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STUDIES IN AFRICAN MUTILLIDÆ

by

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The following records, notes, and descriptions were drawn up during the preparation of a Synopsis of the Mutillidæ of the Belgian Congo which will be published in New York as part of the Report of the collections of the American Museum Congo Expedition. In the course of that work a number of species from other parts of Africa were studied for comparison and they suggested to us various remarks which may be of use to future students of this group.

We wish to express our gratitude to Dr. H. SCHOUTEDEN, Curator of the Zoological Section of the Congo Museum, at Tervueren, for the privilege of examining the very rich collection of Mutillidæ in his care and especially many valuable type specimens. We are also under obligations to Mr. HUGO KAHL for submitting to us a small number of Mutillidæ from the Cameroon, contained in the collections of the Carnegie Museum, at Pittsburgh, and to Dr. H. SKINNER for permission to study the specimens of this family collected by A. DONALDSON SMITH in Somaliland, and preserved at the Academy of Natural Sciences, Philadelphia.

Unless otherwise stated, all specimens here recorded belong to the Congo Museum, at Tervueren. For the location of the localities

mentioned, the reader is referred to the gazetteer which will accompany the « Synopsis of the Mutillidæ of the Belgian Congo. »

The « Monographie der Mutilliden Afrikas » by Dr. H. BISCHOFF (*Archiv für Naturgeschichte*, LXXXVI, Abt. A, Heft 1-5, 1920-1921, 830 pp., 1 map) is the foundation upon which we have built, and our work may be looked upon as supplemental thereto. That we have made changes in the limits of some genera and species is due to causes which we have explained in the introduction to our Belgian Congo paper above referred to.

Apterogyna latreillei KLUG.

Somaliland : Berbera, one female (A. DONALDSON SMITH. — Academy of Natural Sciences, Philadelphia). This specimen was recorded under this name by FOX (*Proc. Ac. Nat. Sc. Philadelphia*, 1896, p. 547).

Tricholabioides semistriata var. **pedunculatoides** BISCHOFF.

Somaliland : Shebeli, one male; Berbera, one male (A. DONALDSON SMITH. - Academy of Natural Sciences, Philadelphia). These two specimens were recorded by FOX (*Proc. Ac. Nat. Sci. Philadelphia*, 1896, p. 547) under the name *Mutilla pedunculata* KLUG.

Squamulotilla ruwenzoriensis, new species.

Male. — Slender. Black; legs reddish yellow, the last segment of the tarsi darker, calcaria whitish. Body sparsely covered with long, erect, white hairs. Wings uniformly smoky.

Length : 8, 5 mm.

Head seen from above somewhat triangular in outline, produced behind the eyes, with the side margins strongly convergent. Ocelli in an equilateral triangle; the posterior pair more than twice as far from the compound eyes as they are from each other; the front ocellus on the postocular line. Head above coarsely, deeply, but not closely punctured; interstices shiny. Eyes weakly emarginate. Clypeus with its median portion raised, closely punctulate; its anterior margin

sharply bidentate. Mandibles without an external tooth, somewhat bent, slender and acute, with an inner tooth. Scape carinate, punctured on the inner side. Second segment of flagellum subequal to the first and much less than the third in length. Thorax slender, with the sides converging anteriorly and with rounded humeral angles. Pronotum and mesonotum uniformly, coarsely and deeply punctate, a little more coarsely than the vertex; anteriorly in the middle the mesonotum bears an impunctate, flat band with lateral longitudinal striæ. Parapsidal furrows absent anteriorly. Scutellum rounded, convex, sculptured like the mesonotum. Propodeum reticulate, with large, flat meshes; a distinct, triangular, basal area present; its posterior face sloping and its angles rounded. Third transverse cubital vein lacking; a spot of chitin in the wing membrane representing its position; second transverse cubital vein with a short appendage. First sternite with a median keel, which is most prominent posteriorly, but not acute. First tergite with sides converging anteriorly; at its apex much narrower than the greatest width of the second segment, but not constricted therefrom. First and second tergites uniformly, coarsely punctured; the punctures about as coarse as on the vertex. Remaining tergites finely and closely punctate. Pygidial segment flat, punctate laterally and basally; impunctate, smooth, and polished medially and at apex. Apex broadly rounded. Last sternite punctured, but unarmed.

Habitat : Belgian Congo, one male, Lanuri Valley, western slope of Mt. Ruwenzori; altitude, 2000 m.; May 24, 1914 (J. Bequaert).

Holotype : Congo Museum, Tervueren.

This species seems to find its closest ally in *Squamulotilla cerenipes* Bischoff, found on similar altitudes on Mt. Kokanjero, in Uganda. Apart from its entirely black color with yellow legs (instead of rust yellow thorax), it may be most easily distinguished from that species by the coarse puncturation of the second tergite, by the triangular basal area of the propodeum, and by the absence of a small median tooth in the emargination of the edge of the clypeus.

Squamulotilla kapiriensis, new species.

Male. — A moderately slender species. Black; except the pronotum, mesonotum, scutellum, and postscutellum which are brick-red; calcaria whitish. With erect, white pubescence, gathered in weak apical fringes on the first four tergites and the first five sternites; on the apex of the succeeding tergites the hairs are black. Wings uniformly smoky.

Length : 13 mm.

Head seen from above transversely oval, not elongate behind the eyes; the hind corners rounded. Ocelli forming an isosceles triangle, the base of which is on the postocular line; hind ocelli removed from each other by far more than half of their distance from the compound eyes. Vertex moderately, coarsely and irregularly punctate. Eyes moderately emarginate. Clypeus sloping on both sides to a weak, longitudinal ridge; anteriorly acutely emarginate with a prominent, blunt tooth on each side of the emargination. Mandibles not dentate externally; somewhat bent, acute, with an inner tooth. Scape carinate, punctate on the inner side; the second joint of the flagellum but little longer than the first, and about half the length of the third.

Thorax rather short; 3,5 mm. long by about 2,5 mm. wide. Pronotum short, with rounded angles. Pronotum, mesonotum, and scutellum uniformly convex, with coarse, but shallow punctures. Parapsidal furrows distinct, except in front. Tegulæ small, slightly pointed on their inner posterior angles, but not curved; strongly convex, shiny and impunctate, except along their inner and anterior margins where they bear some hairs. Scutellum rounded. Propodeum short, with rather abruptly sloping face and obtusely rounded angles; covered with a uniform, dense reticulation of large, flat meshes which are largest on the middle and on the posterior slope; no distinct basal area. Third transverse cubital vein completely developed, though thinner than the second, angular and with an adventitious prolongation about its middle. First sternite with a feeble median keel, ending posteriorly in a strong, downwardly pointed tooth. First tergite with sides moderately converging anteriorly, narrower at its apex than the greatest width of the second; little constricted la-

terally, but noticeably so dorsally, from the second segment. First tergite with scattered, feeble punctures; second tergite with numerous, weak punctures, much sparser and smaller medially; remaining tergites punctulate. Pygidial segment with setigerous punctures, except at apex where it is impunctate; apex truncate. Last sternite rounded, unarmed.

Habitat : Belgian Congo, one male, Kapiri, October 1912 (Mission LEPLAE).

Holotype : Congo Museum, Tervueren.

This species does not appear to be related to any of the described forms. It is readliy separated from *S. jankisiensis* BISCHOFF, to which it is not even nearly related.

Squamulotilla denticollis BISCHOFF.

Cameroon : Lolodorf, one male (A. I. GOOD. — Carnegie Museum).

The raised area of the clypeus ends anteriorly in two diverging teeth which are not mentioned in BISCHOFF's description.

Rhopalomutilla anguliceps (ANDRÉ).

Female (undescribed). — Small, stocky species, with rather slender abdomen. Color uniformly pale ferruginous; calcaria also pale ferruginous. Naked, except for short and very sparse, erect and decumbent, white hairs and, on the abdomen, appressed, sparse, yellowish pubescence.

Length : 4,5 mm.

Head quadrate, approximately as broad as long. Eyes small, oval with large facets, removed by a little less than their length from the base of the mandibles. Vertex with sparse, round punctures and broad, polished interstices; its hind margin not at all produced medially. Antennæ inserted rather close together; with a small, erect tubercle between them. Scape short, curved. Flagellum strongly thickened; the segments transverse, the last one tapered and acute. Clypeus very short, broad, impunctate; its anterior margin simple. Mandibles

falcate, edentate. Thorax in dorsal aspect short, broad; the anterior half or two-thirds subquadrate, with its lateral sides slightly convex; behind that point deeply and suddenly incised in an even curve to the angles of the propodeum, so that the entire thorax in dorsal view appears angulately piriform. Each angle of the propodeum with a minute denticulation, behind which the propodeum is obliquely truncate. The entire dorsum is homogeneous in appearance, uniformly, transversely convex, with distinct, medium-sized punctures, but medially with an impunctate, polished band; the cephalic slope of the pronotum closely punctulate; the truncature of the propodeum indistinctly punctulate and its sides aciculate. First tergite of the abdomen seen from above with almost parallel sides; slightly widened before, but again narrowed at the apex, which is both somewhat constricted from and much narrower than the second tergite. Seen from the side the first segment is anteriorly flattened, widest at a point two-thirds the way to its apex and again narrowing at the apex; the lateral view thus forms a triangle of which the under surface is the base. The anterior flattened portion of this segment is impunctate at base, weakly punctured posteriorly, the posterior surface is rugose and margined at apex and on the apical portion of the sides. No felt grooves on either second sternite or tergite. Second tergite very long, nearly equal in length to the remaining segments together; its surface anteriorly rugosely punctate; posteriorly shiny; sparsely and weakly punctured. Following three tergites finely, closely punctulate. Pygidial area very long and narrowly oval with about four sharp, longitudinal striæ.

Habitat : Portuguese East Africa, one female from Catamba, Lourenzo-Marques (C. W. Howard).

Allotype : Cornell University, No. 657.1.

This female was obtained together with a male, presumably *in copula*, the two specimens being placed on the same pin. The male agrees with the description of *Rhopalomutilla anguliceps* (André). The female also possesses the generic characters assigned to the female of *Rhopalomutilla* by André. The identical female upon which Bischoff based his generic description and which he identified as *clavicornis* André, lies before us. It differs not only from our female

but also from ANDRÉ's description of this sex, based on a specimen taken *in copula* with the male of the genotype, by the exeedingly important fact that its first abdominal segment is transverse, entirely sessile, and practically as broad as the second segment at its widest part; nor is it at all constricted from that segment. It is also different in other characters and is obviously not a *Rhopalomutilla*. We therefore believe that BISCHOFF misidentified the female of *clavicornis* ANDRÉ, and we intend to treat further of the proper systematic position of this specimen in a forthcoming synopsis of the Mutillidæ of the Belgian Congo.

Rhopalomutilla mlanjeana (BISCHOFF).

Belgian Congo : seven males from Albertville, January 20, 1919 (R. MAYNÉ).

