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## Chapter V

## Diptera (Brachycera): Syrphidae

By FRANK MONTGOMERY HULL

In 1950–1951, Dr. PER BRINCK and others of the Zoological Institute, University of Lund, made an expedition to South Africa, which resulted in the accumulation of important material of the insect fauna of this region. The Diptera of South Africa have for years interested the writer and I am deeply indebted to Dr. BRINCK for the opportunity to study this collection of Syrphidae. Though not large in extent, it contains several interesting new species among genera richly represented in this area. This region is noted for the extensive development of the genus *Eumerus* MEIGEN, and possibly there are more species found in South Africa than in the Mediterranean countries. Associated with bulbous plants on which they feed, several species of *Eumerus* have proved to be important pests in the bulb industry. Some additional species of *Eumerus* from South Africa, but not a part of this Expedition collection, are here included for comparison.

In the order Diptera, the two-winged flies of the family Syrphidae are world wide in distribution. This family is fourth or fifth in size based on number of species, and is generally of interest to collectors and students of insects. Their diversity of form and their rather wide range of habits lend interest to them; and because of their relatively large size and generally bright, attractive colors, they are abundant in collections. There are only eleven unique or endemic Syrphidae genera and five unique subgenera in the fauna of South Africa. It is curious that the approximate total number of genera of Syrphidae found in the Nearctic region is 91, in the Palearctic region 92, in the Oriental region 93. The number increases to 108 in the Neotropical region but drops to 52 in the Ethiopian region.

It is apparent that the Ethiopian region, as far as is now known, is weak in syrphid genera. In spite of this fact, the area is exceptionally rich in the subfamily Eristalinae and it has a large number of species in the characteristic genera such as *Senaspis* MACQUART, *Phytomia* GUÉRIN, and *Lathyrophthalmus* SCOPOLI. About 140 species of Syrphidae have been described in this subfamily from the Ethiopian region. The next largest subfamily in this region is the Syrphinae, of which about 70 species have been described. The most characteristic South African genus in this subfamily is *Asarcina* MACQUART. Finally, *Rhingia* SCOPOLI of the subfamily Cheilosinae, and not represented in this collection, must be regarded as an important component of South African Diptera fauna.

The present collection contains 14 genera and 42 species, of which 22 are undescribed. The types are in the collections of the Zoological Institute, University of Lund; some paratypes are in the collection of the author.

## Subfamily SYRPHINAE

Genus *Metasyrphus* MATSUMURA*Metasyrphus tricolor* WALKER

*Syrphus tricolor* WALKER, 1852, Ins. Saunds. Dipt., 1, p. 230.

**Cape Prov.:** Two males, Hout Bay, Skoorsteenkop, Cape Peninsula, 2.2.1951, loc. no. 166 (BRINCK and RUDEBECK).

*Metasyrphus adligatus* WIEDEMANN

*Syrphus adligatus* WIEDEMANN, 1824, Anal. Ent., p. 35.

**Cape Prov.:** 4 females, Hout Bay, Skoorsteenkop, Cape Peninsula, 2–14.2.1951, loc. nos. 166 and 183. — **Natal:** One male, 1 female, Tugela Valley, Royal Natal National Park, 3.4.1951, loc. no. 258 (BRINCK and RUDEBECK).

*Metasyrphus capensis* WIEDEMANN

*Syrphus capensis* WIEDEMANN, 1830, Aussereur. Zweifl., II, p. 121.

**Cape Prov.:** One female, Platberg, Swartbergpas, altitude 5000 ft., 5–6.1.1951, loc. no. 120. — One female, Cape Peninsula, Hout Bay, Skoorsteenkop, 22.1.1951, loc. no. 157. — **Basutoland:** One female, Quthing, 17.3.1951, loc. no. 239 (BRINCK and RUDEBECK).

*Metasyrphus cognatus* LOEW

*Syrphus cognatus* LOEW, 1857, Öfvers. Kongl. Vet. Akad. Förhandl., XIV, p. 378.

**Natal:** One male, Royal Natal National Park, 7–11.4.1951, loc. no. 271 (BRINCK and RUDEBECK).

Genus *Epistrophe* WALKER*Epistrophe rotundicorne* LOEW

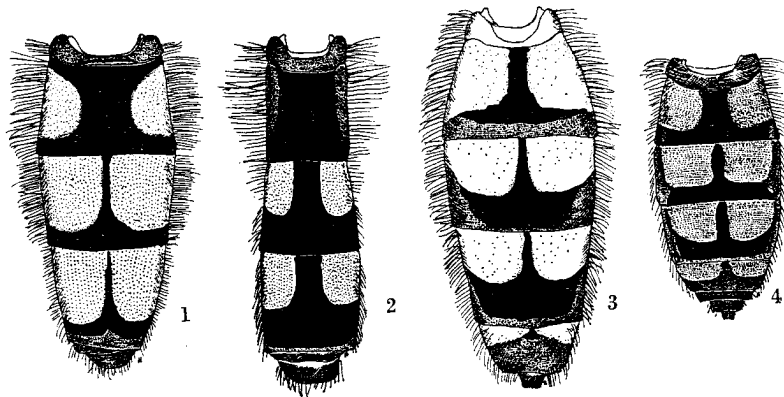
*Syrphus rotundicornis* LOEW, 1857, Öfvers. Kongl. Vet. Akad. Förhandl., XIV, p. 379.

**Cape Prov.:** One male, one female, Hout Bay, Skoorsteenkop, Cape Peninsula, 22.1.1951, loc. no. 157. — One female, Blinkwater Ravine, Table Mountain, Cape Peninsula, 5.7.1951, loc. no. 351. — **Natal:** 2 males, 2 females, Royal Natal National Park, 7–11.4.1951, loc. no. 271. — One male, Tugela Valley, Royal Natal National Park, 5.4.1951, loc. no. 265 (BRINCK and RUDEBECK).

Genus *Melanostoma* SCHINER*Melanostoma gymnocera* BIGOT

*Melanostoma gymnocera* BIGOT, 1891, Ann. Soc. Ent. France, 1891, p. 375.

**Cape Prov.:** Three males, 1 female, Bloukrans River, 20 miles ENE Plettenbergbaai, 11.1.1951, loc. no. 133. — 1 male, 1 female, Hout Bay, Skoorsteenkop, Cape Peninsula, 22.1.1951, loc. no. 157. — **S. Rhodesia:** 1 female, Victoria Falls, 16–17.5.1951, loc. no. 308 (BRINCK and RUDEBECK).



Figs. 1-4. — 1. *Melanostoma violacea*, new species. — 2. *M. trochanterata*, new species. — 3. *M. sulphuripes*, new species. — 4. *M. aeneoscutum*, new species.

#### *Melanostoma trochanterata* new species

(Figs. 2, 6)

A slender species with the second segment elongate and wholly dark in color. Antenna blackish with the lower surface orange brown. Wings tinted with brown. Length 7.5 mm.

##### Male.

Head: Eyes holoptic for a distance not quite as long as the front; the ocelli almost touch the eye margins and are raised and form a short isosceles triangle, its color distinctly brassy, the pile black. Pile of front scanty, fine, erect and yellowish brown. The front is rather swollen, and in the middle it forms a blunt hillock, and is coppery colored. Preantennal margin dark, face metallic black, very thinly dusted with greyish white pollen and a few fine, reddish brown hairs. Face quite short, tubercle low with a very faint, transverse depression above the tubercle. Antenna with the first 2 segments almost black, the second segment distinctly black, except medially on the oblique basal half and a smaller portion of the base laterally. This segment is broadly rounded apically; the short, dark brown arista is pale and strongly thickened at the base.

Thorax: Mesonotum and scutellum polished, shining, brassy black, without pollen or vittae. The pile fine, erect, and brownish yellow. Margin of the scutellum with 2 or 3 pairs of long and more stiffened hairs. Ventral fringe consists of about 12 pairs of long, reddish yellow hairs. Notopleuron with a large tubercle. Pleuron metallic brassy, thinly dusted on the mesopleuron and sternopleuron with brownish yellow pollen; the pile of the same color.

Legs: Femora quite slender, reddish brown on the basal half, except the extreme base, which is orange. The trochanters likewise orange. Apical half of the anterior 4 femora and apical fifth of hind femur diffusely light brownish yellow. Hind femur very slightly swollen

or expanded on the outer half beginning at the middle. Anterior and middle tibiae and first segment of the tarsi light reddish brown, the base of these tibiae more yellowish, leaving an obscure, darker brown band in the middle. Remaining tarsal segments barely darker. Hind tibia similar, except that the middle is more extensively dark brown and the hind tarsus is slender and uniformly dark reddish brown. Pile of the legs reddish yellow.

Wings: The wings distinctly and uniformly tinged with pale brown and everywhere villose. The stigma at most slightly darker than the remainder of the wings. The anterior crossvein enters the discal cell at the basal fifth. Alula large.

Abdomen: The abdomen slightly widened apically, the first 2 segments with nearly parallel sides and both dark sepia brown with faint brassy reflections, and fine, scattered, suberect, yellowish hairs, which become conspicuously longer and entirely erect laterally and extend as far as the middle of the third segment in decreasing length. Third segment with a pair of elongate, subrectangular, light orange spots, a little rounded posteriorly, sharply demarcated and separated in the middle by a distance almost equal their width. Fourth segment similar, the spots not quite so long but equally widely separated. Fifth segment very short and together with the posterior half of the fourth segment with a violaceous reflection. Hypopygium metallic greenish to whitish black.

Cape Prov.: Holotype, male, Hout Bay, Skoorsteenkop, Cape Peninsula, 2.2.1951, loc. no. 166 (BRINCK and RUDEBECK).

#### *Melanostoma violacea* new species

(Figs. 1, 7)

A dark species in which the abdomen bears 3 pairs of large, dark brownish yellow spots. The spots on the second segment are smaller and rounded medially. Scutellum brassy with 3 transverse and slightly arched, striate impressions. Notopleuron with strong coppery and violet reflections. Length 8 mm.

##### Male.

Head: Vertex a little swollen, raised and brassy in reflection, with several rows of fine, erect, black hairs and the ocelli situated in a short isosceles triangle. Eyes touch for a distance equal the full length of the vertical triangle, the upper facets but little enlarged. Front distinctly swollen with shallow, longitudinal, dividing crease in the middle. It is strongly brassy, changing to violet where the eyes touch. Pile is confined to the upper half and along the eye margins and is quite fine, rather long and erect. Face shining metallic black with whitish reflection beneath the antenna, changing along the eye margin and the sides to a slightly more brassy reflection. The tubercle well developed but low and nasiform, the lateral face pile blackish, and the sides with extremely sparse, brownish, minute micro-pubesence. There is at most 1 transverse impression above the tubercle.

Thorax: The thorax is black and everywhere bright brassy to golden in reflection, including the pleuron but with the exception of the notopleuron, which has a strong, coppery to violet reflection. Pile erect, fine and pale brownish yellow, abundant and longer on the disc of the scutellum and the margin with a few fine, long hairs.

Legs: The legs light reddish brown throughout with a wide but quite diffuse, subapical, darker brown band on the hind femur; the hind tibia and tarsi are also rather darker brown. The pile is reddish golden.

Wings: The wings with a moderate tinge of pale brown throughout. The wings are everywhere villose, the stigma slightly darker yellow brown; alula large, the third vein very slightly bowed forward distally.

Abdomen: The abdomen is elongate and quite narrowly oval. The width of the second segment posteriorly is barely greater than the posterior width of the third segment and likewise of the first segment. First segment shining brassy black, remaining segments at most dully shining and with rather distinctly and rather sharply marked light brownish orange spots. Those of the second segment reach the basal corner in about one-third their maximum width, and their maximum width is less than the dividing medial brown color. They are strongly rounded medially, turned sharply to the lateral margin well before the end of the segment so that the dark brown sepia color extends broadly over the base of the segment in the middle, widely down the middle of the segment and over the whole posterior margin. Third segment with very large, similarly colored basal and lateral spots narrowly divided by a medial vitta which extends to the base and the posteromedial corners of these spots are broadly rounded. Fourth segment quite similar to the third. It is as long as the third segment but a little less wide posteriorly. The spots are slightly smaller, are of the same shape and likewise separated by a narrow medial vitta. Hypopygium brassy with blackish pile. The sparse pile on the tergites is yellowish, except on the black portion of the fourth segment where it is partly black.

Cape Prov.: Holotype, male, Hout Bay, Skorsteenkop, Cape Peninsula, 2.2.1951, loc. no. 166 (BRINCK and RUDEBECK).

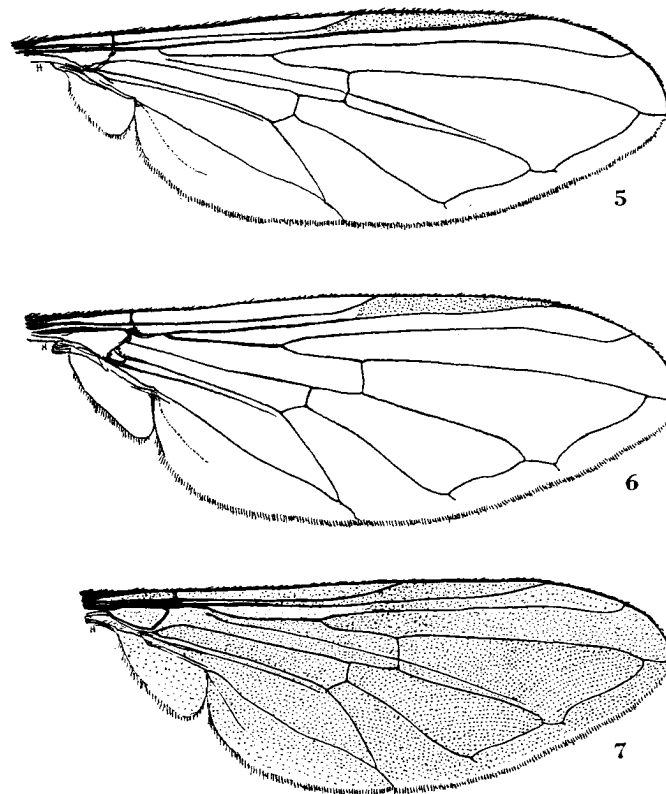
#### *Melanostoma sulphuripes* new species

(Figs. 3, 5)

Probably related to *Melanostoma floripeta* SÆISER; there is a distinct, yet diffuse, wide, dark, brownish black annulus on the hind femur; the hind tarsus is dark brown, especially above; the hind tibia is darkened toward the apex. Second abdominal segment with exceptionally large, elongate, subrectangular, pale yellow spot. First segment almost wholly lemon yellow and with a brown line in the middle narrowly in front of the posterior margin. Third antennal segment and the first 4 legs wholly yellow. Notopleuron and the humerus, and the whole of the pleuron yellow. Length 8 mm.

Female.

Head: Front and vertex polished, shining black, the front with a transverse, shallow depression containing a medially interrupted, grey band of thin pollen. At the bottom of this depression the reflection is rather bright blue. The ocellar tubercle is slightly raised, the ocelli form a short isosceles triangle and there is a very narrow, brown line in front of the antenna. Preantennal area slightly raised, the pile of front and vertex fine, erect and brownish yellow. Face with a moderately prominent tubercle everywhere black,



Figs. 5-7. — *Melanostoma sulphuripes*, new species. — 6. *M. trochanterata*, new species. — 7. *M. violacea*, new species.

the tubercle bare and surrounded by thin, greyish white pollen extending onto the anterior half of the cheeks and present again on the posterior part of the cheeks and the whole of the occiput. Pile of face scanty and consists of a few brownish white hairs on the sides of the lower face and near the eye below the antenna. The antenna has the first 2 segments and the basal half of the third segment pale reddish or orange brown. Third segment rather short, broadly rounded, blackish on the whole apical half. The short arista is reddish brown with the base strongly thickened.

Thorax: The mesonotum metallic black with whitish reflections anteriorly, with brassy reflections posteriorly and which are continued on to the light brown scutellum. The humerus, the lower lateral half of the notopleuron below the large tubercle, the postalar callosity and

the area immediately in front are all light brownish yellow, thinly dusted with pollen of the same color. Pile of mesonotum and scutellum fine, abundant, erect and brownish to reddish yellow. Margin of scutellum with 3 or 4 pairs of longer, stiffer hairs of the same color. Squamae pale brown with similar fringe. Halteres pale orange. Pleuron pale brownish yellow with a suggestion of darker color immediately above the middle and posterior coxae only. The dense pollen and the erect, fine pile are brownish white.

**Legs:** All of the legs pale yellow, the hind femur with a diffuse, brownish band subapically, its tibia and tarsus likewise light brown, and with darker brown pile. Pile of the first 4 legs yellow.

**Wings:** The wings are hyaline, the whole stigmal cell pale yellow, whole wing villose, alula only moderately wide, the rectangular, anterior crossvein enters the discal cell at the basal seventh or just beyond.

**Abdomen:** The abdomen is widest at the end of the second segment, narrowly oval in shape, the first segment and quite large, subrectangular spots on the second segment pale yellow and translucent. Near the posterior margin of the first segment there is a brown line in the middle. Spots of the second segment rounded on the posteromedial corners and the medial vitta is only about  $\frac{1}{4}$  the width of the lateral spots. The posterior, reddish brown, subopaque fascia is fully  $\frac{2}{3}$  the length of the segment. On the third segment, which is a little shorter, the large, basal, yellow spots are separated by a sharp, triangular extension of the equally long, posterior, brown fascia, and this medial extension barely reaches the base of the cell. These large, yellow spots are broadly rounded posteriorly like the end of a thumb nail and laterally reach the margin only on the basal third. Fourth segment similar to the third in the arrangement and extent of the medial tongue of brown color. The spots are slightly shorter, though still large and reach the lateral margin and basal corners in about the same extent. Fifth segment with a pair of narrowly separated, transverse, pale yellow, wedge-like triangles lying on the base of the segment and extending to the lateral margin. Remainder of the segment brownish black. The abdomen is rather strongly shining, the pile scanty, more or less erect and pale yellow. The tiny sixth segment is blackish.

**Cape Prov.:** Holotype, female, Hout Bay, Skoorsteenkop, Cape Peninsula, 14.2.1951, loc. no. 183 (BRINCK and RUDEBECK).

#### *Melanostoma flavipleura* new species

A small fly which resembles a species of *Epistrophe* WALKER, but which has the typical notopleural tubercle and frontal depression characteristic of *Melanostoma* SCHINER. This species will trace to *Melanostoma floripeta* SPEISER in CURRAN's key but is readily distinguished by the sharply triangular spots of the second abdominal segment. Length 8 mm.

Female.

**Head:** The head is shining black on the upper half, especially on the polished vertex and front which bear scattered, erect, reddish yellow hairs. The ocellar tubercle is moderately high, the ocelli lie in a very short isosceles triangle. There is a transverse depression across the front which bears thin grey pollen and forms a complete band, and the pollen

connects narrowly with the similar pollen of the face. The face and cheeks appear to be translucent brownish in color with a large tubercle which is bare and with 1 or 2 faint, transverse grooves above the tubercle. The face is completely pollinose above the tubercle. Antennal pits separated, the first 2 segments and the basal half of the third segment from near the base to the middle below is light brown with a slightly reddish tint. Upper outer corners of the third segment blackish. Arista dark brown, thickened on the basal half. Pile of the face pale yellow and scanty.

**Thorax:** The thorax is metallic black becoming brassy on the posterior half and on the scutellum and without pollen, except on the humerus and thinly but widely over the notopleuron and narrowly around the medial side of the humerus. This pollen is yellowish or brownish white and all of the mesonotal and scutellar pile is fine, erect and distinctly reddish yellow. Postalar callosity translucent, pale brownish orange. The scutellum is largely translucent, probably from defective condition, and is brown. It bears a posterior marginal fringe of at least 10 pairs of long, fine, reddish hairs which are longest near the middle of the apex. The scutellum also has a submarginal fringe of rather long, yellow hairs. Halteres orange, squamae yellowish white with a yellow border and fringe. The whole of the pleuron is light brownish orange with a suggestion of darker metallic color above the fascia. It is widely covered with thin, brownish yellow pollen and considerable fine, erect pile of the same color.

