

BULLETIN AND MEMOIRS

OF

The American Museum of Natural History

FRANK E. LUTZ, Editor

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59.57, 71 (67.5)

Article II.—TIPULIDÆ COLLECTED BY THE AMERICAN MUSEUM CONGO EXPEDITION¹

BY CHARLES P. ALEXANDER, PH.D.

PLATE IV

The crane-flies collected in the Belgian Congo by Messrs. Lang, Chapin, and Bequaert were kindly submitted to me for determination by Dr. Frank E. Lutz. The few specimens included represent only large and rather conspicuous forms but some of these were of exceptional interest. The number of species in the collection is seven, distributed in five genera. Our knowledge of the Tipulidæ of the Congo is almost nil, and further collections will be awaited with considerable interest and anticipation.

The crane-fly fauna of the Ethiopian region exhibits some interesting features that I have endeavored to summarize in the appended table. The family Tanyderidæ and the *Cylindrotominæ* and *Pediciini* of the Tipulidæ have not been recorded as yet from Africa or its islands, and the *Ptychopteridæ* are represented only by a single *Ptychoptera* from the Cape. The *Limnobiini* (*Dicranomyia*, *Libnotes*), *Eriopterini* (*Erioptera*, *Molophilus*, *Trentepohlia*, *Gonomyia*), and *Hexatomini* (*Limnophila*) are well represented in species. The *Tipulinae*, likewise, are common and include a few curious endemic types. Genera that abound in the American tropics and in the Orient (*Geranomyia*, *Eriocera*) are here represented by few species. Still others that, in the Neotropical region, occur in a variety of forms are here indicated only by a few, often non-typical, species (*Rhipidia*, *Teucholabis*, *Gnophomyia*).

The apparent centers of distribution of some of the genera are indicated by the abbreviations, as follows: E=Ethiopian; H=Holarctic; N=Neotropic; Nea=Nearctic; O=Oriental; P=Palaearctic; A=Australasian; *=doubtful genera.

I. Cosmopolitan, or nearly so; representatives occurring in most of the faunal regions of the world.

<i>Ptychoptera</i> (H)	Subg. <i>Empeda</i> (H)
<i>Dicranomyia</i>	<i>Molophilus</i> (H)
<i>Geranomyia</i> (N)	<i>Gonomyia</i> (H)

¹Scientific results of The American Museum of Natural History Congo Expedition. Entomology No. 3.

- | | |
|-----------------------|-----------------------------|
| <i>Rhamphidia</i> (A) | Subg. <i>Leiponeura</i> (N) |
| <i>Limnophila</i> (H) | Subg. <i>Gonomyella</i> (N) |
| <i>Eriocera</i> (N) | <i>Trimicra</i> |
| <i>Elephantomyia</i> | <i>Longurio</i> (E) |
| <i>Orimarga</i> (N) | <i>Tipula</i> (H) |
| <i>Erioptera</i> | <i>Nephrotoma</i> (H) |
- II. Tropicopolitan.
- | | |
|----------------------------|-------------------------|
| <i>Styringomyia</i> (E, O) | <i>Trentepohlia</i> (O) |
| <i>Megistocera</i> (E) | |
- III. Oriental and Ethiopian; especially southern and eastern Africa.
- | | |
|----------------------------|---------------------------|
| <i>Thrypticomomyia</i> (O) | <i>Scamboneura</i> (O) |
| <i>Libnotes</i> (O) | <i>Tipulodina</i> * |
| <i>Conosia</i> (O) | <i>Ctenacroscelis</i> (O) |
- IV. Neotropical and Ethiopian.
- | | |
|----------------------|-----------------|
| <i>Ceratocheilus</i> | <i>Lecteria</i> |
|----------------------|-----------------|
- V. Center of Distribution in the Australasian region.
- | | |
|--------------------|--------------------|
| <i>Tasiocera</i> | <i>Habromastix</i> |
| <i>Dolichopeza</i> | |
- VI. Center of Distribution in the Neotropical region.
- | | |
|--------------------|------------------|
| <i>Rhipidia</i> | <i>Atarba</i> |
| <i>Teucholabis</i> | <i>Toxorhina</i> |
| <i>Gnophomyia</i> | |
- VII. Center of Distribution in the Holarctic or Palearctic region.
- | | |
|--------------------------|----------------------|
| <i>Limnobia</i> (H) | <i>Hexatoma</i> (P) |
| <i>Adelphomyia</i> * (H) | <i>Ormosia</i> * (H) |
| <i>Orimargula</i> (H) | |
- VIII. Endemic (South Africa).
- | | |
|----------------------|--------------------|
| <i>Platylimnobia</i> | <i>Leptotipula</i> |
| <i>Podoneura</i> | <i>Idiotipula</i> |

The types of the new species described in this paper are deposited in the collection of The American Museum of Natural History. Paratypes of *Lecteria africana* are in the author's collection.