The specimens agree with BISCHOFF's very brief description. They are decidedly larger than a male of *clavicornis* (ANDRÉ). The wings are darker with a slight purplish effulgence and the base hyaline in the medial and submedial cells. BISCHOFF regards it as a subspecies of *clavicornis* (ANDRÉ), but we believe that it is specifically distinct. In addition to the differences already mentioned, the shape of the lateral lobes of the seventh abdominal segment is quite characteristic and varies but little among the specimens we have examined : seen from the side, each lobe is a lamella broadened out in its apical half, where its anterior margin is evenly curved, ending in an obtuse angle; its posterior margin presents an obtuse projection separated from the apex by a weakly concave line. The second tergite is decidedly more depressed at the base than in *clavicornis*. Clypeus with a conical tubercle on its middle line in its upper part; its apex with two small, median teeth. Length : 9 to 10 mm.

Rhopalomutilla cristata (BINGHAM).

Belgian Congo : one male, Lukonzolwa, January 2, 1912 (J. BEQUAERT).

The apical margin of the penultimate sternite is divided into three subquadrate lobes by deep incisions. These lobes are semi-membranous and overhang a deep cavity. The lateral margin of the ulti-

mate sternite bears on each side a simple, downward projecting lobe, around which its apical margin is reflexed. Medially this reflexed apical margin projects downward in a short tooth just behind the apex of the middle lobe of the penultimate sternite.

Mutilla (Pycnotilla) striata, new species.

Female. — Black; thorax dull red; calcaria reddish. Clothed with sparse, erect, pale and some black hairs. A median spot of white pubescence at the apex of first and second tergite; a discal spot on each side of the second; a continuous broad, apical band on the third; and a median spot on the fourth and fifth tergites.

Lenght : about 11 mm.

Head very large, quadrate, broader than the thorax, its sides convex; longer behind the eyes tham the lenght of the latter; its hind margin very slightly concave. Eyes small, oval. Front and vertex longitudinally, irregularly ridged. Antennæ not in juxtaposition; their grooves margined above. Superior, raised portion of clypeus very short; summit between the antennæ rounded, terminating immediately below in a median tubercle; from below this a weak ridge extends obliquely outward on each side. Lower part of clypeus broadly depressed, flattened, and impunctate. Mandibles moderately slender and acute. Dorsum with coarse, longitudinal, parallel and quite regular ridges. Dorsal surface of thorax square; its sides parallel. Posterior surface of thorax abruptly truncate, not sculptured. A short, longitudinal tubercle in the middle of the first sternite. Second tergite strongly, longitudinally canaliculate. Pygidial area longitudinally, somewhat irregularly, rugose; the rugæ becoming obsolete somewhat before the apex; the very apex without distinct sculpture.

Habitat : Belgian Congo, one female, Moto (Madyu), Upper Ituri District (L. Burgeon).

Holotype : Congo Museum, Tervueren.

This species seems to find its closest ally in *elmira* Péringuey, from which it differs, according to Péringuey's description, in having

the thorax parallel-sided instead of strongly converging posteriorly. It is also closely related to *agave* PÉRINGUEY from which it may be differentiated by its channeled dorsum and by various other characters.

Mutilla (Pycnotilla) andromeda var. **melanotica** BISCHOFF.

Somaliland : Sheikh Hussein, one female (A. DONALDSON SMITH. — Academy of Natural Sciences, Philadelphia).

This specimen was recorded by FOX under the name *Mutilla sinuata* OLIVIER (*Proc. Ac. Nat. Sci. Philadelphia*, 1896, p. 547). It agrees well with BISCHOFF's description. As in some other *Pycnotillæ* the pygidial area is but poorly delimited.

Mutilla (Pycnotilla) albertvillensis, new species.

Female. — Closely resembling in coloration and pattern *Mutilla* (*Pycnotilla*) *bequaerti* (BISCHOFF), but with the thorax a little broader in proportion to its length. Head and thorax very coarsely striato-punctate; the dorsulum especially in the middle distinctly striatulate. Clypeus with the surface of the upper, raised area flattened and bearing in its middle an erect tubercle; this area terminates below in the flaring arms of a curved ridge, ending on either side in a lobe; below this ridge the clypeus is obliquely depressed to its anterior margin. Scape of the antennæ smooth and polished, with very sparse punctures. Third and fourth segments of the flagellum transverse, together but little longer than the second. Pygidial area irregularly, longitudinally wrinkled.

Length : 13,5 mm.

Habitat : Belgian Congo, two females, Albertville, December, 1918 (R. MAYNÉ).

Holotype and paratype : Congo Museum, Tervueren.

Mutilla kigoma, new species.

Female. — Resembles *M. bitriangulifera* BISCHOFF, but a smaller species, with smaller head, less produced behind the eyes, the eyes larger in proportion. Color and vestiture as in *bitriangulifera*, except

that the band on the second tergite is not distinctly widened toward the middle; that on the third tergite less broadly interrupted medially. Head and thorax coarsely, irregularly punctato-striate. Clypeus with a superior, elevated, triangular portion, the apex of which is between the antennæ, and the base of which is formed by a transverse, elevated ridge which as seen from below is terminated by a median tooth and on each side three smaller teeth. Below this the clypeus is strongly declivous. Sides of the thorax parallel, short; its posterior surface abruptly truncate. Second sternite with three carinæ, acute poteriorly. No margined pygidial area.

Habitat : Tanganyika Territory, one female, Kigoma (R. MAYNÉ).

Holotype : Congo Museum Tervueren.

Mutilla salisburiana ANDRÉ.

We have before us two male specimens from the Belgian Congo, one taken at Malela, December, 1913 (L. BURGEON), the other at Albertville, December, 1918 (R. MAYNÉ), which undoubtedly belong in *Mutilla* proper and are evidently allied to *M. coerulea* BISCHOFF. Among the described species they agree best with *M. salisburiana* ANDRÉ. Pronotum, mesonotum, and tegulæ are mahagony red; the remainder of the animal is black, with a deep blue reflection on the abdomen and, much more weakly so, on the vertex and propodeum. The first tergite bears a continuous, broad fringe of white hairs; the second and third similar apical bands, broadly interrupted in the middle where they continue as narrow fringes. The second sternite has a broad and short, smooth, triangular, weakly raised basal area, delimited behind by low, obliquely converging ridges which are more pronounced in one of the specimens. Unfortunately we do not know whether ANDRÉ's *salisburiana* possesses this structural peculiarity, but it is not mentioned in the original description and in BISCHOFF's monograph.

Mutilla pythia var. **radovæ** (SAUSSURE).

Kenya Colony : Taveta, June 25, 1913 (Dr. BAYER).

Mutilla bitriangulifera Bischoff.

Tanganyika Territory : Kigoma, 2 females (R. Mayné).

Mutilla diselena var. **obscurior** Bischoff.

Tanganyika Territory : between Tabora and Kigoma (Stamper).

Odontomutilla maynei, new species.

Male. — Coal black; covered with a mixture of erect, black and white hairs; the fourth tergite with a noticeable admixture of the two, whereas on the ultimate tergites they are all black; the hairs are strong and conspicuous on the posterior part of the scutellum; the third tergite with a broad, dense, apical band of closely appressed, buff pubescence which extends decidedly on the sides of the sternite. Wings deeply infuscated with violaceous reflection, somewhat hyaline at the extreme base. Calcaria black.

Length : about 13 mm.

Head seen from above but slightly produced behind the eyes; the eyes being removed from the occipital margin by less than the width of their posterior lobe. Lateral margin of the occiput scarcely converging and abruptly meeting the posterior margin; the latter convex, slightly prominent medially. Ocelli in an equilateral triangle, the base of which is on the postocular line. Entire upper surface of head coarsely and closely punctate. Antennal grooves deep, the carinæ margining them above less conspicuous than in *O. quadrilobata* Bradley and Bequaert, with a prominent lobe overhanging the insertion of the antennæ. Median portion of the clypeus elevated, forming between the antennæ a flat-topped prominence, which is acute above, widened below; its surface roughened and hairy, but not margined by carinæ; below this the clypeus is transversely depressed, smooth; anterior margin simple. Mandibles without external tooth, bent, acute, and toothed within. Second flagellar segment approximately two-thirds the length of the third. Eyes large, deeply emar-

ginate within. Thorax slightly wider than the head; the dorsal surface uniformly convex; pronotum, mesonotum, and scutellum sculptured like the vertex. Anterior margin of the pronotum subtruncate; its humeral angles sharp, but not mucronate, continued below in a vertical carina. Scutellum with its surface on a plane with that of the mesonotum; the lateral prolongations elongate, acute, with the tips turned both downward and inward, so that the side of this scutellar plate from a lateral aspect appears as a curved, spatulate, impunctate, and polished line; the inner edges of these lateral prolongations run obliquely downward, merging into the postscutellum, and the median part of the punctate, dorsal surface of the scutellum is also depressed, joining almost imperceptibly with the postscutellum; so that the entire scutellum viewed from above gives the impression of being broadly emarginate. Postscutellum less elevated in the middle than in *O. quadrilobata*; its summit slightly depressed, but separated by only a weak ridge from the lateral sloping portion, which possesses such deep pits as are present in *O. quadrilobata*. Propodeum alate, much as *O. mocquerysi* André; the dorsal and posterior surface very coarsely, but shallowly reticulate; the three basal meshes larger than the remaining; of the three the median one is somewhat prolonged posteriorly; sides and apex of posterior surface less coarsely reticulate. Abdomen slender. First segment short; as seen from above its sides divergent, except at the apex where they are for a short distance subparallel and therefore contrasting with the strongly convex sides of the second segment; seen from the side, the under surface is short, but the sloping anterior face merges more insensibly in the dorsal aspect than in *O. quadrilobata*. First tergite and base of the second punctured about as coarsely as, but less closely than the vertex; the rest of the second tergite, especially in the middle, more sparsely punctate. Following segments finely and somewhat irregularly punctate. First sternite with a median carina ending in a blunt anterior tooth. Second sternite unarmed. Last sternite plane, hirsute, and unarmed.

Habitat : Belgian Congo. One male, Lemba (Mayombe), December 1-10, 1915 (R. Mayné coll.).

Holotype : Congo Museum, Tervueren.

This species finds its closest ally in *O. mocquerysi* (André), from which it differs in the shape of the scutellum and in the absence of the pubescent spots on the first tergite, and somewhat in the shape of the clypeus.

Odontomutilla microcephala André.

Tanganyika Territory : one female, Kigoma (R. Mayné).

Odontomutilla mocquerysi (André).

Cameroon : Metit, one female (A. I. Good. — Carnegie Museum).

Odontomutilla tellini (Magretti) var. **tessmanni** Bischoff.

Belgian Congo : one male, Angu (Uere). November 10-11, 1913 (J. Rodhain); one male, Bambili (J. Rodhain) (Congo Museum).

These specimens agree in every respect with Bischoff's description. In *tessmanni* the first sternite has posteriorly a very small tooth, anteriorly a strong, acute spur the two not connected by a carina. Magretti describes his *tellini* as having on the first sternite an elevated carina, armed with a moderate rostriform spine. In so many respects does *tessmanni* apparently differ from *tellini* that it most probably is specifically distinct; but this can only be decided by a comparison of the two.

Odontomutilla natalensis Bischoff.

Natal : two males from Durban, in the collections of the American Museum of Natural History.