**Legs:** The legs are pale yellow, the pile of the same color. The last 2 tarsal segments are scarcely darker than the preceding three segments. They are pale brown and the dorsal pile of the hind tarsus is reddish brown.

**Wings:** The wings are nearly hyaline, the villi fine but reddish, the veins light reddish brown, the quite long, wide pterostigma pale yellow. Third vein with no deflection into the first posterior cell but not quite straight due to a very slight arching backward on the outer third.

**Abdomen:** The abdomen has nearly parallel sides, as wide as the mesonotum at the end of the second segment, rather translucent and dark sepia brown to blackish with large yellow spots. The first segment is light brown with the sides and anterior corners brownish yellow. Second segment with a pair of large, basal and lateral triangles rather sharply defined, which reach to the full lateral margin and are distinctly though narrowly separated in the middle by a triangular extension of the sepia color on the posterior part of the segment. Third segment as long as the second, but with rectangular spots occupying fully half the length of the segment, slightly rounded on their medial corners and separated in the middle by a tongue-like extension of the dark brown color of the same width as that upon the second segment. Fourth segment with a smaller, shorter pair of basal spots narrowly connected at the base and with their posterior margin broadly rounded so that laterally it approaches and reaches the basolateral corner only narrowly. These yellow spots extend backward slightly more than  $\frac{1}{3}$  the length of the segment. Fifth segment with a pair of basal, triangular spots narrowly connected in the middle.

**Cape Prov.:** Holotype, female, Hout Bay, Skoorsteenkop, Cape Peninsula, 22.1.1951, loc. no. 157 (BRINCK and RUDEBECK).

*Melanostoma aeneoscutum* new species

(Fig. 4)

A shining brassy black species with pale antenna and of rather robust form. The wing is especially broad with dark yellow brown stigma. Length 7 mm.

Female.

**Head:** The head is shining black with a slight brassy reflection on the front. Face with a short tubercle surrounded by very thin, greyish pollen and a few scattered, erect, white hairs laterally. Cheeks without pollen, except laterally along the eye. Occiput opaque grey white with a single row of short, white hairs. Front polished, mostly smooth, a few hairs in front of the ocelli arising from microgranulations. Below the middle there is a shallow, transverse depression, the outer part of which bears an obscure, triangular patch of thin greyish pollen. Preantennal area raised and bare, brown above the antenna. Antenna light reddish brown, the third segment barely darker along the outer half of the dorsal margins. Arista reddish brown and short, strongly thickened on the basal half. Ocelli in an equilateral triangle.

**Thorax:** The thorax is polished, with a slight coppery reflection, more brassy on the scutellum, which is large and thick and especially thick at the base with sharp and abruptly rounded, basal depression. Pile of mesonotum and scutellum fine, erect and yellowish white. Margin of scutellum with 2 pairs of longer, stiff, more yellowish hairs. Pleuron dully shining with thin, brownish white pollen. Notopleuron with a prominent nodular tubercle. The anterior half of the mesopleuron demarcated by a sharp, straight, deep crease. Halteres with orange brown knob.

**Legs:** Anterior and middle legs light reddish brown with a suggestion of darker color in the middle of the middle femur. Middles of the dorsal surface of the anterior tarsi darker brown. Hind femur dark reddish sepia, barely lighter at base and apex. Hind tibia is like the femur in color, and also a little lighter at base and apex. Hind tarsus uniformly dark, reddish brown. Pile of the legs pale yellow. On the hind tibia and tarsus the pile is dark brown and there are a few dark hairs above on the anterior tarsus.

**Wings:** The wings are almost hyaline, everywhere with fine villi, uniform in color, except for the whole of the stigma, which is yellowish brown. Anterior crossvein enters the discal cell at the basal fourth. First and second posterior cells with short appendices at the lower corners. Alula large.

**Abdomen:** The abdomen is oval, shining, the first segment blackish, the second black with a large, subrectangular, reddish brown spot occupying the outer third of the segment and extending to the base of the segment, but with the whole posterior third of the segment black. Third segment likewise with quite large, dark red spots on the base of the segment, widely separated from the lateral margin and more narrowly separated in the middle. In an oblique light these spots have a whitish bloom and the black part is opaque, except on the lateral margin. Fourth segment similar to the third, but the basal spots occupy only two-thirds of the length of the segment, which is slightly less than their extent on the third segment, and the posterior black band is opaque, except for a narrow portion on the posterior margin itself. Fifth segment with a pair of posteriorly convex, similar orange brown spots

on the base, narrowly connected in the middle and narrowly reaching the anterior corner. Sixth and seventh segments black. Pile of the abdomen extremely scanty, subappressed posteriorly, more or less erect on the orange spots and very fine in quality. Sternites uniformly shining reddish brown.

**Basutoland:** Holotype, female, Nazareth Mission Station, 20 miles ESE Maseru, 26.3.1951, loc. no. 248 (BRINCK and RUDEBECK).

Genus *Paragus* LATREILLE*Paragus tibialis* FALLÉN

FALLÉN, 1817, Syrphici Sveciae, p. 60.

**Natal:** One male, Royal Natal National Park, 7—11.4.1951, loc. no. 271. — One female, Tugela Valley, Royal Natal National Park, 3.4.1951, loc. no. 258. — **Basutoland:** One female, Hensley's Dam, 8 miles SW Leribe, 30.3.1951, loc. no. 254 (BRINCK and RUDEBECK).

*Paragus marshalli* BEZZI

BEZZI, 1915, Syrph. Ethiop. Region, p. 13, (f).

**Cape Prov.:** One male, Hout Bay, Skoorsteenkop, Peninsula, 22.1.1951, loc. no. 157. — 1 male, 1 female, same locality, 2.2.1951, loc. no. 166. — One female, same locality, 26.12.1950, loc. no. 95 (BRINCK and RUDEBECK).

*Paragus chalybeatus* new species

A shining black species with distinct, black, facial stripe in the male, brownish antenna, reddish golden hair on the upper occiput and the posterior half of the mesonotum with pale brown pterostigma and totally black abdomen. Length 5.5 mm.

Male.

**Head:** The vertex and vertical triangle are shining black. There are 5 or 6 black hairs just anterior to the posterior corner of the eye but the pile of the upper occiput behind the vertex is reddish yellow. Front shining, pale yellow with a small brown spot above the antenna and the sides of the face are yellowish white, leaving the distinct tubercle laterally compressed, shining black and connected along the edge of the mouth with the black of the cheeks. Face pile yellow and shining. First 2 segments of antenna black, third brownish black and long oval and not more than twice as long as the first 2 segments together. Arista light brownish red. The eyes holoptic for 4 or 5 facets but are actually separated by a hairline groove. The eyes are rather densely long, dull greyish pilose.

**Thorax:** The thorax is shining black, possibly with a faint greenish or brassy reflection on the scutellum and in front of it. The sides of the mesonotum are also faintly brassy. Punctuation of the anterior  $\frac{2}{3}$  of the mesonotum quite fine and exceptionally minute; it is correspondingly coarse and accentuated on the scutellum and in front of it, where it appears almost rugose. Pile of the scutellum exceptionally long, abundant, fine, erect, and reddish yellow. Similar pile across the posterior part of the mesonotum and the postalar callosity. Pleural pile unusually abundant, shaggy, long, and shining yellowish white.

Legs: The basal  $\frac{2}{5}$  of the anterior femur, half of middle femur, and  $\frac{3}{4}$  of hind femur shining black, followed narrowly by a diffuse, reddish brown area shading into quite pale yellow at the tips. The base of all the tibiae quite pale yellow, middle parts light brownish red, the apices paler. All tarsal segments light reddish brown.

Wings: The wings entirely hyaline, except for the pale brown pterostigma. Veins black, villi moderately dense but minute.

Abdomen: The abdomen is larger than in *Paragus tibialis* FALLÉN, shining black with a distinct though not deep constriction where the third segment joins the second. Pile light brassy yellow with some subappressed, blackish hair in the middle of the posterior part of the second, third and fourth segments. Punctuation of the abdomen extremely fine and sparse. The non-punctate, bare portions at the base of the second segment, the end of this segment, and especially at the end of the third segment are extensive. Near the base of the third and fourth segments laterally there are rather shallow depressions.

**Cape Prov.:** Holotype, male, Hout Bay, Skoorsteenkop, Cape Peninsula, 2.2.1951, loc. no. 166 (BRINCK and RUDEBECK).

While this may be the male of *Paragus punctatus* HULL, originally described from a female, there are suggestive differences in the present species. All the tarsi are light reddish brown, the rather reddish golden pile of the upper vertex and posterior half of mesonotum seem distinctive. There appear to be a number of differences from the male of *Paragus punctatus* as described by STUCKENBERG.

### Genus *Baccha* FABRICIUS

#### *Baccha chalybea* new species

A brassy black species with brownish hyaline wings and dark brown stigma. Related to *Baccha cuthbertsoni* CURRAN. Length 8.8 mm.

#### Male.

Head: Vertex shining black with a single row of brownish black pile. The front is brassy black with a bit of yellowish grey pubescence at the junction point of the eyes. The front is somewhat swollen about the area of the frontal callus, its pile sparse and dark brown to black and restricted to the margins of the front. There may be a violet, linear band surrounding the antennal callus; the face is shining brownish black, or more seldom reddish brown, and there is considerable grey pollen along the sides of the face, especially toward the eye margin; a narrow, conspicuous, linear stripe of whitish pollen runs along the eye margin to about midway along the cheeks. The facial tubercle is moderate and wholly shining; the antenna is light reddish brown, the base of the third segment is a little more orange, its dorsal apex is a little more brown. The arista is light brownish yellow, rather strongly thickened at the base and darker apically. The arista has a row of moderately long, whitish hairs on the thickened part of the dorsomedial aspect, seen under the high power of the microscope. The pile of the occiput consists of a single row of long, pale yellow, flattened hairs; the upper portion of the eye encroaches on the occiput obliterating it in profile.

Thorax: The mesonotum is brightly shining brassy black with a suggestion of brown; scutellum concolorous; the pile of both is sparse, erect and light golden brown. There are a few very delicate, slightly longer, golden hairs on the margin of the scutellum and its ventral fringe consists of about 9 quite long, delicate, light golden hairs. The mesonotum has inconspicuous collar of hairs anteriorly; although the anterior pile of the mesonotum is long, the collar of pile is not well differentiated. The pleuron is bright brassy with curved, reddish brown pile. Squama brown with reddish sepia border and fringe. Knob of halteres light yellow, the stalk brown at base.

Legs: The legs are light yellowish brown; the apical half of the hind femur, apical third of this tibia and the premedian, obscure annulus on this tibia sepia brown. Hind tarsus light brown, its basitarsus barely paler.

Wings: The wings are light brownish hyaline, the stigma dark brown, the third vein strongly curved and subsigmoid, the subapical crossvein sigmoid, the anal spuria virtually absent, the alula rather well developed.

Abdomen: The abdomen is of the petiolate type; the second segment is about 4 or 5 times as long as its basal width and 7 or 8 times as long as its narrowest width, and subcylindrical. The apex of the abdomen is between 3 and 4 times as wide as the middle of the second segment. First segment shining black with the merest suggestion of a blue reflection in the middle and brassy in the corners. The second segment is brassy sepia black and shining with wide, opaque bands posteriorly, the third segment similarly colored with large, opaque triangles; the fourth segment similarly colored, opaque areas, if present, are more obscure; fifth segment and hypopygium concolorous. The pile of the abdomen is light reddish brown along the sides of the first and second segment, becoming darker reddish basally and laterally on the remaining segments and almost black posteriorly on the remaining segments.

Female. The female is similar to the male in most respects. The front is shining black, without brassy reflections; on either side along the eye margins there is a hemispherical, grey, pollinose spot; the frontal pile and the single row of vertical pile is light yellowish. The mesonotal pile is short, sparse, curled, appressed and almost white. Pleural pile yellowish white, much appressed. Color of mesonotum and scutellum shining black, the ventral fringe has some 12 to 14 yellowish white hairs. The abdomen is shining black, the opaque triangle of the third segment more or less evanescent in the middle, the abdominal pile paler. The legs are similar to *Baccha cuthbertsoni* but the wings are much more hyaline.

**Cape Prov.:** Holotype male, allotype female and 2 paratype males, Hout Bay, Skoorsteenkop, Cape Peninsula, 22.1.1951, loc. no. 157. — Same locality, 2 paratype females, 2.2.1951, loc. no. 166. — Paratype, female, Bloukrans River, 20 miles ENE Plettenbergbaai, 11.1.1951, loc. no. 133 (BRINCK and RUDEBECK).

### Genus *Asarcina* MACQUART

#### *Asarcina rostrata* WIEDEMANN

*Syrphus rostratus* WIEDEMANN, 1824, *Analecta Ent.*, p. 34.

**Cape Prov.:** Twenty males, 4 females, Hout Bay, Skoorsteenkop, Cape Peninsula, 22.1.1951, loc. no. 157. — 1 male, 1 female, same locality, 14.2.1951, loc. no. 183. — 3 males, same locality, 2.2.1951, loc.

no. 166. — One male, Tzitzikama Forest, Storms River Mouth, 12–14.1.1951, loc. no. 136. — Natal: One male, Royal National Park, 7–11.4.1951, loc. no. 271 (BRINCK and RUDEBECK).

### *Asarcina gemmata* BEZZI

BEZZI, 1915, Syrphidae Ethiop. Region, p. 26.

**Cape Prov.:** Four males, Tzitzikama Forest, Storms River Mouth, 11–13.1. 1951, loc. no. 134. — One female, Bloukrans River, 20 miles ENE Plettenbergbaai, 11.1. 1951, loc. no. 133 (BRINCK and RUDEBECK).

## Subfamily ERISTALINAE

### Genus *Simioides* LOEW

#### *Simioides pachymera* WIEDEMANN

*Eristalis pachymerus* WIEDEMANN, 1819, Zool. Mag., vol. 1, p. 17.

**Cape Prov.:** Two females, Upington, Orange River, 26.11.1950, loc. no. 65 (BRINCK and RUDEBECK).

#### *Simioides villipes* subsp. *flavipila* new subspecies

A subspecies characterized by the narrow, complete or sometimes interrupted yellowish or reddish brown bands across the abdomen. This type of pattern is shared by several species of African and Asiatic Eristaline flies of unrelated groups, which, because of their similar size and compact form, make for confusion. Length 14 mm.

##### Male.

**Head:** Eyes separated by a distance equal to or just greater than that between the posterior ocelli. Sides of front not parallel. There is a shallow, transverse depression across the front, which separates the bare, laterally granulate, black pilose, anterior vertex from the widely pale brownish yellow pollinose front. A large central area of the front is bare, pitted, wrinkled, with 1 short, prominent, longitudinal fissure and in front of this fissure is a short, deep, transverse fissure. This area is dark reddish brown and without pollen. All pile of the front is long, dense, and light brownish yellow and confined to the pollinose outer area. The pile of the face is likewise pale brownish yellow. Sides of face brownish yellow in ground color. The tubercle is black, dully shining, due to thin pollen. Facial pollen is dense laterally and dorsally. Antenna quite black, the first segment with whitish hairs. Arista quite pale yellow throughout, rather thickened with minute, short yellow hairs above and below, not longer than the thickness of the arista. Cheeks shining black.

**Thorax:** The thorax everywhere pollinose, dully shining or opaque, except that the basal half of the scutellum is rather strongly shining, dark reddish brown with dense black pile confined to this area. All other pile of the thorax is brownish yellow becoming almost white on the middle pleuron. Pollen of mesonotum pale brownish orange, becoming grey on the notopleuron.

**Legs:** The hind femur is only moderately thickened, as is more or less typical for *Phytomia* GUÉRIN. It is light shining reddish brown on the basal half with dense but distinctly short, reddish yellow, bristly pile laterally, which changes to black below and above near the apex. The hind femur has longer pale yellow pile dorsally and on the ventrolateral margin. From the lower margin of the femur there is a row of 12 or 14 long, golden hairs which enclose the flattened tibia. Hind tibia rather arcuate, flattened, very dark reddish brown, except on the basal fourth, which is obliquely and diffusely yellowish brown. The yellow brown area bears subappressed, yellow pile dorsally, the greater dark portion of the hind tibia bears a rather dense fringe of slightly longer, coarse, black hairs.

**Wings:** The wings are hyaline, except for a brown cloud in the middle and narrowly along the anterior crossvein. Loop of third vein angular with a long spur. No villi at apex of wing. Stigmal crossvein strong.

**Abdomen:** The abdomen is shining black with 4 relatively narrow, shining brownish orange crossbands. The first of these near the base of the second segment is rather broadly interrupted. The second band is quite in the middle of the remaining black area of the second segment and its width is the same as either black band. The third pale band lies on the base of the third segment. The fourth band, only half as wide as the other three, lies on the base of the fourth segment. All of these bands are distinct and sharply delimited. Pile of the abdomen dense, granulate; posterior margins of second and fourth segments black tuberculate, the tubercles emitting appressed, reddish yellow hairs. The pile along the posterior black band of the segments is appressed or suberect, dense and black. On the fourth segment the lateral third of the abdomen posteriorly and the whole of the sides bear numerous, quite long, reddish yellow, erect hairs. Hypopygium polished black throughout with yellow hairs.

**Cape Prov.:** Holotype, male, Kleinmond, 20.12. 1950, loc. no. 89 (BRINCK and RUDEBECK).

### Genus *Eristalodes* Mx

#### *Eristalodes taeniops* WIEDEMANN

*Eristalis taeniops* WIEDEMANN, 1818, Zool. Mag., I, p. 42.

**Cape Prov.:** One male, Maanschijskop, 7 miles east of Hermanus, 21.12. 1950, loc. no. 93. — One female, Kakamas, 12.11.1950, loc. no. 47. — One female, Table Mountain, Blinkwater, Cape Town, 4.11.1950, loc. no. 23. — Natal: One male, Royal Natal National Park, 7–11.4.1951, loc. no. 271. — Basutoland: One female, Maseru, 27.3.1951, loc. no. 249 (BRINCK and RUDEBECK).

### Genus *Phytomia* GUÉRIN

#### *Phytomia incisa* WIEDEMANN

*Eristalis incisus* WIEDEMANN, 1830, Ausser. Zweifl., 11, p. 155.

**Cape Prov.:** Three females, Mount Frère, 6.3. 1951 (no loc. numbers). — Basutoland: One female, Nazareth M.S., 20 miles ESE Maseru, 24.3.1951, loc. no. 245 (BRINCK and RUDEBECK).



Genus *Eristalis* LATREILLE*Eristalis tenax* LINNÉ

*Syrphus tenax* LINNÉ, 1758, Syst. Nat., X, p. 591.

**Cape Prov.:** Two males, Rhodes, 10.3.1951, loc. no. 224. — One female, Hout Bay, Skoorsteenkop, Cape Peninsula, 26.12.1950, loc. no. 95. — **Natal:** One female, Royal Natal National Park, 7–11.4.1951, loc. no. 271. — One female, Tugela Valley, Royal Natal National Park, 3.4.1951, loc. no. 258. — **Basutoland:** One female, Quthing, 15.3.1951, loc. no. 234 (BRINCK and RUDEBECK).

Genus *Lathyrphthalmus* SCOPOLI*Lathyrphthalmus modestus* WIEDEMANN

*Helophilus modestus* WIEDEMANN, Zool. Mag., II, p. 43.

