-quarters of antennal club more yellowish brownish, and clypeus similarly coloured; humeral tubercles, a large spot on inner side of tubercles, sides of thorax, a broadish central streak, postalar calli, and greater part of scutellum yellowish reddish; greater part of metanotum also yellowish reddish; hinder part of pleurae, sides of tergite 1, and to a certain extent those of 2 yellowish brownish; hind margins of tergites 2 and 3, and sides of 4-6 yellowish whitish; venter yellowish brownish up to sternite 5, the rest more piceous brownish; lower parts of hypopygium yellowish- or reddish brownish; bullae black and shining; legs yellowish brownish, the knees, and basal parts of hind femora and tibiae pale yellowish whitish, the hind femora more piceous brownish towards apex on outer face.

*Integument* of head in front, greater anterior part of pleurae, and to a large extent abdomen above shining; that of thorax above rather coarsely vermicellately rugulose, with a groove-like discal depression on each side beginning at shoulders and converging posteriorly, and these grooves themselves as well as their borders composed of rather coarser undulating rugae; integument of metanotum also vermicellately rugulose; that of pleurae striated, duller posteriorly and with finer microsculpture; integument of abdomen with sparse, setiferous punctures, finer and denser on tergites 1 and 2, especially sides, and also with some shallow oblique grooves discally on sides of 1.

*Vestiture* with the hairs on head and clypeus, on sides of tergite 1, basally on sides of 2, and on hind femora, especially on inner aspect, fairly long and dense, mainly snow whitish; hairs on antennal segment 1 brownish; those on thorax above decumbent, in four streaks, longer on sides and basally, entirely snow whitish, as are also those on pleurae; those on rest of abdomen above short, dark brownish, longer and slightly denser posteriorly; hairs on venter basally whitish, more bristly and darker from sternite 5; those on legs, apart from longish whitish ones on hind femora, shorter and sparser and darker on outer faces of these femora and on darker apical half of hind tibiae.

*Head* with the antennae long, markedly stoutish, much longer than thorax; segment 1 not thickened, about 2·3 times length of 2; segment 3 long, stoutish, much longer than club, a little more than its apical third thickened and finely rasp-like; club elongate, parallel-sided, with fine, rasp-like microsculpture; proboscis about as long as antennae, about 4·01 mm; clypeus markedly short above.

*Wings* rather broad, uniformly tinted subopaquely very pale yellowish brownish, slightly clearer along hind border; veins pallid; first posterior cell rather narrowed apically; third posterior cell appearing rather shortish; knobs of halteres dark above.

*Legs* relatively shortish; hind femora much thickened, almost subspindle-

shaped, slightly curved outwards from base, their double row of spines below brownish, beginning from near base; hind tarsi subequal in length to claw-segment.

*Hypopygium* (text-fig. 20, bottom middle) with the lobes of tergite 9 broadish, rounded apically; sternite 9 deeply indented V-like in apical part, slightly carinate basally below, its processes forked or bilobate apically.

The holotype in the South African Museum.

Length of body: about 15 mm

Length of wing: about 10 mm

*Distribution*: Southern Cape: along the Touws River between Montagu and Ladismith (October 1937).

### *Cephalocera disparilis* n.sp.

A ♀ specimen in the South African Museum agrees with *macrocera* to a certain extent, but as it differs in some important respects it cannot be considered as the ♀ of the latter, even if the colour of parts of the body and the vestiture sometimes differ in the two sexes in this genus. It is therefore referred provisionally to a separate species which agrees and differs from the ♂ of *macrocera* as follows:

*Body* mainly dark, the pleurae more dark piceous brownish, and abdomen also very dark piceous brownish; antennae and proboscis blackish brown; clypeus castaneous brownish; humeral tubercles and postalar calli dark piceous brownish; a medial discal streak on thorax and an indication of a submedial one on each side, as well as base, indistinctly and obscurely dark reddish; metanotum mainly black, but obscurely reddish discally and on each side basally, not so extensively reddish brownish as in *macrocera*; sides of tergites 1 and 2 dark, not yellowish brownish as in the latter species; venter mainly yellowish brownish up to sternite 5; hind margins of only tergites 2 and 3 and sides of 4 whitish; bullae also black and shining; legs yellowish brownish up to sternite 5; hind margins of only tergites 2 and 3 and sides of 4 whitish; bullae also black and shining; legs yellowish brownish as in *macrocera*, with the knees of all the legs and base of hind tibiae also very pale yellowish whitish.

*Integument* of frons, sides of face, and head below shining; that of thorax above as in *macrocera*, coarsely vermicellately rugulose, also with shortish abbreviated, posteriorly-converging, discal grooves in anterior half; pleurae shining, but striated; scutellum mainly smooth and shining; metanotum more finely rugulose than in *macrocera*; integument of abdomen mainly smooth and shining, with fine, sparse setiferous puncturation on sides of tergite 1 and sides basally of 2, very sparse, scattered, slightly coarser ones on tergites 3-6, transverse striation on 6-8, coarser on 8; that of venter also transversely striate.

*Vestiture* with the hairs on head rather short, not very dense, those on occiput whitish, and those on head in front, clypeus, palps and lower edge of buccal cavity brownish, not white as in *macrocera*, but longish, sparse ones on head below also whitish; fine, shortish, decumbent hairs in 4 streaks on thorax

above also whitish as are shortish ones on pleurae; hairs on sides basally of tergite 1 dense, shortish, snow whitish, those on sides of 1 slightly longer, sparse, but also whitish; rest of hairs on tergites minute, only perceptible on tergite 2, the longer, reversed ones on 6-8 (denser on 8) brownish; those on genital segments also brownish, but the denser, finer, brush-like ones below oviscapae more yellowish; fine, sparse, shortish ones at base of venter whitish; hairs on legs, especially hind femora, though also whitish, distinctly less dense than in *macrocera*.

*Head* with the antennae also markedly stoutish and long, much longer than thorax; segment 1 not thickened, about 2.6 times length of 2; segment 3 relatively stoutish, elongate, very much longer than articulation plus club, its apical part slightly thickened and obscurely transversely wrinkled, not so conspicuously finely scabrous or rasp-like as in *macrocera*; club elongate, almost parallel-sided, its base slightly narrowed and its apical part conical; proboscis longer than antennae, about 4.4 mm, a little longer than in *macrocera*; clypeus rather shortish, though not so short as in *macrocera*.

*Wings* rather broad, uniformly tinted subopaquely very pale yellowish brownish, slightly clearer along hind border; veins pallid; first posterior cell rather narrowed apically; third posterior cell appearing rather shortish; knobs of halteres dark above.

*Legs* with the hind femora less thickened than in *macrocera*, more clavate, with a distinctly longer slender basal part, with fewer brownish spines below, which only begin from just in front of middle; hind tibiae with some distinct spicules apically below and also with some bristle-like ones on middle on anterior lower aspect; apical spurs of tibiae and spicules on tarsi longer, more strongly developed than in *macrocera*; basal segment of hind tarsi distinctly much longer than claw-segment.

*Genital segments* with the last covering tergite longitudinally rugulose basally near medial carina which does not extend to apex; last sternite (8) broadly emarginate apically, oviscapae with 8 or 9 bluntish, reddish yellowish spines on a side.

The holotype in the South African Museum.

Length of body: about 15 mm

Length of wing: about 10.5 mm

*Distribution*: Southern mountainous boundary of Koup Karoo: Bosluis Pass (Museum Expedition, October 1952).

### *Cephalocera xerophila* n.sp.

This smallish species, with its orange yellowish basal half of abdomen, cannot be confused with any other of the known South African species of *Cephalocera* except *brunnipes*. It is characterized as follows:

*Body* mainly black; antennae reddish brownish, the clubs more yellowish; clypeus yellowish brownish; humeral tubercles, postalar calli, greater part of pleurae, and to a certain extent coxae more piceous reddish than black;

abdominal segments 1-4 strikingly orange yellowish to a variable extent, 2 and 3 in ♂ being entirely so, and 1 basally and 4 laterally being black, with 1 basally and 3 and 4 laterally and to a variable extent discally along middle in ♀ black; hind margins of tergites 2-4 in both sexes more ivory yellowish, especially on sides; abdominal segments 5-8 black; bullae shining black; hypopygium and to a certain extent sides of oviscape yellowish; legs dark blackish brown, the knees of front and middle legs, base of hind femora, and base of hind tibiae being yellowish, and all the tarsi slightly more yellowish brownish.

*Integument* of head, body and legs shining, excepting thorax above, but in ♀ abdomen above less shining than in ♂; integument of thorax rather coarsely vermicellately rugulose, with a slight submedial, discal, groove-like depression on each side, the humeral tubercles also somewhat rugulose; metanotum more or less transversely striate; integument of abdomen with the last four segments in ♀ subshining, duller, with leathery microsculpture, the last two tergites transversely striate; the femora shining, but transversely wrinkled.

*Vestiture* on head, body and legs in ♂ moderately long and dense, shorter and less dense in ♀, that on hinder part of abdomen in ♂ being also denser and more shortly bristly than in most other species; hairs on greater part of frons, antennae, face and anterior part of head below more yellowish to slightly fulvous yellowish; those on vertex, occiput, thorax above, tibiae and in ♀ sometimes on pleurae, and to a certain extent also base of abdomen, snow whitish; those on pleurae, coxae, femora and in ♂ also on tergites 1 and 2 and sternites 1-5 distinctly more yellowish to fulvous yellowish; hairs on rest of abdomen in ♂ darker, more brownish fulvous; reversed ones on last three abdominal segments in ♀ whitish, but those on oviscape more yellowish; fine hairs on apical part of hind tibiae and on tarsi also dark.

*Head* with the antennae about 2·24-2·28 mm; segment 3 slender, nearly 3 times length of 1 and 2 combined; club elongate-pyriform, shorter than segment 3; proboscis longer than antennae, about 3·3·4 mm.

*Wings* tinted yellowish brownish to apex apically of second submarginal cell and posteriorly to lower vein of discoidal cell, more faintly so in ♂, with the basal half of costal cell and base of first basal cell clearer, with faint fuscous borders to posterior veins of first and third posterior cells in ♀ at least; veins reddish brownish; first posterior cell narrowed apically; discoidal cell very much broader apically than apex of third posterior cell which tends to be acute; knobs of halteres brownish above.

*Legs* with the hind femora distinctly thickened, slightly more so in ♂, subspindle-shaped, with reddish fulvous spines below.

*Oviscape* in ♀ with 7 or 8 spines on a side.

*Hypopygium* of ♂ (text-fig. 20, bottom right) with the anal lobes comparatively small; lobes of tergite 9 markedly small, rounded apically; sternite 9 apically broadly incised V-like, the inner apical part of this incised part under the process produced into an inwardly-directed blunt process or spine on each side, with the processes of the sternite short, somewhat flattened above, not

bidentate, the lower (hinder) margin slightly bulging in the middle, their rapidly narrowed apical part bending downwards and bluntly lobe-like; phallic tubes somewhat flattened in basal half, at first directed vertically upwards, then bent horizontally backwards and then curving inwards and slightly upwards.

From 1 ♂ and 2 ♀♀ in the South African Museum.

Length of body: about 11.5–12 mm

Length of wing: about 8–8.5 mm

*Distribution*: Bushmanland: Naib between Springbok and Pella (Museum staff, October 1939) (♂ holotype and ♀ allotype); Agennys between Springbok and Pella (Museum staff, October 1939) (♀ paratype).

From the ♀ of *brunnipes*, which also has part of the dorsum of the abdomen orange yellowish, the ♀ of this species differs in being smaller, in having comparatively shorter and more slender antennae, more distinct submedial grooves discally on thorax, more sculptured humeral tubercles, no submedial reddish streaks on disc of thorax, greater discal part of tergite 1 yellowish, dark bullae, shorter, more subspindle-shaped and annulated, hind femora, etc.

*Cephalocera fascipennis* Macq.

*Cephalocera fascipennis* Macquart, 1838: 13. Westwood, 1841, I: 55. Walker, 1854: 373. Gerstaecker, 1868: 78.

*Cephalocera umbrina* Bequaert (*nec* Gerstaecker), 1961a: 15, fig. 16. Bequaert, 1963: 59, figs 13B & 15C. (n.syn.)

As there are several South African species of *Cephalocera* with a characteristic and striking bifurcate-fasciate wing-pattern and as Macquart's original description of *fascipennis* is very brief and inadequate, it is difficult to recognize his species among the various other known species with a similar type of wing-pattern. The species which I take to represent *fascipennis* is however comparatively common and fairly well represented in the western Cape and in the Olifants River valley, and thus more likely to have been seen by Macquart. The specimens before me also agree in essentials with Macquart's brief diagnosis. They also distinctly vary in size, colouration, colour of the vestiture and even to a certain extent in wing-infuscation.

Dr. L. Tsacas of the National Museum in Paris, who has very kindly compared a ♂ specimen of this species, which I take to be the *fascipennis* of Macquart, with the supposed ♂ type of Macquart in the Paris Museum, informs me that the type is not a ♂ but a ♀. From his comments on the type and the ♂ sent for comparison, it is quite evident that both the ♂♂ and ♀♀ in the collections before me do belong to *fascipennis*.

The species in question cannot represent Gerstaecker's *umbrina* which apparently also occurs in the same area of distribution. According to the description of the latter it has shorter antennae which, according to Gerstaecker, are markedly shorter than the thorax and the abdomen above is 'durchaus matt'. In all the specimens before me the antennae are distinctly longer than,

or at least not much shorter than, the thorax and the abdomen above is in greater part shining. The damaged ♂ specimen in the South African Museum from Knysna, which Bezzi referred to *fascipennis*, differs in having all the hairs on the head, thorax, base of abdomen and legs entirely snow whitish, not greyish yellowish, yellowish or fulvous yellowish as in *fascipennis s.str.* This specimen in fact represents an entirely different, more eastwardly distributed, species which I am describing as a new species *meridionalis* farther on.

The specimens from Ceres which Bequaert redescribed comprehensively as *umbrina* Gerst. in 1963 on the other hand appear to me to represent some form of *fascipennis* only. They also have a shining, not dull, abdomen above and the hairs on thorax above are yellowish or orange yellowish as in some forms of *fascipennis*. The variety *umbrina* var. *albida* from Mossel Bay, which Bequaert described in an appendix, is however not an *umbrina* nor a *fascipennis* but appears to be a distinct almost eastern Cape species of which my *meridionalis* may even prove to be a synonym.

The species *fascipennis* cannot be confused with *longirostris* of which some forms also occur in the same western subregion and of which some ♂♂ sometimes also appear to have a slight bifasciate wing-pattern. The finer sculpture and yellowish hairs on the thorax above and the distinctly more incrassate hind femora distinguish it at once from *longirostris*.

Supplementing the original description of Macquart and the comprehensive redescription (as *umbrina*) of Bequaert, *fascipennis* is characterized as follows:

*Body* mainly dark or black, the pleurae and abdomen above in ♀ rather more brownish or dark brownish than black; antennae dark brownish to blackish brown, the middle part of clubs more yellowish or orange; clypeus muddy yellowish to yellowish reddish, more brownish in some specimens; humeral tubercles yellowish; following parts also yellowish reddish or ochreous yellowish: an anterior infusion on humeral part on inner side of humeral tubercles, sides of thorax above (narrower, or sometimes obscure or even wanting, in ♂), postalar calli, base of thorax above (narrower in ♂), two submedial, discal streaks converging posteriorly in ♀ (absent or obscure in ♂ and sometimes also in ♀), entire or greater part of metanotum (excepting dark central streak), metapleural part around halteres and the black posterior spiracle, broadish sides of tergites 1-3 or 4, narrow on 5 and 6, passing into broadish spots in posterior angles on sides of the tergites (more extensive in ♀); sternites 1-4 and hind margins of rest in ♂ to a variable extent, entire or greater part of venter in ♀, and ventral parts of hypopygial structures in ♂; hind margin of tergite 1 in ♂ yellowish and those of 2-4 and sides of 5-7 in ♂ whitish, margined on basal side with yellowish or orange; hind margins of tergites 1-5 (or only on sides of 5) in ♀ more yellowish than whitish, or only obscurely whitish across extreme posterior margins of 2-4 (or 5); bullae large and oval in ♂, small in ♀, yellowish, brownish, reddish brownish to brownish, sometimes narrowly darkly-margined, and partly surrounded on basal side by the yellowish reddish on

sides of tergite 2; front and middle legs, basal part or half, and to a variable extent lower surface of hind femora (more extensive in ♀), hind tibiae and tarsi yellowish, the upper face of front and middle femora basally and greater part of hind femora darkened, blackish brownish to a variable extent, and the coxae also dark.

*Integument* of vertex, frons in middle (more extensive in ♀), clypeus, sides of thorax above in ♀, postalar calli, scutellum, greater part of pleurae and abdomen shining; thorax above dulled by very fine vermicellate-rugulose sculpture which is much finer than in the *longirostris* section; notopleural part on extreme sides of thorax also transversely grooved, but the part is considerably narrower than in preceding section; metanotum dull rugulose; propleurae and posterior metapleural part dulled by greyish whitish tomentum; hind margins of tergites 3-7 in ♂ also with rather conspicuous and broadish bands of silvery whitish tomentum; surface of abdomen above in ♂ with aciculate setiferous puncturation; that of ♀ transversely striate on last three segments, more coarsely so on last, and middle tergites sometimes with some scattered punctures.

*Vestiture* very dense and long in ♂, especially on head, thorax above, tergites 1-3, coxae and legs, very dense and villose on latter; vestiture in ♀ very much shorter and sparser, longish only on head, especially clypeus, and sparsely on legs, most of the abdomen in ♀ almost bare, except for shortish hairs on tergites 1 and 2 and to a lesser extent 3, and on last two segments; hairs on sternites 1-3 in ♂ also longish; the hairs on vertex, frons and in four streaks on thorax above in ♂ tinted yellowish, greyish yellowish to fulvous to a variable degree, the rest of the long hairs on body, shorter ones on abdomen and dense ones on legs whitish or snow whitish; those on head, body and legs in ♀ also whitish, but fine ones on disc of thorax tinted very slightly sericeous yellowish.

*Head* with the antennae longer than thorax (excluding scutellum), about 3.24-3.4 mm, proportionally slightly shorter than in *longirostris*; segment 3 elongate, though proportionally shorter than in latter species; proboscis comparatively much longer, about 3.5-5 mm, its labella more finely rugulose than in *longirostris*.

*Wings* (text-fig. 21, top) glassy hyaline, tinted slightly milky whitish, especially at tip, and with the base, hinder half of costal cell behind subcosta, entire marginal cell, entire first basal cell, greater part of first submarginal cell (excepting clear central part in apical half and lower apical part of latter), as well as base, or basal part, of first posterior cell and along adjoining veins yellowish brownish to brownish, this infuscation appearing as a characteristic and conspicuous, apically-bifurcate infusion in both sexes and, apart from which, there is also some infuscation or cloudiness along posterior veins of second basal and discoidal cells and across vein between these cells, or even at base of third posterior cell, which in typical ♂♂ is very faint or almost imperceptible, but in ♀ more extensive and quite distinct, with most of costal cell in ♀ also infused; veins yellowish brownish to brown; discoidal cell spindle-shaped, proportionally much broader than in *longirostris*, at broadest part broader than

either second basal and third posterior cells, apically much narrower than third posterior cell, its apex thus with a long stalk; knobs of halteres yellowish.

Legs with the hind femora distinctly much thickened, incrassate in both sexes, only a little less so in ♀, their double row of reddish brownish to brownish spines below beginning near base; hind tibiae bent almost at right angles basally, the medial carinate ridge below extending to near apex, the apical third below without any distinct spicules; spicules on tibiae and tarsi fulvous yellowish.

*Hypopygium* of ♂ (text-fig. 21, below left) with the lower margin of the spoon-shaped apical part of processes of sternite 9 not angular or sharply angular as in *longirostris*, usually yellowish apically; lobes of tergite 9 obliquely subtruncate apically.

From 7 ♂♂ and 3 ♀♀ in the South African Museum and 1 ♀ in the Transvaal Museum.

Length of body: about 12.5–19.5 mm

Length of wing: about 9.5–14 mm

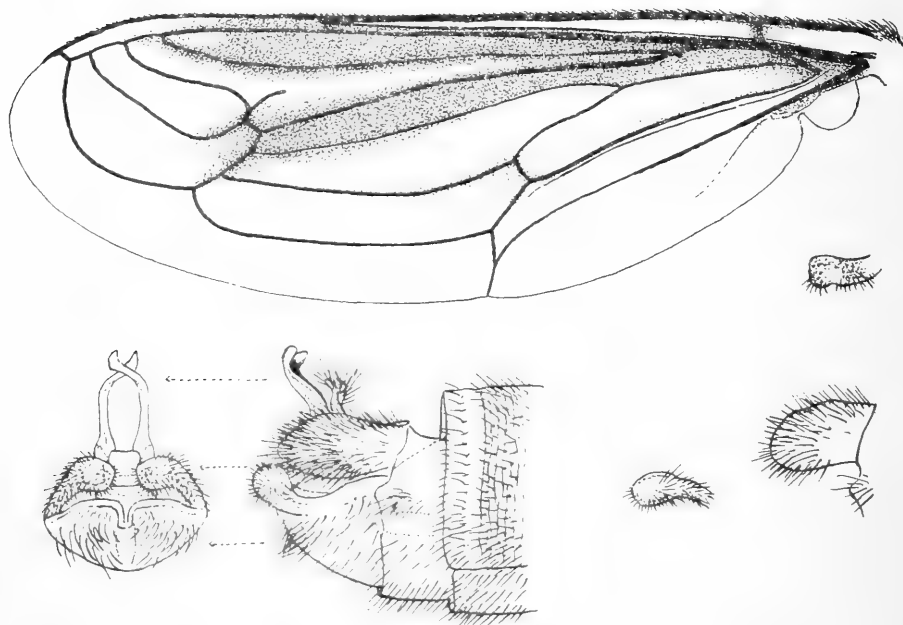


FIG. 21

Top: Wing of ♂ *Cephalocera fascipennis* Macq.

Below left: Posterior view of sternite 9 of ♂ *Cephalocera fascipennis* Macq., showing its processes, also the two phallic tubes and the posterior shield at their base.

Below left middle: Side view of hypopygium of ♂ of same species, showing sternite 9, phallic tubes and right lobe of tergite 9.

Below right: Right process of sternite 9 and right lobe of tergite 9 of ♂ *Cephalocera fascipennis* var. *luteipes* n.