TIPULIDÆ

Limnobiinæ

LIMNOBIA Meigen

Limnobia MEIGEN, 1818, System. Besch., I, p. 92.

Limnobia congoensis, new species

Plate IV, Figure 1

Thorax shiny black and yellowish, the pro- and metapleura yellow; halteres dark, pale at the base; legs dark; wings yellow, the outer margin broadly infumed with darker, the veins narrowly seamed with dark brown; abdomen black, the hypopygial region yellowish.

Female (?).—Length, about 10.2 mm.; wing, 12.6 mm.

Rostrum and palpi dark brown, the latter short. Antennæ brownish yellow, the scape above dark brown; flagellar segments oval, each with a very long bristle. Eyes large, the space on the vertex between them very narrow but little wider than the diameter of the first antennal segment. Head brownish yellow, the area surrounding the insertion of the antennæ brown.

Pronotum dull yellow, above on the mid-line narrowly dark brown. Mesonotal prescutum shiny; the usual three stripes very broad, black, entirely confluent behind; the space anterior to and behind the lateral stripes yellowish. Scutal lobes black, the median area paler; scutellum light yellow; postnotum black. Pleura variegated yellowish and black; propleura, including the coxæ of the fore legs, deep yellowish; mesopleura, including the coxæ of the middle legs, black, excepting a restricted dull yellowish area below the wing-root; metapleura, including the base of the halteres, pale yellowish, continued onto the mesosternum between the middle and hind coxæ. Halteres dark brown, except the basal third of the stem which is conspicuously light yellow. Legs with the coxæ as described above, the hind coxæ black; posterior trochanters blackish, anterior trochanters reddish; femora dark brown, most intense apically; tibiæ brown; tarsi dark brown. Wings with a strong yellow tinge, the apical region and the posterior margin tinged with brown; stigma dark brown, solid; narrow, dark brown seams along the cord and the longitudinal veins, more conspicuous along *Cu*. Venation: *Sc* terminating opposite the end of the sector; *r* at the tip of *R*₁; *Rs* moderately elongated, a little longer than cell 1st *M*₂, angulated and slightly spurred at the origin; basal deflection of *Cu*₁ at the fork of *M*.

Abdomen black, the hypopygium and the sclerites immediately basad of it orange-yellow. The tip of the abdomen of the unique type is slightly injured and I cannot determine the sex with certainty but believe that it is a female. The very narrow vertex suggests that the specimen may be a male.

Habitat.—Belgian Congo.

Holotype.—♀ (?); Medje, 27° 30' E., 2° 25' N.; Sept. 15-30, 1910. (Lang and Chapin Coll.)

This is a true member of the genus *Limnobia* and perhaps the first to be described from the Ethiopian region although *L. uniflava* Riedel may correctly be referred here. The present species bears a slight resemblance to forms like *L. indigena* Osten Sacken, etc.

The rather numerous species referred to this genus by Bergroth, Speiser, Edwards, and others seem rather to be referable to *Dicranomyia*, *Rhipidia* and *Libnotes*. Dr. Bergroth has written several important papers and notes on tipulid synonymy. While admitting many of these points, there are others to which I can by no means agree and it seems opportune to speak of one of these now. In his latest paper on the subject ('Some Tipulid Synonymy,' *Psyche*, XXII, pp. 54-59, April 1915) Dr. Bergroth, in speaking of the genera *Limnobia* and *Dicranomyia*, writes as follows: "Alexander's conception of these two genera seems to be so different from that of Osten Sacken and all other authors that an explanation of how he distinguishes them is much to be desired."