**Cape Prov.:** One female, Swartbergpas, Platberg, altitude 5000 ft., 5–6.1.1951, loc. no. 120. — **Natal:** One female, Royal Natal National Park, 7–11.4.1951, loc. no. 271 (BRINCK and RUDEBECK).

*Lathyrphthalmus cacops* new species

A light colored species due to extensive pollinose areas. The face is deeply projecting. Scutellum with dense, shining reddish pile, the antenna black. Related to *Lathyrphthalmus andersoni* BEZZI. Length 10–12 mm.

## Male.

**Head:** The vertex shining black, convex and considerably raised; it has abundant black pile and bluish reflections. Immediately in front the vertical triangle is yellow pilose, the pile arranged in 2 thick tufts directed backward. Immediately behind the ocelli the occiput is bare of pollen but at the corner of the eyes the occiput becomes thickly greyish yellow pollinose with minute, black punctate spots and long, shining yellow pile. The front is shining, black, the pile restricted to the upper half and yellowish white. The sides are narrowly pale yellow pubescent. The face is deeply projecting, obconical and densely yellowish white pubescent, except on the wide stripe in the middle, and except on a wide stripe from the eye margin to the angle of the epistoma, behind which it is again pubescent; also there is a bare, lateral, wedge-shaped stripe, which does not quite reach the eye margin. This lateral wedge-shaped stripe is widest near the eye margin from which it is attenuated diagonally downward toward the anterior point of the epistoma. The face, including the lateral, bare stripe, is extensively long, densely yellowish white pilose on the sides, the pile encroaching a little on the bare tubercle and middle stripe and the pollen meeting from side to side beneath the antenna.

The first 2 segments of the antenna are dark brown, the third black, nearly orbicular but with straight margin below; the antennal pile is yellow, the arista light reddish and bare. The eyes are narrowly holoptic, meeting for a short distance, and on the upper half only they are densely, long, reddish brown pilose; the upper facets are but little enlarged; the brown spots of the eyes are numerous, small and punctate.

**Thorax:** Mesonotum densely covered with greyish or brownish yellow pollen, obscuring the aeneous black color beneath. It is covered with minute, black punctures where each of the very abundant, long, erect, shining, silky, pale yellow hairs arise. The pleuron is similarly pollinose and like the mesonotum entirely light yellowish, very densely pilose. The scutellum is light, subtranslucent, brownish orange or reddish with very dense, bright reddish golden, erect pile. The squamae are very pale yellow throughout, the halteres yellow.

**Legs:** The femora are brown; the anterior and middle pair are thickly brownish white pollinose; their pile is dense, long, and entirely pale yellow, except for a very few black, bristly hairs ventrally at the subapex of the hind pair. The anterior tibia is very pale yellow basally, diffusely grading into dark brown on the apical half; the basal two-thirds of the middle tibia are similar, grading into light brown apically; the basal third of the hind tibia is pale yellow, diffusely merging into dark brown. The hind tibia is but little flattened and scarcely curved; the tibial pile is entirely pale brassy, except for a few black hairs at the base of the hind tibia below. The anterior tarsus and the first 4 segments of the middle tarsus and last 3 segments of the hind tarsus are dark brown; the middle basitarsus and first 2 segments of hind tarsus are light brownish yellow with brassy pile.

**Wings:** The wings are hyaline, the pterostigma about twice as long as wide and light brown; the veins are very pale brown; the anterior crossvein is a little beyond the middle of the discal cell; the radial sector has 12 long, fine, black bristles; wings apparently without villi.

**Abdomen:** The abdomen is rather short and convex and with extensive pale pollinose areas; the first segment is greenish or aeneous black overlaid with dense, greyish yellow pollen; the ground color of the posterolateral corners becomes yellow. The second segment has a basal fascia, which is gently widened toward the middle until it is not quite  $\frac{1}{3}$  the length of the segment. It does not reach the lateral margins. There is a less extensive, more narrow, shining black fascia in the middle of the posterior margin, which is anteriorly produced in the midline to form a mushroomshaped figure, which reaches not quite half the length of the segment. This fascia is quickly evanescent laterally and is bordered laterally and anteriorly by a diffuse, light brownish orange band, which continues to the side margin and joins with similar color anterobasally. The middle of the segment is shining, slightly translucent, yellowish along the sides, but with a pale yellow, pollinose, middle fascia lying between the 2 black fasciae and restricted to the middle of the segment, since it does not more than reach the lateral third. Third segment with a tiny, median, blackish notch basally, with narrow, basal, shining yellow fascia and a little expanded laterally and including the whole lateral margin; the lateral expansion is due to the attenuate form of the wide, pale yellow pollinose, opaque fascia, which lies immediately behind it; the opaque fascia is followed by a wide, shining black fascia lying along the posterior margin, which is evanescent close to the posterior corners. This posterior black fascia has in the middle along the posterior edge of the segment a narrow, yellowish, pollinose band.

The fourth segment is linearly shining brownish black basally; this black area is of about equal width throughout, and almost reaches to the lateral margin of the segment. The

posterior margin of the fourth segment is completely covered by a similarly pollinose fascia, which does reach the posterior corners and which is a little wider in the middle than laterally. The middle of the fourth segment has a very slightly arcuate, shining brownish black fascia, which becomes reddish at the lateral margin. The pile of the abdomen is everywhere light golden, very dense and erect, except that it is subappressed along the posterior margins of the third to fifth segments and is deeper in color on the second segment.

**Female.**

The female is similar to the male, the front broadly yellowish grey pollinose across the middle and with dark pollen above and a light, medially divided, lunulate, pollinose fascia a short distance in front of the ocelli. The abdomen lacks the prominent, shining, light reddish brown areas along the sides, although this color is present to some extent on the sides of the second segment and very narrowly in the corners of the third segment. The pterostigma of the wing is narrowly etched with dark brown on its outer edge, the mesonotum shows signs of a very obscure, olive grey, sublateral vitta; this vitta is widely interrupted at the suture and attenuate posteriorly; there are still fainter traces present of a medial vitta.

**Orange Free State:** Holotype, male; allotype female, Zastron, 20.3. 1951, loc. 242 (BRINCK and RUDEBECK).

## Subfamily XYLOTINAE

### Genus *Syritta* St. FARGEAU & SERVILE

#### *Syritta stigmatica* LOEW

LOEW, 1857, Öfvers. Kongl. Vet. Akad. Förhandl., XIV, p. 377.

**Cape Prov.:** One male, Hout Bay, Skoorsteenkop, Cape Peninsula, 22.1.1951, loc. no. 157. — One male, same locality, 2.2.1951, loc. no. 166 (BRINCK and RUDEBECK).

#### *Syritta flaviventris* MACQUART

MACQUART, 1842, Dipt. Exot., II, pt. 2, p. 75.

**Cape Prov.:** One female, Mount Frère, 5.3.1951. loc. no. 206 (BRINCK and RUDEBECK).

#### *Syritta nigrifemorata* MACQUART

MACQUART, 1842, Dipt. Exot., II, pt. 2, p. 75.

**Cape Prov.:** One female, Hout Bay, Skoorsteenkop, Cape Peninsula, 22.1.1951, loc. no. 157 (BRINCK and RUDEBECK).

## Subfamily MICRODONTINAE

### Genus *Microdon* MEIGEN

#### *Microdon microtuberculata* new species

Small, reddish brown flies, the thorax nearly black and the face, front and vertex quite black. Related to *Microdon aethiopicus* RONDANI from Abyssinia, differing in the short segments of the abdomen and in the wing venation. Length 8 mm.

**Female.**

**Head:** Face quite convex in profile and rather inflated, the front and vertex also inflated or swollen with a shallow, transverse depression across the middle of the front. Ocellar tubercle small but moderately raised, the ocelli not quite touching. Posterior occiput above is extensive and more or less swollen. Pile of the head everywhere shining yellowish white, except for a few fine, blackish hairs intermixed in front of the ocelli and with a large tuft of erect, fine, black hairs behind the ocelli. Most of the head pile is curled and subappressed, the front and vertex are coarsely granulate, almost pitted, with a small, bare, triangular space in front of the ocelli. Antenna about as long as the head, the first segment slender, with appressed microsetae, yellowish brown in color, slightly wider at the apex, the second segment as narrow at the base as the base of the first segment, twice as wide apically, same color as the first segment, except a little darker at the apex. Third segment not quite as long as the first, nearly cylindrical, distinctly swollen toward the outer half, but with the apex bluntly rounded. The whole segment is black, the arista shorter than the segment, and is reddish brown with the base thickened.

**Thorax:** The mesonotum and scutellum almost black, the pleuron very slightly lighter in color but still very dark reddish brown. Mesonotum, scutellum, upper sternopleuron, anterior pteropleuron and all of the mesopleuron coarsely granulate, including the anterior portion. Scutellum with the apex smooth, except for microgranules. Metanotum transversely striate.

**Legs:** Basal third of the first 4 femora shining, dark reddish brown. The remaining portion rather light orange brown and subtranslucent. The anterior 4 tibiae and tarsi uniformly of this same color, except that the tarsi have a narrow, oblique, sepia annulus across the middle. Hind femur very dark reddish brown, the apex barely lighter, its tibia and tarsus of the same color as the anterior 4 tarsi and tibiae, but with the middle band wider and more extensive. Pile of legs reddish golden. Hind basitarsus moderately swollen, slightly arched and as long as the remaining segments.

**Wings:** The wings are tinged with reddish brown, leaving the middles of the basal and apical cells paler. Wings everywhere villose, except the middle of the alula. Stigmal crossvein strong; spur into the first posterior cell rather short and unusually oblique. Lower corners of the first and second posterior cells each with a spur.

**Abdomen:** The abdomen is wider than the thorax, two and one-half times as wide as the base of the scutellum; basal part of the abdomen reddish brown, becoming darker reddish brown posteriorly, the base of the abdomen slightly subtranslucent. All sternites light orange

brown, the fourth and fifth are granulate, the pile appressed and yellow. Tergites very coarsely granulate, especially on the first 3 segments. The pile dense, short, flat appressed, yellow on the first and the base of the second, and widely yellowish white along the sides of the remaining segments. In some lights the central pile is very fine and microsetate and appears to be black.

**Cape Prov.:** Holotype, female, Hout Bay, Skoorsteenkop, Cape Peninsula, 2.2.1951, loc. no. 166. — 2 paratypic females, same data, one in the collection of the author (BRINCK and RUDEBECK).

***Microdon nigrocyanea* new species**

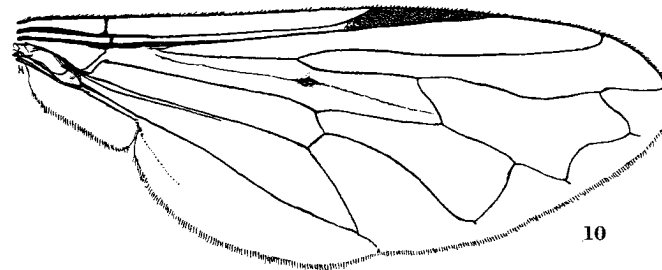
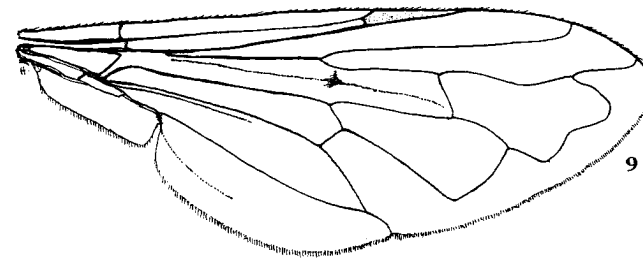
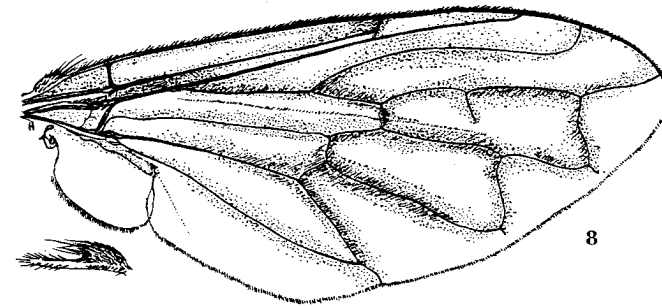
(Fig. 8)

A bluish black species related to *Microdon brevicornis* LOEW, from which it is separated by light reddish brown femur and a different wing pattern. Length 10 mm.

Female.

**Head:** Face shining, dark bluish black, vertex of the same color, the front similar but slightly more greenish. Pile of the face abundant and almost entirely light golden yellow across the middle of the face from eye to eye. Pile about the oral margin black and yellow mixed, and pile below the antenna entirely black. There is a very shallow depression transversely across the middle of the granulate front midway between ocelli and antenna. Below this the blackish pile is directed forward; above this the blackish pile is directed upward. Pile of the vertex blackish, becoming yellow behind and on the upper part of the occiput. The ocelli lie in a not quite equilateral triangle, and are scarcely raised. Antenna black, the inner surface of the first segment slightly reddish brown. The first segment is the same length as the dorsal length of the third segment. Dorsal surface of third segment nearly or quite plane, the lower surface rounded with the apex slightly and bluntly pointed. Arista extends to the apex of the third segment, its base reddish brown and distinctly thickened. Apex quite fine, first antennal segment with 8 to 10 short, black hairs on the dorsolateral margin. Oral opening of the head is quite small with the face but little produced.

**Thorax:** The mesonotum is shining metallic greenish black laterally with a broad diffuse, middle stripe, which is more of a coppery or brassy color and on the posterior half of the mesonotum this color tends to separate into 3 quite narrow, widely separated, coppery, linear vittae. Scutellum shining bluish black and quite dark. Pleuron shining but scarcely metallic, the whole pleuron light coffee brown in color, slightly translucent, paler in color on the metapleuron, hypopleuron and posterior pteropleuron, all of which areas are smooth. The anterior pteropleuron and upper sternopleuron are granulate and the lower posterior part of the mesopleuron has a somewhat oblique, conspicuous, concave depression, which is vertically striate but non-granulate. Above this depression the mesopleuron is sparsely granulate with fine, reddish brown pile, black in some lights. Pile of anterior pteropleuron long and reddish or yellowish brown. Pile of mesonotum rather abundant, suberect and brownish yellow. Pile of scutellum similar, abundant and erect. At the apex the scutellum bears 2 blunt, blackish spines with a shallow depression between. Squama white with white fringe, becoming yellow on the outer portion.



Figs. 8-10. — 8. *Microdon nigrocyanea*, new species. — 9. *Eumerus tessellatus*, new species. — 10. *E. keizeri*, new species.

Legs: Coxae and trochanters dark reddish brown, the hind pair lighter. All of the femora with the base narrowly and quite diffusely reddish brown, this color being almost confined to the portion demarcated by an oblique, scar-like fissure. Remaining part of femora light reddish brown, the pile fine, for the most part dark brown, becoming yellowish only at the apices; the pile on the anterior surface of the basally arcuate, anterior femur appressed and quite short. Tibiae on the basal half light brownish yellow with fine, subappressed, yellow pile and the color obliquely delimited by a narrow, diffuse, medial band of dark reddish brown. Outer portion of tibiae and the basal segment of the tarsi reddish brown, paler than the median annulus. Remaining segments of tarsi at most barely darker than the basal segment, somewhat flattened, and with dark reddish, appressed, bristly pile. Claws reddish at base, pulvilli short and reddish brown. Empodium blunt and wide.

Wings: The wings are broad, greyish hyaline and everywhere villose with all of the veins diffusely margined with light brown, leaving the centers of the cell pale. Whole middle areas of the submarginal and of the marginal cells brown with clear sinuses only at the bases and apices of these cells. Subapical crossvein joining the third vein at a right angle. Lower corner of first posterior cell with a spur. Third vein with the usual oblique appendix into the first posterior cell. Alula large, without brown tinge.

Abdomen: The abdomen is quite broad, much wider than the thorax, three times as wide as the base of the scutellum and at its greatest width, which is at the end of the second segment, it is fully as wide as the abdomen is long. The abdomen tends to be bluntly pointed or obtusely heart-shaped, only moderately convex, everywhere brownish black with a slight reddish cast on the first 3 segments, which changes to dark steel blue in the middle of these segments and the whole remainder of the abdomen dark steel blue. Pile dense, flat appressed and light brownish yellow on the posterior margins of the third segment, on the posterior half of the fourth, and all of the fifth segment, except narrowly across the base, and except for a basal, dagger-like extension of black pile decreasing in height posteriorly, situated on the thin, lateral margin of the second segment and confined to the basal half. Basal pile of the third, fourth and fifth segments black. Second sternite pale reddish brown, the others darker, the last one blue-black, the pile yellowish and appressed. Middle of the first sternite black, bare and convex. Halteres quite pale yellow.

Natal: Holotype, female, Tugela Valley, Royal Natal National Park, 3.4.1951, loc. no. 258 (BRINCK and RUDEBECK).

## Subfamily EUMERINAE

### Genus *Eumerus* MEIGEN

The males of the species of *Eumerus* MEIGEN in this collection and related species may be distinguished as follows:

1. Hind femur much thickened, with a distinct, apical, lateral downwardly turned, ridge-like projection, which may be quite low in a moderately thickened femur and in a massively thickened femur forms a strong, shield-like plate overlapping the outer basal edge of the tibia. Spines along ridge or shield are stout and tooth-like . . . . . 2

- Hind femur relatively slender, scarcely or but little thickened, with a few small spines at the subapex ventrally, without ridge-like projection, plate or keel and without stout teeth or tooth-like spines . . . 3
- 2. Hind femur much thickened but no ridge or shield-like plate developed and overlapping the hind tibia . . . . . 11
- Hind femur massively thickened and with a well developed, shield-like, stout, spine-bearing plate overlapping the tibia . . . . . 16
- 3. Male eyes distinctly holoptic for a short or long distance . . . . . 4
- Male eyes not actually touching; either dichoptic, linearly separated by half the width of an ocellus, or closely approaching one another for a short distance (eyes approximate) . . . . . 9
- 4. Wings distinctly brownish apically and quite darker than the basal cells . . . . . 5
- Wings hyaline, faintly grey or with more or less uniform, pale brown tinge . . . . . 7
- 5. Scutellar margin with 10 or 11 quite long teeth; yellow spots of second abdominal segment quite large but triangular, not reaching the posterior margin; female with wing wholly greyish hyaline (Madagascar) . . . . . *pictulipennis* HULL
- Second segment of abdomen with only grey or whitish pollinose lunules . . . . . 6
- 6. Scutellar margin with 14 moderately developed teeth. Lateral margins of abdomen and scutellum strongly brassy to violaceous in reflection . . . . . *fumipennis*, new species
- Scutellar margin with 8 small teeth. Sides of abdomen and scutellum shining black; spots of second abdominal segment wider and with slight underlying reddish ground color. Wings darker, pterostigma not darker than the wing color (Lourenço Marques) . . . . . *varipennis* CURRAN
- 7. Hind tarsus dilated, flattened, densely appressed, silvery white pilose. A striking species. Second abdominal segment with yellowish brown, subtranslucent spot (South Europe) . . . . . *elegans* LOEW
- Hind tarsus not unusual. Second abdominal segment with at least the anterior ends of the oblique spots yellowish and subtranslucent; ventral posterior border of last sternite with a golden fringe (Cape Province) . . . . . 8
- 8. Eyes covered with dense, long, black pile. Anterior vertical triangle thinly but distinctly grey-white pollinose. Sides of front densely grey-white pollinose, leaving a black, bare triangle in front of antennae. Scutellum at most faintly brassy . . . . . *pumilio*, new species
- Eyes covered with shorter, fine yellow pile. Anterior vertical triangle shining, without pollen. Front wholly covered with dense, pale yellow, appressed pubescence. Scutellum quite brassy . . . . . *brincki*, new species
- 9. An elegant species, the head, mesonotum and corners of the second abdominal segment shining blue; whole of third and second abdominal segments, middle and posterior tibiae and posterior tarsus densely appressed, silvery pilose (Natal, Transvaal and Cameroons) . . . . . *paulae* HERVÉ-BAZIN
- Without such silvery pile . . . . . 10
- 10. Wings with the crossvein clouded with brown; second abdominal segment with 2 broad, yellow spots (Nigeria; Cape Province: Mossel Bay) . . . . . *maculipennis* BEZZI
- Wings and pterostigma clear; no yellow spots on abdomen (Mashonaland) . . . . . *serratus* BEZZI
- 11. Abdomen largely light red upon the second and third segments . . . . . 12
- Abdomen black upon the second and third segments . . . . . 14
- 12. Mesonotum with bright blue vittae; second and third segments widely black down the middle; third and remaining segments densely appressed, silvery pilose; eyes separated by the thickness of the arista (Europe) . . . . . *ovatus* LOEW
- Without such blue vittae and appressed, silvery pile . . . . . 13
- 13. Eyes separated by the width of the anterior ocellus, or slightly more. Mesonotal, grey pollinose vittae distinct; occipital red spot in front of humerus is large (Europe) . . . . . *tarsalis* SCHUMMEL
- Eyes separated by less than the width of anterior ocellus. Mesonotal vittae quite faint. Red spot on occiput linear (Europe) . . . . . *sabulonum* FABRICIUS
- 14. End of last sternite with 2 long, down-turned, rounded, yellow, pilose lobes; base of hind tibia pale yellow; pile of hind femur short, appressed, yellow (Europe) . . . . . *pusillus* LOEW
- Last sternite simple but hypopygium quite large and prominent and rather elongate, even though mostly