Middle right: Right process of sternite 9 of ♂ *Cephalocera mimica* n.sp.



*Distribution:* Western Cape: Het Kruis (Museum Expedition, October 1947); Graafwater (Museum Expedition, October 1947); Olifants River (Museum Expedition, September 1938); Clanwilliam (Ac. University of Stellenbosch, November 1936); Van Rhynsdorp (Dr. Brauns, August 1938).

The ♂ and ♀ from Graafwater represent a distinct form which differs from the more typical specimens from Het Kruis in having a darker, more brownish clypeus; the sides of thorax above and even postalar calli in ♂ dark and in ♀ more obscurely, or more narrowly, reddish; base of thorax, even in ♀, scarcely reddish; metanotum in ♂ spot-like reddish on sides; venter darker in ♀; hairs on thorax above relatively paler, more greyish yellowish, those on vertex whitish; second basal cell in wings in ♂ distinctly more infused and posterior vein of discoidal cell with more extensive fuscous borders, more like those of typical ♀, and clear apical part in first submarginal cell less extensive; wings in ♀ also with more extensive fuscous borders along posterior vein of discoidal cell; and proboscis comparatively shorter, only about 3-3.6 mm.

The ♀ from Van Rhynsdorp represents still another form, with much darker infuscation in the wings, the pattern more like that of the distinct variety described below; with much paler or more extensively yellowish legs, especially hind ones; and with the hairs on disc of thorax entirely snow whitish.

*Cephalocera fascipennis* var. *luteipes* n.

A good series of ♂♂ and ♀♀ from the Citrusdal and Clanwilliam area in the Olifants River valley constitute a distinct and striking variety of *fascipennis* and of which they may even be considered as a distinct subspecies. This variety is apparently more common in the Olifants River valley than the more typical form and certain forms of *longirostris*.

It, especially the ♂, may at once be recognized by the striking pale luteous yellowish legs and the fulvous hairs on these. As in the case of the more typical *fascipennis*, but even more so, the ♀ differs considerably from the ♂ in the length, and to a certain extent the colour, of the hairs. This variety differs from the more typical *fascipennis* in the following respects:

*Body* with the same parts yellowish or yellowish reddish, but sides of thorax and its base in middle much narrower, or not so extensively, reddish, especially in ♀, where there is no indication of two submedial discal reddish streaks as in some ♀♀ of the typical form; vertex on sides in both sexes more consistently very dark reddish; sides of tergites 1-5 in ♂ distinctly more extensively and more broadly yellowish, the yellowish on sides at bases of 4 and 5 also extending upwards, in ♀ the yellowish brownish on sides of tergite 2 also more extensive; hind margins of tergites 1-4 or 5 in ♂ also whitish and also bordered on basal side with orange yellowish, and tergites 6 and 7 to a variable extent usually only yellowish on sides in apical corners, being replaced across discal part by the greyish whitish or silvery tomentum; hind margins of only tergites 2-4 in ♀ yellowish whitish, but that of 1 also reddish brownish as in more typical ♀; bullae in ♂ sometimes more ochreous brownish, in ♀ also yellowish brownish or

reddish brownish as in typical ♀, but tending to be very much smaller or even minute; genital structures in ♂ sometimes paler, mainly pale yellowish; legs, especially in ♂, conspicuously and strikingly pale luteous yellowish, only slightly brownish along upper part of front and middle femora to a variable extent, less so in ♀, and hind femora (including coxae) in some ♂♂, unlike those of more typical ♂, more often almost entirely luteous yellowish, only the upper part in both sexes infused with brownish to a variable extent.

*Integument* as in the typical *fascipennis*, that of front part of pleurae, and the abdomen, mainly shining.

*Vestiture* in ♂ as long and as dense, the hairs on vertex and thorax above pale creamy yellowish, fulvous yellowish to fulvous reddish; longish ones on tergites 1-3 in ♂ creamy yellowish to fulvous yellowish; shortish, depressed hairs on rest of abdomen in ♂ slightly more yellowish or even fulvous; dense hairs on legs not entirely snow whitish, but more creamy yellowish, yellowish to strikingly fulvous yellowish; hairs in ♀ much shorter and sparser than in ♂ and apparently a little shorter than in typical ♀ *fascipennis*, those on vertex, front part of frons and sometimes on clypeus above very slightly tinted creamy yellowish; the very short ones on thorax above in ♀ mainly whitish, though those in two submedial streaks tinted more yellowish in certain lights, and fine ones on tergites 1 and 2 slightly shorter than in typical ♀, slightly more sericeous yellowish than whitish; those on last two abdominal segments whitish to slightly yellowish; hairs on legs shorter than in more typical ♀, without any longish ones, tinted mainly yellowish, appearing more golden on hind femora, without some longer ones on these femora; hairs on front coxae in both sexes snow whitish; spines on hind femora sometimes slightly paler, paler reddish, or more yellowish; apical bands of silvery or greyish whitish tomentum across hind margins of tergites in ♂ as conspicuous as in typical ♂.

*Head* with the antennae, proboscis and other cephalic structures similar to those of typical *fascipennis*.

*Wings* almost similarly infuscated, but hinder half, even in ♂, distinctly more infuscated, the middle apical part of first submarginal cell, before base of second, not so conspicuously clear, the second basal cell distinctly more infuscated, and anterior and posterior veins of third posterior cell more broadly and conspicuously bordered with fuscous, and sometimes third posterior cell itself more infused, as well as apical part or along anterior vein of anal cell, and usually also with the part of hinder border of wing posterior to third posterior cell slightly, but distinctly, tinted and contrasting with the clearer apical part which appears milky whitish in certain lights; clear streak in discoidal cell distinctly much narrower than in the typical form; anal cell in both sexes comparatively narrower.

*Legs* very similar, the hind femora similarly thickened and incrassate.

*Oviscape* in ♀ with about 7 or 8 reddish spines on a side.

*Hypopygium* of ♂ with the broadened apical spoon-like part of processes of sternite 9 tending to be a little narrower than in typical form and lobes of

tergite 9 tending to be distinctly shorter (cf. text-fig. 21, right below).

From 22 ♂♂ and 4 ♀♀ (♂ holotype, ♀ allotype, 8 ♂ and 2 ♀ paratypes in the Transvaal Museum, and 13 ♂ and 1 ♀ paratypes in the South African Museum).

Length of body: about 13–18 mm

Length of wing: about 10–13 mm

*Distribution*: Western Cape: Clanwilliam (Dr. Brauns, September 1928) (♂ holotype, ♀ allotype and 7 ♂ and 3 ♀ paratypes); 8 miles north of Citrusdal (South African Museum, September 1961) (13 ♂ paratypes); Van Rhynsdorp (Dr. Brauns, August 1928) (1 ♂ paratype).

### *Cephalocera mimica* n.sp.

A single ♂ specimen in the collections of the South African Museum collected at Touws River, resembles *fascipennis*, and more especially the var. *luteipes* from Clanwilliam, so closely that it may be very easily mistaken for just another variety of *fascipennis*. Notwithstanding the close similarity of most of its morphological characters and its apparently identical wing-pattern it nevertheless differs primarily in the shape of the processes of sternite 9.

Compared with the ♂ of *fascipennis* var. *luteipes* it differs in the following respects:

*Body* slightly smaller; postalar calli darker; metapleural parts entirely black, not yellowish or reddish yellowish; sides of tergite 1 and its hind margin black, not extensively yellowish; extreme sides of tergites 2–5 whitish, not very broadly and extensively on sides of 2 and 3, and narrowly so on 4 and 5; venter only obscurely pale at base, mainly black; hypopygium mainly black; legs much darker, with more extensively darkened hind femora, the front and middle ones and the tibiae also darkened above, the apical half of hind femora more darkened, the tarsi more brownish, and the pulvilli more extensively blackened; bullae smaller, reddish brownish, dark-margined, more distinctly wider apart.

*Vestiture* as dense and as long on body and legs, similarly coloured, though that on legs not so fulvous yellowish, but more pale greyish yellowish; rings of dull tomentum across hind margins of tergites distinctly much narrower, confined to narrowish whitish hind margins, not extending basally across these as conspicuous silvery cross bands (in certain lights) as in *fascipennis* and its varieties; decumbent hairs on abdomen in punctures distinctly denser and the hairs more sericeous yellowish than fulvous.

*Wings* relatively much shorter, though with a very similar pattern, but with apical parts of second submarginal and first posterior cells distinctly more narrowed, and apical cross-vein of discoidal cell much broader than that of third posterior cell; veins darker, more blackish brown.

*Head* with the interocular space on vertex apparently narrower; vertex relatively more deeply sunk in; antennae similar; proboscis about 3.76 mm long.

*Legs* very similar, the hind femora as incrassate, but appearing less clavate, their bases less narrowed or slender.

*Hypopygium* very similar, but lobes of tergite 9 more tongue-shaped, equally narrowed apically; processes of sternite 9 distinctly, though slightly, more deeply indented below before lower apical angle (cf. text-fig. 21, extreme right middle).

Length of body: about 15 mm

Length of wing: about 9 mm

*Distribution*: South-western Cape: Touws River (Museum Expedition, 16th October 1966).

### *Cephalocera meridionalis* n.sp.

*Cephalocera fascipennis* Bezzi (*nec* Macquart), 1924b: 229. (n.syn.)

This species which Bezzi described as *fascipennis* Macq. and which is represented in the South African Museum by a ♂ specimen without the posterior half of its abdomen, does not agree in even the few distinguishing characters given by Macquart in his inadequate description of *fascipennis*. As the specimen differs specifically from specimens I take to be the true *fascipennis* of Macquart, and also from all the other known species of *Cephalocera*, it is here described as a new species which occurs farther eastwards than any other form of this genus. It agrees and differs from the ♂ of what I take to be *fascipennis* *s.str.* as follows:

*Body* with the same parts yellowish, but prominence on each side of the vertex more piceous reddish; antennae pale, pale yellowish brownish; metanotum more extensively yellowish reddish; bullae smaller, more reniform, slightly paler yellowish brownish; legs similarly coloured, but base of hind femora less extensively yellowish and apical part of hind tibiae more darkened.

*Integument* with the same parts shining or dull.

*Vestiture* distinctly shorter, especially on thorax, pleurae and legs, and entirely snow whitish, not greyish yellowish, yellowish, or fulvous on thorax above as in *fascipennis*.

*Head* with the clypeus distinctly smaller, shorter; antennae proportionally shorter, the segments proportionally shorter, entire length about 2.92 mm (at least 3.24 mm in *fascipennis*); proboscis very much shorter, only about 2.4 mm, as against 3.6–5 mm.

*Wings* with a slightly different pattern of infuscation, the infuscated parts paler yellowish brownish and, though darker in anterior half, the rest of wing is not clear hyaline, but distinctly tinted yellowish, the entire costal and second basal cells being also tinted, and the bounding veins of posterior part of discoidal cell, of third posterior cell and of first posterior cell with distinct faint fuscous borders, the clearer apical part in first submarginal cell and middle part of discoidal cell less distinct (a bifasciate pattern thus much less distinct); veins much paler, more pallid; apex of discoidal cell only very shortly stalked, the apical part of this cell thus very much broader than that of third posterior cell; second submarginal cell markedly narrowed apically.

Length of wing: about 9 mm

*Distribution*: Southern Cape: Knysna (L. Péringuey, October 1916).

There is a great suspicion that this species may prove to be only a more eastwardly-occurring representative of the next species *albida* Beq. (described by Bequaert as a variety of *umbrina* Gerst.). As only a single damaged ♂ representative of *meridionalis* and a single ♂ specimen of *albida* are known and in view of the fact that most species of Mydidae are remarkably restricted in their distribution, this species is however considered provisionally as a separate one.

*Cephalocera albida* Beq.

*Cephalocera umbrina* var. *albida* Bequaert, 1963: 63-64.

A single ♂ specimen from Mossel Bay, collected by Turner, was described as a white-haired variety *albida* of Gerstaecker's *umbrina* by Bequaert in a short appendix to his comprehensive redescription of what he took to represent the latter species. This variety is not represented in the collections before me. As representatives of the genus *Cephalocera* are somewhat difficult to separate and as they also appear to be restricted to certain geographical regions as in the case of other mydoid genera in South Africa, it is more than likely that this variety *albida* represents a distinct and separate species which status it is accorded in this revision.

According to Bequaert it differs from the specimens (from Ceres) which he referred (wrongly I think) to *umbrina* in being smaller; in being entirely and uniformly white-haired, there being no rufous or reddish vestiture on the head above and thorax above; in having the yellowish hind margin of tergite 2 much broadened on sides to surround the bullae (a character also present in *meridionalis*); in having a dark margin around the bullae (also present in *meridionalis*); and in having the whitish pruinosity on the posterior parts of the tergites strictly limited to the pale hind margins.

All these characters appear to me to be of sufficient value to separate *albida* specifically from the specimens of *fascipennis* Macq. which Bequaert referred to *umbrina*.

According to Bequaert's very short description *albida* differs from the preceding *meridionalis* in having a longer proboscis; a more restricted, less extensive and darker infuscation in the wings, which does not also occupy the second basal cell, posterior part of discoidal cell and base of third posterior cell to the same extent; a distinctly broader apical part of second submarginal cell, which is as broad apically as first posterior cell and not much narrowed as in *meridionalis*; a much shorter apical stalk to first posterior cell; a much longer apical stalk to discoidal cell; and much longer hairs on hind tibiae along their inner and lower faces.

Length of body: about 14 mm

*Distribution*: Southern coastal part: Mossel Bay (R. Turner, October 1921).

The other imperfect ♂ specimen from a locality (Howers) in the near eastern Cape and collected by C. B. Cottrell in November 1956 and also

referred to a local variety of the form described by Bequaert as *umbrina* (Bequaert 1963: 64) is also not present in any of the collections before me, but from Bequaert's short reference to it, it appears to be still another species which is different from both *albida* and *meridionalis* and probably represents a still farther eastward-occurring species of this genus.

*Cephalocera simulata* n.sp.

A single ♀ specimen in the collections of the late Dr. Brauns resembles the ♀ of *fascipennis* var. *luteipes* very closely and to a certain extent also that of *brunnipes*.

From the former it differs in the following respects:

*Body* very similarly coloured, with the same parts yellowish or yellowish reddish, but the reddish on thorax above distinctly less extensive, that on sides and across base only narrowish, not broadened medially; tubercles on vertex comparatively paler reddish; black spots submedially on each side of metanotum smaller; hind femora distinctly more uniformly brownish, at least on outer side, not either mainly yellowish or with the basal part very pale yellowish; hind tibiae distinctly more pale yellowish whitish basally and more brownish apically.

*Integument* on disc of thorax and on metanotum, especially latter, distinctly more finely rugulose; that of last two abdominal segments less densely transversely rugose or wrinkled, distinctly more shining.

*Vestiture* also mainly whitish, but with the hairs distinctly shorter, those on thorax above very short, and those on tergite 1 without any longish ones, and those on last two abdominal segments also shorter; hairs on coxae and legs distinctly much shorter, especially on hind femora, and the front and middle ones with fewer longish hairs.

*Head* with the antennae considerably shorter, shorter than proboscis, and only a little longer than thorax (excluding scutellum); segment 3 markedly shorter than in the variety of *fascipennis*, and only a little longer than club (in latter it is considerably longer); clypeus comparatively smaller, less prominent, less bulging and convex; proboscis much shorter.

*Wings* very similarly infuscated, but middle of discoidal cell slightly more broadly clearer; second submarginal cell tending to be broader towards base, its hind vein more bent backwards near its base, and appendix in the specimen markedly long; outer or posterior vein of first posterior cell rather more arcuately curved outwards in apical part.

*Legs* proportionally shorter, the hind femora relatively more thickened, armed below with a double row of darker spines; hind tibiae distinctly more curved basally; basal segment of hind tarsi comparatively much shorter, subequal in length to claw-segment, not distinctly longer as in the variety of *fascipennis*.

From *brunnipes* it may at once be distinguished by the shorter antennae, finer sculpture on thorax above, the yellowish reddish and not smoothish

shining metanotum, black tergites 2 and 3, very much shorter vestiture, etc.

Holotype in the Transvaal Museum.

Length of body: about 11.5 mm

Length of wing: about 9 mm

*Distribution*: Southern Karoo: Willowmore (Dr. Brauns, 15th October 1906).

*Cephalocera umbrina* Gerst.

*Cephalocera umbrina* Gerstaecker, 1868: 77.

The true identity of this species is difficult to ascertain without an examination of the type specimen itself. Its recognition is rendered more difficult owing to the fact that several of the known species, with a *fascipennis*-type of wing-pattern, show more or less uniform characters, especially in this type of wing-pattern and even in the genitalia. From Gerstaecker's description, though fairly comprehensive, *umbrina* cannot be identified satisfactorily because the author based it on a single ♂ specimen and it may be made applicable to some of the other related forms unknown to Gerstaecker. Bequaert has given a detailed redescription in 1963 of what he took to represent *umbrina*, but as I have indicated under *fascipennis* his description is more applicable to specimens which probably represent the latter species than to *umbrina s.str.* in which the antennae are stated by Gerstaecker to be 'merklich kurzer als der Thorax' and the abdomen above to be 'durchaus matt', characters not present in Bequaert's specimens nor in those assigned by me to *fascipennis* Macq.

A single ♂ specimen, with dull abdomen and antennae which are distinctly shorter than the thorax, in the collections of the Transvaal Museum, agrees in essential features with the description of *umbrina* given by Gerstaecker and to which species it is referred provisionally. This specimen also resembles specimens referred to *fascipennis* Macq., but it is characterized as follows:

*Body* with the yellowish reddish or yellowish brownish distributed in the same way, but base of thorax above without extensive yellowish reddish; middle part of metanotum distinctly more broadly black; sides of tergites 1-5 distinctly less extensively yellowish, confined more to sides and not enveloping bullae on sides of 2 and also not extensively occupying sides apically on 1-3 as in *fascipennis*; hind margin of tergite 1 yellowish or yellowish reddish only on extreme sides, and those of 2-4, and to a certain extent also 5, only narrowly whitish, this whitish not bordered on basal sides with conspicuous orange yellowish, and almost only extreme apical corners on sides of 5-7 whitish; bullae darker brownish; base of venter not so pale yellowish, darkened, more castaneous brownish; hypopygial structures below and sternite 8 more uniformly or extensively reddish brownish; legs with the tibiae and tarsi more brownish than yellowish, and front and middle femora appearing more extensively brownish above, and hind femora more uniformly or more extensively darkened, the base and lower surface not so pale yellowish, the spines on them below darker, more blackish.

*Integument* of thorax above slightly more coarsely rugulose; that of metanotum distinctly more coarsely rugulose; that of abdomen above dull, not shining as in *fascipennis* and related species, and with coarser and much denser granular setiferous puncturation.

*Vestiture* with the hairs on vertex and basal half of frons slightly deeper yellowish, more yellowish reddish; those on thorax above in four streaks comparatively denser, distinctly more fulvous reddish, those along the two sub-medial, discal streaks appearing darker or more reddish mauvish in certain lights; rest of longish hairs, excepting whitish ones on propleural part, front coxae and in tuft at extreme sides basally on tergite 1, tinted more yellowish or fulvous in certain lights; those on middle and hind coxae and base of hind femora also more yellowish not whitish; depressed hairs in fine granular aciculate puncturation on abdomen above distinctly much denser and more fulvous or yellowish; hinder part of tergites with scarcely perceptible, narrower, or more obscure, greyish tomentum, not so conspicuously evident as broadish whitish bands as in *fascipennis*.

*Head* with the antennae distinctly shorter, very much shorter than thorax (excluding scutellum), only about 3.06 mm long; segment 3 and club proportionally shorter, the latter distinctly more subpyriform; proboscis about 6.4 mm long.

*Wings*, relative to body, shorter than in *fascipennis*, with a very similar pattern, the dark however occupying more of basal part of first posterior cell, and also with more distinct, or darker, fuscous borders along posterior vein of discoidal cell and basal cross veins of third posterior cell; veins darker; alula comparatively larger.

*Legs* with the thickened hind femora not only armed below with a double row of spines, but also laterally and dorso-laterally in apical half with some distinct spines, entirely absent in *fascipennis*; hind tibiae with distinct spicules on lower apical part, or apical third, minute or absent in *fascipennis*.

*Hypopygium* with the lobes (text-fig. 22, top left) of tergite 9 slightly more narrowed and pointed apically; processes of sternite 9 (text-fig. 22, bottom left) proportionally much smaller, shorter, their broadened, apical, spoon-shaped part comparatively less broad.

Length of body: about 18 mm

Length of wing: about 12 mm

*Distribution*: South-western Cape: Malmesbury (A. Gobreghts, November 1928).

A ♀ specimen in the Transvaal Museum, from the same locality, is provisionally taken to represent the as yet undescribed ♀ of this species. It agrees with the above described ♂ in the relatively shortish antennae, which are also much shorter than in ♀ of *fascipennis*; its more uniformly brownish hind femora; the presence of even stouter and more distinct spicules, apart from hairs, on tibiae below, and on more than apical third of hind ones below (wanting in ♀ *fascipennis*); the presence of deeper yellowish, more fulvous, hairs on disc of



thorax, denser fine hairs on abdomen above; and the very similarly infuscated wings.

Apart from some differences mentioned above, it differs from the ♀ of *fascipennis* in the less smooth and shining, more punctured dorsum of the abdomen above which has more fine hairs, and the more coarsely transversely wrinkled last three segments; comparatively narrower yellowish or dirty yellowish hind margins of tergites 1-4; shorter hairs on legs; comparatively less thickened hind femora; darker veins in comparatively shorter wings, of which the alula is slightly larger and broader; and the less extensive yellowish reddish across base of thorax above.

Length of body: about 14.5 mm

Length of wing: about 9 mm

Length of proboscis: about 3.92 mm

*Distribution*: South-western Cape: Malmesbury (Dr. Brauns, October 1925).