On the contrary, I maintain that my conception of the limits of *Dicranomyia* corresponds very closely with that of Osten Sacken, and that it is Bergroth and some other European writers who deviate from that definition. The most important single feature entering into this discussion concerns the relative length of the subcostal vein, it being long and extending far beyond the origin of the sector in *Limnobia*, but short and ending about opposite or before the origin of the sector in most species of *Dicranomyia*. Dr. Bergroth has apparently overlooked the group of species in the genus *Dicranomyia* (Osten Sacken, 1869, *Monogr.*, Smithsonian Miscell. Coll., No. 219, pp. 73-76) in which the subcosta is fully as long as in *Limnobia*. The species included by Osten Sacken, *D. pubipennis*, *D. globithorax*, *D. rara*, and *D. simulans*, are from eastern America, but species in the same category are found in practically all parts of the world where the genus occurs. In some countries they are more abundant than the species with the short subcosta, but in the Holarctic region are generally very much less common. The species that Dr. Bergroth would place in *Limnobia* (*D. nebulosa*, *eiseni*, *gloriosa*, etc.) are quite comparable to the four species listed above. In Europe, *D. pilipennis* Egger, which is apparently the same as, or very closely related to, *D. pubipennis*, is a common species and must be entirely familiar to Dr. Bergroth, and yet I believe he would hesitate to refer it to *Limnobia*, in spite of the length of its subcostal vein.

The American students of the Tipulidæ seem to have less difficulty in reconciling the group of species with the long subcosta, as discussed above, to the genus *Dicranomyia*, but among the European workers several take a stand similar to that of Dr. Bergroth, especially Edwards and Speiser. DeMeijere described his *D. umbrata* (Java) with a long subcosta and correctly referred it to *Dicranomyia*, yet Edwards later referred it to the genus *Limnobia*. Brunetti describes a variety of forms as species of *Limnobia*; those with a short subcosta (*tinctinervis*, *festiva*) are undoubted species of *Dicranomyia*, while his *L. indica* with the subcosta long is, in my opinion, possibly a *Dicranomyia*; *L. longinervis*, on the other hand, is evidently a *Libnotes*. One of Bergroth's species, *D. venusta*, of western North America, exhibits a marked variability in the length of the subcosta, ranging from specimens where the vein ends opposite the origin of the sector, to others where it extends notably beyond. The question arises: is this a *Dicranomyia* or a *Limnobia*, in the sense of Bergroth? Indeed, what is apparently the same, or a very closely related, species was described later on by Dr. Williston as *Limnobia concinna*.

I have stated elsewhere, and maintain again, that when the fauna of the world is considered, the only characters that are available for distinguishing *Limnobia* from *Dicranomyia* are so slight as to be difficult of definition, yet perceptible. In such cases the student has to depend largely on the habitus of the species concerned. This, of course, brings in intuition and the personal opinion of the authority, but the only other course left is to refer all of these genera, *Dicranomyia*, *Rhipidia*, *Peripheroptera*, *Dapanoptera*, *Goniodineura*, *Libnotes*, etc., to *Limnobia*. A somewhat similar condition obtains in the Eriopterini, and here Dr. Bergroth has deplored the possibility of lumping the complex into one or few genera. I, likewise, believe that this is to be done only as a last resort. The constant accession of exotic Tipulidæ has by no means eased the burden of the taxonomist and the difficulty of exactly defining genera is even greater than it was a half century ago, at the time of the appearance of Osten Sacken's monograph. Recently the writer has undertaken a study of the immature stages of the Tipulidæ and related families. Representatives of over seventy species, including forty genera and all the tribes and major groups, have been obtained. A careful study of this material has thrown much light on the subject of classification, and it seems that its continuance will do much toward solving the problem. The results of this study will appear in another paper.

LECTERIA Osten Sacken

Lecteria OSTEN SACKEN, 1887, Berliner Ent. Zeitschr., XXXI, part 2, p. 206.

Lecteria africana, new species

Plate IV, Figure 2

Coloration brownish yellow or brownish gray, the mesonotal prescutum with narrow, indistinct stripes; pseudosutural foveæ conspicuous; legs reddish brown with the tips of the segments darker; wings pale yellow, deepest along the costa; pale gray and dark brown spots at the forks and tips of many of the veins; abdomen very elongate, reddish brown.

Male.—Length, 29–30 mm.; wing, 22–23 mm.; abdomen, 24 mm.; hind leg, femur, 13.3 mm.; tibia, 12.4 mm.; tarsus, 11.2 mm.

Rostrum and palpi dark brown. Antennæ with the first scapal segment dark brown, faintly gray pruinose; second segment brown; flagellum pale brownish yellow; first scapal segment elongate, as long as the succeeding three taken together; basal flagellar segments rounded or oval, beyond the fourth elongate-oval with long, delicate verticils. Head with the eyes large, protuberant; vertex moderate in width; head strongly narrowed behind, light brownish gray with delicate transverse lines; an indistinct narrow, median longitudinal stripe.