- concealed from above; hind tibia blackish throughout; femoral pile long and white or yellowish white . . . . . 15
15. Pile of front black; pubescence of face and occiput white. Mesonotal vittae without sutural expansion into a pollinose spot. Last sternite with apical margin simple . . . . . *astropilops*, new species
- Pile of front and face yellow, ground color of front brassy, densely covered with pale yellow micropubescence. Frontal pile directed forward. Mesonotal pollen expanded at the suture into large pollinose spots. Last sternite incised at apex (Mt. Kenya) . . . . . *nigrocoeruleus*, new species
16. At least the upper angle and usually both angles of the subapical crossvein broadly rounded and without any trace of spur; males usually widely dichoptic; robust flies; eyes pilose; edges of scutellum pale . . . . . 17
- At least the upper angle of the subapical crossvein angularly pointed and often acute; always with a trace of spur vein, usually with a long spur . . . . . 21
17. Loop of third vein rather deep; last portion of fourth vein straight, joining the third vein at a right angle. Ventrolateral distal plate of hind femur with teeth. Lower occiput as thick as upper occiput and both extensive . . . . . *Megatrigen* spp.
- Loop of third vein more shallow; last section of fourth vein recurrent, joining the third vein at an angle. Femoral plate spinous and tuberculate but not toothed. Lower occiput much less extensive than post-vertical occiput . . . . . 18
18. Male front densely covered with long, matted, forwardly directed, pale micropubescence; the ground color concealed . . . . . 19
- Black color of front not concealed by long, white pile; medial mesonotal vitta quite linear; wings uniformly pale brown . . . . . 20
19. Eyes dichoptic; frontal mat of pubescence is yellowish white. Mesonotum with 3 wide, greyish white, pollinose vittae; outer margins also pollinose; scutellar discal pile white; wings hyaline (South Africa) . . . . . *nivalis*, new species
- Eyes holoptic; frontal mat of pubescence silvery white . . . . . *tessellatus*, new species
20. Whole of fourth segment of abdomen and posterior half of second and third segments light brownish red; rim of scutellum fluted and light brownish yellow (Cape Town) *flavimarginatus*, new species
- Second to fourth segments black with greyish white pollinose fascia, widely interrupted on the second, connected upon the other abdominal segments; with especially wide fascia on the fourth segment; scutellum not fluted, brown in color, the disc black (British East Africa) . . . . . *connexus*, new species
21. Posterior femur produced subbasally into a low tubercle, lobe or long, blunt spur . . . . . 22
- Posterior femur simple upon the basal half . . . . . 23
22. Posterior femur with a prominent, yet low, rounded tubercle; face light red, yet obscured by dense, white pubescence (Cape Province) . . . . . *nodosus*, new species
- Posterior femur with a long, rounded, basal spur; face black, with white pubescence and minute, white pile (Durban) . . . . . *armipes* BEZZI
23. The eyes are dichoptic, widely or narrowly . . . . . 24
- The eyes distinctly touch (holoptic) even though for only a short distance . . . . . 30
24. Abdomen with large, silvery spots on either side (Cape Province) . . . . . *argenteus* WALKER
- Abdomen without conspicuous, lateral, silvery spots; segments with or without lunules . . . . . 25
25. Front, vertex, mesonotum and scutellum wholly golden red pilose; scutellum shining bluish granulate (Cape Province) . . . . . *ochreateus*, new species
- The pile is pale yellow, whitish, or intermixed with black . . . . . 26
26. Scutellum black or brassy, at least upon the disc . . . . . 27
- Scutellum reddish (Kawawa, Sankisia) . . . . . *rubiginosus* HERVÉ-BAZIN
27. The paired abdominal fasciae widely separated from each other (Cape Province) . . . . . *argyropsis* BEZZI
- The paired, abdominal, pollinose fasciae nearly touching or only narrowly separated . . . . . 28
28. The pollinose fasciae of the abdomen are yellow; pterostigma nearly hyaline (Katwamba) . . . . . *jacobi* HERVÉ-BAZIN
- The pollinose fasciae are white or greyish white . . . . . 29

29. The eyes are very sparsely short pilose and may appear almost bare. Sides of second segment reddish in groundcolor (Meru, Rhodesia) . . . . . *axinecerus* SPEISER
- Eyes densely long brownish white pilose. Front densely matted silvery greyish white micropubescent, the pile white. Second segment of abdomen wholly black with bluish reflection, its pollinose fasciae thin. Apex of fourth segment yellowish brown (St. Helena) . . . . . *lugens* WIEDEMANN
30. Eyes pilose, even though very thinly and aparsely so . . . . . 31
- Eyes quite bare . . . . . 35
31. Margin of scutellum very densely greyish or pale brownish white pubescent, the ground color black (Cape Province, Transvaal, Congo, Rhodesia) . . . . . *obliquus* FABRICIUS
- Margin with only loose hairs, the ground color not concealed . . . . . 32
32. Face light red, dusted with white or yellowish pollen; third antennal segment largely brownish red (Cape Province) . . . . . *griseus*, new species
- Face not light red in ground color . . . . . 33
33. Large species with elongate, slender, bluish black abdomen, with bluish white or bluish grey separated fasciae. Scutellum and part of mesonotum coppery to violaceous. Crossveins of wing clouded (Cape Province) . . . . . *speiseri*, new species
- Smaller species; wings not clouded . . . . . 34
34. Scutellum and mesonotal area before it violaceous; fifth sternite deeply cleft but with 2 prominent, densely pubescent, knobbed and produced lobes side by side between and along the medial borders (Europe) . . . . . *australis* MEIGEN
- Last sternite deeply cleft with rounded, apical notch but no pubescent lobes (Europe, United States) . . . . . *strigatus* FALLÉN
35. Posterior margins of scutellum (the crimped and flattened rim) pale yellowish or reddish, distinctly contrasting with the dark disc of the scutellum (Fernando Po, French Congo, Congo, Nyasaland, S. Nigeria) . . . . . *feae* BEZZI
- Rim of scutellum black, brassy or dark brown, sometimes greyish white pubescent . . . . . 36
36. Anterior four legs wholly light red; second abdominal segment with a pair of yellow fasciae . . . . . *axinecerus* SPEISER
- Anterior four femora wholly black; second abdominal segment black; hind femur very large; third antennal segment subtriangular, the second silvery on medial surface, produced forward and overlapping third segment (Natal, Rhodesia) . . . . . *triangularis* HERVÉ-BAZIN

#### *Eumerus argyropsis* BEZZI

BEZZI, 1908, Jena Denkschr. med. Ges., XIII, p. 185.

Cape Prov.: One male, Hout Bay, Skoorsteenkop, Cape Peninsula, 22.1.1951, loc. no. 157 (BRINCK and RUDEBECK).

#### *Eumerus axinecerus* SPEISER

SPEISER, 1910, Expedition Kilimandjaro-Meru, X, p. 129.

Cape Prov.: One female, Hout Bay, Skoorsteenkop, Cape Peninsula, 22.1.1951, loc. no. 157 (BRINCK and RUDEBECK).

#### *Eumerus pumilio* new species

A minute species with comparatively slender hind femur and distinct pollinose fasciae on the abdomen; the first 2 pairs of fasciae are yellow in ground color. Related to *Eumerus serratus* BEZZI. The eyes are holoptic. Length 5.5 mm.

## Male.

Head: The upper third of the occiput is metallic silvery to brassy in color as well as the vertex, which in front of the anterior ocellus becomes bright brassy in reflection. The ocellar triangle is long isosceles. The eyes are holoptic for a distance equal to that between the outer edges of the posterior ocelli; these ocelli are very little larger than the anterior ocellus and are situated a short distance from the eye margin. The front is small, black, covered with minute, silvery pubescence and a few yellowish white hairs along the sides. The face is silvery pubescent and yellowish white pilose. The epistoma is scarcely produced, the face almost straight in profile. Pile of the upper occiput yellow, of the vertex blackish with a few yellow hairs in front. The eyes are sparsely yellowish to reddish brown pilose, the anterior facets enlarged. The first segment of the antenna is very short, reddish brown, the second yellowish below, brownish above, the third light orange, the dorsal border narrowly brownish on the basal half, the arista entirely black.

Thorax: The mesonotum is shining, brassy black and faintly coppery on the notopleuron with a very short, small, T-shaped spot of greyish white pollen on either side of the anterior margin. The pleuron is black with pale yellow pile; the pile of the mesonotum is suberect, moderately short and entirely yellow in front of the suture, in front of the scutellum and apparently yellow across the middle of the mesonotum. There is a row of minute, black bristles above the base of the wing, apparently set in minute black tubercles. The scutellum is shining black with a strong, brassy reflection: the rim is deeply creased and fluted with rather long tubercles on the edge. The pile is erect, light brownish yellow, abundant and rather long; the squama is yellowish white with brownish yellow fringe; halteres brownish yellow.

Legs: The femora are sepia brown with the apices light brownish orange; their pile is yellowish; the hind femur is quite slender and brassy on the lateral surface without any keel or plate but laterally with 5 sharp, black spines at the subapex and with 5 other spines medially. The anterior and middle tibiae are light yellowish brown with golden, more or less appressed pile; the hind tibia is light brown but dark brown beyond the middle, except at the apex, and this tibia is considerably thickened and has a medial fringe of 6 or 7 golden hairs at the apex with all of their remaining pile yellowish. The anterior 4 tarsi are brownish yellow, the last segments darker, the hind tarsus brown.

Wings: The wings are hyaline, the stigma light brown; both outer angles of the subapical crossvein are spurred; the third vein has very little curvature; the postical crossvein is convex, the lower angle broadly rounded without spur.

Abdomen: The abdomen is black with 3 pairs of fasciate spots which are quite oblique; the one on the second segment is considerably larger than those on the third segment and both of these pairs have the medial ends rounded but considerably wider. The fasciae of the fourth segment are restricted to a rather narrow, grey pollinose, straight but oblique band. All 3 pairs of fasciae are very widely separated in the middle. The ground color of the fasciae on the second segment is quite yellow, the pollen inconspicuous, the fasciae sublunate. On the third segment the ground color is less distinctly yellowish but the pollen is more distinct. The sides of the second and fourth segments are strongly brassy, and on the third

segment somewhat cupreous. The pile of the abdomen is pale yellow along the lateral margins, widely and flat appressed and blackish behind the pollinose fasciae where the pile also appears reddish depa in some lights. The fourth sternite has a conspicuous, down-turned fringe of long, golden hairs, denser and more conspicuous in the middle.

The hypopygium is moderately large and somewhat brownish, entirely concealed by the fourth tergite and appears to consist of 2 parts. The brownish, more conspicuous portion is convex and bulbous and posterior to it there is concealed a slightly smaller, convex, brassy, bulbous portion; the ventral, brown portion which begins immediately behind the golden fringe is cleft down the middle and short, golden pubescent.

Cape Prov.: Holotype male, allotype female, paratypes 14 males + 4 females, Hout Bay, Skoorsteenkop, Cape Peninsula, 2.2.1951, loc. no. 166. — 14 males, same locality, 22.1.1951, loc. no. 157. — One male, 1 female, same locality, 14.2.1951, loc. no. 183. — Three males, 3 females, same locality, 26.12.1950, loc. no. 95. — Paratype, male, Ceres, April 1923, R. E. TURNER collector, in British Museum (Natural History). — Natal: One female, Tugela Valley, Royal National Park, 5.4.1951, loc. no. 265 (BRINCK and RUDEBECK). — The specimens collected by the Swedish expedition are in the Zoological Institute of the University of Lund, except some paratypes in the author's collection.

*Eumerus obscurus* new species

A large, black species related to *Eumerus axinecerus* SPEISER. The basal  $\frac{2}{3}$  of the anterior femur is blackish brown, diffusely merging into the reddish apex. Length 9.5 mm.

## Female.

Head: The upper third of the occiput is metallic black with a microscopically linear extension of the white pubescence along the eye margin. The vertex is shining black with long, black pile; the front is shining black, the pile white and subappressed in front of the antenna. The occipital pile is white with a few short, black hairs near the top. The face is shining black, very faintly brassy on the sides and sparsely whitish pubescent with thick, white pile. The first 2 segments of the antenna are yellowish brown, the third reddish on the middle of the basal area and dark reddish brown widely over the dorsal and apical portion; the extreme dorsal margin is black. Arista entirely black with yellowish grey pollen. The medial surface of the second segment has a sparse patch of pale pollen on the upper half which, however, is not sharply delimited. The eyes are bare. The sides of the front are widely margined with whitish pollen, the ocellar triangle is short isosceles.

Thorax: The mesonotum is shining blue black with a pair of faint, obscure, whitish pollinose, narrow vittae on the middle of the thorax; between them there is a mere linear trace of a medial vitta, which at first sight appears to be wanting. The outer vitta is expanded along the sloping anterior margin into a rather large whitish spot of pollen, touching the humerus. The humerus is very sparsely greyish pollinose in front, black in color, the apical corner brown. The postalar callosity is black, but light brown anteriorly and posteriorly; pleuron black, faintly brassy, its pile entirely whitish. The pile of the mesonotum is whitish along the anterior margin, along the transverse suture and the lower border of the notopleuron, but widely black between. There is a large patch of whitish pile diagonally in front of the postalar callosity and some white pile just in front of the scutellum but the greater part of the pile behind the suture is black, short and subappressed. The black row of

setae above the base of the wing is long and sharply tuberculate. The scutellum is shining black with a prominent, impressed furrow subapically in front of the rim; the rim is wide, fluted, the edge with 8 rather well developed teeth on the side, several shorter tubercles in the middle. Pile of the scutellum short and erect and mostly black with some whitish pile on the posterior half. The hairs borne by the long tubercles are very short. The squama is yellowish white, the fringe and border yellow, the halteres orange.

**Legs:** The anterior 4 coxae reddish brown, their femora dark sepia brown on the basal three-fifths where they begin to diffusely merge into the broadly light yellowish brown apices. These 4 tibiae are brown in the middle, more yellowish brown basally and apically; their tarsi are brown, their tibial pile appressed and entirely pale yellow. The hind femur is black with brassy reflections, especially on the subapical plate; this femur is considerably thickened with a very strong plate laterally at the subapex which bears 10 black, spine-like teeth. The extreme apex of this femur is light brown; the femoral pile is appressed, short, pale yellow with a few black hairs apically above. There is no medial plate on the femur but a row of 5 black spines. The hind tibia is much thickened; the knife edge on the basal ventral half is light brown and concolorous with the remainder of the base; it is not serrate and bears fine, short, widely spaced, yellow hairs. This tibia is dark brown in the middle, yellowish brown at the base and apex with 4 long, golden hairs medially at the apex situated in tufts of 2; the tibial pile is short, appressed and yellow. The hind tarsus is dark, reddish brown with similarly colored, appressed pile above and reddish golden pile below.

**Wings:** The wings are nearly hyaline, rendered slightly more brownish by the thick, reddish brown villi. Pterostigma yellowish brown; curve of third vein shallow, the lower outer angle of the subapical crossvein without spur or with only a trace. The inner angle has a long, inwardly directed spur on both wings; the spurious vein ends at the crossvein.

**Case Prov.:** Holotype, female, Hout Bay, Skoorsteenkop, Cape Peninsula, 22.1.1951, loc. no. 157. — 3 paratype females, same locality, 22.1.1951, loc. no. 157, and 2.2.1951, loc. no. 166, and 18.2.1951, loc. no. 184 (BRINCK and RUDEBECK). Above specimens in Zoological Institute of the University of Lund, paratypes in the author's collection. — Additional paratype, female, Lion's Head, Cape Town, August 1920, R. E. TURNER collector, in British Museum (Natural History).

### *Eumerus griseus* new species

The face is light red, the scutellum quite brassy black, the abdomen black with prominent, yellowish white, pollinose fasciae. Length 9.5 mm.

#### Male.

**Head:** The upper part of the occiput, the vertex and ocellar triangle are very highly polished metallic black with a slight silvery reflection. There is a creaselike depression across and between each upper eye corner, leaving the postociput a little rounded and bulging. The lower occiput is yellowish white pubescent and the bare, upper metallic area has a linear, short patch of pubescence along the middle of the bare area on the eye margin. The vertical triangle is comparatively narrow, the posterior ocelli almost touching the eye margin, the frontal triangle in front of anterior ocellus is densely pale brownish yellow pollinose; the light reddish brown front and face are obscured by similarly colored, dense

pollen. The cheeks have a black triangle in front, its apex touching the eye margin. The pile of the front and face is long and yellowish white, the pile of the ocellar triangle black with a few yellowish hairs anteriorly and again on the occiput. There is a linear, short stripe of yellowish pubescence along the medial margin of the eye behind the ocelli ending at the angle of the eye. The ocellar triangle is isosceles and the eyes holoptic for the length of the front and densely light brown pilose. The anterior margin of the epistoma extends gently forward very slightly. The first 2 segments of the antenna are dark brown, the third light reddish brown and quite narrowly blackish along the upper border; the arista is missing.

**Thorax:** The mesonotum is brassy black with a pair of widely separated, quite sparse, brownish yellow, pollinose vittae, which are quite inconspicuous due to the thinness of the pollen. There is an even more inconspicuous stripe of such pollen along the sides of the mesopleuron; the ground color beneath the slender, mesonotal vittae is purplish to bluish or in places greenish in reflection. Between these stripes there is another pair of not pollinose stripes which are scarcely darker than the brassy ground color. The sides of the mesonotum, especially the notopleuron, are almost coppery in color. Pleuron metallic with a strong brassy to coppery reflection on the posterior part of the mesopleuron, the upper sternopleuron and the pteropleuron. The pleural pile is yellowish white with a few reddish brown hairs on the upper part of the pteropleuron. The mesonotal pile is pale yellow in front and behind, very dense on the postalar callosity but with some dark brown to blackish pile across the middle of the mesonotum and with a dense, linear patch of short, black bristles above the base of the wing. The humerus is light reddish brown and brownish pollinose outwardly, the scutellum is metallic black with a pronounced brassy reflection; the flattened margin is granulate but scarcely fluted, the edge microtuberculate. The pile of the scutellum is erect, quite long and yellowish white.