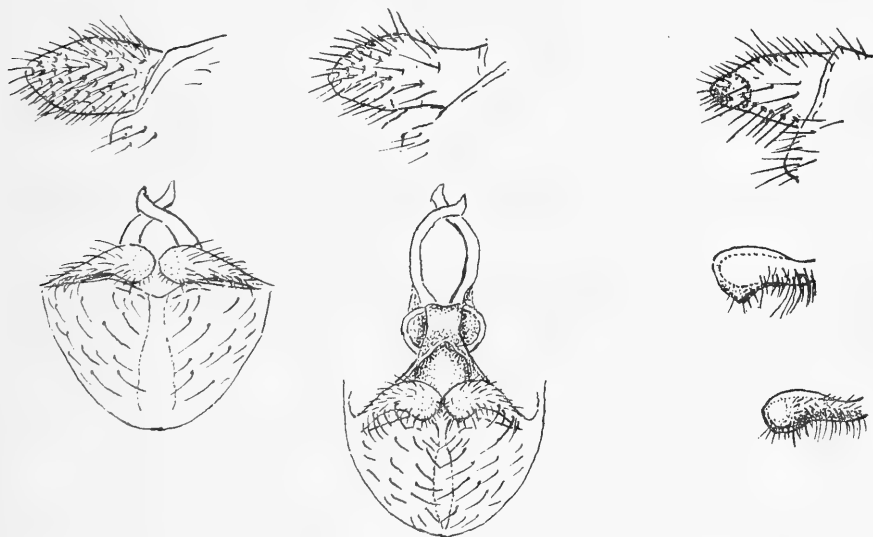


FIG. 22

Left: Side view of right lobe of tergite 9 of ♂ *Cephalocera umbrina* Gerst. and below it posterior view of sternite 9 of the same ♂, showing its processes and partially extruded phallic tubes. Middle: Side view of right lobe of tergite 9 of ♂ *Cephalocera imitata* n.sp. and below it posterior view of sternite 9 of the same ♂ showing its processes and the fully extruded phallic tubes of the aedeagal apparatus (the posterior shield at base of tubes also seen).

Right: Side view of right lobe of tergite 9 of ♂ *Cephalocera brachyptera* n.sp. and below it right process of sternite 9 of the same ♂. On extreme right below right process of sternite 9 of ♂ *Cephalocera riparia* n.sp.

### *Cephalocera imitata* n.sp.

Two ♂ specimens in the collections before me are very near *umbrina* Gerst. as identified by me and raises the question whether, in view of the confusion

concerning the true identity of the latter species, these specimens may not represent the real *umbrina* *s.str.* Their predominantly shining abdomen however separates them from the latter at once in which the abdomen above is stated by Gerstaecker to be 'durchaus matt'. They are nevertheless very near *umbrina* according to the description of the latter and are characterized as follows:

*Body* mainly very dark blackish brownish; clypeus yellowish brownish, blackened along middle; humeral tubercles yellowish brownish; postalar calli and sides of metanotum (latter obscurely) dark reddish brownish; hinder part of metapleurae, sides of tergite 1 and sides in more than basal half of 2-4 and sometimes extreme sides of 5 as well as sternite 9 yellowish brownish; narrowish hind margin of tergite 1 on sides and hind margins of 2-6 or 2-5 (5 and 6 or 4 and 5 only on sides) whitish, the whitish on extreme sides in posterior angles of the tergites broadened (posterior lateral angle of tergite 7 yellowish brownish); bullae orange brownish; venter mainly dark, only sternites 1-3, and to a certain extent 4, more yellowish brownish or castaneous, without any distinct yellowish or whitish hind margins, even on sides; legs with the coxae dark, the front and middle femora yellowish brownish, darkened above, their tibiae and tarsi paler, the hind femora very dark blackish brownish and their tibiae and tarsi brownish.

*Integument* with the central part of frons, clypeus, postalar calli, greater part of pleurae, greater part of abdomen (excepting tomented hind margins of tergites 2-7), hypopygial structures and legs, especially hind femora, shining; integument of thorax above dull, finely rugulose, even finer medially, more finely setiferously punctate on sides; metanotum rugose; scutellum longitudinally obscurely striate; abdomen setiferously punctured, more transversely so on last three segments.

*Vestiture* with the hairs on head above faintly yellowish, on face and clypeus and head below whitish; those in two submedial streaks and on sides of thorax above in front of wing-base, yellowish to fulvous reddish; those on sides of thorax behind wing-base on postalar calli and at base of scutellum more yellowish whitish or whitish; those on pleurae snow whitish; longish ones on tergites 1 and 2 and basally on sides of 3, as well as longish ones at base of venter and shorter ones on sternite 3, also white; short, decumbent, and not very dense, hairs on rest of abdomen and on hypopygium more yellowish or golden, appearing more fulvous reddish along dorsum and on posterior segments; dense and longish hairs on coxae and femora snow whitish, the longish ones along inner face of hind tibiae also whitish, but those along hinder face of front and middle tibiae, though also whitish, tinted slightly yellowish in certain lights; stiffish shortish hairs on dorso-apical part of hind femora dark or blackish brownish; shortish ones on outer apical half of hind femora more fulvous; shortish ones on tibiae more yellowish; hairs and spicules on tarsi yellowish to fulvous, appearing deeper fulvous or darker on hind ones; tomentum in frontal depressions, along inner margin of eyes dirty whitish, that on occiput more whitish and that in a distinct band across hind margins of tergites 2-7 greyish whitish to dull

greyish.

*Head* with the antennae longer than thorax (in *umbrina* markedly shorter); segment 1 about 2.3–2.4 times length of 2; segment 3 longer than club, more than its apical third thickened segment-like; club elongate-conical, gradually broadened to beyond middle, its base feebly constricted; proboscis slender, longer than antennae, about 4.16–4.2 mm long.

*Wings*, relative to body, rather shortish, with a *fascipennis*-type of pattern and the following parts dark brownish: the marginal cell or sides of it, sides of first submarginal cell, first basal cell, faintly along posterior part or vein of second basal cell, basal part of first posterior cell, along veins at base of second submarginal cell, along basal veins of third posterior cell and along course of anterior and posterior veins of discoidal cell; middle part of first submarginal cell to a large extent clear in more than apical half like rest of wing; veins dark brownish; second submarginal cell narrowed apically; halteres yellowish brownish to reddish brownish.

*Legs* with the incrassate hind femora armed below with a double row of very dark blackish brown, backwardly-directed spines on rather prominent tubercles and, as in *umbrina*, also armed laterally and dorsolaterally in apical half with distinct, dark, bristle-like spines, more or less arranged in irregular rows; hind tibiae, apart from the apical spurs, without conspicuous or long spicules, with only shortish fulvous ones in apical fourth and also some spicule-like, dark setae along outer face.

*Hypopygium* with the lobes of tergite 9, the last sternite and its processes, and aedeagal apparatus, as shown in text-figure 22 (middle), the processes rounded apically.

Holotype and paratype in the South African Museum.

Length of body: about 17–18.5 mm

Length of wing: about 11–13 mm

*Distribution*: Cape: Worcester (C. D. Michener, 30th September 1966) (holotype); Rawsonville (S. Everson, 20th January 1963) (paratype).

Apart from the two characters (length of antennae and shining abdomen) mentioned above, this species differs from the ♂ of *umbrina*, as defined in this revision, in having the tomentum restricted to hind margins of the tergites; decumbent hairs on abdomen above distinctly sparser; longish hairs at base of abdomen and on hind femora more snow whitish, not greyish or yellowish whitish; proboscis relatively shorter; setae along outer upper part of basal half of hind tibiae short, not long and bristle-like; halteres darker; broadened apical part of processes of sternite 9 more curved down (cf. text-fig. 22, middle and left) and lobes of tergite 9 less tongue-shaped (cf. text-figs).

### *Cephalocera devia* n.sp.

Another single ♂ specimen in the collections before me, with the antennae unfortunately missing, resembles *imitata* so closely that it may even be considered as only representing a form or variety of the latter. The specimen

however shows certain distinct differences which suggest a separate species rather than a variety. Compared to *imitata* it differs in the following respects:

*Body* also mainly very dark blackish brownish; antennal segments 1 and 2 however yellowish, not dark; clypeus much paler, more yellowish; humeral tubercles much paler, very pale yellowish and surrounding them on inner side on anterior declivity and posteriorly towards wing-base a dark reddish infusion; postalar calli and narrowly across base of thorax also dark reddish; almost entire metanotum, excepting dark central part, reddish; pteropleural and sternopleural parts and in front of and below halteres very dark reddish, not black; metapleural part more extensively yellowish; sides of tergites 1 and 2 and extreme sides of 3-5 more broadly and conspicuously yellowish; hind margins of tergites 2-6 distinctly much more broadly, more conspicuously, yellowish or yellowish whitish, not so white as in *imitata*, though also broadly whitish on sides in posterior angles; bullae similarly coloured, but with more yellowish below and behind them; venter distinctly paler yellowish in basal half and more reddish brownish in hinder half, the base of sternites even paler and hind margins of sternites distinctly and broadly yellowish whitish; legs with the front and middle ones much paler yellowish, the darkish hind femora yellowish brownish basally and below, not mainly dark, and hind tibiae and tarsi paler, more pale yellowish brownish, the base of tibiae even distinctly yellowish.

*Integument* very similar, the abdomen also shining, but without any distinct dull tomented hind margins of tergites, the setiferous, aciculate puncturation slightly denser and posterior segments more coarsely transversely striate.

*Vestiture* very similar, but hairs on thorax above paler, more greyish yellowish than fulvous and without any short darkish hairs dorso-apically on hind femora.

*Head* with the clypeus distinctly larger, longer dorsally (proportions of *devia* to *imitata* being about 14:10); proboscis a little shorter, about 3.16 mm as against 4.16 mm.

*Wings*, relative to body, comparatively longer, almost entirely clear, the marginal and first basal cells tinted only faintly yellowish, without any indication of infuscation along basal and anterior veins of discoidal cell; veins distinctly paler, more reddish yellowish.

*Legs* very similar, the hind femora similarly and equally incrassate, armed below with a double row of slightly paler spines, the sides apically also with spines (a variable number in a row above outer row of ventral ones and some on sides apically, but without the longish bristly ones along outer apical part present in *imitata*); short spicules or setae along upper outer part of hind tibiae paler, more yellowish, and rest of spicules on hind tibiae and tarsi paler, more fulvous yellowish.

*Hypopygium* (as far as this is visible in the specimen) similar, but with sternite 9 relatively broader and shorter, and broadened apical part of its processes apparently proportionally narrower.

Holotype in the South African Museum.

Length of body: about 18.5 mm

Length of wing: about 13 mm

*Distribution*: Cape: Stellenbosch (Ac. University of Stellenbosch, 28th October 1933).

*Cephalocera euryptera* n.sp.

A single ♀ specimen in the South African Museum, with rather broadish wings, represents a species which is very near *fascipennis* and also to the ♀ I have referred to *umbrina*. It agrees and differs from these two species in the following respects:

*Body* also mainly very dark blackish brown or castaneous brownish, with the same parts yellowish brownish or yellowish reddish, but with extensive yellowish reddish also at base of thorax as in *fascipennis*; middle of metanotum more broadly darkened than in latter, more like that of *umbrina*; sides of tergites 1 and 2, and to a lesser extent 3 and 4, also extensively yellowish as in *fascipennis*: hind margins of tergites 2-4, and more obscurely 5, conspicuously and broadly yellowish as in latter, broader than in *umbrina*, and that of tergite 1 also narrower, more yellowish reddish; legs as in *umbrina*, the upper surfaces of femora, the tibiae, and most of hind femora more castaneous brownish than yellowish, the hind femora not paler or yellowish basally and below as in *fascipennis*.

*Integument* more like that of *umbrina*, that of thorax above and of metanotum however comparatively more coarsely rugulose; abdomen above also punctured, not almost smooth as in *fascipennis*, but slightly less densely punctured on tergites 1-3, and distinctly more sparsely so on rest than in *umbrina*.

*Vestiture* slightly denser on disc of thorax and on legs than in the other two species, that on disc of thorax also more yellowish or fulvous as in *umbrina*; fine hairs on abdomen, though less dense than in *umbrina*, distinctly much denser than in *fascipennis*, also slightly more yellowish than whitish discally from tergite 3, but longer ones on 7 and 8 whitish as in the other two species; hairs on legs, especially hind ones, even more yellowish or fulvous than in *umbrina*.

*Head* with the antennae much as in *fascipennis* and longer than in *umbrina*; segment 3 and club proportionally similar to those of former species; proboscis unfortunately broken off in the specimen, but apparently longer than in *umbrina*.

*Wings* rather markedly broad, bifasciately infuscated as in the other two species, but infused parts much fainter; alula much larger, more so than even in *umbrina*.

*Legs* as in *umbrina*, with distinct spicules, apart from hairs, on front and middle tibiae (especially latter) below, and these more strongly developed, and also present only on apical third of hind ones; hind femora as thickened as in *fascipennis*, but armed below with apparently more numerous dark reddish spines.

Length of body: about 17 mm

Length of wing: about 12.5 mm

*Distribution*: South-western Cape: Tulbagh (J. Theron, November 1947).

*Cephalocera flavilineata* n.sp.

Another single ♀ specimen in the collections before me also seems to belong to the *euryptera* section. It is characterized as follows:

*Body* mainly dark piceous brownish, the frons in front and disc of thorax more blackish; antennae yellowish brownish; following parts ochreous yellowish or yellowish: clypeus, humeral tubercles, broadish sides of thorax above, an anterior infusion on inner sides of humeral tubercles (continued posteriorly as a narrow submedial discal line, broadening at base of thorax and confluent with its neighbour to form a large basal infusion), almost entire metanotum (excepting a black spot on each side submedially and a faint dark central line), area below wing-bases, posterior part of pteropleuron, metapleural tubercle, metapleural part below halteres, to a certain extent sides of metasternum, sides anteriorly of tergite 1, sides and hind margin of tergite 1, sides of 2, narrower ill-defined sides of 3-7 (excepting extreme more blackish sides), venter (excepting extreme darkish sides of sternites 4-7), genital segment obscurely, and hind coxae and legs (excepting the more brownish infusion on apical halves above and to a lesser extent on sides in apical halves of hind femora); hind margins of tergites 2-4 and sides of 5 paler, yellowish whitish; bullae small, reddish brownish; bases of hind tibiae and to a certain extent also bases of hind femora also very pale yellowish whitish.

*Integument* of frons, dorsum of clypeus, front two-thirds of pleurae, scutellum and abdomen above, especially from tergite 2, shining; disc of thorax finely vermicellately rugulose; metanotum also rugulose, more distinctly so on sides, finely silvery pubescent; tergite 1 and quite basal two-thirds of 2 with fine setiferous punctures; rest of tergites almost smooth, but last two segments transversely wrinkled and punctured, the last one more so.

*Vestiture* not very long or dense, the hairs on head snow whitish; hairs on palps yellowish; very fine and short ones in streaks on thorax above tinted yellowish, more whitish on sides; longish ones on propleural part and shortish dense ones, as well as the tomentum, on hind part of pleurae and on sides basally of tergite 1 also whitish; shortish hairs on tergites 1 and 2 and on hind coxae also whitish; very fine and very sparse ones on rest of tergites more yellowish, and longer and denser ones on last two segments and the genitalia sericeous yellowish; hairs on venter sparse, short, yellowish, more whitish and slightly denser on sternite 2; hairs on legs shortish, not very dense, but with sparse, longish, bristly ones on front and middle ones as well, with all these hairs tinted sericeous yellowish, appearing more yellowish or golden on hind femora; spines on legs reddish and spicules yellowish reddish.

*Head* with the antennae only a little shorter than thorax (excluding scutellum); segment 1 about 2.3 times length of 2; segment 3 elongate, longer than

club, its apical part thickened; club elongate-pyriform, its apical part conical or attenuated to tubercular prominence; proboscis about 4.2 mm long, longer than antennae, and also longer than thorax (excluding scutellum).

*Wings* rather broadish, tinted very faintly pale yellowish brownish, more so anteriorly to lower vein of first basal cell, at base of first posterior cell, along lower half of second basal cell, and to a certain extent third posterior cell, but a streak through discoidal cell, greater apical part of second submarginal cell to apex, the anal cell and to a great extent axillary lobe being clearer or more hyaline; veins yellowish; halteres yellowish.

*Legs* with the hind femora distinctly thickened, their double row of spines below from near base; middle tibiae below with some spicules in apical half; hind tibiae slightly S-curved, with a few short spicules apically below; basal segment of hind tarsi slightly longer than claw-segment.

*Oviscape* with 7 or 8 yellowish reddish spines on a side.

Holotype in the Transvaal Museum.

Length of body: about 13.5 mm

Length of wing: about 11 mm

*Distribution*: Southern Karoo: Willowmore (Dr. Brauns, 1st October 1919).

This ♀ differs from ♀ of *euryptera* in having slightly narrower wings, with paler veins, and slightly less dark anterior infuscated part, and basally slightly more dilated second submarginal cell; slightly broader yellowish sides of thorax above and more defined submedial yellowish streaks; smaller and more reddish brownish bullae; less punctured tergite 3; smoother and distinctly less punctured tergites 4-6, which are also less sparsely haired; less dense short hairs on tergites 1 and 2, and much fewer hairs on 3; shorter legs, with distinctly less dense and shorter hairs; and more yellowish whitish bases of hind tibiae and femora.

### *Cephalocera brachyptera* n.sp.

This rather short-winged, montane, asilid-like species is characterized as follows:

*Body* mainly black; antennal clubs orange or yellowish brownish to a variable extent; clypeus and humeral tubercles yellowish, the former however sometimes darkened on sides to a variable extent; an infusion anteriorly on thorax above on inner sides of humeral tubercles, and postalar calli in ♀ reddish; metanotum entirely reddish in ♀, in ♂ darkened or blackened on sides and along middle to a variable extent; metapleural area around halteres yellowish or yellowish reddish, more so in ♀; sides of tergites 1-3 and to a feeble extent extreme sides of 4 and 5 in ♀ yellowish; sides of tergite 1 and a variable spot below bullae in ♂ also yellowish; extreme sides of tergites 1-5 and hind margins of 1-5 (or 6), and sometimes even faintly of 7, ivory yellowish in ♂, the hind margins of 1-4 in ♀, and to a fainter extent, more broadly yellowish whitish than in ♂; bullae yellowish brownish to orange, rather large in both sexes, the space between them above in ♂ broader than vertical length of

bullae; venter yellowish brownish basally in ♂, more extensively or even entirely so in ♀, and ventral part of hypopygium in ♂ also yellowish; front and middle legs pale yellowish brownish, darker and more brownish above, the hind ones in ♂ darker, brownish to dark brownish, their femora with the bases, especially on inner sides, and bases and lower sides of hind tibiae paler, more yellowish; hind femora and tibiae in ♀ with more yellowish, especially on inner basal half and even on under surfaces.

*Integument* of head in front, scutellum, abdomen and greater part of pleurae shining; thorax above discally dull, vermicellately rugulose, the sides anteriorly more shining; metanotum dull, rugulose; propleural tubercle and metapleural and metasternal parts less shining and with greyish whitish tomentum; abdomen in ♂ shining, but covered with separated, aciculate, setiferous puncturation, posteriorly somewhat transversely wrinkled; abdomen in ♀ shining, but with scattered punctures, those on tergites 3-6, especially 4 and 5, rather coarsely so; legs in both sexes, especially hind femora, shining.

*Vestiture* fairly long and dense in both sexes, and only a little shorter in ♀, especially that at base of abdomen and on legs, the hairs on thorax above in streaks, the two submedial discal ones being the broadest; hairs on thorax above yellowish to fulvous, the rest on head, body and legs more whitish or snow whitish, those at base of abdomen in ♀ appearing more greyish or greyish yellowish in certain lights.

*Head* with the fronto-facial part in ♂ distinctly narrower than in ♀, the vertex in ♂ being considerably narrower than length of front tarsi (minus claws), whereas in ♀ it is subequal to, or very nearly this length; antennae about 2·64-3·16 mm long; segment 3 a little more than 3 times combined length of segments 1 and 2; club pyriform; proboscis long, about 4·4-4·92 mm from theca.

*Wings* markedly short for species of this genus, rather more so in ♂, tinted faintly greyish yellowish, the marginal and first basal cells, to a fainter extent basal half and apical part of first submarginal cell, base of second submarginal cell, and very faintly in second basal cell, however slightly darker, more faintly yellowish brownish, especially in ♀, the veins in anterior half of wings also with very faint, scarcely perceptible, fuscous borders (the wings in ♂ sometimes without any more darkly tinted parts, or with these parts scarcely perceptible); veins reddish brownish; apex of third posterior cell very much broader than apex of discoidal cell; first posterior cell also markedly broad; knobs of halteres brownish above.

*Legs* with the hind femora distinctly much thickened, subspindle-shaped in both sexes; hind tibia curved, with a few distinct spicules, or at least one, in apical part below in ♂, and with from 3-6 longer, more stoutish spicules in at least apical third below in ♀; basal segment of hind tarsi a little longer than claw-segment.

*Oviscape* in ♀ with about 8 or 9 spines on a side.

*Hypopygium* of ♂ with the lower margin of broadened apical parts of pro-



cesses (cf. text-fig. 22, right middle) of sternite 9 slightly, but distinctly, angularly produced subapically as in *longirostris*, but less sharply so; lobes (text-fig. 22, top right) of tergite 9 bluntly subangular to rounded apically.

From 3 ♂♂ and 4 ♀♀ in the South African Museum.

Length of body: about 13–16 mm

Length of wing: about 7–10 mm

*Distribution*: Western Cape: Citrusdal district (Museum Expedition, November 1948).

### *Cephalocera riparia* n.sp.

This is another montane species which resembles the preceding species *brachyptera* very closely, but differs in the following respects:

*Body* also mainly dark; antennae, excluding orange yellowish clubs, paler, more yellowish brownish, especially segment 3; hind margins of posterior tergites 5–7 in ♂ more evidently whitish, even though those on 6 and 7 are a bit obscure discally, and with hind margins of only 1–3 in ♀ distinctly or conspicuously yellowish; black spots on sides of hind margins of tergites in ♂ larger, especially on 2–5; metanotum on the whole darker, the reddish infusion on sides in both sexes much smaller, less extensive; greater part (♂) or entire (♀) front and middle femora, and their entire tibiae paler or more yellowish.

*Integument* as in *brachyptera*, but abdomen above in ♀ much smoother, more shining, not coarsely punctured, that of ♂ with hind margins of tergites 3–7 covered with distinctly much narrower bands of silvery-gleaming tomentum.

*Vestiture* in ♂ distinctly denser, and even slightly longer on head, base of abdomen and legs, also conspicuously snow whitish, but those on thorax above slightly paler than in *brachyptera*, more greyish yellowish than fulvous yellowish; hairs in ♀ distinctly much less developed than in ♀ *brachyptera*, those on head, thorax, pleurae and abdomen, and even on legs, markedly short, the thorax and abdomen appearing bare, with only minute hairs; the much shorter ones on legs in ♀ also distinctly more yellowish than whitish.