Mesonotum large. Prescutum brownish yellow, sometimes slightly grayish, with three indistinct stripes that are narrowly and indistinctly margined with darker; the middle stripe is bisected by a narrow dark brown stripe; pseudosutural foveæ large, subreniform, dark brown; scutum yellow or slightly grayish, the lobes a little darker medially; scutellum small, brownish yellow, narrowly brown medially, with numerous long yellow hairs; postnotum grayish yellow with a narrow dark brown median stripe. Pleura brownish gray. Halteres brown, the knobs darker. Legs with the coxæ brownish gray; trochanters brown; femora and tibiæ reddish brown, the tips narrowly dark brown; two basal segments of the tarsi reddish tipped with dark; apical tarsal segments dark brown; tibiæ unarmed. Wings pale yellow, the costal region more intensely yellow; small dark brown seams at *r*, *Sc*₂, base of *R*₄₊₅ and base of *R*₅; paler brown seams at the tip of *R*₂, fork of *M*₁₊₂ and less indistinctly at the ends of most of the longitudinal veins and along *Cu*. Venation: *Sc* very long, almost as long as *R*; *R*₅ very long, greatly arcuated at its origin and running very close to *R*₁, even more than is usual in the genus; basal deflection of *R*₄₊₅ short, strongly arcuated; *R*₂ long, strongly upcurved at the tip; *r* inserted on *R*₂ near its base and on *R*₁ a short distance from the tip; cell 1st *M*₂ elongate, irregularly hexagonal; petiole of cell *M*₁ a little longer than this cell; fusion of *M*₃ and *Cu*₁ slight.

Abdomen very long, reddish brown, the lateral margins of the tergites narrowly dark brown; seventh tergite with a narrow brown or black median stripe; abdominal segments with numerous yellow setæ; a narrow basal ring on either side destitute of setæ.

Habitat.—Belgian Congo.

Holotype.—♂; Faradje, 29° 40' E., 3° 40' N.; January 1913. (Lang and Chapin Coll.)

Paratopotypes.—♂♂; January 1913 and April 1911.

Paratype.—♂; Bagboro, 29° E., 4° 18' N.; October 16, 1911.

The hitherto known species of this genus are Neotropical but the occurrence of undescribed forms in Africa was mentioned by the writer some years ago (1913, Proc. U. S. Nat. Mus., XLIV, p. 493). The resemblance of *L. africana* to species of the tropical American genus *Psaronius* Enderlein and especially to the genotype, *P. obscurus* (Fabricius), is striking and difficult of explanation. In the paper just cited I expressed the belief that the two genera are confluent but they seem to be readily separable, the species of *Psaronius* having very long tibial spurs while the tibiæ in *Lecteria* are entirely unarmed. The similarity in venation and general habitus is remarkable.

Tipulinae**MEGISTOCERA** Wiedemann

Megistocera WIEDEMANN, 1828, Aussereur. Zweifl. Ins., I, p. 55.

Megistocera bicauda Speiser

Megistocera bicauda SPEISER, 1909, in Sjöstedt's Kilimandjaro-Meru Exped., II, part 10, pp. 53 and 54. Type locality: Mombo in Usambara.

A single female that agrees well with Speiser's description, except as to the color of the abdomen, which is dark brown above, the basal tergites with a rather bright yellowish brown median stripe which becomes obsolete about the fourth segment.

Belgian Congo: Stanleville, 25° 15' E., 0° 30' N.; February 1915. (Lang and Chapin Coll.)

TIPULA Linnæus¹

Tipula LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 585.

Tipula dolichopezoides, new subspecies

Plate IV, Figure 3

General coloration dark brown, the prescutum without distinct stripes; pleura yellow with indistinct brownish blotches; legs dark brown; wings with a brown tinge, most intense along the anterior margin to beyond the wing apex; a pale area before and beyond the stigma and in cell 1st *M*₂; cell 1st *M*₂ small, pentagonal; abdomen banded brown and yellow.

Female.—Length, about 12 mm.; wing, 11.8 mm.; middle leg, femur, 8.3 mm.; tibia, 9 mm.; hind leg, femur, 8.6 mm.; tibia, 8.7 mm.