**Legs:** The femora are deeply shining brassy in color, especially on the dorsal half; their apices are reddish brown. The hind femur is considerably thickened with a strong, ventral plate at the subapex; laterally this plate bears quite stout, black, tooth-like spines. There are 3 or 4 heavy spines on the medial subapex but there is no plate. The pile of the hind femur is long and yellowish white, subappressed laterally with some dark brown pile both dorsally and laterally near the apex. The anterior and middle tibia are entirely light brownish red; the hind tibia is similarly colored and rather thickened but obscurely dark brown in the middle. The pile of the anterior 4 tibiae is wholly whitish; the pile of the hind tibia is yellowish white laterally at the apex and base, almost wholly along the dorsal margin, but with extensive reddish brown pile laterally in the middle and medially on the posterior half. The first segment of the middle tarsus is red, the remainder of the middle tarsus, the anterior tarsus and the last 2 segments of the hind tarsus blackish. The first 3 segments of the hind tarsus are very dark red, their dorsal pile appressed and black, their ventral and lateral pile reddish golden.

**Wings:** The wings are pale greyish hyaline; they have a slightly brownish tinge due to the thick, brownish red villi; both angles of the subapical crossvein have spurs; the third vein is very shallowly curved, the pterostigma dark brown.

**Abdomen:** The abdomen is black, moderately shining, the oblique, declivitous postmargin of the second segment perfectly smooth and shining and not punctate. The depressions of the second and third segments are quite shallow and entirely absent on the fourth segment. The surfaces of these segments are microgranulate rather than punctate. The first segment is entirely shining black, the second black with a wide, narrowly separated pair of slightly oblique, greyish white, pollinose fasciae; the pollen is evanescent along the lateral or posterior margin. The side margins of the second segment are highly metallic, bluish to whitish in reflections. The third segment is black, similar to the second with even more distinct, wide, nearly transverse, pale yellowish, pollinose fasciae, which nearly meet in the midline and which reach practically to the lateral margin in the middle of the segment. The lateral ends of these fasciae are a little wider than the medial ends. The lateral margins of the segment are also metallic. The fourth segment has a rather prominent, pale brownish yellow, pollinose, slightly oblique, rather wide, fasciate spot on either side of the middle of the segment nearly reaching the lateral margin; the lateral ends are rounded, the inner ends tapering, narrowly attenuate and the pollen evanescent in the middle of the segment. The pile of the first and second segments is light yellow, erect basally, suberect posteriorly and there is suberect, black pile widely over the posterior part of the middle of the second segment. Third segment with yellow pile widely over the lateral margin, except the basal and posterior corners, and with yellow pile on the pollinose fasciae but with dense, black, subappressed pile on the remainder of segment as well as all of the area behind the pollinose fasciae. The fourth segment is everywhere covered with dense, long, subappressed, black pile, except for the more distinct, lateral portions of the pollinose fascia, and except for the lateral area immediately in front of this fascia, where the pile is long and yellow. Apical and marginal pile of the fourth segment is especially long. The last sternite is brassy in color with a median crease or furrow but apparently without cleft; it has long, yellow pile but apparently without special types of pile or ornaments.

**Female.**

The female appears to be rather similar to the male; the spots of pollen at the upper eye angle are hemispherical, the pollinose margins of the front are rather wide, the third segment of the antenna is widely blackish dorsally and apically, the anterior tarsus and middle tarsus appear to be entirely brownish red. On the mesonotum the widely separated stripes are densely pollinose as well as the lateral marginal stripes. The declivitous base of the scutellum is also greyish white pollinose. On the abdomen the fasciae appear to be rather similar, except that on the fourth segment the fascia is scarcely attenuate in the middle and its underlying ground color is reddish as well as also reddish on the fasciae of the third segment. All of the black pile of the abdomen and the yellow pile as well is considerably shorter and on the third and fourth segments and it is much more flat appressed. The sides of the first segment are densely, greyish white pollinose, such pollen being rather thin and scarcely evident in the male.

**Cape Prov.:** Holotype, male, Ceres, November 1920 (R. E. TURNER). — Allotype, female, Hout Bay, Skoorsteenkop, Cape Peninsula, 26.12.1950, loc. no. 95. — 2 paratype females, same locality, 26.12.1950, loc. no. 95, and 22.1.1951, loc. no. 157. — 1 paratype female, Mossel Bay, December 1921 (R. E. TURNER).

The allotype and 2 paratype females from Hout Bay were collected by BRINCK and RUDEBECK and are in the Zoological Institute of the University of Lund, except 1 paratype in author's collection. The holotype and paratype female from Mossel Bay are in British Museum (Natural History).

***Eumerus astropilops* new species**

(Fig. 16)

A small species with slender hind femur, holoptic eyes, protuberant hypopygium and exceptionally tumid dorsal occiput. Pile of vertex and occiput unusually long. Length 7 mm.

**Male.**

**Head:** The head is shining black, more dull on the face, which is very faintly bluish green, more polished on the upper vertex and occiput. Front of vertical triangle slightly brassy. The eyes touch for about 8 facets. The front is unusually small, the vertical triangle large, the ocelli set in a long isosceles triangle. Face virtually without pollen, but in an extreme oblique light there is a faint trace of whitish dust. Pile on the face long, abundant and white. The face is unusually short in profile. Antenna black throughout. Only the base of the arista narrowly yellowish and thickened. The third segment is obliquely subtruncate at the apex.

**Thorax:** The thorax is shining black and from the posterior view the mesonotum has a pair of quite narrow but distinct, greyish white, sharply delimited vittae, which become evanescent in the middle of the mesonotum. Scutellum and pleuron of the same shining metallic black color. Pile of mesonotum erect, fine, only moderately long and pale yellow. Above the wing there is a row of 8 black, sharp bristles. Crimped and flattened area of the scutellum is short, the margin with 3 rather large tuberculate nodules outwardly; on either side of the midline 3 smaller tubercles making 6 pairs. Marginal and discal pile long, fine and erect, and of mixed black and white hairs. Base of scutellum with a band of yellowish white hairs. Squama with similar fringe. Knob of halteres yellow.

**Legs:** The anterior 4 femora very dark brown, nearly black and with whitish pile. Only their extreme apices brownish. Hind femur more distinctly black and shining with similarly colored pile; the hind femur is relatively slender and on the ventrolateral margin near the apex it bears 8 stout, oblique, small, black spines; the inner margin bears 6 spines. All the tibiae black with only the extreme base and apex reddish brown. All tibial pile yellowish white. All tarsi light reddish brown, the hind basitarsus a little darker and the pile yellow.

**Wings:** The wings hyaline but rendered slightly greyish by the dense, dark colored villi. The short pterostigma is yellowish brown. Both angles of the subapical cell with spurs. Curve of third vein shallow.

**Abdomen:** The abdomen is relatively short, broad, flattened and shining black in color. The first segment bears a pair of thinly pollinose and therefore obscure greyish white oblique, narrowly separated, narrow bands. Third segment with similar but a little more distinct, almost straight, equally narrow, oblique bands also narrowly separated. Fourth segment similar, the narrow pollinose fascia also oblique, a little more widely separated but almost as distinct as the first 2 pairs. The pollinose fasciae of the second and third segments lie in rather shallow depressions, especially on the third segment. The fourth segment



is more than usually elongate, the pile in the middle basally black, appressed and setate; the terminal pile sparse, longer, yellowish and also more or less appressed. Hypopygium enlarged, bulbous, metallic black with brassy reflections and whitish pile dorsally and black pile below. The sternites are reddish brown, the fourth sternite and genitalia without special modification.

#### Female.

Similar to the male, the antenna a little larger, also quite black. The front and vertex have parallel sides, the former with black pile on the upper half and white and black pile mixed below. Pile of the eyes in both the male and the female sparse but distinct, present both dorsally and ventrally, and with a shining, silvery reflection. Pollinose bands of the abdomen distinct on all 3 segments.

**Natal:** Holotype, male, Royal Natal National Park, 7–11.4.1951, loc. no. 271. — Allotype, female, Tugela Valley, Royal Natal National Park, 5.4.1951, loc. no. 265. — Paratype, female, Tugela Valley, Royal Natal National Park, 3.4.1951, loc. no. 258. — Paratype, female, Royal Natal National Park, 7–11.4.1951, loc. no. 271 (BRINCK and RUDEBECK).

### *Eumerus fumipennis* new species

(Fig. 13)

A small species with slender hind femur. Related to *Eumerus serratus* BEZZI, and distinguished by the uniformly yellowish brown tinge over the wing, the reddish antenna, the bare, holoptic eyes and the violaceous tints on the scutellum. Length 7 mm, including antenna.

#### Male.

**Head:** The head is shining black, the moderately tumid, posteriorly angulate occiput is brassy behind the eye and pollen stops some distance from the top of the head. The ocelli are set forward in a long isosceles triangle and the anterior part of the vertical triangle is coppery in reflection. Front quite small with flat appressed, brassy yellow micropubescence and a few hairs of the same color changing to black near the antenna. Eyes touch for 8 facets, the face has a strong brassy reflection with the lower part of the face comparatively produced. First segment of antenna black and minute, second segment very dark brown, third orange brown with the broadly arched dorsal margin narrowly blackish. Arista wanting. Eyes bare.

**Thorax:** The thorax is metallic black, somewhat brassy to coppery on the notopleuron and above the wing. Also above the wing there is a row of 15 stiff, black hairs, scarcely bristles. Scutellum with moderately long, flattened, fluted, crimped rim and 7 pairs of moderately long tubercles which extend close to the base and with a short medial gap. Pile of the scutellum, including marginal pile, rather short, fine, erect and white. The scutellum on each side laterally has a strong violaceous to coppery reflection. Squama white with yellowish white fringe. Halteres with a yellow knob.

**Legs:** The femora are black, the middle and hind pair with unusually strong, brassy reflections. Hind femur is slender and on the outer ventrolateral distal part it bears 7 sharp, black, nearly erect, small spines. Inner margin with 4 or 5 such spines. Anterior and middle tibiae almost black, both with brassy reflections on the posterior surface, strongly accen-

tuated on the middle tibia. First 3 segments of anterior tarsus dark reddish brown, last 2 segments black; all the middle tarsal segments nearly black. Hind tibia stout beyond the base with mostly reddish appressed pile but fine, quite short, black hairs ventrally before the middle and pale golden hairs on the outer part. All hind tarsal segments black with dark reddish brown pile changing at the apex to pale yellow.

**Wings:** The wings are tinged with pale, yellowish brown diffusely over the middle area and most of the basal cells. Pterostigma brown and rather dark. Both angles of the subapical cell with spurs, third vein with very shallow curve.

**Abdomen:** The abdomen is short, broad, and relatively flattened. Similar in pattern to *Eumerus astropilops*, new species, but with the greyish pollinose fascia slightly less distinct, very slightly wider, at least on the second segment and much more widely separated in the middle. The accompanying depressions are quite shallow. The dorsal aspect of the abdomen is moderately shining black without other color and very finely granulate, but along the sides of the abdomen it changes on all tergites to a brilliant brassy reflection. Hypopygium small, concealed, spheroidal, metallic brassy, preceded by a pair of recessed, brownish black, mammiform lobes as in *Eumerus pumilio*, new species. Pile of the abdomen is appressed, black setate broadly over the middle of all tergites, including the terminal portion of the last tergite but changing to greyish white along the extreme lateral margin. Sternites restricted to a narrow medial portion of abdomen, sepia brown, and on each sternite narrowly lined by greyish white pollen basally and laterally so as to form inverted U-shaped figures.

**Natal:** Holotype, male, Royal Natal National Park, 7–11.4.1951, loc. no. 271 (BRINCK and RUDEBECK).

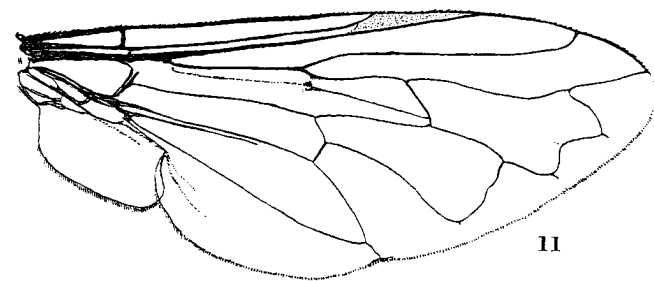
### *Eumerus brincki* new species

(Fig. 12)

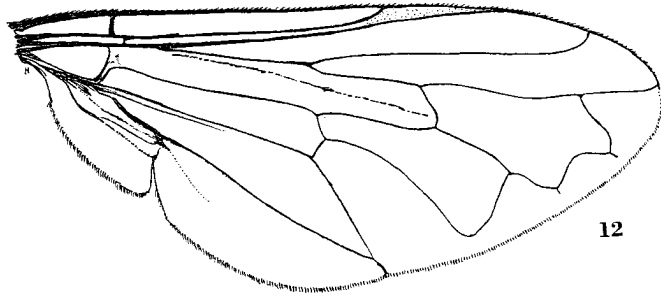
This species belongs to the *Eumerus serratus* BEZZI group and is distinguished by the holoptic eyes and the tuberculate, rather than spinose, margin of the scutellum. In addition it is characterized by the exceptionally long, black pile of the eyes and vertex and the dense, long, pale pile of the face. Length 7 mm, including antenna.

#### Male.

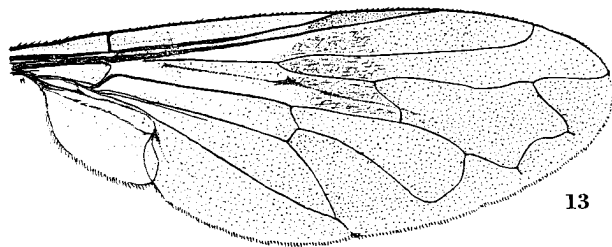
**Head:** The eyes touch distinctly but for only a short distance of some 4 or 5 facets. The upper occiput is prominent posteriorly with a sharp and angular edge and is entirely metallic black with an exceptionally shining reflection. On the anterior vertical triangle in front of the ocelli there is a thin, grey pollen in an oblique light, and a slight brassy reflection. The ocelli are set well forward and lie in a very short isosceles triangle. Front is small, densely greyish white pollinose, except for a small, medial triangle above the antenna. Face is metallic black, and without pollen. Micropubescence is distinctly restricted to a single row along the eye margins but the pile is long, erect, dense and brownish white. Pile of vertex, front and the eyes exceptionally dense, long and blackish. Antenna with all 3 segments brownish red. On the third segment, which is obliquely subtruncate at the apex, the upper third of this segment is faintly dark in color. Arista blackish, scarcely thickened at the base.



11



12



13

Figs. 11-13. — 11. *Eumerus rudebecki*, new species. — 12. *E. brincki*, new species. — 13. *E. fumipennis*, new species.

**Thorax:** The thorax is strongly shining black without pronounced color reflection. In front of the scutellum there is a very faint bluish reflection and certainly from the middle of the scutellum there is an extremely purplish reflection. There is a shallow, transverse depression across the scutellum at some distance from the posterior margin. This marginal portion is convex and the crimped, flattened portion very short, bearing prominent nodules or tubercles, but not spines, of some 6 pairs. Pile of the mesonotum rather long, erect,

fine and mostly brownish white or yellow. Scutellum with still longer, fine, erect hairs, which are sparse and black. The marginal tubercles bear similarly long, fine, black hairs. Squama yellowish white with similar fringe. Knob of halteres light brown.

**Legs:** The hind femur is slender with strong brassy reflection laterally, and on the posterolateral margin distally there are 5 small, sharp, rather widely spaced, black spines; the inner margin has only 3; there is no flange or plate. Anterior and middle femora metallic black. Apices of all the femora light reddish brown. Anterior 4 trochanters reddish dorsally. Anterior 4 tibiae rather light reddish brown with past the middle a rather broad, metallic, black band. Hind tibia stout, especially beyond the base, feebly shining brassy black, the basal third or more dark reddish brown. The pile of the hind tibia is rather long and dense, blackish laterally, or very dark brown, changing to yellow dorsally near the apex. Hind tarsus rather stout on the first segment and all the segments very dark reddish sepia, the first segment darkest, and the dorsal pile dark reddish brown. Anterior tarsus also dark in color with pale pile. Pile of the anterior 4 legs pale yellow to brownish white, with a few interspersed black hairs on the posterior margin of the femora.

**Wings:** The wings are quite hyaline, the dense, minute villi blackish, the short pterostigma brownish yellow, the curve of the third vein quite shallow.

**Abdomen:** The abdomen is relatively short, flattened and broad, strongly metallic along the sides and the reflection over the middle portion extremely faint varying from bluish to purplish. Depressions of lunules on the second and third segments are strong, nearly straight but oblique, a little more arched on the third segment. The underlying ground color of the lunules is very slightly reddish subtranslucent; they are covered on the medial half with greyish white pollen, most distinct on those of the second segment. Sides of fourth segment slightly compressed laterally; the genitalia form a pair of reddish brown mammillate or bullate protuberances preceded by a short, reddish brown, prosternal fringe of hairs. The bullae bear shorter, reddish hairs apically, but the posterior hypopygium is densely covered with fine, black hairs and the posterior half of the fourth tergite also has black hairs.

**Cape Prov.:** Holotype, male, paratype, male, Hout Bay, Skoorsteenkop, 22.1. 1951, loc. no. 157. — One male, Hout Bay, Skoorsteenkop, Cape Peninsula, 2.2. 1951, loc. no. 166 (BRINCK and RUDEBECK). One paratype in the collection of the author.

#### *Eumerus rudebecki* new species

(Fig. 11)

An odd species distinguished by the unusually extensive dorsal occiput, the wide front and vertex, the unusually long isosceles ocellar triangle, the anterior flattened front, the uniformly brownish orange tibiae, tarsi and the suborbicular third antennal segment. Length 8 mm.

Female.

**Head:** The head is shining black with at most a faint brassy reflection on the upper vertex, which is bare with posteriorly angular ridge and bears fine, long, black pile,

and there is a linear extension of white pollen on the eye margin against the lower part of the swollen area of the occiput. Posterior ocelli set nearly opposite the posterior eye corners, the anterior ocellus set quite far forward. Beginning at the anterior ocellus the front is strongly flattened. Frontal and vertical pile quite dense, long, and black. Sides of the front narrowly white pollinose. Face very thinly greyish white pollinose, not concealing the ground color. The upper pile of the face is black or reddish brown, changing to white below and the epistoma is rather protrusive. First 2 segments of antenna dark reddish brown, third quite dark throughout, including the arista, which is basally thickened. Eyes with scattered silvery white pile above and below but longer and denser below.

**Thorax:** The thorax is strongly shining black without strong color reflections. Scutellum is large, somewhat rectangular, rather flattened, distinctly rugose and with irregular, transverse grooves across the middle and an accentuated, preapical groove. Also, the flattened, crimped, posterior margin is unusually long, fluted, bearing widely spaced nodular tubercles of some 8 or 9 pairs, each with a rather long, black hair. Distal pile long, erect, but white along the base. Viewed posteriorly the mesonotum has a pair of widely separated, greyish white pollinose vittae. Anteriorly these vittae expand on the slopes of the thorax but end as attenuate, wedge-like triangles before reaching the suture. Behind the transverse suture these stripes are continued again but become evanescent some distance from the scutellum. The only trace of a medial stripe consists of a spot between the humeri. The humeri are reddish ventrally and also greyish pollinose below. Above the wing there is a row of stiff, black hairs, scarcely bristles; none over the postalar callosity. Squama white with pale brown border and white fringe. Pile of pleuron dense, long and white and the reflection brassy.

**Legs:** The hind femur is only moderately thickened but does not belong to the slender group such as *Eumerus serratus* BEZZI. It has a rather low, poorly developed flange or ridge which bears 6 rather long black spines. All of the trochanters are light brownish orange, all of the tibiae and tarsi may be described as shining orange brown with pale pile. There is a little dark hair on the hind tibia and the pile of its tarsus is also dark reddish brown.