Odontomutilla callewaerti, new species.

Male. — Black; tegulæ rufous. Apex of first tergite on each side with a spot of white hairs; third and fourth tergites with broadly interrupted wide apical bands of white pubescence. Wings of type specimen broken off.

Length : about 15 mm.

Head seen from above with the sides moderately extended behind the eyes and but slightly convergent; posterior margin straight across; a sharp carina extending from the buccal orifice to the postero-lateral angles which are moderately prominent, but not acute. Surface of head uniformly, closely, and coarsely, but shallowly reticulate-punctate. Antennal grooves margined above by a strong carina. Superior portion of clypeus elevated, flat, hirsute; its apex rounded above; its sides diverging into an oblique, somewhat overhanging ridge which disappears toward the sides of the clypeus; below this the clypeus strongly sloping and depressed, impunctate. Mandibles without an external tooth. Second segment of flagellum a little longer than broad, a little shorter than the third. Dorsum sculptured like the head; the anterior margin of the pronotum rather straight, the humeral angles prominent, ending in an oblique carina below. Tegulæ with few, scattered, setigerous punctures. Surface of scutellum forming a flattened plate, reticulo-punctate; its sides curved and ending behind in two short, pointed lobes; its posterior margin sinuate, with a short, median depression, but raised above the surface of the postscutellum. Sides of the propodeum strongly produced at the angles into a compressed lobe. Upper surface of propodeum with coarse, deep meshes; the basal ones enlarged. Sides of propodeum less coarsely reticulate. Mesopleuræ without a distinct median fossa; only a weak tubercle beneath the tegulæ; an oblique ridge in front of the middle coxæ. First abdominal segment greatly widened at its apex; as seen from the side with distinct anterior and dorsal surfaces; its sternite with a strong, erect, acute tooth. Second tergite coarsely punctured, but sparsely and obsoletely so on the disk. Posterior portion of the second sternite with a very prominent, median tooth, sloping in front and truncate behind. Last sternite with a strong, median, longitudinal tubercle at base. Last tergite striato-punctate; a shallow, depressed area before its apex which is somewhat truncate.

Habitat : Belgian Congo, one male, Luluabourg (Callewaert).

Holotype : Congo Museum, Tervueren.

Lophotilla alluaudi (André).

Mutilla alluaudi André, Zeitschr. Syst. Hym. Dipt., VII, 1907, p. 342 (♀).

BISCHOFF lists this species as one of uncertain generic position. A male specimen before us, from Tananarive, Madagascar, presented to Cornell University by Mr. PRESTON CLARK, undoubtedly is this species. It belongs to the genus *Lophotilla*, finding its closest ally apparently in *L. lobicornis* (ANDRÉ) of which we have also seen a specimen from the same locality. The superior, elevated portion of the clypeus is produced into a strongly elevated, transverse ridge which seen from below is roughly semi-circular in outline; the lower surface of this elevation forms the sloping, upper surface of the disk and is traversed by a curved, transverse row of long, reddish setæ; below this the disk of the clypeus is depressed, smooth, and polished; the sides of the clypeus are obscured by vestiture. The sixth sternite has a weakly indicated, lateral tubercle. Seventh sternite with a similar, very small, lateral ridge. The eighth with a weak, transverse, basal ridge and two oblique, strongly elevated tubercles. The seventh and eighth sternites are fused and together are called by ANDRÉ the seventh.

Lophotilla betsilea (SAUSSURE).

A male specimen before us from Tananarive, Madagascar, possesses felted grooves on both second sternite and tergite.

Dolichomutilla lessensis, new species.

Male. — Black; ground color of the apical abdominal segments reddish, especially on the venter; calcaria whitish. Sparsely covered with erect, silky, yellowish setæ, the apex of the second and the entire third tergite covered with tomentose, yellow, appressed pubescence; the surface of fourth, fifth, and sixth segments sparsely covered with appressed, yellow pubescence; a very thin fringe of appressed, yellow setæ on the apex of the first tergite. Wings deeply infuscated, with violaceous reflection, their bases hyaline, and the apices of the anterior pair broadly hyaline.

Length : 11 mm.

Head seen from above with its lateral margins strongly convergent posteriorly, rounded into the posterior margin which is rather prolonged medially. Ocelli in an equilateral triangle, the base of which is on the postocular line. Occiput coarsely, but not deeply rugose-punctate, reticulate posteriorly; front obsoletely punctate. Antennal tubercles prominent. Upper margin of the antennal foveæ weakly carinate. Upper portion of clypeus sloping on either side from a median, longitudinal ridge which is carried upward between the antennæ. Anterior margin of clypeus slightly produced and emarginate medially. Mandibles slender, without an external tooth. Second segment of flagellum longer than wide, about two-thirds the length of the third. Eyes distinctly but not deeply emarginate. Dorsum coarsely reticulo-punctate. Anterior margin and humeral angles of prothorax entirely rounded. Parapsidal furrows indistinctly marked posteriorly, absent in front. Tegulæ elongate, recurved, their surface with scattered, setigerous punctures. Scutellum produced into a blunt cone; its surface reticulate; its apex an impunctate tubercle. Mesopleuræ with a median, circular depression, without tubercle in front of the middle coxæ. Propodeum coarsely reticulate; basal median area somewhat elongate. Propodeum very oblique, the dorsal surface merging very gradually into the posterior surface. Seen from above the first segment is widened uniformly to its apex, at an angle less than that made by the basal sides of the second segment; maximum width of the latter greatly in excess of that of the first. From the side the first segment widens in a gradual curve to the apex where it is not constricted; the carina of its sternite with a median notch cutting off a blunt tooth behind and a truncate lobe in front. Second sternite unarmed. Last sternite with a triangular, impunctate, basal area; the remaining and greater part of its surface uniformly punctate. Last tergite with a median, impunctate, flat strip.

Habitat : Belgian Congo, one male, Lesse, August 24, 1914 (J. Bequaert).

Holotype : Congo Museum, Tervueren.

To judge from the description, this species appears to be somewhat similar to *conigera* André and still more so to *rotundipyga* Strand. In *conigera*, however, the second sternite has a distinct lon-

gitudinal carina, which is also present, but less strongly marked, in *rotundipyga*. The scutellum in *lessensis* has not a sharp apex, as described for *conigera*.

Dolichomutilla guineensis var. **voltensis**, new variety.

Female. — Agrees with typical *guineensis* (FABRICIUS), except that the band of silvery white pubescence of the third tergite is not interrupted in the middle and that the thorax is very dark brown-red (maroon of RIDGWAY's Color Nomenclature). There is no apical fringe of white pubescence on the first tergite in the unique specimen we have seen, but this may have been rubbed off.

Length : 15 mm.

Habitat : French West Africa, one female, Upper Volta River (Rev. J. W. TAYLOR).

Holotype : Congo Museum, Tervueren.

Dolichomutilla guineensis var. **nigra** BISCHOFF.

Tanganyika Territory : between Tabora and Kigoma (STAMPER).

Dolichomutilla guineensis var. **heterodonta** (CAMERON).

Kenya Colony : Tsavo River, 2 females; Sabaki, one female (Dr. BAYER).

Somaliland : Sheikh Hussein, one female (A. DONALDSON SMITH. — Academy of Natural Sciences, Philadelphia).

This Somaliland specimen was recorded by FOX (*Proc. Ac. Nat. Sci. Philadelphia*, 1896, p. 547) as *Mutilla guineensis*.

Smicromyrme THOMSON.

Ashmead based his genus *Mimecomutilla* on the male of *Mutilla purpurata* F. SMITH as genotype, but he either did not know that species or the specimen which he assumed to be of that species was misidentified or incorrectly examined. The characters by which he

defines *Mimecomutilla* do not apply to *purpurata* SMITH as described by BISCHOFF who had for study a metatopotype of that species from the British Museum. Still different from either *purpurata* SMITH or from ASHMEAD's interpretation thereof are specimens which have been identified by PÉRINGUEY and other South African entomolists as *purpurata* and which have been made by Bischoff his species *renominanda*. BISCHOFF called this the genotype of *Mimecomutilla*, but was incorrect in doing so, since ASHMEAD had already established *purpurata* SMITH as genotype. Furthermore *renominanda* also does not agree with the characters assigned by ASHMEAD to *Mimecomutilla*, since it possesses *three* distinct submarginal cells and *Mimecomutilla* was characterized as having only *two*.

According to BISCHOFF, and we have no occasion to disagree with him, *purpurata* SMITH is a true *Mutilla*. *Mimecomutilla* ASHMEAD based on it as genotype (even if misidentified) must therefore be reduced to a synonym of *Mutilla*. For the group which BISCHOFF calls *Mimecomutilla*, typified by his *renominanda*, there seems to be no need to find an applicable name, since we cannot find any characters by which to recognize it as distinct from *Smicromyrme*. Specimens of both sexes of *renominanda* determined by BISCHOFF lie before us and it is very vertain that there is no distinction in the shape of the male head, such as indicated by BISCHOFF in his key, between the majority of the species of these groups although it is true that in *rufipes* FABRICIUS) the type of *Smicromyrme*, the head is slightly prolonged and pointed medially. The weak difference in the sculpture of the pygidial area in the female and the occasional difference in the maculation of the second tergite of this sex cannot be looked upon by us as substantiating generic or even significant group distinctions. Furthermore, in the males, *rufipes* and *renominanda* both agree in having externally dentate mandibles and there are groups of species which BISCHOFF puts both in *Mimecomutilla* and in *Smicromyrme* which possess mandibles unarmed externally.

We have before us a male of *Lobotilla leucopyga* var. *leucospila* (CAMERON) identified by BISCHOFF and other specimens which agree with it. The clypeus is of the same type as in certain other species of *Trogaspidia*, that is to say there is a superior raised area, a depressed, transverse disk, and a narrow, anterior, transverse area. But,

whereas in other *Trogaspidia* the depressed dorsal portion is always impunctate and polished, in this it is densely hirsute. We cannot concede that this distinction is of generic or even subgeneric value, in view of the several, equally distinct modes of modification which the clypeus of various species of *Trogaspidia* assumes. Although the margin of the hypopygium in the females placed by BISCHOFF in *Lobotilla* has four lobes, in view of the absence of any other correlated characters, we cannot consider that these signify anything more important than a small group of related species of *Trogaspidia*.

The tegulæ of the only species of *Spinulotilla* that we have seen, are no smaller in the male than in some *Glossotilla*. The only difference that we can find for separating *Glossotilla* from *Spinulotilla* in the male sex is the presence of a tooth on the outer side of the mandibles in the former. There are no characters given by BISCHOFF for separating the females and we doubt that *Spinulotilla* can be maintained as even a subgeneric group; but, not having specimens of the females, we prefer for the present to recognize it as a subgenus rather than to synonymize it.