¹*Tipula brunettiana*, new name for *Tipula splendens* BRUNETTI, 1912, Fauna British India, Diptera, p. 314 (India); non *Tipula splendens* DOANE, 1901, Journ. N. Y. Ent. Soc., p. 107 (United States).

Frontal prolongation of the head short, brownish yellow above, the sides darker brown; nasus represented only by a few stout hairs. Palpi moderately elongated, dark brown, paler at the joints. Antennæ with the scape light yellow; first flagellar segment elongate, yellow; remaining segments brown, the basal portion a little darker; flagellum with long verticils. Head broad behind, dark brown, the front and the anterior portion of the vertex yellowish.

Mesonotum dark brown without distinct stripes; abundant long black hairs on the interspaces. Pleura dull yellow, indistinctly marked with brown, the mesopleura largely dark; a dark area on the mesosternum between the middle and hind coxæ. Halteres slender, dark brown, the extreme base and apex paler. Legs with the coxæ and trochanters yellow; remainder of the legs dark brown. Wings with a slight brown tinge; the costal region, including the wing apex, dark brown; broad brown seams along the cord and less distinctly along the longitudinal veins; a pale obliterative area before and beyond the oval dark brown stigma and another completely filling the small cell *1st M*₂. Venation: *Rs* short, gently arcuated, only a little longer than *R*₂₊₃; *R*₂ long, persistent, bisecting the outer obliterative area; cell *1st M*₂ very small, pentagonal; cell *M*₁ long-petiolate, the petiole about equal to *R*₂₊₃; fusion of *Cu*₁ and *M*₃₊₄ rather extensive, beginning at the fork of *M*.

Abdominal tergites dark brown, excepting the broad basal and lateral margins. Sternites yellow, the segments with the posterior margin rather broadly ringed with brown; a narrow sub-basal transverse band of brown. Female ovipositor rather large, with a long dorsal basal shield, castaneous; the tergal valves elongate, slender, divergent apically, with the tips rounded; sternal valves a little shorter, compressed, the tips subacute.

Habitat.—Belgian Congo.

Holotype.—♀; Stanleyville, 25° 15' E., 0° 30' N.; February 1915. (Lang and Chapin Coll.)

This small species curiously suggests the genus *Oropeza* Needham, but is apparently a true *Tipula*. Its resemblance to certain African species of *Dolichocheza*, belonging to the subgenus *Trichodolichocheza* Alexander, is also noteworthy.

Tipula langi, new species

Plate IV, Figure 4

General coloration dark brown; pronotal scutum narrow and very high; a rounded dark brown spot on the margin of the prescutum at about mid-length; scutellum yellow; wings brownish gray, a brown seam along *r-m* and the basal deflection of *Cu*₁; abdomen reddish brown, with a dark brown lateral stripe.

Female.—Length, about 18.5 mm.; wing, 19.5 mm.

Frontal prolongation of the head elongate, dark brown above, paler, reddish yellow on the sides; nasus elongate, slender; palpi dark brown. Antennæ with the scape brown; first flagellar segment elongate, dark brown, the base a little paler; remainder of the flagellum broken. Head dark brown.

Pronotum dark brown, the scutum highly projecting. Mesonotal prescutum yellowish brown, brighter anteriorly; a narrow indistinct median brown line; a rounded blackish spot on the lateral margin of the prescutum at about mid-length

and just behind the pseudosutural foveæ; scutum dark blackish brown, the centers of the lobes yellowish brown; scutellum yellowish brown; postnotum similar, the basal third dark brown. Pleura dull yellowish brown, the region near the anterior spiracle more cinereous; a dark brownish black area on the lateral regions of the postnotum behind the wing-root. Halteres elongate, dark brown, the knobs brighter reddish. Legs with the coxæ and trochanters dull yellowish; femora and tibiæ reddish brown, the tips dark brown; tarsi dark brown. Wings with a strong brownish gray tinge, the costal region more brownish; stigma dark brown, narrow; a narrow brown seam along *r-m* and the basal deflection of *Cu*₁. Venation: *Rs* shorter than *R*₂₊₃; *R*₂ present but weak and cell *R*₂ consequently small and with its inner end acute; *R*₃ short, straight; cell *1st M*₂ large, ample.

Abdominal tergites reddish brown, a little brighter basally; lateral margins of the segments broadly blackish, producing a dark lateral stripe; an indistinct blackish median spot near the base of the segments; sternites yellowish. Female ovipositor with the tergal valves very long and slender, the inner margin at the base fringed with long hairs; sternal valves short, compressed, pale yellow, the tips broadly rounded.