**Wings:** The wings are broad and greyish hyaline due to the very dense and extremely fine blackish villi. Stigma short and brown, both angles of the subapical crossvein with strong spurs.

**Abdomen:** The abdomen is broad and short, more or less flattened over the middle of the first 3 segments, the sides a little curled throughout. The color is black with a strong purplish reflection, including the reflection from the nearly transverse, greyish white pollinose, medially interrupted fascia. The sides of the abdomen become obscurely reddish brown. The pollinose fasciae of the fourth segment are a little more oblique and only those of the second segment lie in a very shallow depression. The abdomen is densely microgranulate with dense, black pile changing to white on the pollinose fascia and along the lateral margins of the segment.

**Cape Prov.:** Holotype, female, Table Mountain, Cape Town, 18.12.1950, loc. no. 84 (BRINCK and RUDEBECK).

*Eumerus speiseri* new species

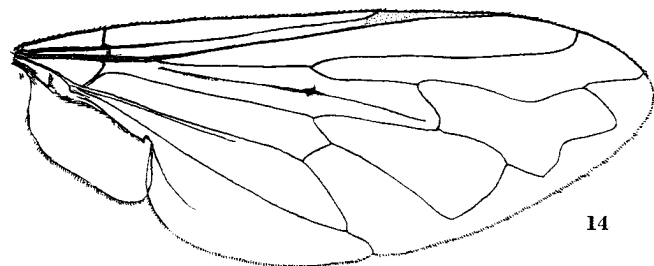
(Fig. 15)

A very large species in which the abdomen is elongate, tapering, subcylindrical on the last segment with massively thickened hind femur and infuscated wings. Length 11.5 mm. Male.

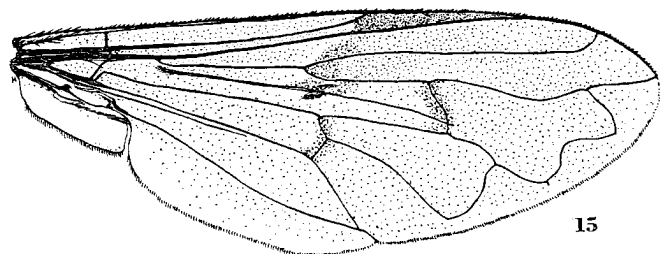
**Head:** The head is black, the upper occiput rather tumid with rectangular posterior margin, shining and without pollen, except for a minute, conspicuous patch of silvery pollen as far laterally from the eye corners as the posterior ocelli lie from this corner. The vertical triangle is quite large and long, and shining black. The ocelli are set well forward in an isosceles triangle. Most of the anterior vertical triangle in front of the ocelli is thinly covered by yellowish micropubesence, which does not obscure the ground color. All pile of front and vertex very dark brown. The eyes touch for at least 10 facets, the front, however, is small, rather wide below and densely greyish white pollinose with erect hairs of the same color along each eye margin. This band of hairs changes to dark brown opposite the first antennal segment. Hairs of the face unusually long, dense, and greyish white. The face is quite short and receding; the epistoma not produced, the surface rather densely covered with coarse, greyish-white micropubesence, especially noticeable in an oblique view from above. Eyes sparsely but widely pilose above and below with shining white pile. The antenna entirely black, including the arista, which shows very little basal thickening. Third segment subtriangular, the second segment unmodified medially.

**Thorax:** The thorax is dully shining black and very finely granulate. There is very little color reflection, except in front of the scutellum, which is strongly violaceous to coppery; the sides of the scutellum and its whole margin are likewise coppery; the pleuron is somewhat brassy in the middle. The mesonotum viewed from behind has a pair of widely separated, slender, not very distinct, linear, greyish white, pollinose stripes which connect at the suture with a rounded spot of the same color and continue more narrowly behind. That part of the stripe lying on the anterior margin of the thorax expands widely below and laterally and along the sloping border there is also a medial stripe of similar pollen. There is a trace of similar pollen behind the notopleuron and rather distinctly on the humerus. The scutellum is broadly rounded, rather convex and abrupt both basally and posteriorly with the flattened, crimped rim short and bearing 9 pairs of short, distinct tubercles. Marginal and discal pile of scutellum rather short and brownish yellow, with a few darker hairs intermixed. Over the mesonotum the pile is abundant, fine, erect and mostly yellow with some dark hairs across the middle. There are stiff hairs only above the base of the wing, and no bristles or spines. Squama white with pale brown border and yellowish fringe. Pleural pile yellowish white, and covered with a thin whitish dust.

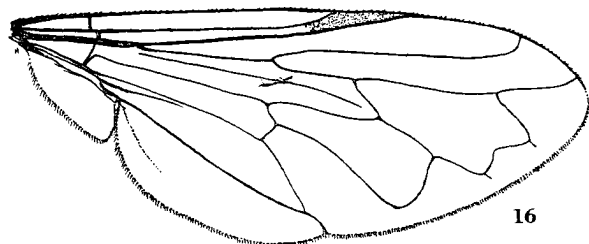
**Legs:** All the femora shining black with comparatively faint, brassy reflection, a little more accentuated on the lower half of the massively thickened hind femur. All of the tibiae reddish brown and rather dark, with the middle portion even darker and the pile appressed, flat and pale brownish yellow. Pile of hind femur likewise quite appressed and of the same color. The hind femur bears on the apical  $\frac{2}{3}$  a large, rugose or granulate, flange-like plate with 9 short but stout, black spines. There appears to be only a single spine on the femoral



14



15



16

Figs. 14-16. — 14. *Eumerus rubidus*, new species. — 15. *E. speiseri*, new species. — 16. *E. astropilops*, new species.

apex. Tarsi reddish brown, pile of hind basitarsus likewise dense, appressed, reddish brown, but conspicuously changing to white at the apex.

**Wings:** The wings are rather strongly tinged with brown largely due to the dense, reddish villi. The anterior crossvein, posterior crossvein, and the vena spuria above the posterior crossvein are all margined with darker brown. Stigma long and rather dark brown. Curve of third vein deep. Angles of the subapical cell at most with a trace of spur.

**Abdomen:** The abdomen is elongate, tapering, flattened on the first and second segments, less so on the third, shining black with a faint bluish reflection dorsally, changing to brassy

or faintly purplish on the sides of the enlarged, elongate, clavate and subcylindrical fourth segment. The abdomen is characterized further by 3 pairs of quite distinct, yet diffuse, bluish white, pollinose, strongly oblique, widely separated fasciae. Those of the second and third segments are slightly crescentic and lie in shallow depressions. Pile along the sides of the first and second segments rather long, coarse, and white; it is continued along the third and fourth segments but shorter. Dorsally the pile over the pollinose fasciae is pale yellow or whitish. Elsewhere it is appressed, dense, fine and black setate. The hypopygium beyond the end of the elongate fourth segment is only moderately large but is convex, and densely black pilose. The sides of the last sternite are emarginate, the middle pinched into an elevated, angular ridge. Genitalia and sternite without special modification.

**Cape Prov.:** Holotype, male, Table Mountain, Cape Town, 15.12.1950, loc. no. 83 (BRINCK and RUDEBECK).

#### *Eumerus keizeri* new species

(Fig. 10)

An odd, shining black species with flattened, granulate front, which lacks the more or less non-granulate, medial area in *Eumerus rudebecki*, new species, and is distinguished by the very dark, brownish black pterostigma, and the shining black face. Length 7 mm.

Female.

**Head:** The head is black and shining, the occiput moderately tumid above, shining purplish in reflection and with an isolated, elongate spot of greyish white pollen halfway between the posterior eye corners and the upper end of that band of whitish pollen, which extends upward from the lower occiput. Also there is another linear spot of such pollen on the eye margin medially reaching to the eye corners. All of the ocelli are set far forward in a short isosceles triangle. The front is flattened, sparsely granulate throughout with the sides narrowly covered with silvery pollen and with chiefly yellowish white hairs mixed with darker hairs. Pile of vertex entirely blackish, that of the upper occiput white. Face shining black, slightly brassy or even purplish laterally and without pollen, except for a very thin patch of whitish dust on the upper lateral part and visible only when seen sharply from above. Face pile quite scanty and whitish. The face is short and slightly concave. Antenna with the first segment light reddish brown, the second segment darker, the third very dark reddish brown, broadly rounded apically but longer below and above. The arista wholly blackish and basally thickened.

**Thorax:** The thorax is rather strongly shining, microscopically granulate with slight purplish reflections in front of and on the scutellum. Viewed from behind there is a pair of widely separated, greyish pollinose vittae, expanded on the anterior margin, attenuate but not broken before reaching the suture, ending in the small, rounded spot at the suture, and then continued again as a small, elongate spot isolated in the middle of the posterior half of the mesonotum. The scutellum is large, somewhat rectangular, though with rounded corners, transversely striate or grooved irregularly with moderately long, crimped, fluted rim containing 8 pairs of small, short tubercles. These tubercles bear a minute hair and the discal hairs are extremely short, pale yellow. The pile of the mesonotum is extraordi-

narily short and fine, erect and entirely pale yellow. There is a row of 8 or 10 short, black bristles above the wing and 5 on the anterior part of the lateral margin of the postalar callosity. This callosity is brown, the humerus is brown below and grey pollinose on this part. Pleuron with faint whitish dust, coppery reflection, and short, appressed, backwardly directed, yellowish white pile. Squama white with brownish yellow border and yellowish white fringe. Knob of halteres brown.

**Legs:** The femora are blackish with the base and apex of the first 4 rather reddish brown. The hind femur is similar in color and at the apex appears reddish only on the medial surface. It is also reddish next to the trochanter. All trochanters reddish brown. The hind femur has a brassy reflection laterally, is only moderately thick but is not relatively slender as in *Eumerus serratus* BEZZI. Near the apex ventrally and laterally it bears 2 large, black spines followed by 4 close-set, small spines. The inner margin bears 6 large, tuberculate, rather long, black spines, the first of which is near the middle of the femur. First 4 tibiae dark reddish brown, more blackish in the middle, their tarsi of the same color. Hind tibia and tarsus very dark, reddish brown with pile of the same color but at the apex of the stout tibia there is a single row of pale yellow hairs laterally.

**Wings:** The wings are greyish hyaline, the dark color chiefly from the dense villi. The stigma unusually dark brown and long. Curve of the third vein shallow. Subapical crossvein with long spurs.

**Abdomen:** The abdomen is unusually broad, more or less flattened on the first 2 segments, less so on the third. It bears 3 pairs of nearly transverse but slightly arcuate and widely separated, conspicuous greyish white pollinose fasciae, which bear a bluish to purplish reflection. The abdomen is moderately shining black with a slight bluish reflection on the first and fourth segments. It is finely granulate with long, yellowish white pile only on the basal half of the lateral margin of the second segment; elsewhere the pile is extremely short, flat appressed and black, except on the pollinose fascia, and except on the basal half of the first and second segments where it is pale. Fifth segment rather strongly bluish in reflection; extremely curled upper lateral margins of fourth and fifth segments are purplish in reflection.

**Cape Prov.:** Holotype, female, Table Mountain, Cape Town, 15.12.1950, loc. no. 83 (BRINCK and RUDEBECK).

#### *Eumerus rubidus* new species

(Fig. 14)

A large, broadly oval species with large, broad wings, bare eyes, wide face and very metallic thorax and scutellum. Femur massively enlarged. Related to *Eumerus axinecerus* SPEISER, but differing in the color of the legs and other particulars. Length 9 mm, including antenna.

Female.

**Head:** The head is large with moderately tumid, dorsal occiput, which is shining, bare and metallic on somewhat less than the upper half. The occiput bears, between the eye corner and the upper end of the normal, ventral pollen, an isolated, elongate spot

of silvery pollen. There is a larger, rather conspicuous triangle of such pollen on the medial eye margin some distance from the posterior eye corners and close to the posterior ocelli. All the ocelli set far forward in a moderately long, isosceles triangle. Vertex slightly elevated, front depressed across the middle but not flattened and with on each side a rather wide, conspicuous, medially arched band of dense, yellowish white pollen. Reflections from the middle front slightly brassy. Front about the antenna narrowly brown. Pile of the vertex widely blackish, changing to yellowish white posteriorly and on the occiput. Pile of the front more scanty, shorter, fine, erect, whitish and more or less confined to the sides. Face rather prominent but with the epistoma not protrusive and the face at most barely concave. It is rather thinly covered with a sparse, silvery grey micropubescence and with rather abundant white pile, which is suberect and continues on to the cheeks.

**Antenna** large, all 3 segments rather uniformly light brownish red. Viewed from in front the third segment medially is more reddish toward the base. The second segment appears to extend rather strongly into the third segment medially and bears on the dorsal half a plate of brilliant silvery white pubescence. Eyes quite bare.

**Thorax:** The thorax is strongly shining metallic black. There is an extremely faint purplish reflection in front of the scutellum and the whole disc of the scutellum is strongly greenish brassy. Viewed from the rear, there is a rather wide, widely separated pair of punctate and greyish white pollinose vittae extending from the anterior margin to the middle of the postsutural half of the mesonotum. At the suture these vittae expand to form a small, rhomboid-shaped swelling. There is also a narrow, medial vitta which is evanescent beyond the suture. Only the upper anterior portion of the humerus has pollen. Pile of mesonotum dense, fine, suberect, yellowish white in-front of the suture, in front of the scutellum and on the scutellar margin. The pile across the middle of the mesonotum is rather broadly blackish with some yellow hairs intermixed and it is widely black over the scutellum, including the base. This scutellar hair is rather long, dense, fine and erect. The scutellum is large, sub-rectangular with broadly rounded corners, rather convex on the disc, and the crimped, flattened margin is fluted and rather long. It bears numerous, short tubercles of at least 10 pairs. Pleuron with long, abundant, suberect, whitish pile.

**Legs:** All of the femora have a strong, brassy reflection and are black with the apex narrowly light brown. Trochanters dark reddish brown. All the tibiae rather light brownish yellow on the basal third, reddish narrowly at the apex and blackish between. Hind tibia unusually robust, laterally compressed with dense, appressed, yellowish white pile. The hind femur is massively thickened with extensive lateral plate bearing 10 stout, blunt, black, large spines. Lateral surface of this plate extends well up on the sides of the femur, exceptionally rugose and coarsely granulate, the pile yellow. The anterior 4 tarsi very dark brown, the hind tarsus even darker. Dorsal pile of the first 4 tarsi whitish, of the hind tarsus reddish sepia.

**Wings:** The wings are large, broad, nearly hyaline, densely covered with minute, reddish brown villi. Angles of the subapical cell without spur vein. Loop of third vein relatively deep. Pterostigma short, almost hyaline, and very faintly yellow with a yellow crossvein.

**Abdomen:** The abdomen is quite broad and oval, relatively flattened on the first 2

segments; first segment with a narrow, complete fascia of metallic, bluish black, which is coarsely granulate, extending across the middle of the segment and ending at the top of the bare, glassy smooth, declivitous portion of the segment. Both front and posterior parts of this segment and the whole of the second segment are light brownish red and somewhat translucent. Third segment of very nearly the same shade of light red, which is continued on the anterior half of the fourth segment to include all of the area in front of and beneath the pollinose fasciae. The remainder of the fourth segment is very dark reddish, almost black and has a slightly bluish green reflection. Fifth segment dark reddish. Abdomen with 3 pairs of unusually broad, widely separated, conspicuous, silvery white pollinose fasciae, which change in extent and area as the abdomen is rotated from a dorsal to a lateral view. The depressions beneath the fasciae on the second and third segments are rather well developed and the pollinose bands of the third and fourth segments are moderately arched. Pile of the abdomen rather coarsely long, black and setate, except on the pollinose fasciae, and except on the basal half and whole sides of the second segment where it is yellowish white. It is also narrowly yellowish along the entire lateral margin of the abdomen. Sternites brown.

**Cape Prov.:** Holotype, female, Hout Bay, Skoorsteenkop, Cape Peninsula, 2.2.1951, loc. no. 166 (BRINCK and RUDEBECK).

*Eumerus tessellatus* new species

(Fig. 9)

A shining black species with very faint reflections on the thorax and abdomen, and distinguished by the shining, silvery front, face, anterior vertex, and dorsomedial plate of the second antennal segment. Related to *Eumerus villeneuvei* HERVÉ-BAZIN, but apparently distinct on the basis of HERVÉ-BAZIN's figure of antenna of his species. It lacks the large spot of white and punctate pollen on the upper occiput and the anterior vertical triangle is silvery white but not yellowish. The vittae of the mesonotum have a different pattern. Length 9 mm.

**Male.**

**Head:** Upper occiput moderately tumid, shining bluish black, without pollen on the upper third but with brassy reflection in the middle of the eye at the point where the ventral silvery pollen ends. The vertical triangle is large, shining, granulate, bluish black, the anterior half of that part lying before the ocelli with dense silvery pollen or more specifically with fine, flat appressed, anteriorly directed, matted, white pubescence. The dense and brilliant silvery reflection of the front is likewise due to the hairs being completely appressed and directed longitudinally forward. The ocelli are set well forward in an isosceles triangle. There is a minute spot of pubescence on the medial eye margin close to each posterior ocellus. Vertical pile black, except for 3 white hairs on each side of the white patch of vertical pollen. Front without erect hairs of any kind but with white, sparse pile beginning opposite the antenna and extending over the face. Face densely covered with silvery white, pollen-like micropubescence, which is micropunctate. Face rather prominent, epistoma slightly protrusive, eyes bare and touching for at least 10 facets.

The antenna black in most lights; viewed from below, the third segment is ventrally reddish brown, so dark as to be almost black. In an oblique light, both inner and outer surfaces of the third segment bear white dust. Second segment with not more than the upper half developed into a non-protrusive, silvery pubescent plate. Arista wholly black, rather strongly thickened on the basal half.

**Thorax:** The thorax is black throughout, moderately shining, densely and rather coarsely granulate with bluish reflections anteriorly above the postalar callosity and on the upper mesopleuron. The mesopleuron changes to brassy color beneath the humerus. The humerus has brassy yellow pollen. On the pteropleuron the reflection is also brassy. The scutellum is exceptionally large, strongly rectangular in shape with rounded corners and with a transverse preapical depression. The crimped, posterior rim is moderately long and fluted, bearing numerous, small tubercles, consisting of at least 15 pairs. The mesonotum from the posterior view shows a pair of moderately widely separated, narrow, bluish or greyish white, pollinose vittae, which are almost broken between the anterior margin and the transverse suture, where the vittae are a little expanded and are continued more linearly and scantily backward and stop some distance from the scutellum. There is an even more indistinct, linear medial vitta. Halfway from the outer vitta to the lateral margin lying on the transverse suture there is a minute, triangular spot of pollen extending obliquely forward. Above the wing there is a row of 12 stout, black, spinous setae and a patch of 7 others on the anterior part of the postalar callosity. Pile of the whole middle and anterior pleuron, the whole mesonotum in front of the suture is dense, coarse, short, suberect and pale brassy. There is yellow pile in front of the scutellum, leaving a conspicuous, broad band of shorter black setae across the middle of the mesonotum. Scutellar pile at the base erect, short and yellow; still shorter pile on the posterior half, where it appears to be also pale yellow. Marginal hairs very short. Squama pale yellow, nearly white with yellow margins and whitish fringe. Halteres yellow.

**Legs:** Femora black with only the extreme apices brown. Hind femur extraordinarily thick and massive, without any strong color reflection, although a little purplish on the ventral half, and slightly greenish dorsally on the basal part. It bears a large, lateral distal plate with 8 unusually stout, short, black, stubby spines. Inner margin with 5 or 6 similar spines. Anterior and middle tibiae and their tarsi very dark brown, a little more blackish distally. Hind tibia stout, somewhat compressed laterally, black, with dense, flat appressed, yellowish, minute hairs. Hind tarsus blackish.