Trogaspidia and *Glossotilla* also cannot be maintained as distinct genera. The only basis for their separation in the male sex lies in the shape of the scutellum, and that shows transition stages which connect the two groups. Similar species groups occur within each of the two and the species of these are possibly more closely related to one another than to other members of their so-called genus. There seems to be no real way of distinguishing the females of *Glossotilla* from those of *Trogaspidia*. In *Trogaspidia* the carinæ of the sides of the pygidial area are terminated before the apex, leaving a median, immargined « lobe ». In *Glossotilla* these carinæ come nearer to the apex of the segment or disappear more gradually so as not to leave a marginal notch and hence a median lobe. But this is not always the case even in *Glossotilla*. In a specimen of *G. suavis* var. *speculatrix* (F. SMITH), for example, before us and so determined by BISCHOFF, the carinæ terminate abruptly leaving a distinct median lobe. We therefore consider *Glossotilla*, as well as *Spinulotilla*, as of subgeneric rank.

The males of *Smicromyrme*, in the restricted sense, differ from those of *Glossotilla* in having a short second segment of their flagellum, but in no other respect. The females only differ in having sometimes two,

sometimes no discal spots on the second tergite, but never a median, unpaired spot. These seem better subgeneric than generic differences and since they cannot be correlated with other, better characters we have reduced *Glossotilla* also to subgeneric rank.

The only way in which BISCHOFF distinguishes the females of *Trispilotilla* from those of *Trogaspidia* is that in the former the apex of the first tergite has a median pubescent spot, said in his generic key to be lacking in *Trogaspidia*. Yet *Trogaspidia junodi* ANDRÉ and *T. biseriata* (SAUSSURE) possess such a spot and would in his own key be determinable only as *Trispilotilla*. The males differ from *Trogaspidia* only in having the mandibles outwardly not toothed. As noted above, Bischoff leaves males with, and males without an external mandibular tooth both in his genus *Smicromyrme* and his genus *Mimecomutilla*, which is not consistent with separating *Trispilotilla* because of the absence of a mandibular tooth. Of *Trispilotilla* BISCHOFF says : « Wenn nicht die zugehörigen Männchen wesentlich verschieden wären, würde ich eine Abtrennung dieser Formen von der Gattung *Smicromyrme* nicht für gerechtfertigt halten ». And elsewhere : « Die Männchen sind denen der Gattung *Lobotilla* z. T. täuschend ähnlich. » We therefore also include *Trispilotilla* as one of the subgenera of *Smicromyrme*.

The genus *Ceratotilla* was established for females related to *Pristomutilla* in which the head is large and the greater number of which although not all, bear erect teeth on the antennal tubercles. It does not seem desirable to recognize as a genus or even subgenus a group which is distinguished only by virtue of having a large head and we have therefore recombined *Ceratotilla* and *Pristomutilla*. Moreo ver, there are species included by BISCHOFF in *Pristomutilla* which have the antennal tubercles toothed.

But we are obliged to go further with these groups. In the females of *Pristomutilla* and *Ceratotilla* the meshes of the propodeum have on the upper margin of the posterior face become elongated into a transverse row of spines. In all other respects these insects belong to *Trogaspidia* and it is only by the presence of this character that BISCHOFF separates them from *Trogaspidia*. Yet he leaves in *Trogaspidia* four species of his *trigonophora* group which are characterized by having an exactly similar row of spines,except that they are shorter :

« Höckerreihe » he says in contrast to « Dornenkamm ». The females only are known and it seems clear that we have only a group of species, distinguishable only as females and of which the males will prove to be of the ordinary *Trogaspidia* type. We therefore consider *Pristomutilla* as of subgeneric rank.

Viereckia is also a member of the same complex and is distinguished by the presence of testaceous spots on the integument of the second tergite, a character which also occurs in species retained by BISCHOFF in *Trogaspidia* and in *Myrmilla*. We prefer to consider it also as a subgenus.

Smicromyrme (Smicromyrme) zairensis, new species.

Male. — Black; pronotum, mesonotum and tegulæ dull red; calcaria whitish. Covered with erect, sparse, white hairs and decumbent silvery setæ on the front, temples, clypeus, below the eyes, base of propodeum, and apical fringes on the first four tergites. Wings brown, paler at the base, with violaceous reflection.

Length : holotype, about 10 mm.; paratype, 6 mm.

Head transverse, subparallel, but not much extended behind the eyes; the hind margin straight, except somewhat incised medially. Vertex coarsely punctured, slightly raised between the ocelli, with a weak, median, longitudinal impression. Clypeus transversely depressed, but somewhat raised in the middle; its anterior margin weakly bidentate. Edges of the mandibles raised, forming a cup-like rim; externally the mandibles dentate. Second flagellar segment shorter than third. Pronotum on its anterior margin with lateral angles rounded, posteriorly angularly emarginate; within this emargination the mesonotum is depressed, black, and only minutely punctulate. Dorsum closely, coarsely punctate; parapsidal furrows distinct posteriorly. Scutellum convex, with a weak indication of a median, longitudinal depression. Propodeum coarsely reticulate. Mesosternum with evenly convex surface, without either superior or precoxal tubercles. Marginal cell short and broad, no longer than first submarginal. First abdominal segment uniformly broadened to its apex, where it is not constricted from the second, but is much narrower than the maximum width of the latter; its sternite with a median carina but no

tooth. Second tergite rather coarsely punctured, more sparsely so in the middle; its sternite uniformly and rather coarsely punctured. Last sternite flat, uniformly and rather closely punctate; its apex produced medially.

In the paratype the pronotum, except the humeral angles, and an anterior discal spot on the mesonotum, are black.

Habitat : Belgian Congo, two males, Banana, August 6, 1920 (H. SCHOUTEDEN).

Holotype : Congo Museum, Tervueren. Paratype : Cornell University, No. 660.1.

Smycromyrme (Smicromyrme) bayeri, new species.

Female. — Elongate. Brownish black; calcaria testaceous. With erect white and black setæ and decumbent white hairs; apical median spot on first tergite, transverse row of three round, discal spots on second, small apical spot on the same, unbroken apical band nearly the length of the third, weak apical fringe at the sides of the fourth, lateral fringe on the fifth, and basal fringe on the last, yellowish white.

Length : 12 mm.

Head broadly rounded behind the eyes, closely and coarsely rugose punctate. Antennal grooves margined above, the margin not reaching the eyes. Antennal tubercles in juxtaposition. Clypeus above the base of the antennæ with a short, transverse, median tubercle the apex of which is bifid. On either side below and to the side of this an additional tubercle. Disk of clypeus depressed, impunctate. Mandibles straight, acute, edentate. Second segment of flagellum longer than the third, but shorter than the combined fourth and fifth. Dorsum and closely coarsely rugose-punctate; its sides parallel; anterior margin convex; humeral angles sharp, but not acute; a little notch behind the position of the tegulæ. Propodeal scale elevated. Posterior surface of propodeum, except inferiorly, rugose-punctate, the meshes sharp. First sternite with a posterior, acute, erect, but not large tooth. Second tergite with oval punctures, moderately sparse above the felted grooves. Pygidial area elongate oval, with reflexed margins which end before the apex, leaving a smooth and polished median

lobe. Disk of pygidium with short and irregular, much interrupted, vermiculate wrinkles, the general direction of which tends to be oblique.

Habitat : Kenya Colony, one female, Tsavo River, 1913 (Dr. BAYER).

Holotype : Congo Museum, Tervueren.

This species has its nearest ally in *congoana* BISCHOFF, from which it, however, differs in the shape of the striæ of the pygidial area which are much more irregular and interrupted. In addition, *congoana* has the thorax red.

Smicromyrme (Smicromyrme) tolerabilis new name.

Smicromyrme bequaerti BISCHOFF, 1923, Arch. f. Naturgcsch., LXXXVI, Abt., A, Heft 4, p. 592 (*nec Trogaspididia alecto* subsp. *bequaerti* BISCHOFF, 1920, *op. cit.*, Heft 3, p. 412, ♂. = *Smicromyrme* [*Trogaspidia*] *bequaerti* [BISCHOFF] BRADLEY and BEQUAERT, p. 242 *seq.*)

The male type of this species lies before us and also a specimen from Sankisia collected by J. BEQUAERT and referred by BISCHOFF on p. 589 of his Monograph with a query to *exaltata* (SMITH), as a form of that species. As a matter of fact these two specimens are identical in every respect and must both be considered as *tolerabilis*. The differences between *tolerabilis* and *exaltata*, to judge from BISCHOFF's description, seem to be slight. He indicates that in *exaltata* only the first and second abdominal segments are red and the third is entirely covered with white pubescence; whereas in *tolerabilis* the third segment is red and with only a weak apical pubescent band. The pronotum is covered with white pubescence in both species. The clypeus in *tolerabilis* is depressed and covered, except for a median, longitudinal strip, with white decumbent hairs. The setæ on this median strip are longer and erect; this median area is slightly raised above, depressed and semi circularly emarginate at apex.

Smicromyrme (Smicromyrme) rufopicta ANDRÉ, **S. delagoensis** ANDRÉ and **S. albistyla** (SAUSSURE).

BISCHOFF united these three forms as subspecies of *atropos*, but they are abundantly distinct by structural characteristics one from another, as indicated in the following key. We therefore believe that they should be given specific rank.

1. Mesosternum not tuberculate in front of the middle coxæ, the interstices of the puncturation forming a weak transverse ridge. Mesopleuræ uniformly convex, with neither a median depression nor a superior tubercle. Clypeus broadly flattened; the median portion somewhat convex and ending above in an interantennal carina; the anterior margin emarginate, the edge of the emargination bearing stiff setæ. Middle of last tergite without a translucent spot. Two basal abdominal segments red..... *rufopicta* André.

Mesosternum with a strong, transverse tubercle in front of each middle coxa. Mesopleuræ with a strongly elevated, oblique tubercle below the tegulæ..... 2.

2. Last tergite without a median, translucent spot. Apex of the clypeus not semi-circularly emarginate..... *delagoensis* André.

Last tergite with a median, translucent spot. Clypeus emarginate and bidentate at apex..... *albistyla* (Saussure).

Smicromyrme (Trispilotilla) melanocephala (Bischoff).

The female specimens which we have seen from the Belgian Congo present the following structural peculiarities : Clypeus : basal (upper) field ending in a raised, bluntly thickened plate which overhangs the median disk below it; the disk itself scooped out, margined on each side by a carina which projects at its edge. Carina of first sternite divided into two subequal teeth by an interval wider than the teeth. Propodeum not divided from the thorax proper.

In the male the clypeus has its upper portions raised and produced upward acutely between the antennæ; the raised surface densely covered with erect, black bristles which somewhat obscure its structure; this portion margined below by an elevated, prominent U-shaped carina, the arms of which turn outward and gradually disappear above; this U forms the summit of the vertical, lower face of the elevated area; from its base at the middle two carinæ extend obliquely outward to the anterior margin of the clypeus, becoming sharper and more elevated as they proceed and delimiting an apical, very broadly triangular, slightly concave area, which is but slightly punctulate and moderately shiny; between this and the upper, elevated area the sides of the clypeus are more or less punctate and hirsute;

the anterior edge is plain. The dorsal surface of the propodeum with a longitudinal, median groove bordered on each side by a strongly raised carina and extending from the base of the propodeum to the apex of the dorsal surface where it ends in a short, sinuate, strongly raised, transverse carina.

Smicromyrme (Trispilotilla) africana (André).