Habitat.—Belgian Congo.

Holotype.—♀; Avakubi, 27° 40' E., 1° 20' N.; Oct. 4-8, 1909. (Lang and Chapin Coll.)

This species is closest to *T. jocosæ* Alexander (Cape Colony) in the peculiar venation, but cell *R*₂ is smaller and with its inner end even more acute, while cell *1st M*₂ is comparatively small.

Tipula langi rubricapilla, new subspecies

Female.—Length, 18 mm.; wing, 17 mm.

Differs from the typical *langi* as follows: the head is much brighter in color, reddish, as is also the dorsal shield of the ovipositor. The flagellum is brownish black, the segments rather elongated and with long verticils. The high pronotal scutum is broadly yellow medially, the sides dark brown, the mesonotum largely dark, but the scutellum is entirely yellow. Pleura yellowish, with extensive dark brown markings including the propleura, most of the mesopleura and the outer face of the coxæ. Abdomen dark brown, especially on the sternites.

Habitat.—Belgian Congo.

Holotype.—♀; Medje, 27° 30' E., 2° 25' N.; Sept. 1-7, 1910. (Lang and Chapin Coll.)

Pupa of *Tipula* Species

A large tipuline pupa was secured by Dr. Joseph Bequaert in the Butagu Valley at 2200 meters, western slope of Mt. Ruwenzori. The specimen was taken in April 1914 from wet moss near a brook. There can be little doubt but that the specimen belongs to a large species of the restricted genus *Tipula* Linnæus but any further determination is impossible at this time. The fly that would emerge from this pupa would

be almost as large as *Tipula abdominalis* (Say) of northeastern North America. It would naturally be expected that this might be the pupa of the large and vigorous *Ctenacroscelis albovittatus* (Macquart) which has an extensive range in eastern Africa, but the venation of the wing-pad precludes this reference. This specimen may be briefly described as follows:

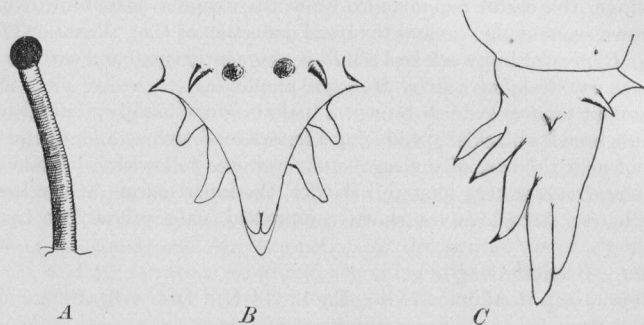


Fig. 1. Details of pupa of *Tipula* species from Mt. Ruwenzori. A, pronotal horn; B, ventral aspect of the caudal end; C, lateral aspect of the caudal end.

Pupa.—Length, 37 mm.

Width, dextro-sinistral, at the wing-pad, 5.2 mm.

Depth, dorso-ventral, at the wing-pad, 5.3 mm.

Pronotal breathing horn, 2.5 mm.

Coloration of the alcoholic pupa very dark reddish brown. The specimen was evidently nearly ready to emerge when it was killed.

Labral sheath very broad, transversely wrinkled. Sheaths of the maxillary palpi strongly recurved at their tips. Pronotal breathing-horns short, equal in length, cylindrical, the tips slightly expanded (Fig. 1A). The mesonotum is expansive, with about eight prominent but depressed tubercles, the anterior four of which extend across the dorsum in a semicircular transverse row; the outermost pair are located just above the root of the wing. Wing-sheaths showing the venation clearly, vein R_2 not dipping strongly toward vein R_3 ; cell M_1 petiolate; vein $m-cu$ short or punctiform. Wing-sheaths reaching the base of the third abdominal segment. Leg-sheaths attaining the base of the fourth abdominal segment, the fore tarsal sheaths shorter than the other legs.