**Wings:** The wings are comparatively small for the stoutness of the species and with a grey tinge due largely to the dark, dense villi. Pterostigma short, brownish yellow, with stigmal crossvein. Curve of third vein moderately deep. Subapical cell without spurs.

**Abdomen:** The abdomen is short, robust, the second segment flattened. The fourth segment elongate, strongly compressed laterally, the hypopygium moderately protuberant and rounded. It bears dense, short, blackish pile. The abdomen is black, rather feebly shining with comparatively faint, bluish white pollinose vittae. Those on the second segment are V-shaped, those on the third segment are wide laterally, more narrow medially, and rounded medially. All 3 pairs are widely separated, the last pair strongly oblique. All 3

pairs have a broken pattern, like that seen in *Sarcophaga*, but depending on the direction of light to be seen. Sides of the abdomen without any strong color reflection, but a little purplish. Fourth sternite crimped into a medial ridge.

**Cape Prov.:** Holotype, male, Hout Bay, Skoorsteenkop, Cape Peninsula, 2.2.1951, loc. no. 166 (BRINCK and RUDEBECK).

#### *Eumerus nigrocoeruleus* new species

A shining black species with 3 pairs of whitish, pollinose fasciae and distinct, bluish reflections on the sides of the mesonotum, the pleuron, the lateral margins of the abdomen and on the pollinose fasciae. Hypopygium quite large and elongate. Seemingly related to *Eumerus pusillus* LOEW. Length 7.5 mm.

##### Male.

**Head:** The eyes are holoptic for a distance a little greater than the distance between the lateral edges of the posterior ocelli and rather densely, shining, yellowish white pilose; the pile is long and perhaps slightly scale-like. The occiput is unusually thickened above and wide, the posterior rim microtuberculate, the entire upper two-fifths of the occiput bare, sparsely granulate and with a slight bluish reflection. There is a transverse depression, very shallow and wide, between the upper posterior corners of the eyes; the ocelli form a very large, isosceles triangle; the posterior ocelli are no larger and each is remote from the eye margin. There is a trace of yellow pubescence linearly along the eye margin in front of the anterior ocellus. The front is very small owing to the long vertex and to the wide occiput; it is black in ground color, brassy and densely covered with pale yellow pubescence on either side and a little, long, yellow pile which is directed forward. The vertex is shining black, slightly greenish in reflection with long, black pile; the occipital pile is pale yellow both above and below. The face is short, much retreating, very slightly produced forward at the epistoma and hence ever so slightly concave. It is mostly with a little thin pubescence along the eye margins and long, pale yellow pile which is distinctly longer beside the eyes. All 3 segments of the antenna are black or very dark brown.

**Thorax:** The mesonotum and scutellum are shining black with a very faint bluish or greenish reflection along the sides. There is a pair of slender, very widely separated, brownish white vittae that reach about half way down the length of the mesonotum between the transverse suture and the scutellum. These vittae arise on the anterior margin, and on the deeply sloping portion of the anterior mesonotum they are expanded into large, pollinose spots. There is a tiny, medial, short but slender spot in the midline on the anterior margin. Pleuron shining black with thin, bluish white pubescence on the upper part of the sternopleuron and the pleural pile long and pale yellow. The humerus is black, but brown at the posterior ends; the postalar callosity is metallic black, brown anteriorly and posteriorly and it has yellow pile. The pile of the mesonotum is erect, fine and yellowish white with a very few black hairs intermixed. Over the base of the wing there is a row of black, bristly hairs with black tubercles; the pile on the disc of the scutellum is long, erect and pale yellow; the margin or rim is granulate; the edge tuberculate with long, yellow hairs. Squama yellowish white, the margin and fringe pale brown or yellowish. Halteres orange.

**Legs:** All the femora are black, only the extreme apices brownish; their tibiae are also black. The femora bear moderately long, dense, yellowish white pile. The hind femur is comparatively slender but little thickened. The lateral plate, if present, is very short. There are perhaps 7 or 8 short, black teeth laterally on the subapex. The hind tibia is moderately thickened. The anterior 4 tarsi and the last 4 hind tarsal segments are light brown, the hind basitarsus is blackish above, appressed, pale yellow pilose dorsally and reddish pilose below.

**Wings:** The wings are greyish hyaline, the pterostigma yellowish brown; both angles of the subapical crossvein have spurs; the curve of the third vein is quite shallow.

**Abdomen:** The abdomen is black with distinctly bluish reflection on the pollinose fasciae and on the lateral margins of the second and third segments. The upper margin of the smooth declivitous apex of the first segment is sharply creased and bears just below a single row of black granules; the lower surface of the margin is fluted. The oblique furrows or depressions are prominent on the second segment but shallow on the third, absent on the fourth. The greyish white pollen is distinct from above; all the fasciae are oblique and narrowly but distinctly separated in the middle; on the second segment the fasciae extend for only a short distance, that is for about half the length of the furrow. On the third segment the fasciae approach more closely to the lateral margins but they end some distance away and then turn very slightly forward. On the fourth segment the fasciae are about the same length as on the third. The pile of the second segment is yellowish white on and before the fasciae but so dark reddish brown behind as to appear blackish. On the third and fourth segments there is similar dark pile in front and behind the fasciae. The lateral pile throughout is yellowish white and the pile on the apical fourth of the fourth segment is largely yellow and longer. The abdominal pile, except on the sides of the second and third segments is appressed. The fourth segment appears to be longer than usual; certainly the hypopygium, while not visible from above, is much longer than usual and bulbous and convex, making the abdomen somewhat club-shaped. The last sternite is cleft in the middle but the sides are closely approximate; it is brassy black with black bristles and has a fringe of long, stiff, black hairs along the apical margin.

**Kenya:** Holotype, male, western slope of Mt. Kenya on the Meru-Nyeri Road, 6000–8500 ft., 16–23.2.1911, S. A. NEAVE collector. — **Cape Prov.:** Paratype, male, Port St. Johns, Pondoland, 6–25.2.1924. R. E. TURNER collector. In the British Museum (Natural History).

#### *Eumerus nivalis* new species

A large, quite robust, *Merodon*-like species. All of the 3 angles of the apical crossvein are rounded and without spurs. The curve of the third vein is deep, the pilose eyes rather widely separated in the male. Length 10.5 mm.

##### Male.

**Head:** The occiput is quite thick above, the yellowish pubescence extends widely up to the upper eye corner but there is an oblique wedge behind the upper occiput ending at about the medial point of the humerus, which is nearly or quite bare of pollen and is shining black with large, dark granulations where the pile arises. The pile of the occiput and of

the vertex is long, erect and yellowish white. The ocelli are very widely spaced, the posterior ocelli much larger than the anterior one; they almost touch the eye margins and form nearly an equilateral triangle. The area between is shining black, very thinly yellowish pollinose and granulate. It has a brassy to greenish reflection, but there is a pronounced coppery stripe running longitudinally from each posterior ocellus to back behind the occiput. The eyes are densely short, scalose pilose and rather widely separated. They are, however, angularly produced toward one another and are separated by not quite the distance between the posterior ocelli. The front is densely covered with long, matted, appressed, yellowish white pile directed forward. Centrally this pile is yellowish brown but may be discolored. The face is brownish black, densely yellowish grey pollinose, the brownish epistoma is rather sharply and conspicuously produced forward for a short distance; the pile of the face is dense, long and yellowish white. The antenna is entirely black, the arista yellow on the thickened basal half.

**Thorax:** The mesonotum is densely microgranulate with conspicuous, pale, brownish yellow, pollinose markings as follows: A wide, medial vitta attenuate posteriorly, which lies midway behind the suture; a large spot on each side of the anterior margin extending back at least half the distance to the transverse suture and medially connected with the inner ends of the suture and continued backward as a wide but acutely pointed wedge as far as the medial suture. All of the humerus, of the notopleuron, and a wide, marginal, lateral border continued to in front of the scutellum are also pollinose. The ground color of the mesonotum is shining black but is quite strongly reddish just inside of the pollinose stripe, which lies above the base of the wing, and again in front of the scutellum. Anteriorly in front of the transverse suture there is a small, violaceous triangle, which represents a continuation of this stripe. Above the base of the wing there is a tuberculate row of spinous setae, the tubercles brown and the setae yellow. The pile of the mesonotum is dense, nearly erect and pale yellow, longer in front of the suture. The pleuron is black, the mesopleuron pale yellow pollinose and densely long, white pilose; all of the pleural pile is white. The postalar callosity is yellowish brown, densely black granulate, the rim flattened, creased, inconspicuously fluted and bearing long, medially directed, dense, yellowish white pile. The pile on the disc of the scutellum is rather short and pale yellow. The squama is white, the border yellow, the fringe white; halteres dark brown with a blackish knob.

**Legs:** The anterior and middle femora are very dark, reddish brown, almost blackish, becoming a little lighter near the apex; their tibiae are dark, reddish brown on the middle tibia, light brown on the anterior tibia, which, however, have an obscure, blackish spot beyond the middle; hind femur missing.

**Wings:** The wings are hyaline, very faintly brownish in the middle, but this color scarcely noticeable. The lower and upper outer angles of the subapical crossvein are broadly rounded, without any trace of spurs, the inner angle is also broadly rounded, the curve of the third vein is a little deeper than in most species of *Eumerus* and the costa ends a considerable distance above the apex of the wing. The pterostigma is hyaline, the stigmal crossvein quite strong, the wing veins medium brown, the vena spuria faint but continued well beyond the anterior crossvein.

**Abdomen:** The black, very densely punctate, granulate, robust, somewhat tapering abdomen has the apex of the abdomen wide. The transverse depression on the second segment is rather oblique, but quite shallow, a little less oblique on the third segment and still more shallow, and the depressions appear to be absent on the fourth segment. The anterior corners of the second segment have bluish reflections, the smooth declivitous postmargin of the third segment is brownish black, narrowly micropunctate in the middle of its upper margin with appressed, white pile. The oblique fasciae of the second segment are greyish white pollinose, black micropunctate and all of the pile of this segment is short and appressed, except for a tuft of long, white pile in the anterior corners. The pollinose fascia is narrowly separated in the middle and proceeds almost to the posterior corners; the pile in front of the fasciae is pale yellow, more dense and black behind on the obtuse posterior triangle. On the third segment the basal margin is narrowly whitish pollinose in the middle, the large fascia across the middle of this segment is broadly connected in the middle and stops a short distance from the sides of the segment, but sends a narrow extension diagonally down to reach the posterior margin close to the corners of the segment and connect with a sublateral stripe of similar pollen on the fourth segment. The pile of the third segment is yellowish white on the sides, widely black posteriorly and again in front of the pollinose fascia. All of the pale pollinose areas of the second segment are pale yellow pilose. Fourth segment with a wider, more prominent, pollinose fascia on the basal margin, narrowly connected with a short, medial, anteriorward extension, which proceeds from the wide, central, oblique, pollinose fascia in the middle of this segment. This central fascia is a little narrowed toward the sides where it connects with the lateral, marginal stripe of pollen and in the middle the central fascia is indented posteriorly. The pile of this segment is entirely appressed, longer on the posterior half and entirely pale in color, pale yellowish basally, but silvery white on and behind the central fascia. The lateral margins of the second segment narrowly, the ground color beneath its fascia, the lateral margins of the third segment and the posterior margin and lateral margin of the fourth segment more obscurely are very dark, reddish brown. All of the pollinose fasciae are black punctate, the punctuations smaller on the posterior segments. The last sternite is densely appressed, pale yellow pilose, without unusual form.

**Cape Prov.:** Holotype, male, Belmont, 23.2.1934, J. OGILVIE collector, in British Museum (Natural History).

#### *Eumerus flavimarginatus* new species

A large, robust species, the eyes widely separated in the male and densely pilose, the apical crossvein with the angles rounded and unspurred. Related to *Eumerus connexus*, new species. Length 9.5 mm.

**Male.**

**Head:** The upper third of the occiput is shining black but the yellowish pubescence of the occiput is continued narrowly along the upper eye margins to within a short distance of the upper eye corners and there is a minute, semicircular spot of yellow pollen on the medial eye margin just behind and almost touching the posterior ocelli. The ocelli



are virtually an equilateral triangle, the posterior pair very much larger than the anterior ocellus and almost touching the eye margin. The vertex is black, densely granulate, the margins along the eye conspicuously yellowish white pollinose and the medial edge along the pollinose margins distinctly brassy in its reflection. The margins of the eye at the near point are bluntly angular, the distance in between being not quite as great as the distance between the posterior ocelli. The front is shining black, bright brassy on either side in front of the approximation of the eyes; the sides of the front have yellowish pubescence, which is obscured by the dense, appressed, shining, yellowish white pile, which is long and directed forward. The middle of the front is bare but the sides bear pile similar to that along the margin but more nearly erect. The pile of the upper part of the occiput and on the vertex between the ocelli is reddish but behind the posterior ocelli it becomes almost black and it is yellowish white in front of the anterior ocellus. Eyes densely white pilose, the pile perhaps a little flattened or sclose. Face shining black, brassy beneath the antenna with the lateral margins along the eyes and a narrow, medial stripe, beginning beneath the antenna, yellowish white pubescent. The face is densely long, shining, yellowish white pilose throughout. The epistoma is rather abruptly produced, the remainder of the face very slightly convex in profile but retreating. The cheeks are shining black. The first 2 segments of the antenna are black, white pilose medially and below, with a few, black hairs at the apex above. The third segment is missing.

**Thorax:** The mesonotum is dull, shining black with 3 strong, brassy to coppery vittae upon the middle of the mesonotum. Anteriorly the lateral pair is widest, the medial vitta expands behind the transverse suture. The lateral vittae are covered by prominent, though less wide, pale brownish yellow pollinose, black punctate stripes. The pollinose area extends for only a very short distance behind the transverse suture, where it is rapidly attenuate. There is a narrow, linear streak of pollen on the medial vitta continued a little past the suture and there is a prominent, marginal stripe of similar though perhaps paler pollen beginning on the humerus and extending throughout to the front of the scutellum where it is somewhat wider. The humerus is black with a brownish area behind; the postalar callosity is very dark reddish brown, black granulate with long, yellowish pile. The pleuron is shining black with quite faint brassy reflection, the pile long, dense and whitish. On the mesonotum the pile is rather long, nearly white on the notopleuron, light reddish brown across the middle of the mesonotum, on the anterior half, very dark reddish brown behind the suture but becoming paler on the pollinose area just in front of the middle of the scutellum. The marginal stripe around the mesonotum on that part which lies behind the suture bears light red pile, except on the expanded portion in front of the scutellum. The scutellum is densely erect, blackish pilose in the middle, becoming reddish on the extreme base and near the apical margin. The rim of the scutellum is quite long and is pale reddish brown and much in contrast to the shining black, very densely microgranulate disc. The pile of the rim is yellowish white, the rim is granulate, the color of the granulations the same as the rim itself. The scutellum is unusually wide. The squama, its border, and the fringe of the lower squama and the halteres are light yellow; fringe of the upper squama mostly reddish brown.

**Legs:** The anterior femur is brownish black, becoming dark reddish brown toward the apex with light brownish tips. The first 4 tibiae are reddish brown with an obscure, dark brown band beyond the middle, their pile rather long, subappressed and wholly yellowish white, their tarsi reddish brown with pale pile above and bright reddish golden pile below. The hind femur is greatly thickened, shining black, granulate with long, nearly white pile appressed laterally and strong, lateral, subapical plate bearing 5 heavy, brownish black teeth. The hind tibiae are reddish brown at the basal half and at the apex and widely dark reddish brown beyond the middle; their tarsi are light reddish brown on the sides, dark brown in the middle, the pile appressed and yellow, reddish golden below. The hind basitarsus is rather long and thickened.

**Wings:** The wings are tinged with brown, especially on the anterior half, the pterostigma scarcely darker than the margin, the stigmal crossvein strong. The apical crossvein is broadly rounded on both outer angles, is without any spur, the lower angle of the discal cell has a short spur. The curvature of the third vein is a little deeper than in most *Eumerus*; the anterior crossvein enters the discal cell barely beyond the middle. The vena spuria is a faint fold. The stalk of the anal cell is evanescent.

**Abdomen:** The abdomen is short, obconical, very broad and robust at the base, the second segment considerably wider than the thorax. The first segment is black, but difficult to see since it is largely covered by the scutellum. The second segment is very dark reddish brown on the basal half, becoming light reddish brown on the posterior border and along the lateral margins. The prominent, distinct pairs of only slightly oblique, whitish, pollinose fasciae are widely separated on all 3 segments, are very nearly transverse on the third segment, are rounded at their lateral ends on the second segment, are rather sharply attenuate on the lateral ends on the third segment. On both the second and third segments the fasciae end a considerable distance from the posterior corners of the segment. The color of the third segment is much as on the second, very dark red basally, almost black in the middle, becoming light red posteriorly on the lateral margin and widely in the posterior corners. The fourth segment is entirely light brownish red and bears a pair of narrow, basal, pollinose fasciae, the color similar to that of the others; these basal fasciae are perhaps narrowly connected in the middle, but together cover little more than half of the entire basal margin. The principal central fasciae on this segment lie in the middle of the segment and being slightly attenuate and directed forward in the middle give the impression of being slightly curved. Each of these fasciae occupies about two-thirds of the width of the segment on its side. The pile of the second segment, except in the basal corners, is appressed and white, becoming slightly reddish in the middle of the posterior margin. On the third segment the pile is so dark red in front of the fasciae as to appear almost black; it is also dark behind the fasciae in the middle of the segment; elsewhere on this segment and over the whole of the fourth segment it is rather long, appressed, yellowish white. The posterior margin of the fourth segment and the entire lateral margin of the fourth, third and second segments on the reflex portion is yellowish pollinose. The last sternite is reddish brown and appears to be short and cleft down the middle, the sides closely approximate. The lateral portions of the sternite are considerably produced posteriorly, with rounded, thickened, yellowish, apical margin.

**Cape Prov.:** Holotype, male, Cape Town, November 1927, R. E. TURNER collector, in British Museum (Natural History).

***Eumerus connexus* new species**

A black species with light brown wings. The costal vein is quite recessive. The subapical crossvein is broadly rounded, without spurs, the eyes of the male widely separated. Related to *Eumerus flavimarginatus*, new species. Length 8 mm.

**Male.**

**Head:** The vertex is very much thickened, bearing on its upper third a distinct ridge, directed from a point which is opposite the humerus diagonally toward the upper corners of the eyes; this ridge is broadly rounded. Behind this ridge the minute, yellowish white pollen of the occiput is absent. The occiput, front and vertex are densely, long, pale yellow pilose; the pile on the front is subappressed and directed forward; the ocelli are widely spaced in an equilateral triangle; the hind pair almost touch the eyes and are very much larger than the anterior. The eyes are densely, shining, yellowish white pilose; this pile is perhaps slightly scalous or flattened. The upper facets of the eye are not enlarged and the eyes are widely separated by a distance equal to that between the posterior ocelli. Their margins at the near point are broadly rounded. The face is shining, dark reddish brown and densely, shining, yellowish white, long pilose and only the sides are pubescent. The dense, pale yellow pubescence of the face is continued up along the sides of the front and seems to cover most of the front. The face is quite retreating, the entire head almost hemispherical in profile. The first 2 segments of the antenna are brownish black and black pilose and short; the third segment is missing.

**Thorax:** The mesonotum and scutellum are shining black, thickly microgranulate, especially on the scutellum. There is a narrow, linear, yellowish, pollinose stripe down the middle of the mesonotum from the anterior margin for a short distance past the transverse suture; there is a small spot on the anterior margin on either side of this line and a similar, small, roundish spot on the medial ends of the transverse suture. There is a thin line of greyish or yellowish white pollen along the upper margins of the mesonotum above the postalar callosity; the lateral half of the humerus and whole notopleuron are greyish white pollinose. The pleuron is shining black, reddish posteriorly, the anterior half of the pleuron is thinly, pale, brownish yellow pollinose; the pleural pile is long, erect, pale yellow but rather sparse; the humerus is black, but reddish brown at the posterior corners; the postalar callosity is brown, black microgranulate and it bears long, dense, yellowish pile. Above the base of the wings there is a row of stout, reddish yellow, spinous setae with black, tuberculate bases. The margin of the scutellum is light brown with black granules and long, yellow fringe situated in a double row. The squama and halteres are pale orange brown including border and fringe.