*Head* with the vertex, frons and face equally broad in both sexes; antennae comparatively shorter, less than 3 mm long, especially in ♀; segment 3 proportionally shorter; proboscis also slightly shorter, only about 3·8–4·36 mm.

*Wings* in ♂ distinctly longer, broader, more vitreous hyaline or faintly milky whitish, the lower vein of first submarginal cell distinctly thicker, more prominent, and both it and basal parts of fork at its end, and sometimes also lower vein of marginal cell, with slight fuscous borders, both the marginal and first basal cell sometimes appearing infuscated; wings in ♀ more like those of *brachyptera*, similarly tinted, but lower vein of first submarginal cell distinctly thicker, like that of ♂.

*Legs* with the hind femora more distinctly clavately thickened, their double row of spines below also reddish brownish and on rather prominent tubercles, and in ♂, as in ♂ of *umbrina*, with some bristly spines on outer apical part as well (not present in *brachyptera*); hind tibiae in ♀ with shorter spicules apically below.

*Oviscape* in ♀ with fewer, only about 6, spines on a side.

*Hypopygium* of ♂ with the preceding tergite and sternite 8 longer; processes (text-fig. 22, right below) of sternite 9 narrower, somewhat coarsely punctured along lower side and, though broadened apically, not subangularly or angularly prominent apically below as in *brachyptera*.

From 2 ♂♂ and 2 ♀♀ (♂ holotype, ♀ allotype and ♀ paratype in the South African Museum, and 1 ♂ paratype in the National Museum of Rhodesia).

Length of body: about 13·5–17·5 mm

Length of wing: about 9–12 mm

*Distribution*: South-western Cape: upper sources of the Olifants River in Ceres division ((Museum Expedition, December 1949) types and ♀ paratype); Vogel Vlei (Voëlvlei) Mountain near Hermon, between Bains Kloof and Tulbagh Kloof) (November 1948 (1 ♂ paratype)).

### *Cephalocera trichogyna* n.sp.

A single ♀ specimen from southern Namaqualand, in the Transvaal Museum, belongs to a species of which the ♀ is rather hairy, much like the ♀ of *brachyptera*, and in this respect differing from most of the known South African species of *Cephalocera*. The greyish yellowish-tinted wings also help to distinguish it from other species.

From the ♀ of *brachyptera* it may at once be distinguished by the longer and less infuscated wings, shorter antennae, smaller and darker bullae, less deeply punctured abdomen, absence of stoutish spicules on hind tibiae below, etc. It has the following characters:

*Body* mainly dark or black above; antennae dark reddish brownish, the clubs more orange; sides of vertex and clypeus deep dark reddish brownish or dark wine reddish; humeral tubercles yellowish; anterior declivous part of thorax, especially on inner sides of tubercles, sides of thorax (very obscurely), postalar calli, and narrowly across base, dark reddish; metanotum also dark reddish, but darkened centrally; pleurae dark castaneous brownish, paler on pteropleuron, and more yellowish above hind coxae; sides of abdomen yellowish, especially on posterior part of tergite 1, base of 2, and sides of 2–4 (or 5), more obscurely yellowish brownish posteriorly; hind margin of tergite 1 yellowish, and those of 2–5 conspicuously yellowish, those of 6 and 7 more narrowly and obscurely yellowish brownish; bullae small, shining dark blackish brown; venter mainly yellowish brownish, the hind margins of sternites yellowish whitish, especially on extreme sides; legs mainly yellowish, but coxae brownish, the femora more yellowish brownish, and all the femora appearing darker above, darker brownish, especially hind ones.

*Integument* of vertex on sides, central part of frons and clypeus above shining, the rest dulled to a variable extent by greyish whitish bloom; integument of thorax above dull, centrally with fine leathery micro-sculpture, with setiferous granules under the two submedial hair-streaks and with irregular areolate-rugulose sculpture, and the broadish bare streaks on each side more finely

areolate-rugulose, and sides with fine setiferous granules or granular aciculate puncturation and greyish bloom; metanotum more coarsely areolately rugulose, more convergently striate on sides, and with fine greyish pubescence; pleurae shining in anterior part, with greyish bloom on propleural and hinder meta-pleural parts; abdomen mainly shining, with setiferous puncturation discally across tergites 1 and 2, more transversely on hinder half of 1 and more sparsely and larger on hinder part of 2, with sparser, slightly coarser, setiferous punctures on 3, sparser ones on 4-6, and rather dense transverse rugae on 7, and more widely separated shallower ones on 8; venter mainly shining and transversely striate, more so across sternites 6 and 7, widely separated on 8; legs, especially hind femora, also mainly shining.

*Vestiture* rather long and dense for a ♀, dense and longish on head, thorax above, tergites 1 and 2, coxae, and front and middle femora; those on head snow whitish, those in four broadish streaks and a central narrow one on disc of thorax more fulvous yellowish or reddish, but more whitish on extreme sides; those on rest of body, including abdomen posteriorly, mainly snow whitish; hairs on front and middle coxae whitish, but those on hind ones tinted slightly more greyish yellowish; hairs on legs mainly whitish, especially the longer ones, but the shorter ones on hinder or outer faces of front and middle femora, and less dense ones on outer sides of hind ones, appearing slightly more yellowish in certain lights, the fine ones on tibiae and also longish, bristly ones on front and middle tibiae also appearing more yellowish tinted; spines on hind femora blackish brown and spicules on tibiae and tarsi yellowish.

*Head* with the antennae much shorter than thorax (excluding scutellum); segment 1 slender, about twice length of 2; segment 3 a very little more than 3 times combined length of 1 and 2, a little more than its apical third thickened, slightly longer than the club; the latter slightly elongate-pyriform; proboscis about 4.88 mm long, much longer than thorax; palps small, but distinct.

*Wings* rather elongate, narrowish, tinted very slightly more or less uniformly greyish yellowish, being clearer in discoidal and anal cells and in middle of second submarginal cell; veins pale yellowish reddish; second submarginal cell more narrowed apically than the others, the appendix at base rather shortish; third posterior cell more or less parallel-sided, being broad apically; alula slightly reduced; halteres yellowish.

*Legs* with the hind femora distinctly thickened, their double row of spines below reddish brownish, and from near base; hind tibiae carinate below to about apical third, with a few sparse, longish hairs on inner aspect; basal segment of hind tarsi subequal in length to claw-segment.

*Oviscape* with 7 or 8 yellowish spines on a side, appearing dark-tipped below in certain lights.

Length of body: about 15 mm

Length of wing: about 12 mm

*Distribution*: Southern Namaqualand: Van Rhynsdorp (Dr. Brauns, August 1928).

*Cephalocera dysmachoides* n.sp.

A species which in the ♂ sex superficially resembles species of the asilid genus *Dysmachus*, especially *D. suillius* F. and *D. hirtipes* Ric., and which is easily recognized by the short, but distinct, tubercle-like prominence or slight process at apex of hind tibiae below, the rather prominent, spiniferous tubercles on hind femora below, the entirely black bullae, and the relatively narrow vertex. None of the preceding species have this combination of characters. It may however be confused with the next two species, *brachycera* and *namaquensis*, which also show most of these characters, but the much longer antennae, and the different shape of the processes of sternite 9 of the ♂ at once distinguish it from those two species. It is slightly variable in the colour of the hairs on the thorax and femora in the ♂♂. The chief distinguishing characters are as follows:

*Body* mainly very dark or black; antennae reddish brownish to blackish brown, the clubs more orange yellowish subapically; vertex on sides very dark reddish to blackish; clypeus dark castaneous brownish to dark piceous reddish, or in ♂ sometimes even black; humeral tubercles yellowish; an infusio around tubercles and sides above in ♀, postalar calli in both sexes, and narrow base of thorax in ♀ dark reddish; metanotum dark reddish, darker in ♂, its sides in ♂ almost black; pleurae in ♀ more dark castaneous brownish; abdomen in ♀ mainly very dark castaneous or piceous brownish rather than black, especially posteriorly, the extreme sides slightly paler, in ♂ mainly black, the extreme sides sometimes more piceous brownish; hinder part of metapleurae, extreme sides basally of tergite 1, the sides apically of tergites 1-4 in ♀ to a variable extent yellowish; hind margin of tergite 1 reddish brownish, those of 2-7 in ♂ whitish, but usually present only discally on 6 and 7 and sides of 2-5 or 6, with a blackish brown spot interrupting the whitish hind margins; hind margins of tergites 2-4 in ♀ yellowish; bullae shining black in both sexes, smaller in ♀; venter in ♂ mainly very dark castaneous brownish, paler, more yellowish brownish posteriorly on last sternite and ventral part of genitalia; venter in ♀ more brownish or castaneous brownish, as in ♂ without distinct yellowish hind margins, only the very extreme sides of those of sternites 1-4 slightly yellowish whitish; legs brownish or slightly yellowish brownish, the upper faces of femora darkened, the hind coxae and hind femora above and on sides in ♂ more extensively darkened, more blackish brown, the knees and extreme apices of tibiae of front and middle legs pale yellowish in both sexes; femoral spines and in ♀ also genital ones very dark blackish brownish, almost black.

*Integument* of central part of frons and clypeus shining, the rest of head in front dulled by dense greyish or greyish whitish tomentum like head behind eyes; integument of thorax above dull, very finely vermicellately rugulose along three broadish discal streaks; scutellum mainly shining; metanotum dull and rugulosely sculptured; pleurae mainly shining, with greyish tomentum on propleurae and on posterior metapleural and metasternal parts; abdomen in ♂ mainly shining and in ♀ mainly so from tergite 3, 1 and 2 and base of 3 being duller; tergites 1 and 2 in ♂ with fairly dense, fine, setiferous punctures, the middle tergites with

sparser, fine punctures, and 6 and 7, especially the latter, with slightly coarser ones, and sides of 2 and 3, as well as 7, with slight transverse striation; tergites 1 and 2 in ♀ with very fine, not very dense, setiferous punctures, the middle tergites almost bare, but 7 and 8 transversely wrinkled; venter shining and transversely wrinkled, especially in ♀; legs also markedly shining.

*Vestiture* with the hairs in ♂ rather dense and long, dense and long also on tergites 1 and 2 and sides of 3, and also on venter basally, conspicuously so on femora, for most part snow whitish, but those in streaks on disc of thorax tinted slightly greyish yellowish, pale yellowish to fulvous brownish, those on tergite 1 in ♂ sometimes also yellowish or yellowish brownish; hairs on thorax in 5 streaks, the central one very narrow; hairs on abdomen in ♂ on tergites 4-7 rather longish, sparse, but shorter than those on tergites 1, 2 and sides of 3; hairs on venter shorter posteriorly than basally; those on inner sides of basal half of hind tibiae in ♂ relatively long, and the long and dense ones on hind femora and on the other femora above sometimes yellowish; hairs in ♀ very much shorter and sparser, the longest ones on vertex and clypeus much shorter and sparser than in ♂, the short, decumbent ones on thorax above also in 5 streaks, and those on tergites 1 and 2, though denser than on middle tergites, also short, not longer than those on disc of thorax, with all the hairs on body whitish, but those on disc of thorax sometimes tinted slightly yellowish; reversed hairs on last two abdominal segments also whitish; hairs on venter in ♀ very short and sparse; hairs on legs very short and sparse, some sparse longish ones only on anterior faces of front and middle femora, and on their tibiae, but without any longish ones on hind tibiae, and with all the hairs also whitish as in some ♂♂.

*Head* with the vertex and frons rather narrow; antennae only a very little shorter than thorax (excluding scutellum); segment 1 about 2-2.4 times length of 2, only very slightly thickened in ♂, slightly broadened apically, segment 3 very slightly longer than club, slender, more than its apical third thickened segment-like; clubs elongate-pyriform, their base constricted and the apical part conically narrowed to the rather prominent, crater-like tubercle; proboscis about 3.68-4.2 mm long; palps small.

*Wings* rather shortish, especially in ♂, with the anterior part or half infuscated brownish or smoky brownish, slightly more extensively so in ♀, the second basal cell in ♀ being as dark as anterior part, whereas in ♂ it is very much clearer, and fuscous borders along lower vein of discoidal cell and apical vein of anal cell not or scarcely discernible in ♂, with the middle apical part, or sometimes entire apical part (even in ♂), of first submarginal cell at base of second submarginal clearer to a variable extent in both sexes, and also with a clear streak through discoidal cell, not or scarcely evident in ♂, and in both sexes with a slight milky whitish tint; veins yellowish brownish to brown; first posterior cell much narrowed apically in both sexes; halteres rather shortish, mainly yellowish, the knobs slightly brownish above.

*Legs* with the hind femora markedly thickened, incrassate, more so in ♂,

almost spindle-shaped in ♂, slightly more clavate in ♀, curved slightly outwards near base, more so in ♂, their double row of spines below situated on rather prominent tubercles, very dark, and from near base; hind tibiae curved, carinate below to near apex, armed apically below with a distinct, though short, tubercular process or prominence, not evident in preceding species, the hind tibiae in both sexes without any spicules, apart from apical spurs; basal segment of hind tarsi in ♂ distinctly shorter than claw-segment, but in ♀ however longer, and hind tarsi in ♀ as a whole longer than in ♂.

*Genital segments* in ♀ with the last vertical tergite rugulose sculptured on each side of central carina; oviscape with 8-9 blackish spines on a side.

*Hypopygium* of ♂ with the lobes of tergite 9 (text-fig. 23, left) bluntly rounded apically; sternite 9 scoop-like, slightly raised ridge-like centrally, and apically narrowly incised, with the apical margins pallid, its processes (text-fig. 23, bottom left) only slightly broadened apically, mainly dark and shining, but their apices yellowish brownish.

From 2 ♂♂ and 2 ♀♀ (♂ holotype, ♀ allotype and ♀ paratype in the Transvaal Museum, and 1 ♂ paratype in the South African Museum).

Length of body: about 12.5-14 mm

Length of wing: about 7.6-10.5 mm

*Distribution*: Western Cape: Clanwilliam in the Olifants River valley (Dr. Brauns, September 1928) (types and 1 ♀ paratype); 4 miles south of Clanwilliam (South African Museum, September 1961) (1 ♂ paratype).

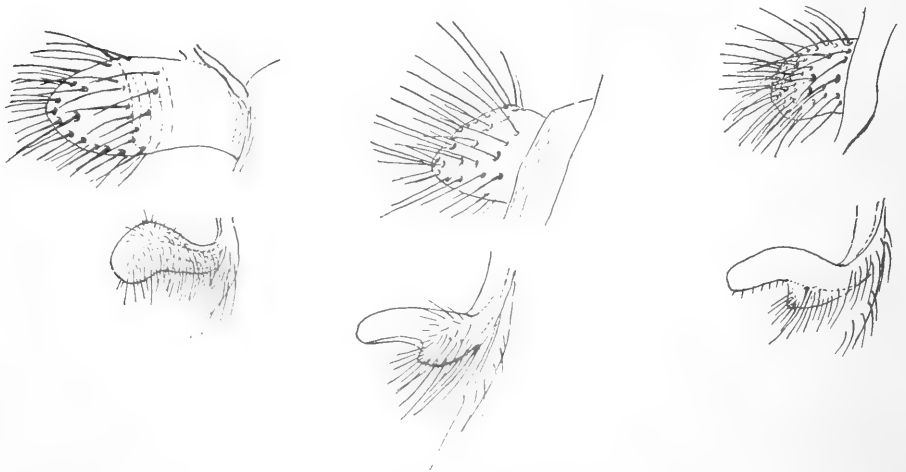


FIG. 23

Top: Side view of right lobe of tergite 9 of ♂ *Cephalocera dysmachoides* n.sp., ♂ *Cephalocera brachycera* Bezz., and ♂ *Cephalocera namaquensis* n.sp. respectively.

Bottom: Dorso-posterior view of right process of sternite 9 of ♂♂ of the same three species respectively.

*Cephalocera brachycera* Bezz.

*Cephalocera brachycera* Bezzi, 1924b: 231.

This characteristic species, with markedly short antennae, pyriform antennal clubs, markedly incrassate hind femora and apical process on hind tibiae below, cannot be confused with other species of *Cephalocera*. It is unfortunately represented in the collections by the ♂ only which may be recognized by the following characters:

*Body* mainly black; antennae yellowish brownish to brown, the clubs orange yellowish; clypeus dark, sometimes yellowish reddish on sides; humeral tubercles, sides of tergites 1–3 to a variable extent, narrower sides of rest of tergites, sometimes the venter to a variable extent and hypopygium yellowish brownish; hind margins of tergites 2–7 ivory yellowish or ivory whitish, but all appearing whitish due to silvery whitish tomentum, those of 2–5 sometimes slightly broader; bullae dark reddish brownish to dark blackish brownish, elongate-oval, the space between them broader than vertical length of a bulla; legs brownish to reddish brownish, the femora above sometimes almost black, paler reddish or reddish yellowish below, the knees of front and middle legs more yellowish, and base of hind tibiae also paler or more yellowish.

*Integument* of head, pleurae and abdomen shining; that of legs also shining; thorax rather humped in appearance, dull, not distinctly sculptured, but with the hairs in aciculate punctures; metanotum dull, due to fine microsculpture, not coarsely sculptured or striate, but sometimes with slight shallow grooves.

*Vestiture* fairly dense and longish in ♂, mainly snow whitish, but the rather dense ones on thorax above, in broad streaks, dark brownish, only the fringe on the extreme sides white, and two submedial discal streaks anteriorly or in anterior half composed of greyish tomentum; a transverse, discal streak of greyish tomentum also evident on tergite 1; tergite 2 with fine yellowish fulvous hairs discally, and sparse, short ones discally on rest also more fulvous brownish; hairs on hind femora sometimes with some intermixed, long, yellowish ones, and with short, yellowish, decumbent ones above; those near apices of front and middle tibiae with some more yellowish or more brownish ones.

*Head* with the antennae markedly short, only about 1.88–2 mm long; segment 3 a little shorter than, or subequal in length to, club; latter much inflated, subglobularly pyriform; proboscis about 3.8–4.5 mm long.

*Wings* hyaline, with reddish brownish to dark brownish veins; discoidal cell apically very much narrower than apex of third posterior cell; alula much reduced; axillary lobe long, narrow; knobs of halteres darkened above in type specimen, but with more white above in the other specimen.

*Legs* with the hind femora markedly incrassate, armed below with strong spines on conspicuous tubercles; hind tibiae slightly curved, ending apically below in a blunt process as in *dysmachoides* and the genus *Ectyphus*; basal segment of hind tarsi scarcely or not longer than second.

*Hypopygium* with the lobes of tergite 9 shortish (cf. text-fig. 23, middle top); sternite 9 scoop-like, broadly sulcate in apical half below, its inwardly curved

processes (text-fig. 23, middle bottom) ending apically in an inwardly and downwardly directed bluntish lobe and laterally below some distance from the apex in an angular projection or tooth, and the basal part of the processes somewhat dorso-ventrally depressed.

From the ♂ holotype and another ♂ specimen in the South African Museum.

Length of body: about 13·5–15 mm

Length of wing: about 11–11·5 mm

*Distribution*: Namaqualand: Okiep (Lightfoot, September 1890) (type); Swartdoring River between Bitterfontein and Garies (South African Museum Expedition, 2nd–3rd October 1966).

The specimen from Swartdoring River appears to be a slight variety or form, with some yellowish reddish on sides of clypeus, less extensive yellowish on sides of abdomen, darker venter and darker femora.

### *Cephalocera namaquensis* n.sp.

Another species belonging to the *dymachoides* and *brachycera* section and almost inseparable from the latter species. It is unfortunately represented in the collections by a single ♂ specimen only, which however may be distinguished from *brachycera* in the following respects:

*Body* similarly coloured, but clypeus slightly more yellowish on sides, the metanotum with yellowish infusions on sides, the venter on the whole darker, the front and middle femora more extensively yellowish below, and their tibiae paler yellowish; bullae shining black, distinctly much larger than in *brachycera*, bean-shaped, much closer together, the space much less than vertical length of bullae; hind margins of tergites 2–7 more narrowly yellowish whitish, more so across extreme hind margins, but with slightly broader, more extensive and conspicuous silvery tomentum across them than in *brachycera*, and which is slightly angularly produced towards base from tergites 3–7.

*Integument* with the same parts shining; that of thorax above slightly duller, with slightly more distinct microsculpture.

*Vestiture* as long and as dense, also mainly snow whitish; that on thorax above slightly less dense, much paler, only faintly greyish yellowish or pale fulvous brownish in part, not so dark brownish, and that across base and on postalar calli snow whitish; fine hairs on dorsum of abdomen entirely whitish; hairs on apical parts of tibiae entirely whitish like rest of hair; tomentum on disc of tergite 2 also silvery whitish, not yellowish or fulvous, and tergite 1 without a transverse streak of greyish tomentum.

*Head* with the antennae as long as in *brachycera*, and with more or less the same relations between the segments; proboscis about 3·48 mm long.

*Wings* shorter, more pointed apically, also hyaline, but costal cell very slightly, but distinctly, tinted more yellowish; discoidal cell distinctly more narrowed and acutely pointed apically; the wings less reduced.

*Legs* comparatively shorter; incrassate hind femora comparatively shorter,



more subspindle-shaped; hind tibiae markedly shorter, ending at a comparatively longer distance (nearly a third length of femora) from base of latter.

*Hypopygium* with the lobes of tergite 9 (cf. text-fig. 23, right top) even shorter, narrower, more rounded than in *brachycera*; apical part of processes (text-fig. 23, right bottom) of sternite 9 slightly broader, more truncated, more bent downwards, and the extension of hind (lower) margin some distance away from the apex, tending to be rounded, not so sharply angular as in *brachycera*.

Holotype in the South African Museum.

Length of body: about 12 mm

Length of wing: about 8 mm

*Distribution*: Southern Namaqualand: Nuwerus in the Knersvlakte (Museum staff, September 1941).

*Cephalocera catalus* Gerst.

*Cephalocera catalus* Gerstaecker, 1868: 79, pl. 1, fig. 2. Bezzi, 1924b: 229, 230.