Female. Clypeus : basal field flat, with a preapical, short, transverse keel which does not overhang the disk below it; the disk itself but weakly margined on the sides. Carina of the first sternite divided by a narrow notch into an anterior and a posterior, much longer tooth. Propodeum separated from the thorax proper on its dorsum by a smooth, curved, weakly impressed line.

Male. Clypeus with its upper portion elevated, flattened, with long black hairs, ending above in an acuminate upward production between the antennæ; the elevated portion flaring out widely below into two crescent-like arms, the acute tips of which end in a sharp, rectangularly terminated carina; within the arms of the crescent the clypeus has below a large, sloping, highly polished, impunctate area which lower turns forward toward the front edge of the clypeus; the anterior edge is more or less truncate, broadly beveled, punctured and hirsute. Dorsal surface of propodeum with a median, longitudinal groove, bordered on each side by a prominent carina obsolete at the base; ending posteriorly at the junction with the posterior surface in the spreading arms of a V-shaped carina, the stem of which extends rather weakly along the median line toward the petiole, and the arms of which are short, but strongly raised.

Smicromyrme (Trispilotilla) acheron (F. Smith).

We have seen a male from Elgon District, Kenya Colony (Dr. Bayer. — Congo Museum). In this the clypeus is of the general type of *africana*, but the superior raised portion is densely covered with erect, black bristles which obscure its surface, the arms of the crescent are straighter and terminate more in a rounded ridge than in an abruptly truncate carina; median portion of the crescent de-

pressed below; the anterior margin of clypeus, instead of being simply and broadly beveled, is preceded by a sharp, elevated and curved, transverse carina. Dorsal surface of propodeum with a median, longitudinal groove bordered by prominent carinæ diverging at their base, their apices strongly elevated and joining in a triangular tubercle at the top of the posterior surface.

Smicromyrme (Trispilotilla) monteiroæ var. **charaxiformis** (Bischoff).

Male. Clypeus : upper part smooth and polished, raised, the sides sloping like a roof to a median ridge which terminates abruptly about the middle of the clypeus; each of the sides is circularly depressed, forming a basin; anterior to the ridge the clypeus has a depressed, median, transverse, smooth and polished area, with a plain front margin. Dorsal surface of propodeum with two longitudinal carinæ converging posteriorly and suddenly diverging before the base, ending at the junction with the posterior surface in an irregular, not strongly marked, transverse carina.

Smicromyrme (Trispilotilla) demaculata (Bischoff).

Male. Clypeus similar to that of *charaxiformis*, but the median ridge of the elevated, upper portion is broadly flattened on top, much less abruptly terminated beneath, and the transverse, impressed basin below is more sharply delimited. Dorsal surface of propodeum with two carinæ which converge posteriorly and suddenly diverge before the base, ending posteriorly in an irregular, transverse carina which weakly separates the meshes of the dorsal from those of the posterior surface.

In addition to the differences pointed out above the males of these five species of *Trispilotilla* are not alike in the shape of the scutellum. While in *africana* and *melanocephala* the scutellum is exceedingly prominent and conical to the summit, in *demaculata* and *charaxiformis* it is much less prominent, its summit compressed and as seen from the side sloping convexly in front and abruptly declivous behind.

In *acheron* the scutellum is strongly elevated, its summit very slightly compressed and a little more abrupt posteriorly than in front.

Smicromyrme (Trogaspidia) dispilotæmorpha (BISCHOFF).

Obock : Djibuti, one female (J. HERVÉ-BAZIN).

Smicromyrme (Trogaspidia) degreefi, new species.

Female. — Elongate,very slender. Black; the antennal tubercles, the middle of the mandibles, the coxæ and the dorsal surface only of the thorax, dull red; calcaria testaceous. With erect black setæ, mixed with white ones on the under side of the body and on the legs; the pleuræ covered with yellowish, somewhat glossy tomentum; two round, discal spots of yellowish white pubescence on the second tergite and two similar, broad, transverse spots on the third, widely separated from each other and from the lateral margins. Ultimate tergite with abundant yellowish hairs.

Length : 6,5 mm.

Head elongate behind the eyes, with strongly converging sides; the occipital margin straight. The entire head densely and coarsely punctured, hardly raised between the eyes. Antennal grooves margined above, the margin reaching the eyes. Antennal tubercles in juxtaposition. Clypeus with a short, superior raised portion below the antennæ, separated from the lower, scooped out part by a strong ridge; the raised area with a median, transverse, feebly bituberculate lamella. Mandibles straight, acute, edentate. Second segment of flagellum but little longer than the third. Dorsum closely and coarsely rugose-punctate; its sides nearly parallel, as broad anteriorly as at the propodeum. Propodeal scale elevated. Anterior margin convexly rounded, the humeral angle only marked as a minute tooth. Posterior surface of propodeum longitudinally ribbed. First sternite with a low carina which is broadly notched in the middle, the two teeth thus formed very low. Tergites uniformly covered with dense, moderately large punctures. Pygidial area shiny, its basal third co-

vered with 14 to 16 fine, irregular, longitudinal wrinkles which stop before reaching the middle; its apical two-thirds smooth.

Habitat : Belgian Congo, one female, Uele District (De Greef).

Holotype : Congo Museum, Tervueren.

This species belongs in the group of *S.* (*T.*) *trigonophora* (Bischoff). Its closest relative appears to be *S.* (*T.*) *serenjeana* (Bischoff) from which it differs in the sculpture of the pygidial area, the much finer sculpture of the second tergite, the much abbreviated lateral spots of pubescence on the third tergite, and the color of the thorax which is red on the dorsum only.

Smicromyrme (Trogaspidia) lukugensis, new species.

Male. — Black; except the abdomen which is orange rufous; the under side of the first segment black. Calcaria white. Erect pubescence of head, thorax, and legs mostly whitish and partly black; that on the abdomen coppery orange. In addition there is more or less dense, appressed, tomentose, slightly yellowish white pubescence forming spots and bands on head and thorax as follows : on the face between the eyes and clypeus; above the antennæ and sparsely on the lower temples; the posterior margin of the pronotum and a very dense patch on the excavated lower portion of the mesopleuræ; entire dorsal surface of the propodeum. The tergites have very fine, appressed, orange pubescence, becoming denser laterally and absent in the middle; scarcely in evidence on either the first or last. Wings uniformly brown, with somewhat of a violaceous reflection.

Length : about 14 mm.

Head seen from above much broader than long; the occiput but moderately extended behind the eyes; its sides strongly convergent and rounded posteriorly; its posterior margin broadly emarginate; its surface with strong but well separated punctures, with polished interstices; below the ocelli the punctures much denser. Ocelli forming an isosceles triangle, the base of which is anterior to the postocular line. Antennal groove strongly margined, the carina bent almost into the shape of an interrogation mark. Clypeus with an anterior, raised, roughly triangular portion, the point of which ends

above in a short, sharp carina between the antennæ, and the lateral arms of which are short and end in a distinct, blunt prominence; the lower edge of this triangle broadly emarginate. Below this portion the disk of the clypeus forms a transverse, impunctate, and highly polished trough, rather flat except as it slopes upward above; in the middle of the anterior part of this trough is a very slight tubercle. Anterior margin of clypeus preceded by a few punctures, squarely truncate; its edge slightly reflexed, terminating on each side in a small tooth which projects laterad, and continued obliquely to each side in a small carina which runs towards the condyle of the mandibles. Mandibles with a very strong inferior tooth; their apices bluntly pointed; with an obtuse inner tooth, but not strongly widened. Scape long, rather shiny; its upper surface with white hairs, but not bearing distinct scopæ. Second segment of flagellum subequal in length to the third. Thorax moderately short; its dorsal surface uniformly convex; the angles and the anterior margin of the pronotum rounded. Pronotum and mesonotum closely and rather coarsely punctured; the mesonotum with a median, longitudinal, polished ridge at the sides of which the parapsidal furrows, especially posteriorly, are very deeply marked; between these and the tegulæ are weakly impressed, additional, longitudinal grooves. Scutellum strongly conical; its summit with an oblique, slightly compressed, polished, broad ridge, rounded in front and abruptly truncate at apex, the rest of the scutellum is more closely punctured than the mesonotum. Postscutellum obliquely elevated, forming part of the base of the scutellar cone, weakly punctate in the middle. Mesopleuræ of irregular conformation, there being a strong swelling below the tegulæ and another above the middle coxæ. Tegulæ shiny, with a few small punctures around the edges and striæ around the outer edge. Propodeum with the sculpture of its dorsal surface obscured by pubescence, excepting for a median, longitudinal area demarcated by posteriorly converging carinæ and which ends in an elevation at the junction with the posterior surface; the latter is coarsely reticulate, but the meshes rather small; the upper lateral surface similarly reticulate. First tergite seen from above with its sides diverging at a lesser angle than that made by the sides of the second segment at base; its width at apex much less than the maximum width of the second segment; seen from the

side the upper surface is rather evenly convex, without demarcation between the anterior and dorsal aspect. Edges of the tergites more or less obscurely punctured; the middle of their disk largely impunctate and shiny, excepting on the last two. First sternite with a prominent, median carina, elevated and cut off at right angles, posteriorly. Last tergite with a median, impunctate, longitudinal ridge, slightly depressed towards its apex which forms an elevated platform, terminating in the spreading arms of a vertical Y-shaped carina; the stem of this carina is set on the middle of the posterior edge of the segment. The surface of this longitudinal, pygidial elevation is obliquely striate, the striæ converging toward the tip. Second sternite simple. Sixth sternite totally unarmed laterally. Seventh sternite nearly as broadly exposed as the sixth, with a low, oblique, lateral ridge. Last sternite with rather flattened, oblique ridges which strongly converge posteriorly, each forming at its tip a rounded tooth and terminating much anterior to the end of the segment; behind them the surface of the segment is depressed, membranous, and densely hirsute.

Habitat : Belgian Congo; one male, Albertville, December, 1918 (Holotype. — R. MAYNÉ); one male, Lukuga River, Niemba, December 1917 to January 1918 (PONS); one male, Mpala (R. MAYNÉ).

Holotype and one paratype (Mpala), Congo Museum, Tervueren; one paratype (Niemba), Cornell University, No. 658. 1.

In BISCHOFF's key this species would run to *divisa* subsp. *miniaticeps* BISCHOFF, with which, however, the agreement can only be superficial. We have before us a specimen of the subspecies *klugiana* ANDRÉ of *divisa* and find that it differs from *lukugensis* in essentia structural characters as follows : the upper, elevated portion of the clypeus is uniformly convex above and ends below in a transverse, abrupt and medially subacute ridge; the disk of the clypeus is without the median, preapical, small tubercle; the margin of the clypeus is not quite truncate, but weakly bilobed; its edge not reflexed and without lateral teeth or carinæ; the scutellum is much less strongly elevated; the mesopleuræ have an upper and lower swelling as in *lukugensis*, but these are much less pronounced and the depression between them smaller; the lower one is rounded instead of sharp below; ventral surface of mesopleuræ anteriorly with an oblique, smooth,

polished swelling, under surface of middle coxæ with a rounded, smooth and polished elevation which is not present in *lukugensis*. The pygidium of *klugiana* is of a very different type; the longitudinal, median swelling is scarcely defined until its very apex where it terminates in a carina which from behind is seen to be in the form of an inverted crescent; this crescent is abruptly elevated above the base of a short, strongly marked, thin, longitudinal, median carina that extends to the middle of the apex of the segment; its base being in a median depression of the apex of the segment beneath the crescent-shaped carina above referred to, which extends over it like a hood; the swelling of the tergite is entirely smooth, polished and unsculptured above. The oblique carinæ of the ultimate sternite, although situated similarly to those of *lukugensis*, are very weak, not at all forming a tooth, and the sternite behind them is but little depressed, appears only slightly membranous, and is not more noticeably hairy than most of the sternites.