Abdominal tergites with a row of twelve small spines across the caudal margin of the posterior ring, on either side of the median line with an additional slightly larger spine grouped close to two of the series to form a close triangle. Pleurites with a large spine on the anterior ring and two small spines placed side by side on the posterior ring. Abdominal sternites with about eleven spines on the posterior ring, the two outermost on either end of the row small and paired; two widely separated larger spines on the basal half of the posterior ring. Female cauda surrounded by ten powerful spines, four being on the sternum of the eighth segment, two on the pleura of the eighth segment and four larger spines, set close together, located at the base of the ninth tergum (Fig. 1 B and C). In addition to the four

tergal spines there is an additional long, powerful lobe on either side at the base of the tergal valves, these directed caudad and slightly dorsad. Tergal valves of the ovipositor considerably longer than the sternal valves.

Specimen in the collection of the American Museum.

NEPHROTOMA Meigen

Nephrotoma MEIGEN, 1803, Illiger's Mag., II, p. 262.

Nephrotoma chapini, new species

Plate IV, Figure 5

Head orange-yellow, including the frontal prolongation; no dark occipital mark; mesonotum dull yellow with three broad black stripes; scutellum and postnotum yellow, the apical third of the latter black; pleura yellow, spotted with brown; wings brownish yellow, the cord indistinctly seamed with brown; abdomen yellow, transversely banded with black.

Female.—Length, 15 mm.; wing, 12.4 mm.

Frontal prolongation of the head very short, yellow; nasus short with a tuft of long black hair; palpi dark brown. Antennæ with the first segment yellow; second segment dark brown; flagellum very dark brown. Head rich orange-yellow, duller on the genæ; vertical tubercle rather prominent; no shiny area on occiput.

Pronotum broadly yellow, the sides dark brownish black. Mesonotum dull yellow with three very broad black stripes that are almost confluent behind, separated only by a very indistinct line of chestnut brown; the space before the lateral stripe triangular, dull yellow; scutum almost entirely black, the median area paler; scutellum dull brownish yellow, the sides darker; postnotum yellow, the apical third dark brownish black. Pleura yellow, the mesepimeron paler, almost whitish; a large brown spot on the mesepisternum and another on the mesosternum, suffusing the base of the middle coxæ. Halteres dark brown, the extreme base and the knobs a little paler. Legs with the coxæ more or less infused with brown, darkest on the posterior coxæ, which are almost entirely of that color; trochanters dull yellow; femora black, the basal portion yellowish, this narrowest on the fore femora, broadest on the hind femora; tibiæ and tarsi black. Wings with a strong grayish yellow tinge, costal area a little brighter; stigma brown; the cord and the longitudinal veins indistinctly seamed with very pale brown. Venation: R_s very short, scarcely longer than the basal deflection of R_{4+5} ; cell M_1 broadly sessile.

Abdominal tergites banded black and yellow, the first tergite and the apical half of segments two to four black, the apical two-thirds of segment five black; all of segment six black except a small yellow spot on the sides at the base; segment seven entirely black; segment eight yellow, margined with black; segment nine yellow; ovipositor chestnut; lateral margins of the tergites broadly dark brownish black; sternites approximately similar to the tergites.

Habitat.—Belgian Congo.

Holotype.—♀; Stanleyville, 25° 15' E., 0° 30' N.; February 1915. (Lang and Chapin Coll.)

In its banded abdomen this species suggests *N. tigrina* Alexander of Portuguese East Africa (1917, Ann. South African Mus., XVII, pp. 177-179) but in other respects there is not a great resemblance between the two.

***Nephrotoma ruwenzoriana*, new species**

Plate IV, Figure 6

Head orange-yellow, the frontal prolongation black above; thorax entirely blue-black except the basal two-thirds of the postnotum which are orange-yellow; halteres and legs black; wings strongly infumed with blackish; abdomen black with only the last segment reddish.

Female.—Length, 17.5 mm.; wing, 12.8 mm.

Frontal prolongation of the head short, jet black above, reddish yellow on the sides; nasus long, slender, black; palpi short, black. Antennæ with the first segment brownish orange; second segment brown; flagellar segments black. Head orange-yellow, the occiput with a brown triangular mark that runs forward onto the vertex.

Pronotum very dark reddish brown; mesonotum entirely deep blue-black with only the basal two-thirds of the postnotum bright yellow. Pleura blue-black. Halteres and legs black. Wings broad, strongly tinged with blackish, especially along the costal region and on the basal third, whence it is continued outward along veins *Cu* and *2nd A*; stigma dark brown; tip of the wing darkened, a broad seam along the cord. Venation: *Rs* short, straight, oblique; cell *M*₁ rather narrowly sessile.

Abdomen entirely blue-black, with the exception of the ninth segment and the valves of the ovipositor, which are yellowish chestnut.