This rather smallish species which Gerstaecker described from a single ♂ specimen collected by Drège is not present in any of the collections before me and was also unknown to Bezzi. From Gerstaecker's description, and especially that of the process of its ninth sternite, it is quite evident that it belongs to this *brachycera* and *namaquensis* subsection. His figure of the entire insect is however very misleading and does not appear to show all the characters given in his description. Moreover in his description certain important characters, other than the shape of the process of sternite 9, such as the slightly produced apex of hind tibiae below and the narrowish interocular space which characterize this subsection are not mentioned or shown in the figure. To facilitate its recognition, as based on the description, I have accommodated it in two different sections of the introductory key to the species of this genus. According to the description there is however little doubt that it belongs to the *brachycera* subsection and that it is nearest to my *namaquensis*. In fact it is quite possible that the latter merely represents a form or variety of it. It however appears to differ from *namaquensis* in the following respects:

*Head* with antennal segment 3 according to Gerstaecker distinctly longer, more than 3 times combined length of 1 and 2 (in *namaquensis* it is only a little more than twice this length); interocular space on vertex, according to the figure, appears to be distinctly broader; proboscis relatively shorter, about twice vertical length of eyes (in *namaquensis* distinctly more than twice this length).

*Wings* with the veins darker, more brownish, not yellowish as in *namaquensis*.

*Abdomen* with hind margins of tergites 2-7 more yellowish reddish, not mainly whitish; bands of whitish or silvery tomentum across tergites 3-7 evidently broader, more broadly triangularly produced towards base than in *namaquensis*.

*Legs* pale yellowish brownish and hind femora darkened above (in *namaquensis* with the front and middle legs paler, more yellowish and hind femora and tibiae uniformly castaneous brownish); hind femora, according to figure,

less spindle-shaped incrassate; hind tibiae not so markedly shortish and, according to the figure, not distinctly produced apically.

*Vestiture* with the hairs on thorax above reddish brownish, more golden yellowish on sides (those on disc in *namaquensis* whitish and pale fulvous brownish, those on sides dense and contrastingly snow whitish); hairs at base of abdomen greyish yellowish, not snow whitish.

#### CEPHALOCERODES n.gen.

This new genus is erected to accommodate three peculiar, rather smallish species of Mydidae which, though showing relationship to the variable genus *Cephalocera* in the character of the posterior vein of the third posterior cell in the wings and in the shape of the two phallic tubes of the aedeagus in the ♂♂, cannot be placed in the latter. Unfortunately only ♂♂ are represented in the collections before me. It differs from *Cephalocera* in the following respects:

*Body* smallish, asilid-like.

*Head* (cf. text-fig. 24, right) broad, much broader than thorax; interocular space on vertex markedly broad and that on head below markedly narrowish; vertex with a rather prominent tubercular prominence on each side and head below with a similar prominence on each side; frons in front markedly transversely prominent, convex, divided into a prominent boss-like tubercle on each side; antennae markedly short, about as long as, or shorter than, not longer than, head, and shorter or much shorter than interocular space on vertex (in *Cephalocera* distinctly very much longer than interocular space), with segment 3 proportionally very short, shorter than, or only a little longer than to scarcely longer than, segments 1 and 2 combined, with the club dilated, ovate, or ovate-pyriform, longer than segment 3 to even as long as segments 1-3 combined; proboscis, though sometimes slender as in *Cephalocera*, either very much shorter, confined to length of buccal cavity, or projecting only slightly, or it is much reduced, vestigial, or entirely wanting; postvertical spines not observable.

*Thorax* smallish, quadrangular, shorter than width of head, its integument above smoother than in species of *Cephalocera*, dull and with finer microsculpture, not so relatively coarsely sculptured; metanotum distinctly much less coarsely sculptured, dull and smoother.

*Abdomen* with tergite 1 usually slightly depressed discally, its integument either dulled by tomentum or shining.

*Wings* rather short, and though with the posterior vein of third posterior cell also originating from anterior vein of anal cell in its apical part and posterior to apical cross-vein of second basal cell as in *Cephalocera*, without a distinct and consistent appendix projecting into first submarginal cell from base of second submarginal; base of latter cell less truncate, distinctly more obtusangular, appearing stalked; discoidal cell sometimes either narrowed and angularly acute apically, or closed, ending a little short of basal part of posterior vein of first posterior cell, or it is broadly open apically on latter cross-veins as in *Cephalocera*, appearing shortly stalked; alula present as a small lobe or it is much

reduced; other venational characters as in *Cephalocera*.

*Legs* with the hind femora, in the known ♂♂, either only slightly thickened or distinctly thickened or incrassate, armed below with two rows of much more slender, or even bristle-like, spines which begin beyond middle, confined to apical half or apical fourth; hind tibiae not carinate in basal part or half below, either without distinct spicules (apart from apical spurs), or with some slender ones in apical part below; tarsal claws either rapidly bent down apically or more gradually curved or sickle-shaped; pulvilli falling short of apices of claws, or distinctly shortened.

*Vestiture* with the hairs on head, thorax, base of abdomen and legs, in ♂♂ at least, conspicuously developed, markedly dense, long and shaggy, villose, very long and dense and conspicuously brush-like on head in front (cf. Bequaert 1963: 58, text-fig. 14A and in this revision text-fig. 24, right), reminiscent of the dense facial brush of the bombyliid-genus *Corsomyza*; metanotum either as in *Cephalocera* without any long hairs, or with long hairs on extreme sides; mesopleuron and pteropleuron, as in latter genus, without any hairs; hairs on femora especially hind ones, markedly long and dense, sometimes bottle-brush-like (cf. text-fig. 24, left); those on all the tibiae long and dense.

*Hypopygium* of ♂♂ similar to that of *Cephalocera*, but with the processes of the scoop-like sternite 9 relatively longer or more slender, only curved finger-like inwardly, not broad or broadened apically and not curving so much inwards and downwards to nearly touch along midline as in *Cephalocera*; aedeagal apparatus with the two phallic tubes also long and stethoscope-like.

The three known species of this new genus are *oldroydi* (Beq.) (Bequaert 1963: 56) the type-species of the genus, *eremobius* n.sp. and *bequaerti* n.sp. These three species show a remarkable graded retrogressive evolution in certain structures, probably due to a graded adaptive specialization in a certain direction or directions. They may be considered as representatives of the original genus *Cephalocera* which have deviated from the more typical mean in a functional, morphological and geographical direction in adaptive response to certain environmental factors. The species *bequaerti* from the Koup Karoo, nearest to what might be considered as the original home (western Cape) of the genus *Cephalocera*, shows transitional characters, such as the presence of a slender, but much shortened, proboscis, an entirely bare metanotum, still distinctly thickened or incrassate hind femora, and still slightly thickened and shortened processes of sternite 9.

In the second species *eremobius*, from Aminuis in South West Africa, the proboscis has been reduced to a small knob, the sides of the metanotum have hairs, the hind femora are only slightly thickened, and the processes of sternite 9 are more slender and slightly longer.

In the type-species *oldroydi*, from Bulawayo in Rhodesia, these characters are still the same as those of *eremobius*, but the proboscis has entirely disappeared.

The seasonal appearance of all three known species is during the winter months of June and July.

The three species may be separated as follows:

1. (a) Proboscis very rudimentary, vestigial or wanting; antennal segment 1 not markedly thickened and club ending in a shorter process; hind femora only a little or sometimes scarcely thickened, with relatively fewer, more slender, bristle-like spines below and with relatively less dense, sparser hairs; hind tibiae with some longish, bristle-like spicules apically below; claws more gradually curved, sickle-shaped, and pulvilli more reduced; abdomen above mainly dull, with dark or brownish tomentum, with a tuft of longish hairs also basally on sides of tergite 3, and fine hairs on rest of abdomen paler, pale brownish or pale yellowish; metanotum with a tuft of longish hairs on sides; wings hyaline, the veins paler, without fuscous borders, the discoidal cell sometimes more acute or angular apically, sometimes even shortly stalked on basal part of lower vein of first posterior cell, and alula small, but distinct; dense hairs on face dark or darker and those at base of abdomen not all pale; processes of sternite 9 relatively longer, more slender . . . . . 2
- (b) Proboscis shortish, but distinctly developed, nearly or subequal in length to antennae; antennal segment 1 markedly thickened, and club ending in a longer teat-like process; hind femora much thickened, incrassate, subspindle-shaped, with relatively more numerous and stouter spines on more perceptible tubercles below, and with very much denser, more villose hairs; hind tibiae with only long hairs and with only shortish, or without any, spicules in apical part below; claws only apically more rapidly curved down, and pulvilli longer, extending to slightly beyond middle of claws; abdomen above mainly shining, without or with very little, dull tomentum, without any long hairs basally on sides of tergite 3, and with the fine hairs on rest of abdomen entirely very dark or black; metanotum without any hairs; wings tinted slightly smoky brownish up to base of second submarginal cell, more evident along the darker veins, the discoidal cell more normally truncate, or widely open apically, and alula much reduced; dense hairs on face and sides of base of abdomen contrastingly whitish; processes of sternite 9 relatively stouter and shorter . . . . . ♂ *bequaerti* n.sp.
2. (a) Segment 3 of antennae proportionally longer, about  $1\frac{1}{2}$  times length of combined basal segments and more than half that of club, the latter more ovoid; proboscis entirely wanting; fronto-facial width, relative to eye-width, comparatively broader, about or quite 4 times that of eye; vertex, relative to interocular space on head below, broader, quite 3 times the latter; thorax discally above more finely granular; apex of discoidal cell in wings opening normally on basal part of posterior vein of first posterior cell; alula slightly less lobe-like; vestiture on head and body more brownish, that on thorax above more pale yellowish, that on legs slightly less dense, paler, or more brownish, and decumbent hairs on abdomen above more brownish; lateral lobes of tergite 9 more rounded apically; sternite 9 relatively shorter, much shorter than 8, its apical margin more broadly emarginate, its processes with a distinct short, inwardly-directed, conical process or lobe at base . . . . . ♂ *oldroydi* (Beq.) (ex descr.)
- (b) Segment 3 of antennae proportionally shorter, a little less than  $1\frac{1}{2}$  times 1 and 2 together and nearly or quite half length of club, the latter more pyriform; proboscis still present as a knob or short lobe; fronto-facial width, relative to eye-width, comparatively narrower, only about or a little more than 3 times eye-width; vertex, relative to interocular space on head below, narrower, only about 2·2–2·5 times the latter; thorax above more microscopically rugulose than granular; apex of discoidal cell angularly acute apically and very shortly stalked on basal part of posterior vein of first posterior cell; alula distinctly more developed, more lobe-like; vestiture on head and body on the whole darker, more blackish than brownish, that on thorax above more whitish, that on legs slightly denser, darker, blackish brown to blackish, and decumbent hairs on rest of abdomen above paler, even more whitish than brownish, or only brownish posteriorly; lateral lobes of tergite 9 more pointed at lower apical part; sternite 9 only a little shorter, or even longer, than 8, its posterior margin more deeply and angularly indented, and its processes without any inwardly-directed process or lobe at base . . . . . ♂ *eremobius* n.sp.

*Cephalocerodes oldroydi* (Beq.) n.comb.

*Cephalocera oldroydi* Bequaert, 1963: 56, figs 13A, 14A and B and 15A and B.

This type-species of the new genus *Cephalocerodes* was described by Bequaert in 1963 from a single ♂ specimen from Rhodesia. It is not represented in any of the collections to which I have had access, but may be easily recognized from Bequaert's detailed description and text-figures.

It appears to be chiefly characterized by its brownish head, pleurae, abdomen and legs; by the broadish interocular space on vertex, which is quite 3 times the width of that on head below; the antennae in which segment 3 is quite  $1\frac{1}{2}$  times the combined length of basal segments (cf. Bequaert, text-fig. 14B); the entire absence of a proboscis; the granular disc of thorax; the reduced alula in wings; the yellowish hind margins of tergites 1-6 which are more brownish discally; the elongate-oval brownish bullae; the pale yellowish hairs on vertex and brownish ones on rest of head; the pale yellowish hairs on thorax and brownish whitish ones on sides of metanotum; the pale brownish hairs on pleurae; an abdomen dulled by brownish tomentum, with tufts of longish hairs on sides basally of tergites 1-3 of which those basally are whitish, and with the fine, sparse, decumbent ones on rest of abdomen brownish; the brownish hairs on venter; brownish hairs on legs; a rather broadly emarginate hind margin of sternite 9 (cf. Bequaert, text-fig. 15B); and the distinct, short, inwardly-directed, conical process or lobe at base of processes of sternite 9 (cf. Bequaert, text-fig. 15B).

Length of body: about 10 mm

*Distribution*: Rhodesia: Bulawayo (Rhodesian Museum, 3 June 1924).

*Cephalocerodes eremobius* n.sp.

Another slightly variable species of this new genus from the north-western part of South West Africa, appears to be very near *oldroydi*. It is also unfortunately represented in the collections by ♂♂ only. It is characterized as follows:

*Body* mainly dark; head mainly dark or blackish brown to black, but sometimes mainly dark reddish brownish; thorax above very dark blackish brownish to black, the humeral tubercles and postalar calli tending to be paler, more dark reddish brownish to paler reddish brownish; metanotum dark blackish brownish, sometimes reddish brownish; pleurae also dark blackish brownish to blackish, though sometimes also paler and reddish brownish; abdomen mainly blackish brownish or black above, sometimes more dark reddish brownish, the sides of tergite 2 or sides basally of 2 and 3 more reddish or reddish brownish; hind margins of tergites 2-5 or 2-7 pale yellowish reddish; bullae small, oval, to elongate-oval, with a slight pit-like depression in lower anterior part, very dark blackish brownish, very widely separated; venter yellowish brownish, sometimes paler yellowish brownish, the hind margins of sternites 1-3 (or 4) tending to be obscurely pallid, sometimes scarcely evident; hypopygium, especially sternite 9 and its processes, yellowish to pale yellowish brownish; legs dark brownish, brownish, to even pale yellowish brownish.

*Integument* of head in front (except extreme sides of face), head below, sides of thorax above, scutellum, pleurae, tergite 1 and sides of 2 and base laterally of 3, bullae and legs shining; thorax discally above more or less dulled by very fine leathery microsculpture; metanotum dull, only antero-lateral depression shining; abdomen with tergite 1 rather deeply depressed discally and both basal lateral parts of 2 and 3 somewhat raised and transversely prominent, the greater part of abdomen above dulled by dark or dark blackish brownish tomentum.

*Vestiture* with the hairs on head, sides of tergite 1 and sides basally on prominences of 2 and 3 and on legs long and dense, those on head mainly very dark blackish brownish or black, only those on inner part of tubercles on vertex whitish; those on thorax above mainly whitish, arranged in two sub-medial streaks and along sides in notopleural part (these separated by 3 bare discal streaks), with some dark or blackish hairs anteriorly in the hair-streaks; hairs on sides of metanotum mainly pale or whitish; those on pleurae mainly dark or brownish, but tuft on prominence in front of halteres with whitish ones intermixed, sometimes entirely dark or blackish; tufts of longish hairs on sides of tergites 1 and 2 whitish anteriorly and dark blackish brownish to black posteriorly, and that at base of 3 laterally mainly pale or whitish, but sometimes all the tufts mainly brownish or dark brownish and with much fewer pale hairs or the latter are more greyish brownish; fine decumbent hairs on rest of abdomen above rather sparse, mainly pale or whitish, sometimes becoming more yellowish or brownish posteriorly; sparse hairs on venter mainly dark or brownish; hairs on hypopygium mainly dark brownish; those on legs, including coxae, very dark, either very dark blackish brownish to almost black, though sometimes more dark brownish.

*Head* with the relationship between vertex, fronto-facial width (just in front of antennae) and interocular space on head below as  $\pm 38:42:15$  to  $40:43:16$ ; antennae with segment 1 about twice length of 2, segment 3 rather shortish, not quite  $1\frac{1}{2}$  times combined length of basal segments, nearly or quite half length of club, the latter elongate-pyriform; clypeus rather prominent, broadly inflated boss-like and slightly bilobate; proboscis very short, vestigial, in form of a very short two-segmented lobe (the apical segment, or labella, narrower and slightly shorter): palps small, but distinct, with longish hairs apically.

*Wings* hyaline, without any tint or infuscation; veins yellowish; first posterior cell rather broadly open apically on second vein, the two submarginal cells thus tending to be narrowed apically; discoidal cell in three of the specimens narrowed and acutely angular apically, falling short of basal part of posterior vein of first posterior cell and connected with latter by means of a short stalk (in a fourth specimen the discoidal cell in right wing is much narrowed apically, but opens on first posterior cell); third posterior cell, as a result of discoidal cell anomaly, very broadly opening apically on first posterior cell; anal cell with a rather long apical stalk; alula distinct, lobe-like; halteres pallid or yellowish, their knobs brownish above.

*Legs* with the hind femora only very slightly thickened, with about 3-5 dark slender spines on outer aspect below in apical fourth or third and about 1-3 on inner aspect; hind tibiae straight or slightly sinuous and, apart from the apical spurs, armed apically on outer side with 3 or 4 longish, bristle-like, dark spicules and some shortish ones on inner aspect apically; tarsi relatively short, the basal segment of hind ones longer than claw-segment; claws gradually curved, more sickle-shaped; pulvilli shortened, reaching only about middle of claws.

*Hypopygium* of ♂ with sternite 9 scoop-like, distinctly longer than 8, its posterior margin between the processes rather deeply and angularly indented, its processes slender, finger-shaped, curving upwards and slightly inwards, without any inwardly-directed basal process, and with rather sparse hairs below like those on apical half laterally of the sternite itself.

From 4 ♂♂ in the South African Museum.

Length of body: about 10-11.5 mm

Length of wing: about 6.75-7.3 mm

*Distribution*: South West Africa: Aminuis (Museum staff, July 1936).

There is no doubt that this species is very near *oldroydi* (Beq.), but compared with Bequaert's description of the latter it appears to differ in the following respects:

Antennal segment 3 proportionally shorter, nearly or quite half length of club (in *oldroydi* it is longer than half); the club more elongate-pyriform; proboscis, though very much reduced or vestigial, still present as a very short two-segmented lobe or knob; vertex, relative to interocular space on head below, narrower, only about 2.2-2.5, not quite 3, times the latter space; discoidal cell in wings more angularly acute apically and stalked on basal part of posterior vein of first posterior cell; alula more developed, more lobe-like; body tending to be darker; vestiture on the whole darker, more blackish brownish, that on thorax above more whitish, and decumbent hairs on abdomen paler, usually more whitish or pallid on middle parts; lateral lobes of tergite 9 more pointed at lower apical part; posterior margin of sternite 9 distinctly more deeply and angularly indented; and processes of sternite 9 without any sign of an inwardly-directed basal process as described and figured by Bequaert.

#### *Cephalocerodes bequaerti* n.sp.

This peculiar species from the Koup Karoo, as has already been stated, is obviously a form transitional between the genus *Cephalocera* and the new genus *Cephalocerodes*, agreeing with the former in certain characters, but agreeing more with the latter in cephalic characters, the antennae, the vestiture, certain wing-characters, and in hypopygial characters.

Represented in the collections by ♂♂ only, it may be recognized by the following characters:

*Body* mainly very dark or black; antennae yellowish brownish; prominences on vertex, and pleurae sometimes tending to be more blackish brownish or very

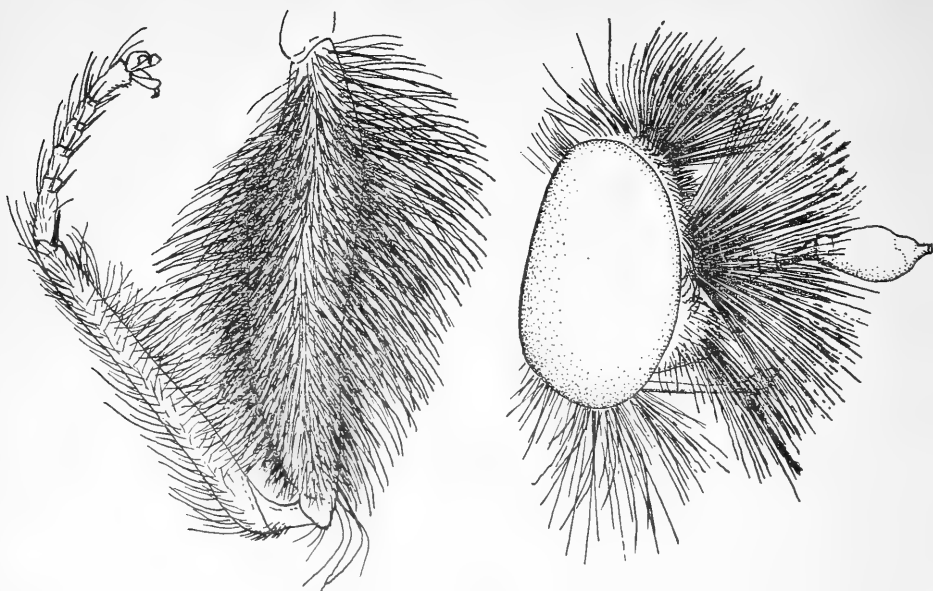


FIG. 24

Left: Side view of left hind leg of ♂ *Cephalocerothes bequaerti* n.gen. et n.sp.

Right: Right side of head of ♂ of the same species.

dark castaneous or dark piceous brownish; venter to a variable extent dark toffee brownish, darker posteriorly; legs very dark castaneous or blackish brownish to almost black, the tibiae sometimes paler, more yellowish brownish, and tarsi even more yellowish; hind margins of tergites 2-6 (sometimes 2-5) narrowly, but conspicuously, ivory yellowish or whitish; hind margins of sternites 1-5 at least slightly more broadly pallid or yellowish whitish, more so on sides; bullae black and shining, much larger and longer transversely than in preceding two species.

*Integument* of greater part of vertex, frons, clypeus, head below, scutellum, pleurae, abdomen above and below and the legs shining; that of thorax above dull leathery, with two very faint and obscure, submedial, discal streaks of greyish tomentum perceptible in certain lights; integument of metanotum dull, leathery, but with a fine greyish tomentum evident in certain lights; abdomen above acicularly setiferously punctured, more so posteriorly; pleurae with faint greyish tomentum perceptible in certain lights on mesopleuron anteriorly and posteriorly and on hypopleural and metapleural parts.

*Vestiture* very dense, long and brush-like on head in front (cf. text-fig. 24, right), especially facial part, long and dense on thorax above, the hairs more or less along two broadish, submedial, discal streaks, denser anteriorly and broadly so on each side laterally, separated by three streaks; metanotum, unlike that of



two preceding species, without any hairs, even on sides; the hairs very dense and long on sides of tergite 1 and base laterally of 2, markedly dense and long on legs, villose and bottle-brush-like on hind femora (cf. text-fig. 24, left), denser on front and middle tibiae than on hind ones (all the hairs on legs very much denser than in two preceding species); vestiture coloured as follows: those on inner parts of tubercles on vertex whitish, the very dense and long ones around antennal bases and facial part contrastingly snow whitish, the rest of hair on head blackish brown; hairs on thorax above mainly very dark brownish to blackish brown, with some whitish ones in front of scutellum; those on pleurae and sternal parts also very dark blackish brownish; dense tuft on sides of tergite 1 and anteriorly in basal lateral tuft on 2 contrastingly whitish; rest of short, decumbent hairs in acicular punctures on abdomen above, as well as hairs on hypopygium and those on venter, very dark blackish brownish; those on legs also very dark blackish brownish to blackish, but some longish ones on upper inner basal part of hind femora whitish.