**Legs:** The anterior femur, tibia and tarsus are brownish black; the tibial pile is appressed and yellow, but short anteriorly and long behind; middle legs missing. The hind femur is very much thickened; it bears long, pale yellow pile; the pile is appressed on the outer lateral half; hind tibia only moderately thickened but as on the femur, it is densely, long,

shining, pale yellow, appressed pilose. Hind tarsus blackish, the basitarsus considerably thickened with long, appressed, yellowish pile.

**Wings:** The wings are light brown throughout, the costa and the recurrent apex of the third vein end some distance above the apex of the wing. Pterostigma concolorous with the remainder of the wing. The stigmal crossvein is very strong. Subapical crossvein broadly rounded without any spurs; the lower corner of the discal cell also broadly rounded. Anterior crossvein but slightly oblique, lying distinctly before the middle of the discal cell.

**Abdomen:** The abdomen is rather convex with down-curved sides beyond the second segment; it is shining black with bluish reflections, especially along the edges of the pollinose fasciae. The first segment is very dark reddish brown, the smooth declivitous border of this segment has a linear crease above; it is not granulate and reddish brown. The oblique depressions are very shallow, almost absent on the second and third segments and quite wanting on the fourth. On the second segment there is a black punctate, yellowish white, acute triangular, wedge-shaped fascia of yellowish white pollen proceeding from the lateral margin of the segment at the posterior corner. It is attenuate and obliquely directed toward the middle of the segment. It is quite short, the space between these fasciae is nearly twice the length of each; the pollen from this fascia runs narrowly along the lateral margin on the reflex portion of the margin. The third segment has the fascia on the middle of the segment larger, wider and more conspicuous. It proceeds similarly to those on the second segment from the posterior corners; it is attenuate, but is narrowly connected in the middle. On the fourth segment the fascia is similarly arranged but is very wide and conspicuous; it is somewhat more oblique and much more broadly connected on the middle, at which point these fasciae meet a short distance from the base of the segment. The pile of the second segment is appressed, except in the basal corners, and is entirely pale yellowish white, except for black pile on the obtuse, posterior triangle. The third segment has most of the pile dense, black and appressed in front of the fasciae and also behind the fasciae and long, appressed, pale yellow pile directly on the pollinose fasciae and pale narrowly along the side margins of the segment. On the fourth segment there is black pile in front of the fasciae on either side, except in the middle of the segment and except laterally; elsewhere the pile is long, subappressed and light, shining yellow. The last sternite is light brownish red and in the middle along its posterior margin, somewhat produced outwardly, is a rounded, cup-like shield, which bears a dense tuft of yellowish brown pile.

**Kenya:** Holotype, male, Kuja Valley, South Kavirondo, 4000 ft., 30.4—1.5.1930, S. A. NEAVE collector, in British Museum (Natural History).

***Eumerus nodosus* new species**

A large species with pale red front and face and with a low, basal protuberance on the hind femur. The scutellum is bright brassy. Abdomen black with bluish to greenish reflections. Related to *Eumerus armipes* BEZZI. Length 9.5 mm.

**Male.**

**Head:** The upper third of the occiput is brassy black; there is an isolated, elongate spot of pubescence in the middle of this area along the eye margins and a similar but minute,

linear spot along the medial eye margins close to the posterior corners of the eye and remote from the posterior ocelli. The ocelli are in a short isosceles triangle, the posterior pair scarcely larger; there is a rhomboid of pale yellow pollen anteriorly in front of the anterior pollinose area. The vertex itself is shining black, brassy anteriorly and posteriorly. The front and face are pale red, densely covered by white pubescence and long, silvery pile appressed on the front, erect on the face. The epistoma is slightly produced forward; the cheeks are shining black. At the lower eye corner there is a tuft of reddish brown pubescence. The first segment of the antenna is reddish brown; the second is nearly black; the third is black with obscurely reddish base below. The third segment is diagonally punctate on the outer third and slightly rounded; the arista is entirely black. The eyes extensively holoptic, the anterior facets enlarged; eyes have dense, pale brownish yellow pile which is quite fine.

**Thorax:** The mesonotum is shining black, very bright brassy and almost coppery on the notopleuron and on the lateral margin above the wing; it is similarly colored on the postalar callosity and on the entire surface of the scutellum and to a slight extent on the area just in front of the scutellum. The humerus and the anterior margin is on either side also brassy. There is a pair of widely separated, rather prominent, pale brownish white or greyish yellow vittae, extending though more narrowly, for more than half the distance from the transverse suture to the scutellum. Anteriorly these vittae expand on the anterior margin into a large spot which covers the anterior surface of the humerus. The lateral half of the humerus and the anterior and the posterior corners of the postalar callosity are light reddish brown. The postalar callosity has very long, dense, pale yellow pile; the pleuron is coppery to violaceous in reflection, the color quite pronounced and is thinly dusted with yellowish white pollen and dense, long, whitish pile. The pile of the mesonotum is long, erect, light yellow along the anterior margin, reddish brown over the greater part of the mesonotum with a little pale pile in front of the scutellum. There is a row of fine, black bristles above the base of the wing which are scarcely tuberculate; at least the tubercles, if present, are too small to be readily seen. The pile of the scutellum is dense, long, erect and pale yellow; the margin is thin, microtuberculate and black. The squama, border and fringe are light yellow, the halteres orange.

**Legs:** The anterior and middle femora are dark red on their anterior surfaces but black on their posterior surfaces and have a reddish apex; their tibiae are reddish brown, their pile entirely pale, long posterolaterally, short and appressed anteroventrally; their tarsi are nearly black with long, pale yellow pile, which is especially long and appressed over the ventral lateral plate; the plate bears 3 large, stout, brownish black teeth and 2 smaller teeth apically and 1 smaller tooth basally; the inner surface of the femur is without a plate but bears 3 large, black teeth. The base of the hind femur bears somewhat medially a large, low but distinct, rounded, tubercular protuberance. The hind tibia is much thickened and dark brownish red, including the basal knife-edge; its pile is not very long but is quite appressed and pale yellow, the medial apex bears several long, golden hairs. The hind tarsus is brownish black with similarly colored pile on their dorsal surface.

**Wings:** The wings are pale brownish hyaline; both outer angles of the subapical crossvein

bear spurs, the distance between the angles is unusually long; the curve of the third vein is shallow, the pterostigma is yellowish brown, the oblique, anterior crossvein enters the discal cell close to the outer third.

**Abdomen:** The abdomen is shining black, very faintly bluish or greenish in reflection. The sides of the second segment, the ground color of the pollinose fasciae on this segment and the lateral margins of the third and fourth segments range from silvery white to brassy in color. The outer ends of the pollinose fasciae on the third and fourth segments are deep, reddish golden in reflection. The shining black, upper margin of the declivitous postborder of the first segment is smooth and not granulate. The fasciae on the second, third and fourth segments are distinct from above, are bluish or greyish white and micropunctate and all 3 pairs of fasciae are connected narrowly in the middle and all 3 pairs about equally oblique. The oblique depressions are rather prominent on the second segment, more shallow on the third; the pile of the second segment is dense and light yellow and is widely erect on the sides and in the basal corners; the erect pile extends inward a little in the middle of the segment and narrowly across the entire basal margin; the pile on the wide, posterior, middle triangle is appressed and black. On the third segment the pile is erect along the entire base of the segment, more or less erect on the oblique fasciae and on the side margins but is appressed on the posterior triangle. The pile is dark reddish brown along the basal margin, is black behind the fasciae and elsewhere white. On the fourth segment there is nearly erect, black pile basally, yellowish white pile widely over the sides of the segment and on the fasciae but all of the terminal pile through the middle of the segment is black. The last sternite is flat with impressed rim; it is a very short rectangle and bears a medial yellow, pollinose vitta throughout its length and a large, somewhat triangular, similarly colored spot on either side; its pile is chiefly fine, long, and black, with a few yellowish hairs toward the base. The hypopygium is small with a violaceous reflection apically and densely brownish yellow pollinose on the ventral two-thirds.

**Cape Prov.:** Holotype, male, Matjesfontein, 16—21.10.1928, R. E. TURNER collector, in British Museum (Natural History).

#### *Eumerus ochreateus* new species

A large, robust species with wide, flattened, oval abdomen. Scutellum bright blue with bright brownish orange rim. A very handsome species. Not closely related to other African species. Length 10.8 mm.

Male.

**Head:** The occiput is very thick above, bluish black and granulate only narrowly at the top; the dense yellow micropubescence of the occiput is widely extended, although attenuate toward the upper angle of the eye. On the medial surface of the eyes at the upper corners there is a tiny triangle of yellow pubescence and the eye margins of the vertex in front of the posterior ocelli are reddish golden pubescent. The ocelli lie in an equilateral triangle; the hind pair are considerably larger; the vertex is blackish in ground color and densely granulate. The front has distinct bluish reflections, is much more sparsely granulate

and the side margins are thinly pubescent. The pile of front, vertex and upper occiput is long, thick, and reddish golden. The pile is directed a little forward on the front. The eyes are widely separated, the distance almost as great as the width of the upper portion of the occiput and fully as great as the distance from the outer edges of the posterior ocelli. The eyes are long, glittering, dense, yellowish white, scaly pilose; some of the upper pile is not scaly. The anterior facets are not enlarged. The face is shining black, slightly blue greenish toward the sides and widely covered laterally with dense, yellowish micropubescent, which extends across to meet the antenna. The facial pile is pale yellow but thick. The antenna is wholly black; the second and third segments are rather elongate, the third almost oval; the arista is blackish apically, dark brown on the thickened basal fourth.

**Thorax:** The thorax is shining black with bluish reflection in front of the scutellum. The mesonotum has a pair of narrow, widely separated vittae which run only a short distance posteriorly behind the suture but expand along the extreme anterior margin to reach and cover the humerus. There is a wide, lateral stripe of similar brownish yellow pollen, which extends past the postalar callosity to end near the basal corners of the scutellum where it turns forward in a point for a very short distance. Postalar callosity is orange brown with black granules and golden red pile. There is a row of small, black tubercles above the base of the wing with reddish hairs. The pleuron is black anteriorly, reddish brown behind, densely brownish yellow pollinose down the middle. The pile of the mesonotum and pleuron is dense, quite long, nearly erect and golden red. There is similar, dense, long pile on the scutellum, especially long on the rim, and the scutellar pile is subappressed. The disc of the scutellum is bright blue in reflection, densely granulate; the rim is unusually long, flattened and prominent and entirely pale brownish orange matching the pile and tubercle. Squama, fringe, border and halteres light yellow.

**Legs:** The anterior and middle femora black with a bluish reflection, their tibiae light reddish or orange brown but dark brown and almost black along the ventral surface. These first 4 tibiae have a narrow, obscure, brownish annulus postmedially; their tarsi are pale brownish orange, their pile golden. The hind femur is considerably thickened with bluish reflections and with very dense, long, erect, pale yellow pile, which becomes appressed only on the thickly tuberculate, lateral plate which bears about 4 or 5 large, stout, black spines. Hind tibia thickened, blackish, the base light brown, densely covered with rather long, golden pile. The hind tarsus is light orange brown, darker on the upper surface of the very much thickened basitarsus; the pile is appressed and golden and the basitarsus golden pollinose as well.

**Wings:** The wings are strongly tinged with brown. The lower angle of the subapical crossvein is broadly rounded; in one wing it bears no spur at all, in another a minute trace; the upper angle bears a long spur but in both wings there is an odd spur at an angular bend in the fourth vein which lies a short distance above its confluence with the lower crossvein; the spur is directed into the first posterior cell. Pterostigma no darker than the remainder of the wing, the stigmal crossvein strong. The costa and third vein end some distance above the apex of the wing, the curve of the third vein is shallow. The oblique anterior crossvein enters the middle of the discal cell.

**Abdomen:** The abdomen is unusually broad and robust, quite flattened on the second segment. The oblique, furrow-like depressions of the segments are exceptionally shallow and almost wanting. The second segment is densely, coarsely granulate; there is a medial, central, basal patch of yellowish white pollen and a narrow wedge of similar, more yellowish pollen which proceeds from the lateral margin at the apex of the segment and, narrowly attenuate, runs a short distance toward the middle of the segment. On the third segment there is a very much wider fascia, originating in the same way, of bright yellow pollen; it is also pointed medially and runs inward only a little farther so that the medial end of this fascia is separated by a distance as long or longer than the fascia itself. On the fourth segment there is in the middle of the segment a pair of oval, wide, medially attenuate fasciae of similar pollen with pointed ends which begin sublaterally and are widely separated in the middle although there is a minute, linear, media extension. The apical margin of the fourth segment is light orange brown, mostly yellow pollinose, and the yellow pollen extends widely over the lateral, reflexed margin where it is quite bright; it is not connected with the central fascia. This lateral pollen extends more narrowly along the reflexed margin of the third and second segments. The pile of the second segment is reddish golden along the sides, somewhat yellowish along the base and also obliquely down the area usually occupied by a furrow, but the greater part of the pile on this segment is appressed and black, except on the sides and on the pollinose fascia, where it is reddish golden except in front of the pollinose fascia where it is black. The last sternite is cleft down the middle; the sides are closely approximate, the apical margin is formed into a deep, rounded, V-shaped notch; this sternite bears long, golden red pile.

**Cape Prov.:** Holotype, male, Katberg, 1-10.2.1933, R. E. TURNER collector, in British Museum (Natural History).

#### Bibliography

- BEZZI, MARIO. 1908. Ditteri Eritrei raccolti dal Dott. ANDREINI e dal Prof. TELLINI. II. Dipt. Cyclorrhapha. Boll. Soc. Ent. Italiana, vol. 39, pp. 3-199.
- 1912. Ditteri raccolti da Leonardo Fea durante il suo viaggio nell'Africa occidentale. Parte I<sup>a</sup>: Syrphidae of the Ethiopian Region. British Museum (Natural History), publ., pp. 1-146, 28 figs.
- 1920-1921. Syrphidae Aethiopiae Musei Nationalis hungarici. Broteria (B), ser. Zoologica. 1920. Vol. 18, fasc. 3, pp. 131-142. — 1921. Vol. 19, fasc. 1, pp. 5-22.
- 1923. Resultats scientifiques, Insectes Dipteres: Voyage de CH. ALLUAUD et R. JEANNEL en Afrique Orientale (1911-1912). Part 6. Bombyliidae et Syrphidae. Paris, pp. 315-351.
- CURRAN, HOWARD C. 1923. Records of some African *Microdon* (Syrphidae), with description of one new species. Rev. Zool. Africaines, vol. 11, pp. 145-147, 1 fig.
- 1927. Diptera of the Belgian Congo. Bull. American Mus. Nat. Hist., vol. 57, pp. 33-89.
- 1929. Nineteen new Diptera from Africa. American Mus. Novitates, no. 340, pp. 1-15.
- 1938-1939. Records and descriptions of African Syrphidae (Diptera). American Mus. Novitates. 1938. Pt. I, no. 1009, pp. 1-15. — 1938. Pt. II, no. 1010, pp. 1-20. — 1939, Pt. III, no. 1025, pp. 1-11. — 1939. Pt. IV, no. 1026, pp. 1-10.
- EFFLATOUN BEY, HASSAN C. 1922. A monograph of Egyptian Diptera. Part 1. Syrphidae. Mém. Soc. Ent. Egypte, vol. 2, fasc. 1, pp. 1-123, 6 plates.
- 1926. Contribution to the knowledge of the Syrphidae of Egypt. Bull. Soc. Ent. d'Egypte, Ann. 1925, fasc. 4, pp. 274-283.

- HERVÉ-BAZIN, J. 1913. Syrphidae (Dipt.) recueillis au Congo Belge par le Dr. J. BEQUAERT. I. Genre *Eumerus* MEIGEN. II. Genre *Ceroides* RONDANI. III. Genre *Microdon* MEIGEN. Rev. Zool. Africaines, Bruxelles, III, 1913, fasc. 1, pp. 68–102, 2 pls., 30 figs.
- 1913. Syrphidae (Dipt.) recueillis au Congo Belge par le Dr. J. BEQUAERT, IV. Rev. Zool. Africaines, Bruxelles, III, 1913, fasc. 2, pp. 279–298.
- 1914. Note sur quelques Syrphidae (Dipt.) du Musée du Congo Belge. Rev. Zool. Africaines, Bruxelles, III, 1914, pp. 480–482.
- 1914. Contribution à l'étude des Syrphides (Dipt.) de Madagascar. Rev. Zool. Africaines, Bruxelles, IV, pp. 101–108, pl. 6, figs. 1–8.
- 1914. Syrphides nouveaux des colonies françaises. Bull. Soc. Ent. France, pp. 115–116, fig. 1.
- HULL, FRANK MONTGOMERY. 1938. Exotic forms of Syrphid Flies. Ann. Carnegie Mus., vol. 27, pp. 128–128.
- 1944. Some Flies of the Family Syrphidae in the British Museum (Natural History). Ann. Mag. Nat. Hist., ser. 11, vol. 11, pp. 21–61.
- 1944. Additional species of *Microdon* in the British Museum (Natural History). Ann. Mag. Nat. Hist., ser. 11, vol. 11, pp. 241–261.
- 1949. Studies upon Diptera in the British Museum. Ann. Mag. Nat. Hist., ser. 12, vol. 2, pp. 727–746.
- 1949. The morphology and inter-relationships of the genera of Syrphid flies, recent and fossil. Trans. Zool. Soc. London, vol. 26, pt. 4, no. 1, pp. 257–408, 25 pls., 211 figs.
- 1949. A study of Syrphid Flies from Madagascar. Proc. Acad. Sci. Philadelphia, vol. 92, pp. 309–334, figs. 1–10.
- LOEW, HERMANN. 1857. Bidrag till kannedomen om Afrikas Diptera. Öfvers. Kongl. Vet. Akad. Förhandl. Stockholm. Vol. 14, pp. 337–383.
- 1860. Die Dipteren-Fauna Südafrikas. Abh. Naturwiss. Ver. Sachsen-Thüringen in Halle, Berlin. Vol. 2, pp. 358–399.
- MUNRO, H. K. 1924. A new genus and species of Syrphidae (Diptera) from South Africa. Ann. Transvaal Mus., vol. 10, pt. 2, pp. 87–88, pl. 1, figs. 1–3.
- SPEISER, PAUL. 1910. Wissenschaftliche Ergebnisse der Schwedischen Zoologischen Expedition nach dem Kilimandjaro, dem Meru, und den umgebenden Massaisteppen Deutsch-Ostafrikas 1905–1906 unter Leitung von Prof. Dr. YNGVE SJÖSTEDT. 2: 10, Diptera no. 5, Cyclorhapha, Aschiza, Syrphidae. Stockholm, pp. 113–133.
- STUCKENBERG, B. R. 1954. The *Paragus serratus* complex, with descriptions of new species (Diptera: Syrphidae). Trans. Roy. Ent. Soc. London, vol. 105, pt. 17, pp. 393–422, 33 figs.
- 1954. Studies on *Paragus*, with descriptions of new species (Diptera Syrphidae). Rev. Zool. Bot. Africaines, vol. 49, fasc. 1–2, pp. 97–139, figs. 1–43.
- VAN DOESBURG, P. H. 1955. Syrphidae from South Africa. Ann. Transvaal Mus., Pretoria, vol. 22, part I, pp. 354–366; part II, pp. 515–517.