Smicromyrme (Trogaspidia) vetustata (Bingham).

We have seen three males of this species from Lourenzo Marques (H. Junod) (Cornell University).

Smicromyrme (Trogaspidia) medon var. **themis** (Péringuey).

Lourenzo Marques, three males (H. Junod). Chilomo, Mlanje, Nyasaland, one male (Dr. Soveral) (Cornell University).

Smicromyrme (Trogaspidia) salisburyica (Bischoff).

Lourenzo Marques, one male (H. Junod) (Cornell University).

Smicromyrme (Trogaspidia) aurea (Bischoff).

Cameroon : Lolodorf, one male (A. I. Good. — Carnegie Museum).

Clypeus with its upper triangular portion somewhat raised and punctured along the edges; medially impunctate and polished; its

depressed area extending toward the sides below and limited inferiorly by a transverse, curved, sharp carina below which is the small median anterior lobe which bears two transverse, punctate grooves.

Smicromyrme (Trogaspidia) tricolor (Klug).

Somaliland : Sheikh Hussein, one female (A. Donaldson Smith. — Academy of Natural Sciences, Philadelphia).

This was correctly recorded by Fox (*Proc. Ac. Nat. Sci. Philadelphia*, 1896, p. 547) as *Mutilla tricolor*.

Smicromyrme (Trogaspidia) alecto (F. Smith).

In the male of this species the anterior margin of the clypeus is very strongly produced into a transverse, depressed plate, the anterior edge of which is slightly concave, the antero-lateral angles sharp, the sides slightly diverging above; the surface of this plate has a few setigerous punctures and some transverse striolæ; it is limited above by a transverse carina which is extended obliquely outward above the margin of the clypeus almost to the condyle of the mandibles. The inferior swelling of the mesopleuræ is coarsely reticulo-punctate; the interstices just in front of the middle coxæ forming an irregular tubercle. Under face of the middle coxæ with a longitudinal, impunctate, shiny ridge. The ridge of the scutellum with a narrow, longitudinal furrow bordered on each side by a carina. First sternite with a longitudinal carina, emarginate anteriorly so as to make a blunt, anterior and a longer, but also blunt, posterior lobe; the latter truncate behind. Second sternite with an almost mammiform tubercle. Eighth sternite truncate, its tips slightly membranous; its entire surface, except the membranous portion, uniformly covered with an only moderately dense brush of reddish brown bristles.

Smicromyrme (Trogaspidia) bequaerti (Bischoff).

Trogaspidia alecto subsp. *bequaerti* Bischoff, 1920, Arch. f. Naturgesch., LXXXVI, Abt. A, Heft 3, p. 412 (♂). (nec *Smicromyrme bequaerti* Bischoff, 1921, *op cit.*, Heft 4, p. 592).

The unique male type of this is before us and as it differs in the following structural characters from *alecto*, it should be ranked as a distinct species. Clypeus with an anterior, transverse plate, not depressed below the level of the disk; its anterior margin very slightly concave; its antero-lateral angles a little less than right angles; its sides parallel; its transverse extension much greater in proportion to its length than in the case of *alecto*; its surface covered by a row of punctulations which bear small setæ; it is delimited above by a very weak carinula, not reaching its sides, and above this are two or three fine, transverse striolæ. Mesopleuræ closely, but not deeply and only moderately coarsely reticulo-punctate below; just in front of the middle coxæ forming an oblique, crested ridge. Middle coxæ with a smooth and polished area, but without an elevated ridge. The ridge of the scutellum with a longitudinal furrow broader than in *alecto*, marked by less strongly raised carinæ and becoming obsolete toward its apex. First sternite with an anterior, truncate lobe. Seventh sternite unarmed. Eight sternite with ridges somewhat shorter and more erect than in *alecto*; the bristles of this sternite mostly grouped into two brushes, one behind each of these two ridges. The apical membrane in the unique type is frayed at the apex, so that its shape cannot be exactly determined, but it seems to be somewhat more extensive than in *alecto*.

Smicromyrme (Trogaspidia) prolongata (Bischoff).

Glossotilla alberti subsp. *prolongata* Bischoff, 1921, Arch. f. Naturgesch., LXXXVI, Abt. A, Heft 4, p. 493 (♂).

An additional male specimen of this species, from Yambata, Belgian Congo (de Giorgi), compared with the type and with a specimen of *alberti* from Cameroon, substantiates Bischoff's surmise that it should be regarded as distinct form, rather than a subspecies of *alberti* (André). The disk of the clypeus bears anteriorly a broad and high triangular lamella; the summit of the clypeus is on one plane with the disk and but sparsely punctured. Seventh sternite with strong, lateral, oblique ridges extending the length of the segment; those on the eighth broadened, parallel with, but no longer than those of the seventh. We cannot understand why it should be included in *Glosso-*

tilla and have transferred it to the subgenus *Trogaspidia* where we believe it belongs. Its scutellum is strongly gibbous and surmounted with a longitudinal, raised keel as in *Trogaspidia*, and quite as prominent, if not more, as in some other species of that subgenus, such as *ligulifera* BISCHOFF. Nor do we find other characters which would ally it with the species of *Glossotilla* rather than with those of *Trogaspidia*.

Smicromyrme (Trogaspidia) alberti (ANDRÉ).

Mutilla alberti ANDRÉ, 1896, Term. Füzetek, XIX, p. 22.

Glossotilla alberti BISCHOFF, 1921, Arch. f. Naturgesch., LXXXVI, Abt. A, Heft 4, p. 493 (♂).

Cameroon : Lolodorf, one male (A. I. GOOD. — Carnegie Museum).

This species differs markedly from *prolongata* in the shape of the clypeus and the ridges of the last sternites. The smooth disk of the clypeus terminates anteriorly in a low, transverse, squarely truncate lamella. Seventh sternite with short and feeble, slightly oblique, lateral ridges; those on the eighth much longer, strongly curved inwardly toward the middle of the segment, so as to almost meet in the center. Scutellum gibbosely carinate, as in *prolongata*, so that this species too properly belongs in the subgenus *Trogaspidia*.

Smicromyrme (Trogaspidia) mufungwensis (BISCHOFF).

The unique male type of this species is before us. BISCHOFF remarks that its mouth-parts are dirty, so that he was unable to describe the form of the clypeus. Contriving to clean them, we discovered the presence of an elevated, transverse tooth unsuspected by BISCHOFF and which removes it from where he had placed it to the section of the genus which comprises *prolongata* BISCHOFF and *odontostoma* BISCHOFF.

Smicromyrme (Trogaspidia) kachiobweana (BISCHOFF).

In the male type and another male from Kalembe-lembe, Belgian Congo (R. MAYNÉ), wich we have compared with it, the anterior portion of the clypeus has a sloping, transverse, depressed basin,

margined by rounded and not very prominent ridges, a little more than twice as broad as it is long; its upper part somewhat hirsute. Mesopleuræ with a very distinct, oblique, polished ridge in front of the middle coxæ; these with an oblique, curved, but not very definite ridge. First sternite with a median carina produced in the middle into a very prominent, obtuse, triangular tooth.

Smicromyrme (T.) kachiobweana var. **jankisiaca** (BISCHOFF).

In this form the clypeus and all structures we have compared in the male are as in *kachiobweana*, except that the tubercles of the seventh sternite are all but obsolete. The hairs of the ocellar region, as noted by BISCHOFF, are in part black in the type specimen. In another, somewhat larger specimen which we refer to this form on the strength of its obsolescent processes of the seventh sternite, the ocellar hairs are entirely grey. BISCHOFF separates his *tanganjicæ* and with it *jankisiaca* from *kachiobweana* and *mufungwensis* on the basis that the latter two possess a densely pubescent dorsal surface of the propodeum, whereas in the former the propodeum is less thickly and more erectly clothed. The types of all but *tanganjicæ* are before us and we find no appreciable difference in the vestiture of the propodeum of the three forms; *mufungwensis*, however, belongs in another species group. In all respects the structure of *jankisiaca* is so close to that of *kachiobweana*, that we can only consider it at most a variety of this species. As to whether such is also true of *tanganjicæ*, not having seen specimens, we cannot express an opinion.

Smicromyrme (Trogaspidia) bunkeyana (ANDRÉ).

We have also examined the unique, male type of this species. The anterior margin of the clypeus has a broadly bevelled emargination, terminating laterally in a blunt peg-like tooth, the top of which is truncate and microscopically punctulate; laterad of the base of these teeth the disk of the clypeus is striolate to the condyle of the mandibles; this median, bevelled edge corresponds to the impressed basin of such species as *kachiobweana*.

Smicromyrme (Trogaspidia) bugalana (BISCHOFF).

Numerous specimens of this species before us belong to the form which BISCHOFF calls *kibomboana* and of which we have also seen the type. We have not seen the typical form, but as the difference is only in the density of the wing coloration it seems probable that both are morphologically alike. The type of BISCHOFF's *propodealiformis*, however, shows such a distinct clypeal structure that we must give it, specific rank.

We have one pair from Beni, taken *in copula* (J. BEQUAERT), of which the male shows no structural difference from the males of *kibomboana*, but the first and third tergites are entirely black and the disk of the wings is somewhat paler. We could consider it a variety of *bugalana*, but do not deem it necessary to distinguish it with a name. As the female of *bugalana* was not known with certainty, we subjoin a short description of both sexes of this pair.

Male. — Black; morocco red on the second abdominal segment; calcaria pale. Covered with conspicuous, silky white setæ, dense on the face, clypeus, and mesopleuræ; forming thin apical fringes on all but the last abdominal segment; a pubescent band on the pronotum. Wings stained brown, with a strong violaceous reflection.

Length : about 15 mm.

Head transverse, strongly narrowed behind the eyes, irregularly punctured above. Antennal grooves margined above. Clypeus with a densely hirsute superior area, the oblique lateral arms of which enclose a shallow median basin on the impunctate disk; anterior margin produced into a short, transverse, oblique lobe, with a basal row of setæ on each side, forming a blunt, raised tooth. Second segment of flagellum subequal to the third. Dorsum coarsely punctured; mesonotum with a median, raised, impunctate line; parapsidal furrows distinct posteriorly; between them and the tegulæ an additional raised line. Tegulæ smooth and polished, with punctures only along the anterior and inner edges, around the outer edges finely striolate. The scutellum with a median raised carina somewhat compressed, but little elevated posteriorly, truncate behind. Mesopleuræ with an oblique, median depression; a short, oblique carina in front of the

middle coxæ. Mesosternum behind the front coxæ with strongly elevated, forwardly projecting, transverse tubercles. Propodeum reticulate; median, basal mesh reaching the apex of the dorsal surface. Second tergite impunctate medially. Tooth of first sternite strong, truncate behind and sloping anteriorly. Second sternite slightly elevated in the middle at base. Seventh sternite with weak lateral teeth; the eighth with a strong ridge which parallels the side margin. Last tergite with a median polished, impunctate strip which is not elevated; apex broadly subtruncate.