*Head* (text-fig. 24, right) with the relationship between vertex, fronto-facial width and interocular space on head below as 38:38:18 to 50:50:21; interocular space on vertex thus relatively very broad, about as broad as fronto-facial width at about level of antennae and comparatively broader than in preceding two species and about 2·1–2·38 times width of space on head below; clypeus relatively narrower and smaller than in *eremobius*; antennae (text-fig. 24, right) markedly shorter than interocular space on vertex, shorter than head, segment 1 markedly thickened, incrassate, very much more so than in the other two species, quite twice, or a little more, length of the rather prominent segment 2, segment 3 short, shorter than 1 and 2 together; club inflated, ovate, spindle-shaped, ending in a rather long, teat-like apical process; clypeus smaller and narrower than in the other two species; proboscis (cf. text-fig. 24, right), though short and only about 0·8–1·12 mm long, resembling that of species of *Cephalocera*, slender and with small labella; palps minute.

*Wings* tinged yellowish brownish in basal and anterior half up to base of second submarginal cell, due mostly to faint borders along veins in this region; veins brownish; first and second submarginal cells only slightly, or normally, narrowed apically; first posterior cell on the other hand sometimes tending to be narrowed apically; discoidal cell, unlike that of *eremobius*, normally and broadly open apically on basal part of posterior vein of first posterior cell, its apex thus stalked; anal cell, unlike that of *eremobius*, only very shortly, or scarcely, stalked apically; alula much reduced, almost wanting; knobs of halteres very dark or blackish brownish above.

*Legs* with the hind femora (text-fig. 24, left) more like those of species of *Cephalocera*, distinctly much thickened to a slightly variable extent, even incrassate, subspindle-shaped and curving slightly outwards, flattened on inside, armed below with more numerous and, though slender, stronger, apically-directed, blackish spines than in two preceding species, beginning at about, or just beyond, middle and situated on slight tubercles; front and middle tibiae

with denser and longer hairs along outer face in basal two-thirds or more and which are distinctly denser than on hind tibiae; latter, unlike those of the other two species, with only very short and scarcely distinguishable spicules apically (apart from the spurs); basal segment of hind tarsi also longer than claw-segment; claws more curved down apically, not so sickle-shaped as in the other two species; pulvilli a little longer, nearly reaching apex of claws.

*Hypopygium* with the lateral lobes of tergite 9 relatively narrower, more sharply pointed than in the other two species; scoop-like sternite 9 usually shorter than 8, also deeply and angularly indented posteriorly as in *eremobius*, its upwardly and apically inwardly curved processes relatively shorter and stouter than in preceding two species and, as in the case of *eremobius*, without any distinct inwardly-directed basal process.

From 5 ♂♂ in the South African Museum.

Length of body: about 9-11.3 mm

Length of wing: about 6.16-8.8 mm

*Distribution*: Koup Karoo: Prince Albert Road (Railway Station) (A. J. Hesse, July 1945).

#### Subfamily Mydainae Beq.

*Orthomydinae-Oligoneurinae* Bequaert, 1961 (*a*: 16 and *b*: 14 and 15).

*Mydinae* Bequaert, 1963: 3.

To accommodate all the genera of Mydidae in which the aedeagus of the ♂♂ is single, ending in a single phallic tube or gonopore, Bequaert suggested the subfamily Orthomydinae in 1961 (*a*: 16 and *b*: 14 and 15), for which denomination he subsequently (1963: 3) substituted two separate subfamilies, the Mydinae and the Diochlistinae.

The representatives of these two subfamilies differ from ♂♂ belonging to the other subfamily Syllegomydinae, in which the aedeagus is double and ending in two phallic tubes, also in certain other characters which enable us to allocate the ♀♀ as well. These other supplementary and distinguishing characters are venational ones and centre around anomalies of the second submarginal cell and the presence of a posterior cross-vein in the hind border of the wings.

As far as the second submarginal cell is concerned it either opens normally on the second vein, in which case there is also present a distinct posterior cross-vein in the hind border of the wings, or the cell opens directly on the costal margin and with or without a posterior cross-vein, or three submarginal cells are present of which the normal second one is represented by an enclosed cell between the normal first and the additional third.

These wing characters, as referred to in the paragraphs dealing with the classification of the Mydidae and also in the key to the subfamilies and genera, enable us to allocate the various genera to two distinct subfamilies, the Mydinae and Diochlistinae of Bequaert.

The only representative of genera with a single aedeagus in Southern Africa is the genus *Ectyphus* of Gerstaecker and which is to be assigned to the subfamily Mydinae.

Representatives of this subfamily, as stated in the introduction and in the key to the subfamilies and genera, are characterized by the presence of only two submarginal cells in the wings of which the second opens either normally on the second vein (in which case a posterior cross-vein is also present in hind border), or the cell more frequently opens on the costal margin itself. The genus *Ectyphus* Gerst. belongs to the first category of this subfamily.

#### Genus ECTYPHUS Gerst.

*Ectyphus* Gerstaecker, 1868: 92. Bezzi, 1924b: 194. Séguy, 1928: 133 and 141.  
*Cephalocera* Macquart ( *nec* Latreille), 1838: 13 (I).

This genus which Gerstaecker first described from South Africa is apparently confined to southern Africa as was stated by Bezzi in 1924. Species described from other geographical regions outside Africa as belonging to this genus will probably be found to belong to other closely related genera. North American species, formerly referred to this genus, have already been transferred to the genus *Opomydas* by Curran. The supposed occurrence of *Ectyphus* in South America is also doubtful.

From all the other known genera represented in southern Africa it may at once be distinguished by the following combination of characters:

*Body* rather shortish, plump or stoutish, more bulky in ♀♀, the abdomen broadish, plump and bulky; extreme anterior, basal, lateral part of tergite 1 rather tumid and inflated.

*Integument* of thorax above finely or more coarsely rugulose or shagreened in appearance; that of abdomen above usually with fine or more coarse areolar microsculpture to a variable extent or sometimes even subscabrous or shagreened.

*Vestiture* relatively very poorly developed, greater part of body being almost bare, the ♂♂ however slightly more hairy; hairs on head, pteropleuron, coxae and legs, especially tibiae, the longest; metanotum bare; hairs on thorax above and on abdomen minute and, in ♀♀, wanting on most of abdomen, even those on last segment very short, not so reversed or pointing forwards as in ♀♀ of other genera; metapleural part in front of halteres and rest of metapleural and upper metasternal parts bare in both sexes.

*Head* with the face (clypeal part) (text-fig. 25) comparatively broad, much broader than in other genera, sometimes dilated or broadened lobe-like anterolaterally, giving the clypeus a flat-nosed shape, on sides either or almost touching the inner eye-margins, overlying the genal grooves; inner margins of eyes emarginate on sides of frons above antennal insertions; proboscis either rudimentary, vestigial, or only very short, confined to buccal cavity, differing from that of most other genera in having, in proportion to its length, relatively large sometimes rather long, broadish, fleshy and not horny labella (cf. text-fig. 25 top right), covered with more distinct, more conspicuous, or even relatively long, hair-like spinules; palps distinctly longer, more slender than in most genera.

*Wings* rather broadish, distinguished from those of all other known South

African genera in having a distinct cross-vein in the veinless hind border; second submarginal cell opening on second vein; first posterior cell opening on costal margin as in *Afroleptomydas*; third posterior cell usually rather truncate apically, not much narrowed or obtuse as in some other genera, usually more posterior than level of first posterior; discoidal cell usually more acute apically.

*Legs* with the hind femora usually markedly thickened or incrassate, more so in ♂♂, with two rows of spines below and also with a short row of 2 or more spines above these on each side near apex (hind femora thus actually with four rows of spines); hind tibiae characteristic, somewhat compressed, sharply carinate along middle below, ending apically below in a tibial process which in some ♀♀ are however wanting; hind trochanters with 1 or 2 distinct spines below.

*Genital segments* in ♀♀ usually withdrawn into segment 7; last perpendicular tergite with a central keel-like carina as in other genera, but the oviscap-sclerite on each side which also bears a row of spines is rather narrowish.

*Hypopygium* of ♂♂ (cf. text fig. 26) covered below by sternite 8 which appears scoop-like, sternite 9 being hidden by the latter and not prominent and unconcealed as in the other genera; lateral process or prong on each side from concealed sternite 9 armed below with a palp-like or flattened lobe-like process or appendage; aedeagus tubular, stoutish, conical, ending apically in a cowl-like or inverted cup-like cap and a fairly large gonopore.

Geographically this genus seems to be better represented in the more wooded and forested parts of the south-eastern and eastern Cape, Natal and Transvaal. Only one rather aberrant species occurs in the south-western Cape. It has not been recorded from the Karoo, western Cape, Namaqualand and north-west Cape.

The type-species is *Ectyphus pinguis* Gerst.

The known species and their varieties may be separated by the following key:

1. (a) Proboscis much shorter, smaller, much reduced or even rudimentary, its labella much reduced, very much shorter, smaller, very much shorter than buccal cavity; clypeus distinctly broader, more broadened lobe-like on sides, its sides very near to or touching eye-margins; hind trochanters with at least 2 spines; apical process of hind tibiae below much shorter, usually much shorter than apical width of tibiae above process and in ♀♀ very short or sometimes wanting; disc of thorax above without two conspicuous submedial streaks of much coarser or rather longitudinally arranged coarse rugae or rugulose sculpture . . . . . 2
- (b) Proboscis much longer, more developed, its labella large, conspicuous, fleshy, occupying most of length of buccal cavity; clypeus much narrower, scarcely or not broadened lobe-like on sides, farther away from eye-margins; hind trochanters with only 1 spine; apical process of hind tibiae below more strongly developed, longer in both sexes, as long as or much longer than apical width of tibiae above process; disc of thorax with two more conspicuous submedial streaks of more coarse, more or less longitudinally arranged rugae in front half . . . . . 10
2. (a) Clypeal part of face characteristic, relatively broader, more triangular, flat-nosed-like, the sides at first slightly indented from narrow base, then broadly dilated or roundly broadened lobe-like, usually with much sparser and shorter hairs which are not stiffish

- or bristly; clypeus, humeral tubercles and inflated lateral basal part of tergite 1 and to a variable extent extreme base on sides of tergite 1 behind inflated part conspicuously lemon yellowish, pallid or pale yellowish; proboscis very rudimentary, not longer than half length of buccal cavity; hind margins of tergites 2-7 usually very broadly yellowish on sides, even if interrupted medially above, often occupying nearly or about or even more than half of tergites on sides; dorsum in ♀♀, even if with interrupted yellowish hind margins, not contrastingly ochreous yellowish or brownish; apical process of hind tibiae relatively shorter in ♂♂ and either absent or very short in ♀♀ 3
- (b) Clypeal part of face not so characteristically triangular, more uniformly convex, more semicircular, its sides from base more outwardly rounded and continuous with broadened sides near apical part, usually with either very much denser and longer hairs or with denser stiffish or bristly ones; clypeus, humeral tubercles and inflated lateral basal part of tergite 1 not, or not all of them, conspicuously pale lemon yellowish or pale yellowish; proboscis slightly longer, longer than half length of buccal cavity and, if very short, clypeus at least not triangularly flat-nosed-like; hind margins of tergites, if yellowish, either only so on sides or complete dorsally, distinctly less broadened on sides, much less than half length of tergites; dorsum of abdomen in ♀♀ usually contrastingly ochreous yellowish or brownish to a variable extent; apical process of hind tibiae relatively stronger in known ♂♂ and even in ♀♀ strongly developed . . . . . 7
3. (a) Integument of dorsum of abdomen (tergites 2-basal half of 7) with distinctly coarser microsculpture, either areolar and finely shagreened in appearance or even subsca-brously areolar or rugulose or more transversely more coarsely rugulose and 'nadel-rissig'; yellowish hind margins of tergites, especially in ♂♂, more narrowly interrupted dorsally or not at all; wings tinted more yellowish or yellowish brownish, usually less uniformly so, the middle parts of apical and posterior cells being clearer or less tinted; legs usually more reddish brownish to yellowish . . . . . 4
- (b) Integument of dorsum of abdomen with distinctly very much finer areolar or leathery microsculpture; yellowish hind margins of tergites, especially in ♂, more broadly interrupted dorsally, in ♀ complete and also across tergite 1; wings on the whole darker, tinted darker, more uniformly smoky brownish to almost black in ♂ and even in ♀ darker brownish, with darker veins; legs in ♂, especially hind ones, much darker, very dark brownish to almost black and in ♀ also darker brownish. . . . .  
♂ ♀ *pinguis* var. *litoralis* n.
4. (a) Vestiture on head, body and legs, especially on abdomen and hind femora, even in ♂♂, distinctly less dense, shorter, the abdomen not appearing markedly hairy; abdomen in ♂♂, apart from yellowish hind margins, either mainly dark or black or very dark blackish brown; integument of abdomen above mainly with either fine, areolar or shagreen-like microsculpture or with more coarsely rugulose or subsca-brous microsculpture; legs in ♂♂, especially hind femora, either darker, more reddish brownish, darkened above to a variable extent, or mainly pale yellowish, and in known ♀♀ more yellowish . . . . . 5
- (b) Vestiture on body and legs, especially abdomen and hind femora, in ♂ distinctly longer, denser, the abdomen above appearing markedly hairy or pubescent; abdomen in ♂, apart from broadish yellowish hind margins, with tergites 1 and 2 and discally, narrowly and transversely across apical parts of 3 and 4 darkened, the rest sometimes reddish; integument of abdomen more or less coarsely transversely rugulose or aciculate punctured; legs in ♂ at least more luteous or yellowish reddish . . . ♂ *capillatus* n.sp. (♀ unknown)
5. (a) Abdomen above with finer, areolar microsculpture, having a shagreened appearance, the yellowish hind margins of tergites in ♂ more broadly interrupted discally, at least twice or more than twice length of yellowish lateral part, in ♀ either complete or interrupted discally by more reddish to a variable extent; venter yellowish brownish, with narrower yellowish hind margins, occupying less or much less than hinder half of sternites, the last sternite in ♂ darker, more reddish brownish to brown; wings in ♂ more uniformly tinted brownish, the middle parts and apical and posterior cells less conspicuously clearer . . . . . ♂ ♀ *pinguis* Gerst. s.str.
- (b) Abdomen above with distinctly coarser, areolar, or more rugulose, or semiscabrous microsculpture, the yellowish hind margins of tergites in ♂♂ either more narrowly

interrupted above (the space being distinctly much less than twice length of yellowish lateral part), or complete and uninterrupted; venter dark, black or yellowish in ♂♂, with much broader yellowish hind margins, occupying at least, or even more than, hinder half of sternites, the last sternite in ♂♂ pale yellowish; wings, even in ♂♂, less uniformly tinted, the middle parts and apical and hinder cells more evidently clearer

6 (♂♂) (♀♀ unknown)

6. (a) Hind margins of at least tergites 2-5 broadly yellowish only on sides, being interrupted above discally by darker or more reddish brownish and tergite 1 without any yellowish across hinder part; integument of abdomen above slightly more coarsely subscabrous; metanotum without any extensive reddish on sides submedially; venter mainly black or very dark, with broad yellowish hinder halves; hind legs darker, more reddish brownish, extensively darkened above; wings on the whole more darkly or deeper yellowish brownish, with middle parts of apical and posterior cells clearer to a lesser extent  
♂ *pinguis* var. *karooensis* n.
- (b) Hind margins of tergites 2-7 broadly and completely yellowish (*Ceramius*-like), only a little narrower above than on sides and tergite 1 also with a broad, conspicuous, yellowish ring across hinder part; integument of abdomen above duller, slightly finer subscabrous; metanotum with a reddish infusion submedially on each side; venter paler yellowish, with much broader yellowish hinder parts; legs much paler or lemon yellowish, the hind femora more yellowish, darkened only along inner upper face and laterally in apical part; wings less tinted, more yellowish, with the apical and posterior cells more extensively, or almost entirely, clear or clearer . . . ♂ *pinguis* var. *ceramiiformis* n.
7. (a) Proboscis more developed, distinctly longer, at least half length of, or as long as, buccal cavity; palps longer, distinctly longer than antennal segment 1; clypeus usually more yellowish and sides of thorax above either reddish or reddish brownish and sometimes also much of humeral tubercles and, if dark, proboscis is longer; disc of thorax usually with three velvety black streaks; legs, in ♀ at least, paler, more reddish brownish, the tibiae even paler . . . . . 8
- (b) Proboscis less developed, rudimentary, shorter, scarcely half length of buccal cavity; palps shorter, only as long as, or shorter than, antennal segment 1; clypeus darker, more brownish or reddish brownish and sides of thorax above black or dark, including much of humeral tubercles; disc of thorax with only two conspicuous, broadish, submedial, velvety black streaks, the rest of surface with ashy grey bloom; legs darker, reddish brownish to dark brown, even tibiae dark . . . . . ♀ *bitaeniatus* n.sp.
8. (a) Hairs on head, body and legs distinctly longer and denser, those on clypeus not relatively sparse, and all the hairs mainly whitish or at least paler; ochreous yellowish on abdomen above in ♀♀ more extensive, broader, occupying also discal part of tergite 6 and hinder part of tergite 1 to a variable extent; hind margins on sides of tergites 2-5 or 6) whitish or pale yellowish whitish in both sexes; first posterior cell markedly broad apically; hind tibiae in both sexes with the carina below more strongly developed, ending in a longer, more prominent process, the tibiae appearing more compressed . . . 9
- (b) Hairs on these sites distinctly shorter, sparser, those on clypeus relatively sparse and more bristly and all the hairs darker, those on vertex and upper frons even more brownish and the rest on head, body and legs more fulvous to fulvous reddish; ochreous yellowish on abdomen above in ♀ distinctly less extensive, narrower, occupying only narrower discal parts of tergites 2-5, without any ochreous on tergite 1; hind margins of tergites, in ♂ at least, reddish and more evident on sides of 2-4; first posterior cell normally broad apically; hind tibiae, in ♀ at least, with a feebler carina below, ending in a much shorter apical process, the tibiae appearing more cylindrical . . . . .  
♀ *abdominalis* Bezz. (♂ unknown)
9. (a) Ochreous yellowish on abdomen above in ♀ distinctly more extensive, much broader, the black on sides narrower; sides of tergites and last tergite with distinct, rather coarse, sparse puncturation, the last tergite also more transversely wrinkled; proboscis distinctly longer, almost as long as buccal cavity; ocellus yellowish; wings distinctly tinted darker, more brownish; antennal segment 1 relatively longer, quite twice, or even a little more, length of 2; hind femora relatively more thickened  
♀ *flavidorsalis* n.sp. (♂ unknown)

- (b) Ochreous yellowish on abdomen above in ♀ narrower, the black on sides much broader; sides of tergites and last tergite in ♀ without any, or very much fewer, much sparser puncturation and last tergite not or scarcely wrinkled, smoother; proboscis in both sexes distinctly shorter, only about half length of buccal cavity; ocellus reddish; wings in both sexes clearer, only feebly tinted slightly yellowish in middle part; antennal segment 1, especially in ♀, relatively shorter, a little less than twice length of 2; hind femora relatively less thickened; (♂ mainly black, the abdomen black, with reddish hind margins on tergites 2-5 (or 6), whitish on sides) . . . . . ♂ ♀ *pretoriensis* Bezz.
10. (a) Legs mainly pale, the femora reddish brownish in ♂, the hind ones often darkened to a variable extent, femora in ♀ entirely pale yellowish like the tibiae; clypeus dark reddish or reddish brownish in ♂, paler reddish or yellowish reddish in ♀; antennae yellowish, yellowish reddish to reddish; reddish part of thorax paler in both sexes, more yellowish reddish or pale yellowish whitish, broader in ♀; wings tinted more brownish or reddish brownish . . . . . ♂ ♀ *armipes* Bezz. (typical)
- (b) Legs, in ♂ at least, very dark or black, only underparts apically of front and middle femora, front and middle tibiae and tarsi more yellowish brownish; clypeus in ♂ very dark or black; antennae entirely dark or black; reddish parts on thorax very dark and obscurely reddish; hind margins of tergites dull and inconspicuously yellowish or greyish yellowish, more evident on sides; wings distinctly much darker, very dark blackish brown to black . . . . . ♂ *armipes* Bezz. (a dark form of)

*Ectyphus pinguis* Gerst.

*Ectyphus pinguis* Gerstaecker, 1868: 92, pl. 1, figs 6 and 7. Bezzi, 1924b: 196.

*Cephalocera longirostris* Macquart (*nec* Wiedemann), 1838: 13.

*Cephalocera longicornis* Macquart, 1838: 14 (error in transcription).

As there are at least four known forms of *Ectyphus* in the southern and south-eastern Cape with a very similar pattern of yellowish markings on the head and body and as *pinguis* itself appears to be distinctly variable the true identity of the type-species *pinguis s.str.* becomes imperative.

To arrive at this it is necessary not only to compare specimens very carefully with Gerstaecker's good description and figures of this species, but also to try to locate the original locality from where the type specimens came. Gerstaecker's specimens were collected by Drège, a collector who was known to have collected mostly in the southern Cape and more especially in the eastern Cape in the neighbourhood of Port Elizabeth and adjacent parts.

Most of the specimens in the collections before me which I presume to be *pinguis s.str.* on the strength of both Gerstaecker's description and figures and on the identification of Bezzi and other authors were collected either at Port Elizabeth or other localities in the same region and usually not along the extreme coastal forested dunes.

The '*Cephalocera longirostris*' of Macquart (1838: 13) is, as stated under *Arenomydas niger* (Macq.) in this revision, not a *Cephalocera* but an *Ectyphus* (the only South African genus which has a '*petite nervure transversale au bord interieur*' in the wings). From notes on the specimen so identified in the National Museum in Paris kindly supplied by Dr. L. Tsacas, it is evident that at least three errors are involved in Macquart's identification. Firstly the specimen is a ♂ and not a ♀. Secondly it is not a *Cephalocera* and not the species *longirostris* of Wiedemann, and thirdly there is an error in transcription ('*longicornis*' for

'*longirostris*') where the same specimen is compared with *Cephalocera nigra* (*Arenomydas niger*) on page 14. Dr. Tsacas also states that a label '*Ectyphus pinguis* Gerst.' was subsequently attached to it by Séguy. From Macquart's very brief description of his *longirostris* (p. 13) it is quite evident that Séguy identified it correctly and that it is a ♂ of *Ectyphus pinguis* Gerst. which is a variable species occurring in at least 3 distinct varieties, as described below.