Habitat.—Belgian Congo.

Holotype.—♀; Mt. Ruwenzori, 29° 50' E., 0° 30' N., on the western slope in the Butagu Valley at 3000 m.; April 15, 1914. (J. Bequaert Coll.)

Most closely related to *N. fuscipennis* (Karsch) from Portuguese West Africa (1886, Ent. Nachricht., XII, pp. 52 and 53). The two species may be separated by the following key:

- 1. Female with the scutellum yellowish red; a yellow spot on pleura above the middle coxæ; second and third abdominal segments more or less yellowish red.....*N. fuscipennis* (Karsch).
- Female with the scutellum black; pleura and abdomen uniformly blue-black.....*N. ruwenzoriana*, new species.

BULLETIN A. M. N. H.

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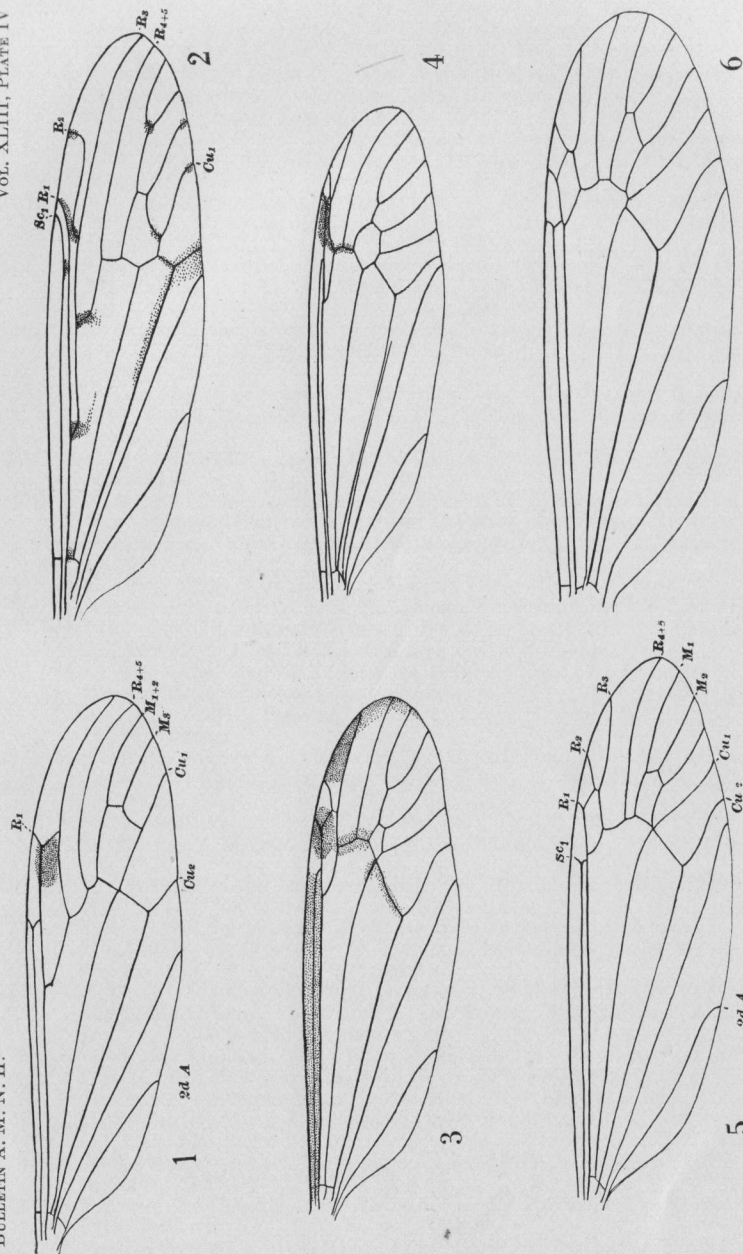


Fig. 1. Wing of *Limnobia congoensis*, new species.
 Fig. 2. Wing of *Lecteria africana*, new species.
 Fig. 3. Wing of *Tipula dolichopectoides*, new species.
 Fig. 4. Wing of *Tipula langi*, new species.
 Fig. 5. Wing of *Nephrotoma chapra*, new species.
 Fig. 6. Wing of *Nephrotoma ruwenzoriana*, new species.

Sc = Subcosta; R = Radius; M = Media; Cu = Cubitus; A = Anal veins (Comstock-Needham System).