Female. — Black; dorsum, upper edge of the pleuræ, and posterior face of propodeum dull red. A white, discal spot of pubescence on each side of second tergite; a broadly interrupted, apical band on the third; an apical spot on each side of the fourth; and white setæ on the last tergite.

Length : 12 mm.

Clypeus extending upward in a carina between the antennæ; with an upper, transverse, erect tubercle, below which run oblique ridges terminating abruptly on the sides and enclosing a sloping, depressed, impunctate, median area. Sides of the thorax somewhat concave, not widened posteriorly; propodeum abruptly truncate. Pygidial area with a distinct median lobe which is not wrinkled but finely shagreened, separating at an obtuse angle from the lateral expanding edges; the disk of the pygidium with rather fine, longitudinal, but somewhat wrinkly and irregular ridges, converging and confluent from the base toward the apex.

Smicromyrme (Glossotilla) garuana (Bischoff).

Trogaspidia garuana Bischoff, 1920, Arch. f. Naturgesch., LXXXVI, Abt. A, Heft 3, p. 423 (♂).

The clypeus of this species is of a rather distinctive type. The upper elevated portion is very coarsely rugose-punctate and uniformly gibbose, so that there is no distinction between its lateral and median surfaces; and this punctate area extends downward on each side enclosing the sides of a very small, impressed basin, from which it is separated by a polished rounded ridge. The impressed basin is trans-

verse, small, semi-circular or subtriangular in shape; its surface roughened with punctulations and separated only by a feeble ridge from the anterior lobe of the clypeus, which is transverse, impunctate, shiny, and deeply depressed.

The scutellum is uniformly convex, without a carina, but there is a median, flat, not entirely impunctate, polished strip of irregular outline. The last sternite has two strong ridges, the apices of which are turned toward each other; the very apex of the segment membranous.

Because of the entire absence of a keel on the scutellum we do not find it possible to retain this specis in the subgenus *Trogaspidia*. In its golden thoracic pubescence it closely resembles *Smicromyrme* (*Trogaspidia*) *variipennis* (BISCHOFF), but the clypeus is of an entirely different type and it is probable that there is no real close affinity between them.

Smicromyrme (Glossotilla) leonina (BISCHOFF).

Glossotilla leonina BISCHOFF, 1921, Arch. f. Naturgesch., LXXXVI, Abt. A, Heft 4, p. 488 (♂).

In addition to the male types of *Glossotilla leonina*, *G. kibomboana*, *G. jokelensis* and *G. congoensis*, the three last-named uniques, we have before us specimens which indicate an intergradation of the characters upon which BISCHOFF founded these species. Thus while in the type of *leonina* the abdomen is infuscated at the tip, we have other specimens in which it is entirely red. Of the other specimens *kibomboana* type has no pubescent spot on the second tergite, one specimen has a very small spot, others have moderate sized spots with increasingly larger pubescent bands, and one specimen has very large, sharply marked spots and broad apical bands. The difference in the puncturation of the second tergite does not appear to be more than individual in its nature. The lateral processes of the ultimate sternite are of the same peculiar type in all of these forms and also in *Glossotilla adelpha*, that is to say they consist of a basal, oblique or almost transverse, flattened, subtriangular tubercle, approaching each other in the middle and from there carried backward as longitudinal, subparallel carinæ. In one of our specimens this posterior, longitudinal carina on one side

is lacking, leaving the sternite bilaterally asymmetrical with only the basal, triangular tubercule on one side. In the type of *congoensis* this is true on both sides, only the triangular, basal tubercles remaining, but it is apparent that the matter is one of individual variation and would not be distinctive of a series of specimens.

It is evident, therefore, that the species is a variable one in minor structural characteristics, in color, and in vestiture; we feel obliged to reduce *kibomboana* and *congoensis* as varieties of *leonina*, and to consider *jokolensis* as synonymous with *congoensis*. In transferring these forms to *Smicromyrme* we select *leonina* as the proper name of the species, there being another *Smicromyrme kibomboana* which has precedence over *Glossotilla kibomboana*.

Smicromyrme (Glossotilla) mukongo, new species.

Male. — Entirely black; calcaria white. Covered with erect, white and a few black hairs and dirty white, appressed pubescence arranged as follows : front between the antennæ; sides of the pronotum; dorsal surface of propodeum; round, subbasal lateral spots and a slight median apical fringe on second tergite; interrupted apical band on the third; median apical band on the sixth. Wings infuscated, slightly paler in the cells at base.

Length : about 14 mm.

Head transverse; short and rounded behind the eyes; middle of the posterior margin concave. Ocelli small, in an equilateral triangle, the base of which is anterior to the postocular line; anterior ocellus larger than the other two. Vertex coarsely, rugosely punctate; front more closely. Antennal grooves sharply margined. Clypeus with a strongly raised portion, produced upward between the antennæ in the form of a ridge; this raised portion rather triangular in shape, punctulate, but with its surface rounded and not sharply bordered, rounding below into the depressed, impunctate disk; the sides of this impunctate area stretching away narrowed to the condyles of the mandibles; the disk traversed medially by a weak longitudinal elevation; its anterior margin apparently the rounded margin of the clypeus; but, in reality, the anterior lobe is turned under at a right angle

to this surface and hidden by the mandibles. Mandibles with a large external tooth. Eyes emarginate. Second article of flagellum equal to third. Dorsum sculptured like the vertex. Scutellum with rather flat upper surface, traversed by a median, polished, low ridge which is not truncate, nor projecting behind. First abdominal segment not nodose, gradually widening to the second from which it is not constricted; its sternite with a median keel, truncate in front and posteriorly produced into an acute tooth. Second segment as seen from above constricted just before the apex so that its sides at that point appear a little tuberculate; its dorsal surface coarsely punctate, sparsely so in the middle of its disk; the base of its sternite elevated into a sort of tubercle which is limited anteriorly by a V-shapedc arina; surface of the sternite with coarse, spatter-punctures, excepting for a large, smooth, impunctate, median basin which is limited posteriorly by a transverse, curved ridge. Last tergite with an indistinct median ridge which terminates posteriorly in a raised, truncate process. Sixth sternite with indications of lateral ridges. Seventh sternite with heavy, crescent-shaped, raised ridges. Last sternite with short, stout ridges, somewhat curved toward each other apically.

Habitat : Belgian Congo, one male, Thysville, June 3, 1915 (J. Bequaert).

Holotype : Congo Museum, Tervueren.

Smicromyrme (Glossotilla) malelensis, new species.

Male. — All black, with white calcaria. With erect, white and some brown hairs and with dirty white, appressed pubescence distributed as follows : dense spot on the face; spot on the side of the mesopleuræ; basal spot on propodeum; subbasal, lateral spots and a narrow, median, apical band on second tergite; an interrupted, broad, apical band on the third; suggestions of an interrupted, apical band on the fourth and fifth; a broad; median band on the sixth. Wings deeply infuscated, showing somewhat of a violaceous reflection.

Length : 11 mm.

Head seen from above transverse, rounded behind the eyes; posterior margin concave. Vertex coarsely, rugosely punctate; sculpture

of the median part of the front obscured by the vestiture. Ocelli in an equilateral triangle, the base of which is slightly anterior to the postcular line. Eyes deeply emarginate. Antennal grooves strongly margined superiorly. Superior, raised portion of the clypeus ending in an acute point above, between the antennæ; its surface punctulate and clothed with long hairs; its two arms extending downward and to the sides, not very definitely limited and enclosing the upper sloping portion of the transverse, depressed, smooth and polished disk; the flattened sides of the clypeus towards the condyle of the mandibles impunctate and polished except for a few median, microscopic striolæ; the anterior margin of this discal portion truncate, with rounded lateral angles and preceded by a shallow, weakly impressed, transverse groove bearing a few hairs. Mandibles with a strong tooth on the lower margin, inner margin with a tooth before the apex; their upper surface with a sharp ridge which is not, however, raised into a strong carina. Scape strongly contorted toward the apex and somewhat widened, the under surface smooth and polished. Second segment of flagellum as long as the third. Dorsum sculptured like the vertex. Anterior margin and angles of the pronotum rounded; disk of mesonotum with a median, impunctate, polished line, on each side of which are, posteriorly, deeply marked parapsidal furrows. Scutellum flat, coarsely punctured, with a median irregular, impunctate ridge which is not raised posteriorly. Propodeum reticulate; basal area obscured by vestiture; but apparently with a median area which extends tapering to the apex of the dorsal surface; lateral surface reticulate. First abdominal segment as seen from the side gradually and evenly widened; above without distinct differentiation between anterior and posterior surfaces, merging evenly into the second; as seen from above it is narrower at the apex than the greatest width of the second segment from which it is slightly constricted at apex; its ventral, median carina elevated and rectangularly truncate posteriorly. Second segment as seen from above suddenly constricted before its apex, so that its sides are noticeably tuberculate; the basal, median portion of its tergite rather sparsely, its discal portion very sparsely, but coarsely punctate; its sternite slightly elevated in the middle at base, but not tuberculate nor carinate; the sides of its sternite spatter-punctured, medially with a longitudinal, impunctate,

polished line which widens at the apex in a rounded, slightly elevated, impunctate area, without a distinct transverse ridge. Middle of the last tergite raised and truncate before the apex. Sixth sternite with small, oblique ridges. Seventh sternite with flattened, curved ridges. Eighth sternite with heavily swollen, thick ridges which cu ve toward each other and unite posteriorly, but are much lower behind than in front.

Habitat : Belgian Congo, one male, Malela, July 5, 1915 (J. BEQUAERT).

Holotype : Congo Museum, Tervueren.

Smicromyrme (Pristomutilla) congoana (BISCHOFF).

Pristomutilla congoana BISCHOFF, 1921, Arch. f. Naturgesch., LXXXVI, Abt. A, Heft 4, p. 525 (nec *Smicromyrme congoana* BISCHOFF, *op. cit.*, p. 572).

One female from Faradje (LANG and CHAPIN) we assign to this species with some hesitation for the band on the third tergite is laterally abbreviated, leaving therefore only two spots. It is not, however, so clearly distinct as to warrant description as a new form, on the basis of a single specimen.

Smicromyrme (Pristomutilla) ctenothoracica var. **rufithoracica** (BISCHOFF).

Kenya Colony : Taveta (Dr. BAYER).

Ctenotilla lobognatha, new species.

Female. — Dark brown; with red dorsum, piceous legs, mandibles, and scape; a crescent-shaped band, occupying most of the apex of the third tergite, testaceous. Calcaria testaceous. With sparse, erect, pale setæ which form a thin fascia on the testaceous band of the third tergite.