Specimens, both ♂♂ and ♀♀, which agree with Gerstaecker's description are characterized as follows:

*Body* mainly dark, dark reddish brownish to blackish brown, the dark parts of head and disc of thorax nearly or mainly black, the abdomen above in ♀ usually more reddish brownish, usually darker in ♂ to almost black; pleurae either reddish brownish to even black; antennae yellowish brownish in ♂ to yellowish in ♀, segments 1 and 2 or sometimes only 2 in ♂ often pale or yellowish, the clubs yellowish or more orange in apical half, sometimes strikingly orange yellowish in ♀; clypeus strikingly lemon yellowish to orange yellowish; vertex on each side usually reddish to a variable extent; also pale lemon yellowish to pallid or even almost whitish are: the humeral tubercles, broadish sides of thorax above to wing-base, inflated basal part on sides of tergite 1 including extreme lower basal angle of tergite 1 below inflated part, extreme sides of junction between tergites 1 and 2, broadish hind margins of 2-7 on sides in ♂ (broadest on extreme sides and broadly interrupted discally above, though usually a little narrower on 3), broadish hind margins of 2-6 (or 7) in ♀ (also broadest on sides, but more narrowly interrupted above discally, or sometimes not interrupted, or sometimes less broadly yellowish there, but more often not interrupted posteriorly across 5 and 6), and broadish hind margins of sternites 1-6 in both sexes; reddish or reddish yellowish are: a spot anteriorly on thorax on inner side of humeral tubercle (usually more extensive in ♀), sides of thorax from wing-base to include postalar calli, a medial discal spot or infusion of variable extent on thorax (usually more extensive in ♀), hind margin of scutellum to a variable extent, a spot on each side of metanotum, more extensive in ♀, an infusion on propleural tubercle, sides of tergite 1, hind margin and junction between 1 and 2, in both sexes sometimes hinder half of 1 and middle discal part of hind margins of 2-4 and, in ♂, sometimes also 2-6 or 7 and much of the last two tergites in ♀; extreme sides of tergites 2-7 in ♀ to a variable extent and inflexed margins of tergites below in ♂ black; venter, apart from ivory yellowish hind margins, mainly yellowish brownish or reddish brownish in both sexes, but usually darker in some ♂♂, especially in basal or apical half, the sides of sternites usually darkened in ♀; genital parts mainly yellowish brownish to reddish brownish; bullae reddish brownish to blackish brown, the narrow or linear bullae themselves usually darker or blackish, sometimes very narrow, short, or even wanting in some ♀♀; legs yellowish brownish to reddish brownish in ♂, more yellowish in ♀, especially tibiae and tarsi, the coxae and hind legs in ♂ darker reddish brownish.

*Integument* of most of frons, except shining middle ocellar part, dull, longi-



tudinally wrinkled; discal part of thorax above dull, finely rugulose; that of pleurae subshining, with faint bloom; postalar calli and hind margin of scutellum more shining; tergite 1 above, and especially depression between 1 and 2, the yellowish hind margins of tergites and, in ♀, also sides of abdomen and last segment, as well as greater part of venter in both sexes, shining; tergites 2-7 in ♂ above with distinct, fine, areolar microsculpture (shagreened in appearance) and setiferous punctures which on last two segments become transverse or 'nadelrissig', the last sternite transversely wrinkled, the tergites in ♀ with the same areolar microsculpture, but slightly finer and only discally on 2-6 (only on basal part or half of latter); integument of hind femora, in ♂ at least, with fine, areolar sculpture and transversely wrinkled to a variable extent, less so in ♀.

*Vestiture* on head and body greyish whitish, tinted sericeous yellowish, becoming slightly more distinctly sericeous yellowish towards end of abdomen in ♂ above and below; that on abdomen above in ♂ moderately sparse and shortish, in ♀ minute and sparse, even on last two segments; hairs on legs also longer and denser in ♂, longer than in some of the varieties, greyish whitish, but tinted slightly sericeous yellowish in certain lights.

*Head* (cf. text-fig. 25) with the antennae much shorter than thorax (minus scutellum); segment 1 short, only about twice length of 2 in ♂, a little less in ♀; segment 3 very slightly thickened apically, distinctly shorter than club; latter almost spindle-shaped, but broadest much nearer apex, its base constricted for a short distance; clypeus characteristically triangularly flat-nosed-like, its sides at first slightly indented from narrow base, then dilated or broadened lobe-like; proboscis rudimentary, subequal in length to, or scarcely or not much longer than, antennal segment 1; palps distinct, rod-like, rather longish, sometimes even subequal in length to proboscis.

*Wings* tinted yellowish brownish to distinctly brown in both sexes, sometimes darker so in ♂, the middle parts of submarginal cells, first posterior cell, third posterior and anal cells, as well as hind border, often slightly less tinted or clearer, especially more evident in some ♀♀, and extreme apex of wings (apices of first posterior cell and hind border) usually clearer still, appearing whitish; veins yellowish to yellowish reddish; apex of second submarginal cell narrowed, tending to be narrower there than apices of first submarginal and first posterior cells; apex of discoidal cell more often shortly stalked to a variable extent; knobs of halteres more often entirely pallid or yellowish above.

*Legs* usually with 2 (rarely 1) spines on hind trochanters; hind femora distinctly thickened, very much so and incrassate in ♂, armed below with 1-3 spines basally, then a double row and apically on each side an outer row of 2 or 3, all these spines yellowish reddish to reddish; hind tibiae compressed below, with a prominent and sharp keel below, more prominent in ♂, ending apically in ♂ in a sharp prong, shorter than apical width of the tibia, without or with only a very feeble prominence in ♀, without any or with only 1 spicule laterally apically below in ♂ and 2 or 3 (apart from apical spurs) in ♀; basal segment of hind tarsi distinctly longer than claw-segment.

*Hypopygium* of ♂ (cf. text-fig. 26) with the apical angle of lateral lobes of tergite 9 usually bluntly obtusangular; ventral appendage or process below process or prong of concealed sternite 9 palp-like, slightly longer than hind claw; aedeagus as described for the genus and as shown in text-figure 26.

In the collections of the Albany, Natal, South African and Transvaal Museums.

Length of body: about 11–18 mm

Length of wing: about 8·5–12·5 mm

*Distribution*: Eastern Cape: Port Elizabeth (February); Swartkops (November); Dunbrody: Kleinmond near Port Alfred (January); Kasouga near Port Alfred (December); Port Alfred; Cuylerville near Kleinmond (December).

A ♀ specimen in the Transvaal Museum, from the collection of the late Dr. Brauns and with the yellowish hind margins of the tergites rather broadly interrupted, has a locality label 'Tulbagh 10/xii/1927'. This locality cannot be correct for this species appears to be restricted to the scrub forest and wooded parts of the eastern Cape and has not been recorded from any part in the western Cape Province.

This species, however, appears to be very variable in size, colouration, infuscation in the wings and the extent to which the yellowish hind margins of the tergites in ♀♀ are developed or interrupted discally above. Apparently it is a plastic species varying in certain directions according to its topographical and probably botanical habitat, and to such an extent that certain distinct varieties are recognizable.

Three such varieties are described below:

*Ectyphus pinguis* var. *litoralis* n.

This eastern Cape and coastal form, frequenting the scrub- or sclerophyll-covered coastal dunes of the southern coast from Jeffrey's Bay to a little beyond Port Elizabeth, and which does not occur inland beyond this extreme coastal belt is a distinct variety which has been confused with *pinguis s.str.* in some collections. It may almost be considered as a distinct subspecies if the very much finer microsculpture on the abdomen and, in ♂, also the longer and denser hairs on the hind femora be taken as of subspecific value.

It, and more especially the ♂, differs from *pinguis s.str.* in the following respects:

*Body* on the whole much darker, especially in ♂, the dark parts in ♂ either or almost black, the legs in ♂ very much darker, the femora, especially hind ones, very dark blackish brown to black, the tibiae often also dark, only the knees, extreme apices of tibiae and front and middle tarsi yellowish; legs in ♀ either yellowish as in *pinguis s.str.* or often also slightly darker, more yellowish brownish than yellowish; pattern of lemon yellowish and yellowish reddish on head and thorax identical, the conspicuous very pale yellowish whitish or pallid inflated part on sides basally of tergite 1 and sides of same tergite as conspicuous, but sometimes tending to be slightly more extensive; hind margins of tergites in ♂

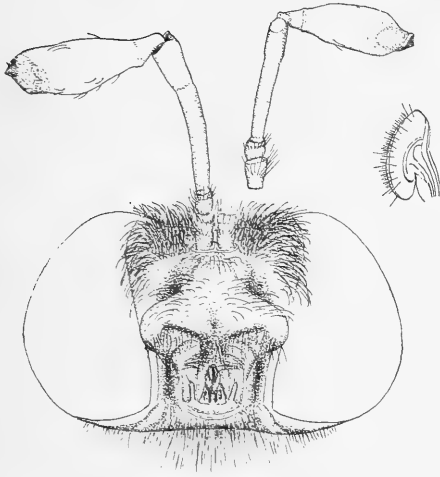


FIG. 25

Oblique ventral view of head of ♂ *Ectyphus pinguis* var. *litoralis* n. to show broad flat-nose-like clypeus, much reduced proboscis and ventral view of right antenna.

Right top: Ventral view of left antenna of ♂ *Ectyphus armipes* Bezz.

Right: Side view of proboscis of ♂ *Ectyphus armipes* Bezz.

yellowish whitish, ivory yellowish or lemon yellowish, confined to extreme sides, the interruption dorsally usually being broader to much broader than in typical *pinguis*; hind margins of all the tergites (1-7) in ♀ distinctly and relatively broadly and uniformly yellowish, only broader on sides, the medial discal parts not tending to be more reddish or even slightly interrupted as in some of the typical ♀♀ and hind margin of 1 always completely yellowish, not more reddish or dark; venter in ♂ mainly or more extensively dark, the hind margins of sternites being more narrowly yellowish than in typical form, in ♀ usually also relatively darker and, if mainly pale, the yellowish hind margins apparently narrower.

*Integument* of abdomen above with distinctly very much finer, areolar microsculpture in both sexes, smoother, distinctly less dull and shagreened discally, that of ♀ especially very fine and minute.

*Vestiture* slightly longer and denser in ♂, especially on abdomen posteriorly, distinctly so on hind femora and, even in ♀, hairs on hind femora are relatively longer, the hairs on body and legs however similarly coloured.

*Head* (text-fig. 25) with the antennae as in typical form, the club usually also a little longer than segment 3; proboscis similar.

*Wings* on the whole tinted darker, more blackish brown or smoky brownish to almost black, especially in ♂; veins usually darker.

*Legs* very similar, but apical ventral process of hind tibiae relatively longer in ♂ and, though short in ♀, usually more prominent than in typical ♀.

*Hypopygium* of ♂ (text-fig. 26) with the posterior angles of lateral lobes of tergite 9 more often tending to be more bluntly acutangular, less obtuse; appendage below process of sternite 9 relatively shorter than in typical ♂, only about as long as hind claws.

From 46 ♂♂ and 22 ♀♀ (♂ holotype, ♀ allotype and 36 ♂ and 19 ♀ para-

types in the South African Museum, 7 ♂ paratypes in the Transvaal Museum, 2 ♀ paratypes in the Rhodes University, 1 ♂ paratype in the University of Stellenbosch and 1 ♂ and 1 ♀ paratypes in the collection of Dr. M. Bequaert of Gand in Belgium).

Length of body: about 11–19 mm

Length of wing: about 8·5–13 mm

*Distribution*: Eastern Cape: Jeffrey's Bay near Humansdorp (South African Museum, January 1960) (♂ holotype, ♀ allotype, 14 ♂ and 13 ♀ paratypes); Jeffrey's Bay (Brauns, 1924) (1 ♂ paratype) and December 1932) (6 ♂ paratypes); Jeffrey's Bay (J. Heyns, December) (1 ♂ paratype); Papiessfontein, Gamtoos mouth (South African Museum, January 1960) (22 ♂ and 7 ♀ paratypes); Van Staden's mouth (South African Museum, January 1960) (1 ♂ paratype); Port Alfred (F. Junor, February 1955) (1 ♀ paratype).

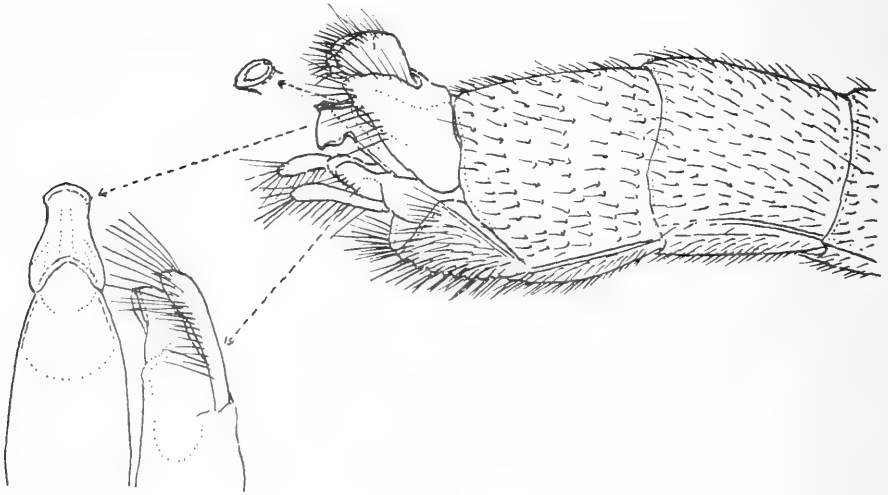


FIG. 26

Side view of hypopygium of ♂ *Ectyphus pinguis* v. *litoralis* n. showing the single aedeagus with its hood- or cowl-shaped apical part (more enlarged on left in oblique, ventral view and separately also its rather large oval gonopore), and the processes of sternite 9 with the palp-like appendage (also enlarged on left).

*Ectyphus pinguis* var. *karooensis* n.

Two ♂ specimens, from the late Dr. Brauns' collection in the Transvaal Museum, obviously belong to *pinguis* Gerst., but constitute a distinct southern Karoo or Little Karoo variety which differs from the typical form in the opposite direction to that differentiating the preceding variety *litoralis* from *pinguis* s.str.

They agree with the typical form in colour and the colour pattern and have the same parts of the head and body lemon yellowish, yellowish reddish and black respectively; the lemon yellowish on extreme basal part on sides of tergite 1 however more extensive.

They however differ in having the integument of abdomen above (which has similar yellowish hind margins, also interrupted medially discally, but relatively narrower so) distinctly more coarsely or more rugulose sculptured or shagreened and duller, the more areolar microsculpture of the typical ♂♂ being replaced by distinctly more subscabrous or rougher rugulose sculpture.

The venter is on the whole much darker and the yellowish hind margins of sternites relatively broader, more conspicuous, the last sternite entirely yellowish.

*Wings* similarly infuscated, but there is a greater tendency for the middle parts of the submarginal cells and cells in hinder half to be clearer, less tinted.

*Legs* with the hind femora darker, sometimes much darkened above and even from about middle below, and the microsculpture of these femora, apart from the slightly coarser transverse wrinkles, also more coarsely areolar or shagreened and duller.

*Head* with the antennae apparently relatively longer; segment 3 and the club, though having the same proportions, apparently slightly longer.

Both the holotype and paratype in the Transvaal Museum.

Length of body: about 13–17.5 mm

Length of wing: about 10–12.5 mm

*Distribution*: Southern Karoo: Willowmore (Dr. Brauns). Probably collected in the more wooded Georgida and Uniondale side rather than on the Karoo side of Willowmore.

*Ectyphus pinguis* var. *ceramiiformis* n.

Still another very distinct inland variety of *pinguis* from the late Dr. Brauns' Karoo collection, but unfortunately represented in the collection by only a single ♂ specimen. It is obviously very near the variety *karooensis* if not merely an extreme form of the latter and has a very striking resemblance to species of the masarid-genus *Ceramius*. It may be distinguished from the more typical *pinguis*, slight forms of the latter and from the var. *karooensis* in the following respects:

*Body* differs from *karooensis* in having the hind margins of all the tergites, including the first, very broadly and conspicuously, uninterruptedly yellowish, on sides being even much broader than half the length of a tergite, the abdomen appearing very strikingly yellow-ringed as in species of *Ceramius*; venter mainly yellowish, due to almost entire sternites being yellowish; entire sides of tergite 1, including inflated part, unlike those of *pinguis s.str.* and var. *karooensis*, very extensively and continuously yellowish with the broader hinder part of tergite 1; front and middle legs conspicuously pale yellowish, not yellowish brownish or reddish brownish as in *karooensis* and more typical ♂♂; hind legs, including lower face of hind coxae, also very much paler yellowish, but with the inner dorsal part and apical part laterally of hind femora brownish; antennae very pale yellowish, the apex of segment 3 darkened and the club orange yellowish.

*Integument* somewhat similar to that of the var. *karooensis* and different from that of typical ♂♂ of *pinguis* and slight forms of the latter in the relatively duller, coarse, scabrous, or rugulose, sculpture on abdomen above, the sculpture how-

ever slightly less coarse than in *karooensis*, but distinctly more so than in typical form.

*Wings* distinctly less tinted than in either of the other two; the hinder half, including greater middle parts of the submarginal cells and first posterior cell, however more extensively clearer or more hyaline; veins more yellowish.

Holotype in the Transvaal Museum.

Length of body: about 18 mm

Length of wing: about 14.25 mm

*Distribution*: Southern Karoo: Willowmore (Dr. Brauns).

*Ectyphus capillatus* n.sp.

Two ♂ specimens from the eastern Cape Province may almost be considered as still another, rather hairy, more inland or eastern Karoo variety or subspecies of *pinguis*, but as the hairiness of the abdomen is rather conspicuous and much longer than in *pinguis* and its varieties, and as they also differ in other respects they are considered as representing a distinct species which agrees and differs from colour forms of *pinguis* and the var. *karooensis* in the following respects:

*Body* with the head and thorax and tergites 1 and 2 dark or black as in both these forms, but tergites 3-7 either also pitch brownish and black, or sometimes paler, paler reddish brownish; venter, excepting dark extreme sides and inflexed sides of tergites, on the whole or sometimes much paler yellowish brownish or reddish brownish; antennae, or at least club, paler, more luteous; other pale yellowish and reddish parts and markings on head and thorax same as those of *pinguis* and its varieties, the hind margins of tergites also ivory yellowish and also much broadened on sides as in var. *karooensis*; hind margins of sternites also yellowish; legs yellowish reddish.

*Integument* similar to that of var. *karooensis*, that of abdomen however even slightly coarser, more transversely rugulose or 'nadelrissig', and that of hind femora smoother, more shining.

*Vestiture*, especially that on abdomen and legs, distinctly very much denser and much longer and slightly more sericeous yellowish (the abdomen appearing distinctly more hairy); hairs on hind femora, especially above, distinctly denser, longer, more villose.

*Head* with the antennae as in var. *karooensis*, slightly longer than in more typical forms, with the club distinctly longer than segment 3 (but probably as variable as in *pinguis* and its varieties where it is sometimes shorter, sometimes subequal to or sometimes longer).

*Wings* infuscated yellowish brownish as in the *pinguis* series, but less uniform than in *pinguis*, more like those of the var. *karooensis*, with clearer or less infuscated parts apically in middle of submarginal cells and middle parts of posterior cells; veins more yellowish.

*Legs* as in var. *karooensis*, but with more numerous spines in outermost lateral row on hind femora.

*Hypopygium* similar to that of *pinguis* and its varieties, but with the apical part of process of sternite 9 relatively longer, not much shorter than appendage (in *pinguis* s.str. much shorter than appendage).

The holotype in the South African Museum and paratype in the Transvaal Museum.

Length of body: about 16–17 mm

Length of wing: about 13 mm

*Distribution*: East Cape: Brakkloof near Grahamstown in the Albany district (G. White, 1907) (holotype); Resolution in the Albany district (A. Walton, January 1924) (paratype).

*Ectyphus pretoriensis* Bezz.

*Ectyphus armipes* Bezzi, subsp. *pretoriensis* Bezz., 1924b: 197.

This slightly variable species from Pretoria which Bezz. described as a subspecies of his *armipes* from Natal, and of which the types are in the South African Museum and 2 ♂♂ and a ♀ are in the Transvaal Museum, is without doubt an entirely different and distinctly separate species.

It differs from *armipes*, which is dealt with farther on, in the following respects:

*Head* with the clypeus much broader, more lobe-like dilated on sides apically, touching and very slightly overlapping eye-margins, sometimes entirely black in some ♂♂; proboscis much reduced, very much smaller, the labella very much shorter, more reduced; antennae sometimes dark or entirely blackish, shorter, the clubs shorter, more ovate-pyriform, their narrowed or constricted base much shorter.

*Wings* rather long, only faintly subopaquely greyish hyaline to very faintly yellowish brownish in middle parts, not darkly infuscated; veins very pale, pallid or pale yellowish; first posterior cell tending to be markedly broad apically, more than in other species; halteres pale yellowish.

*Abdomen* distinctly smoother, more shining, without fine, areolar microsculpture; tergite 1 with much finer longitudinal grooves, especially in ♂; hind margins of tergites only yellowish on extreme sides, more broadly interrupted discally with reddish brownish in ♂ and, in ♀, with the dorsum of 1–6 extensively ochreous yellowish; tergite 7 in ♀ darker, more castaneous or blackish brownish.

*Legs* sometimes very dark in ♂; hind femora distinctly less thickened in both sexes; hind trochanters usually with 2 (not 1) spines below; hind tibiae with the apical process below distinctly shorter in both sexes, much shorter than width of tibia above process.

*Vestiture* with the hairs relatively longer on head, thorax above, pleurae, coxae and legs, denser on head and thorax; disc of thorax with 3 velvety black streaks separating 4 streaks of greyish whitish tomentum, which are more conspicuous.

*Hypopygium* of ♂ with the appendage below process on each side of sternite 9

narrow, palp-like, not flattened or broad and flap-like.

From *pinguis*, with which it agrees in its broadish clypeus, the presence of 2 spines on hind trochanters, finer grooves on tergite 1 and in the structure of the ♂ genitalia, it differs in the more semicircular clypeus, the slightly more developed proboscis, relatively longer palps, more ovate-pyriform antennal clubs, smoother abdomen, different colour on abdomen above in ♀, clearer wings, and presence of a longer apical process on hind tibiae below in ♀.

This species shows closer affinities with the species *abdominalis* from the Western Province and the Karoo species *flavidorsalis* described below.

From the former it however differs in the clearer wings, pale halteres, paler legs, more developed apical process on hind tibiae in ♀, denser and longer and more whitish hairs and broader ochreous yellowish on dorsum of abdomen.

From the new species *flavidorsalis* the ♀ differs in the narrower, ochreous yellowish on abdomen above, absence of distinct, coarse, sparse punctures on sides of tergites and on last tergite, shorter proboscis and less dark wings.

Length of body: about 12.5–16 mm

Length of wing: about 11–14 mm

*Distribution*: Transvaal: Pretoria (September).

*Ectyphus abdominalis* Bezz.

*Ectyphus abdominalis* Bezzi, 1924b: 198.

This somewhat aberrant species from the south-western Cape is still represented in the collections by only the unique ♀ type from Montagu on which Bezzi based his description. It shows some affinities with *pretoriensis*.

It differs and is distinguished from all the other species by its large, markedly broad, convex, pale yellowish reddish clypeus which slightly overlaps the eye-margins; smallish proboscis which is however larger than that of *pinguis*; rather longish palps; deep or dark reddish parts of thorax; smoothish abdomen of which the dorsum (dorsal or discal parts of tergites 2–5) is ochreous yellowish and hind margins of tergites which are more reddish brownish than in the preceding series of species; darker reddish brownish femora and less yellowish, more pale yellowish brownish, tibiae; more cylindrical hind tibiae, with only a very short, dentate process apically below; hind trochanters with 2 spines below; infuscated wings of which most of the infuscation is in form of narrowish brownish borders along veins; dark halteres; and reddish or fulvous brownish vestiture of which the hairs on head are rather stiffish and somewhat sparse and those on thorax above and on tergite 1 are very short and sparse.

Length of body: about 15 mm

Length of wing: about 12.5 mm

*Distribution*: Western Cape: Montagu (January).

*Ectyphus flavidorsalis* n.sp.

Another slightly variable species in the collections of the Transvaal Museum, represented by only two ♀♀, superficially resembles the ♀ of *pretoriensis*



and even more so that of *abdominalis*, from the latter of which they may be distinguished as follows:

*Body* mainly dark, but with the clypeus yellowish; antennae yellowish brownish, the clubs darker basally and apically; humeral tubercles yellowish reddish, but darkened discally; sides of thorax above, postalar calli, an infusion anteriorly around humeral tubercles extending backwards on each side as an abbreviated submedial fascia, and hinder border of scutellum, paler, more yellowish reddish than in *abdominalis*; metanotum laterally also extensively yellowish or yellowish reddish; pleurae with area below wing-base, sutural parts, hinder part of pteropleuron, metapleural and upper metasternal parts more yellowish reddish than reddish; sides laterally of tergite 1 and base of venter much paler than in *abdominalis*, more pale yellowish to pallid; broad discal parts of 2 on sides above, or entirely, and those of 3-5 (or sometimes also 6) and sometimes also hinder half or part of tergite 1 more broadly and extensively ochreous yellowish, only extreme sides of 2-5 (or 6) being blackish or dark, this black extending dorsalwards just in front of hind margins; hind margins of tergites 1-6 more yellowish than in *abdominalis* and on sides of 2-6, especially 2-4, conspicuously ivory whitish or yellowish (darker and more narrowly and obscurely yellowish reddish in latter species); bullae dull black; last tergite, and sometimes also one before it, also either dark reddish brownish or dark; venter yellowish in basal half, dark on sternites 5-7 in holotype, more uniformly reddish brownish in paratype, the hind margins of sternites whitish or ivory yellowish in holotype, less yellowish in paratype, but in both specimens paler than in *abdominalis*; legs also reddish brownish, the knees more conspicuously pale yellowish.

*Integument* as in *abdominalis*, the abdomen however slightly less brilliantly shining, except last two segments; pteropleuron larger, with coarser striae; extreme sides of tergites 2-5 with slightly more numerous, denser puncturation and more numerous punctures on last two tergites.

*Vestiture* on the whole similar in length and density, but apparently slightly longer on thorax above and denser also on legs, distinctly much paler, more whitish on head, only the postvertical spines reddish; hairs on disc of thorax only feebly sericeous yellowish, not dark; those on pleurae and base of abdomen and on legs also more whitish.

*Head* with the antennae slightly shorter, segment 3 being relatively shorter, but club also longer than segment 3, the club however apparently less broad; proboscis as long; palps rather long.

*Wings* tinted brownish as in *abdominalis* and also mainly as fuscous borders along veins; apex of first posterior cell markedly broad, more like that of *pretoriensis*.

*Legs* with 2 or 3 spines on hind trochanters; hind femora also with reddish spines; hind tibiae distinctly more compressed, with stronger, distinctly more prominent keel below, ending in a relatively much longer apical process, without any inner lower spines in apical half below, excepting extreme apical ones.

From the ♀ of *pretoriensis*, which it also resembles very closely, it may be distinguished by the slightly longer proboscis which is almost as long as buccal cavity, the broader, more extensive ochreous yellowish on abdomen above, the more numerous, coarse, but sparse puncturation on sides of tergites and on last tergite and by the more infuscated wings.

Holotype and paratype in the Transvaal Museum.

Length of body: about 17·5–18·5 mm

Length of wing: about 13·5–14 mm

*Distribution*: Southern Karoo: Georgida near Willowmore (H. Brauns, January 1927) (holotype); Willowmore (H. Brauns, December 1909) (paratype).

### *Ectyphus bitaeniatus* n.sp.

Another species of which the ♀ has the abdomen above extensively ochreous, but unfortunately also represented in the collections by only a single ♀ specimen.

Superficially this ♀ resembles both those of *abdominalis* and *flavidorsalis* and also to a certain extent *pretoriensis*. It agrees with and differs from all these in the following respects:

*Body* mainly dark; antennae dark reddish brownish; clypeus brownish, densely covered with greyish tomentum; thorax above, unlike in the case of the others, and including humeral tubercles, dark or black; pleurae dark blackish brown; postalar calli dark brownish; extreme hind border of scutellum and slight infusion on sides of metanotum reddish brownish; abdomen discally extensively ochreous yellowish on tergites 2–6, this narrowest on disc of 6; tergite 1 reddish brownish; sides of tergites and last segment dark blackish brown or piceous; venter yellowish up to end of sternite 4, then darker, more dark reddish brownish to piceous or black on last one; hind margins of tergites 2–4 (and 5 obscurely) conspicuously ivory whitish as in *flavidorsalis* and *pretoriensis*, but only fewer of these so; hind margins of sternites 1–5 also whitish; legs dark reddish brownish (hind ones missing in specimen), the knees yellowish.

*Integument* as in *abdominalis*, that of abdomen smooth and shining, with even fewer punctures on sides; last tergite slightly more transversely wrinkled than in the other species; integument of thorax above dull as in all the others, also covered with greyish whitish and black tomentum, but whereas the others have 3 streaks of black discally separating the greyish, this species has only a single, conspicuously velvety, blackish streak on each side discally (there being only 2 black streaks on disc).

*Vestiture* shorter and less dense than in the other three species, that on disc of thorax very sparse and shorter, all the hairs pale or whitish as in *pretoriensis* and *flavidorsalis*; hairs on legs shorter and sparser, whitish.

*Head* with the antennae relatively much shorter, segment 3 being proportionally much shorter and very much shorter than club; proboscis rudimentary, vestigial, even more reduced than in *pretoriensis*, more like that of *pinguis*; palps slender, nearly as long as proboscis.

*Wings* relatively shortish, even more darkly infuscated brownish than in the other three species.

*Legs* with 2 spines on hind trochanters.

The ♀ holotype in the Transvaal Museum.

Length of body: about 14.5 mm

Length of wing: about 10.5 mm

*Distribution*: East Cape: Resolution in the Albany district (A. Walton, December 1921).

*Ectyphus armipes* Bezz.

*Ectyphus armipes* Bezzi, 1924b: 196.

An easily recognizable Natal species which differs from the other known species and varieties in the following respects:

*Head* with the proboscis (text-fig. 25, right), though confined to buccal cavity, distinctly larger, not rudimentary, with well-developed, large, long, fleshy labella, extending backwards under basal part of proboscis, occupying almost entire length of buccal space, covered with rather conspicuous, longish, hair-like spinules; clypeus very much narrower, its sides farther away from eye-margins, not so obviously dilated lobe-like near apical part as in *pinguis* and *pretoriensis*; antennal club (cf. text-fig. 25, top), which is also longer than segment 3, distinctly more spindle-shaped, more gradually narrowed basally and also narrowed apically.

*Thorax* with slightly coarser sculpture, especially along two submedial, slightly rugulose streaks; scutellum entirely black, rugulose sculptured, at least across base.

*Wings* more darkly infuscated brownish to very dark or blackish brownish, more like those of *pinguis* var. *litoralis*; halteres more darkened above or even black.

*Abdomen* not very shining, appearing dull, due to minute, areolar or leathery microsculpture; tergite 1 discally with coarser or deeper longitudinal grooves, especially in ♂, than in any of the other species; hind margins of tergites 2-5 in ♂ narrowly yellowish whitish, though darker discally, much narrower on sides than in *pinguis* and its varieties, those of tergites 1-6 in ♀ more broadly yellowish than in ♂, more like those of ♀ of *pinguis* var. *litoralis*, and entire tergite 7 in ♀ yellowish brownish or reddish.

*Legs* either mainly yellowish (♀) or the femora brownish or reddish to even black to a variable extent in ♂; hind trochanters with only 1 spine; hind femora rather more incrassate, even in ♀, than in the other species; hind tibiae compressed, sharply keeled below, ending apically in a prominent and long process in both sexes, which is distinctly longer than tibia is broad just above it.

*Hypopygium* of ♂ with the posterior angles of lateral lobes of tergite 9 acutangular; appendage below process on each side of the concealed sternite 9 very characteristic, broadened, flattened, projecting triangularly flap-like posteriorly on each side above and beyond sternite 8, and differing from the

appendages of all the other known ♂♂; both sternite 8 and the appendages with distinctly longer and denser, whitish hairs than in the other species.

This species appears to be variable in the colour of the body, legs and the infuscation in the wings.

Among the material before me are some ♂♂ taken by Mr. C. Booth at Durban between January and March 1959 which represent a distinct dark form.

These ♂♂ differ from the more typical form and aberrations of it in being almost entirely black; in having very dark or black legs, only the underparts apically of front and middle femora, front and middle tibiae and tarsi being more yellowish brownish; in having a very dark or black clypeus and dark antennae; the usually yellowish markings on thorax very dark and only obscurely reddish; the hind margins of tergites dull and inconspicuously greyish yellowish, more evident on sides; and in having very much darker, very dark blackish brownish or black wings.

In the South African Museum (including types), Transvaal Museum and Natal Museum.

Length of body: about 13–19.5 mm

Length of wing: about 10.5–14 mm

*Distribution*: Natal: Durban (January–March).

#### SUMMARY

This contribution is a comprehensive revision of all the known genera and species of the dipterous family Mydidae occurring in southern Africa, including South West Africa, Botswana (Bechuanaland), parts of Rhodesia and Portuguese East Africa.

Altogether 22 genera and 2 subgenera are dealt with and described. Of these 12 genera and 2 subgenera are new. The genera are grouped into 3 subfamilies and 3 new tribes. The number of species described in detail is 156 of which 108 are new. Ten varieties are also described and among them 8 are new. Descriptive keys for the separation and identification of the subfamilies, tribes, genera, subgenera, species and varieties are given. Two maps, indicating the geographical distribution of the genera and subgenera, are given and 27 figures of various morphological structures of taxonomic importance in the text and 11 on 2 plates supplement the descriptions. A list of the most important bibliographical references is given and an index is appended.

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## INDEX

All subfamilies, tribes, genera, subgenera, species and varieties which are new are in bold face. Synonyms, or generic and specific names no longer in use, are in italics. Pages where the main or chief descriptions are given are also in bold face.

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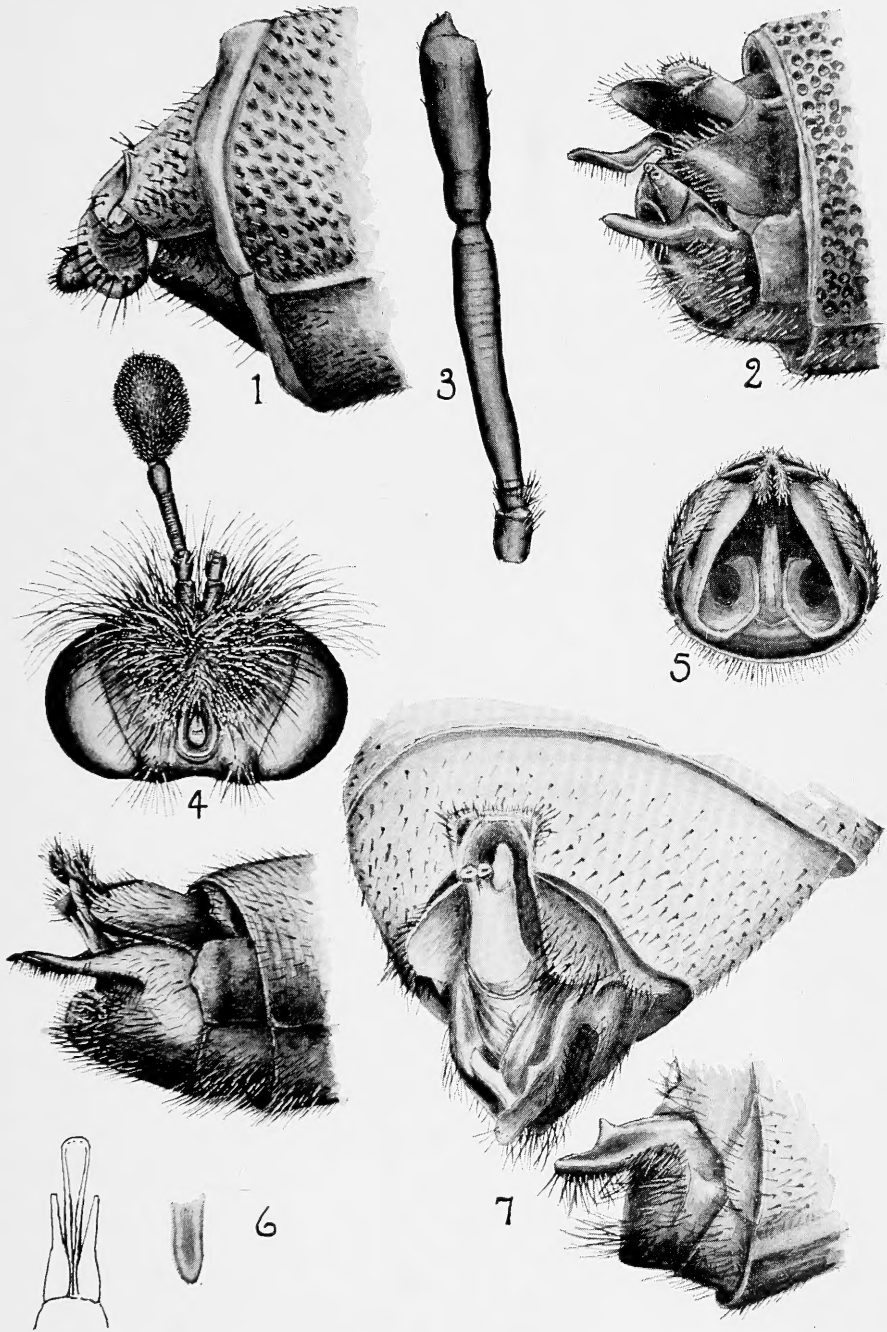


FIG. 1: Side view of apex of abdomen of ♀ *Mydaselphis peringueyi* var. *hesperus* n.  
 FIG. 2: Posterior oblique view of hypopygium of ♂ *Mydaselphis karoensis* n.sp.  
 FIG. 3: Left antenna of ♂ *Nomoneura fasciata* Bezz.  
 FIG. 4: Ventral view of head of ♂ *Lachnocorynus chobeensis* n.gen. et n.sp.  
 FIG. 5: Posterior view of hypopygium of ♂ *Lachnocorynus chobeensis* n.gen. et n.sp.  
 FIG. 6: Side view of hypopygium of ♂ *Nomoneura fasciata* Bezz.; below it (left) posterior view of much enlarged phallic tubes and dorsal epimere, and (right) dorsal view of enlarged apical part of left process of sternite 9.  
 FIG. 7: Above: Posterior oblique view of hypopygium of ♂ *Vespiodes conopeus* (Sack).  
 Below: Side view of part of hypopygium of the same ♂ showing left process of sternite 9.

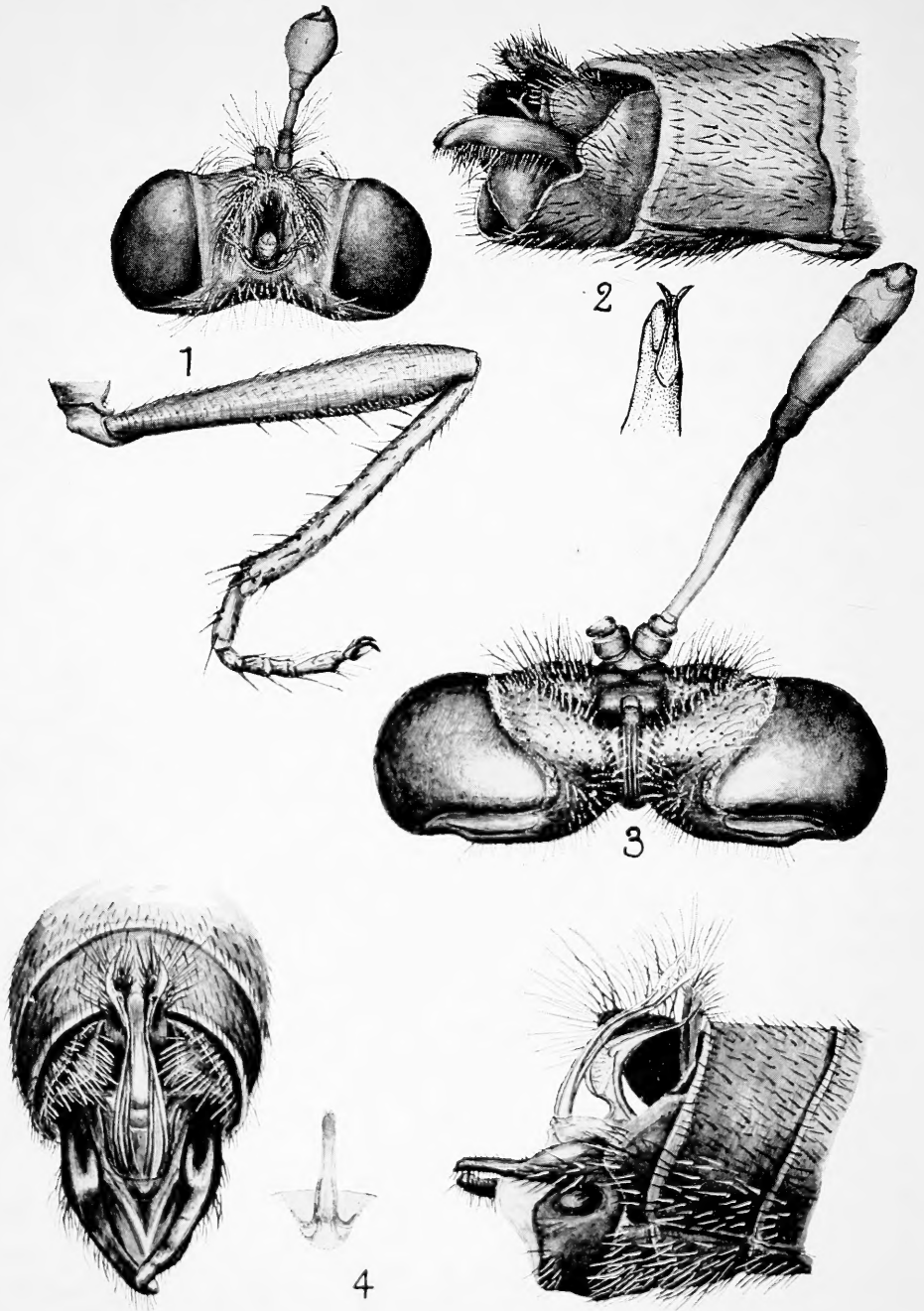


FIG. 1: Above: Ventral view of head of ♀ *Halterorchis inermis* Bezz.

Below: Outer view of left hind leg of ♀ of the same species.

FIG. 2: Above: Slightly oblique side view of hypopygium of ♂ *Arenomydas partitus* (Gerst.)

Below: Slightly oblique posterior view of much enlarged aedeagal apparatus of ♂ of the same species.

FIG. 3: Dorsal view of head and right antenna of ♀ *Neolaparopsis puncturatus* n.gen. et n.sp.

FIG. 4: Left: Dorsal view of hypopygium of ♂ *Nomoneuroides natalensis* n.gen. et n.sp.

Right: Side view of hypopygium of ♂ of the same species.

Middle: Posterior view of epimere of the same hypopygium.

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Based on

CONFERENCE OF BIOLOGICAL EDITORS, COMMITTEE ON FORM AND STYLE, 1960.

*Style manual for biological journals.* Washington: American Institute of Biological Sciences.

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THIELE, J. 1910. Mollusca: B. Polyphacophora, Gastropoda marina, Bivalvia. In Schultze, L. *Zoologische und anthropologische Ergebnisse einer Forschungsreise im westlichen und zentralen Süd-Afrika*. **4**: 269-270. Jena: Fischer. *Denkschr. med.-naturw. Ges. Jena* **16**: 269-270.

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To be governed by the rulings of the latest *International code of zoological nomenclature* issued by the International Trust for Zoological Nomenclature (particularly articles 22 and 51). The Harvard system of reference to be used in the synonymy lists, with the full references incorporated in the list at the end of the article, and not given in contracted form in the synonymy list.

*Example*

*Scalaria coronata* Lamarck, 1816: pl. 451, figs 5 *a*, *b*; Liste: 11. Turton, 1932: 80.

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