Length : 5 mm.

Head seen from above broader than the thorax, trapeziform, being widest at the front of the eyes; the lateral margins prolonged in straight

converging lines behind the eyes, meeting the hind margin at an obtuse angle emphasized by a vertical carina; median portion of the hind margin abruptly emarginate; the carina at the postero-lateral angles continued on the under surface where it ends behind in a tooth. Front and vertex closely but rather finely striato-punctate; the vertex with a small, polished, impunctate, median strip of irregular outline. Antennal tubercles elevated into acute spines, but little closer to each other than they are removed from the eyes. Antennal grooves, margined by a very fine carina. Superior portion of clypeus with a sinuate ridge which curves upward closely between the bases of the antennæ. Mandibles stout, on the whole very slightly curved, the upper edge with a broad basal lobe occupying the entire basal half; the outer margin of this lobe at right angle to the inner margin of the mandible; the lobe forming a huge, erect tooth which covers the greater part of the clypeus when the mandible is closed and almost meets the parallel margin of the corresponding lobe of the other mandible; apex of mandible slender and acute, with a small inner tooth; a ridge extending from the acute apex of the inner lobe to the condyle. Second segment of flagellum elongate, longer than the two following united. Dorsum in dorsal view with parallel sides, interrupted by several short teeth; the humeral angles sharp; dorsum a little more coarsely striato-punctate than the head. Upper angle of the propodeum with a median and two lateral long spines between which are some irregular, very short teeth, the extreme side with a short, curved spine; posterior face truncate; its lateral margins weakly toothed. First segment curving broadly into the second, without constriction, but without a dorsal surface. Second segment broadly ovate; its tergite closely, uniformly, but not coarsely punctate. Pygidial area long oval, rather pointed, entirely impunctate and shiny, testaceous.

Habitat : Belgian Congo, one female, Congo da Lemba, May, 1912 (R. Mayné).

Holotype : Congo Museum, Tervueren.

The extraordinary mandibles of this species, with the broad, erect, basal tooth, closing over and hiding the surface of the clypeus, distinguish it from any mutillid with which we are familiar. Among the

genera recognized by BISCHOFF, the species appears to agree best with *Ctenotilla*, of which we have, however, seen no known species. It is possible that it may be necessary eventually to place it in a distinct genus.

Dasylabris somalica (FOX).

Mutilla somalica FOX, 1896, Proc. Ac. Nat. Sci. Philadelphia, p. 548, fig. 1 (on p. 549) (♀).

We have examined the female type from Finik, Somaliland (A. DONALDSON SMITH) at the Academy of Natural Sciences, Philadelphia. The species is closely allied to *Dasylabris porphyrea* (GERSTAECKER) of which it is perhaps only a variety. As shown in FOX' figure, the second tergite is covered with bright golden tomentum except for a design of narrow, black lines. Compared with the description of *porphyrea*, in *somalica* the very broad, apical, transverse, golden fascia of the second tergite is not continuous, but broadly interrupted in the middle; in addition this golden fascia is prolonged anteriorly on the sides to form elongate, triangular spots broadly separated from the very large, elongate, median golden spot of the base.

Dasylabris foxi, new name.

Mutilla leda FOX, 1896, Proc. Ac. Nat. Sci. Philadelphia, p. 547 (♀) (not *Mutilla leda* BLAKE, 1872, Trans. American Ent. Soc., IV, p. 72).

The female type from near Gelani, Somaliland (A. DONALDSON SMITH), at the Academy of Natural Sciences, Philadelphia, differs from all other *Dasylabris* we have seen in the absence of a pygidial area limited by lateral carinæ. The last sternite is smooth and shiny over the greater part of its middle surface.

BISCHOFF, who has not seen this species, suggests that it might belong in the *deckeni*-group and perhaps be related to *D. neavei* BISCHOFF. It reminds us, however, much more of the group of *D. quinquenotata* ANDRÉ. Front and vertex with two broad, lateral bands of silvery white tomentum which run close to the inner orbits and are distinctly, though narrowly separated on the occiput; they

unite on the face above the insertion of the antennæ. Temples, behind and below the eyes, almost entirely covered with silvery white pile. On the abdomen the silvery white pubescence is distributed as follows : a broad apical band on the first tergite; three large, rounded spots placed in a triangle on the second tergite; the median spot elongate oval, placed lengthwise on the basal third of the segment; the two lateral spots elliptical, very broad, and placed much before the apical margin, almost as far from each other as their own width; they do not appear to result from the fusion of two pairs of lateral spots; third, fourth, and fifth tergites each with a median, transverse spot and apical side fasciæ not connected with the median spot. The sides of the second tergite bear long, silvery hairs in the vicinity of the felted grooves. Broad, silvery fringes at the apex of second and third tergites and traces of such toward the sides of the fourth sternite. Silvery hairs also form indistinct spots on the pleuræ of the thorax. Thorax sanguine red, the remainder of the body black.

Head distinctly narrowed behind the eyes, the sides of the vertex strongly convergent. Occiput without trace of lobes or carina. Thorax squarely truncate anteriorly, the humeral angles broadly rounded off. Seen from above the thorax is elongate, distinctly broader in the region of the tegulæ, before its middle; narrower posteriorly, about one and one-half times as long as its greatest width. First sternite with a short, uniformly straight carina which is neither dentate not emarginate.

It will be interesting to know whether *D. quinquenotata* André and its relative *D. alluaudi* Bischoff agree with *D. foxi* in the absence of a pygidial area. *D. filum* Bischoff, which Bischoff compares with *quinquenotata*, possesses a well limited and sculptured pygidial area, as we have found upon examination of the type.

Dasylabris deckeni Magretti var. **signaticeps** André.

Somaliland : Laga, one female (A. Donaldson Smith. — Academy of Natural Sciences, Philadelphia). This specimen was recorded by Fox (*Proc. Ac. Nat. Sci. Philadelphia*, 1896, p. 547) under the name *Mutilla mephitis* Smith, but in that species the shape of the head is different.

Stenomutilla dolichoderoides, new species.

Female. — Entirely black; with a continuous. apical band of yellowish white hairs on the first and second tergites and a fringe on the second sternite; the band on the second tergite broadened medially. Calcaria black. A long, slender species.

Length : 9,5 mm.

Head and dorsum uniformly, very coarsely and closely punctured. Head prolonged behind the eyes, the margins strongly converging; median part of posterior margin prolonged into a rim over the neck. Clypeus with a superior, elevated portion, narrow and bordered on each side by a raised margin ending above between the antennæ in an acute angle and terminated below by a smooth and polished transverse lobe; below this a transverse, elevated ridge runs all the way across the clypeus; this ridge is somewhat interrupted by a median emargination in the center of which is a small lobe. Mandibles slender, acute. Antennal grooves without superior margin. Thorax widest in the middle; strongly narrowed both anteriorly and posteriorly; ending in front in a transverse neck, the anterior margin of which is slightly reflexed. First abdominal segment slender, with its apex about one-third the maximum width of the second; its under side with a median ridge, but without distinct teeth. Second sternite swollen at base; this swelling commencing on the sides with a ridge which runs forward from the felted grooves. Second tergite closely and coarsely punctate, a little bit more sparsely on the sides. Ultimate tergite with the median and apical portion impunctate and polished.

Habitat : Tanganyika Territory, one female, Kigoma (R. Mayné).

Holotype : Congo Museum, Tervueren.

This species would run to *congoana* in Bischoff's key, but the clypeus is of a different shape, the first abdominal segment much more slender, and the thorax more elongate. It is also close to *kohli* Bischoff, but Bischoff's figure shows for that species a stouter first segment of the abdomen as in *congoana*.

Stenomutilla bischoffi, new species.

Male. — Black; calcaria brown. With erect white and reddish brown hairs; the latter predominant on the dorsum, upper parts of the head, and second tergite; the white ones absent on the fourth, fifth, sixth, and seventh abdominal segments. Bands of decumbent, but not matted white setæ on the apex of first, second, and third tergites. Wings infuscated, a little paler at base.

Length : 12,5 mm.

Head seen from above transverse; the margins behind the eyes but slightly convergent; the hind angles moderately rounded; the posterior margin slightly convex, but medially produced backward into a short neck. Head very coarsely, densely, delicately punctate. Ocelli in an equilateral triangle, the base of which is placed upon the postocular line. Front punctured like the vertex. Antennal grooves not margined above. Superior portion of the clypeus forming a lozenge-shaped elevation the surface of which is flat, coarsely punctate and covered with long setae which obscure the structure of the clypeus; one angle of the lozenge is produced into a sharp keel between the antennæ; the inferior angle forms a corresponding carina projecting toward, but sloping abruptly down to, the anterior margin of the clypeus. Mandibles bent, short; the apices acute; the inner margin with two small teeth, without a broad lobe; outer margin simple. Second segment of flagellum much shorter than the third, a little longer than the first. Eyes broadly oval, with only a suggestion of an emargination within. Dorsum punctured like the vertex, uniformly convex; anterior margin of pronotum concave; the humeral angles rather prominent, but rounded. Tegulæ small, but roughly sculptured. Parapsidal furrows but weakly indicated and only posteriorly. Scutellum flat, but divided posteriorly by a median depression into two lobes. The middle portion of the propodeum sloping almost directly from the postscutellum to the petiole, so that it presents no distinct dorsal surface; coarsely reticulate; laterally with a distinct dorsal surface which is also coarsely reticulate; postero-lateral angles somewhat prominent, but not acute; lateral surface coarsely reticulate. Mesopleuræ with a transverse depression below the tegulæ; with a

weak tubercle in front of the middle coxæ. First abdominal segment seen from above much widened before and constricted at the apex; its surface coarsely punctured, more sparsely on the summit; seen from the side also widened before and again contracted at the apex so that it is strongly nodose; its under surface long, straight, much longer than wide at apex, its sternite with a median, low keel. Second sternite very convex; its posterior margin with a weakly impressed, transverse area, in front of which on each side is a weakly indicated, short, oblique tubercle. Second tergite coarsely punctate, a little more sparsely and finely in the middle. Last sternite flat, with a few evenly distributed, setigerous punctures.

Habitat : Belgian Congo, one male, without more definite locality (? Mayumbe) (ded. GILSON).

Holotype : Congo Museum, Tervueren.

Stenomutilla atra BISCHOFF.

A female from Malela, which we suppose to belong to this species, seems to differ from any of those mentioned by BISCHOFF. One reason for calling it *atra* is that we have two males of this species from the same locality, which in general appearance are very much like the female. The posterior margin of the head does not have its median part produced into a rim as in *dolichoderoides*. The thorax seen from the side is not so slender as in that species or in *congoana*. The first addominal segment is broader than in *dolichoderoides*, resembling in that respect more closely *congoana*, and it has a distinctly carinate ridge beneath. The sculpture of the second tergite seems to be as in *congoana*. While the clypeus has, as in *dolichoderoides*, a superior, median, transverse lobe, absent in *congoana*.

Bradley, J. Chester and Bequaert, Joseph C. 1923. "Studies in African Mutillidae." *Revue zoologique africaine* 11, 211–258.

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