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ZOOLOGICAL RESULTS OF THE
SWEDISH EXPEDITION TO
CENTRAL AFRICA 1921

INSECTA

6.

TIPULIDÆ (DIPTERA)

BY

CHARLES P. ALEXANDER

WITH 2 FIGURES IN THE TEXT

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1924

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Communicated October 25th 1923 by CHR. AURIVILLIUS and Y. SJÖSTEDT.

The Crane-flies taken by count GYLDENSTOLPE upon PRINCE WILLIAM'S Expedition to East Africa in 1921 have been kindly submitted to me for determination by Dr. YNGVE SJÖSTEDT. Although but few in number (eight specimens, one of which was unrecognizable) the included species are of great interest, no fewer than six being new to science und all well-defined forms. The types of all the species are preserved in the Naturhistoriska Riksmuseet, Stockholm.

The material was collected upon the volcanic plateau north of Lake Kivu, on the border of the territory ceded to Belgium as a result of the World War. Dr. BEQUAERT states that this region is variously called Birunga, Virunga, Ufumbiro and Mfumbiro, appearing under the latter name upon the recent map prepared for the National Geographic Society (1922). The various localities mentioned in the text are mountains of this range, Mikeno, Sabinio and Karissimbi, and

the adjoining parts of Ruanda. The discovery of the gorilla in this region previously to 1913 has attracted several scientific parties to Birunga, notably the expedition of Major ARRHENIUS (1913), the Expedition of PRINCE WILLIAM (1921) and the joint expeditions of CARL AKELEY and the BRADLEY'S (1921) in search of gorilla material for Museum groups. The english edition of PRINCE WILLIAM'S account of his expedition has appeared in London, 1923 »Among Pygmies and Gorillas».

The crane-flies collected by GYLDENSTOLPE while a member of the Swedish Expedition include the following genera: *Limonia* (1 species), *Pseudolimnophila* (3 species), *Tipula* (2 species) and *Nephrotoma* (1 species). The only one of these that had been previously described was the last-named (*N. ruwenzoriana* ALEXANDER).

In this paper, the terminology of thoracic and hypopygial sclerites proposed by Dr. G. C. CRAMPTON has been adopted; the venation proposed by COMSTOCK and NEEDHAM has been used.

Family Tipulidae.

Subfamily Limoniinae.

Tribe Limoniini.

Genus *Limonia* MEIGEN.

1803. *Limonia* MEIGEN; Illiger's Mag., 2: 262.

1818. *Limnobia* MEIGEN; Syst. Besch. Zweifl. Ins., 1: 116.

The great genus *Limonia* is represented in the Ethiopian Region by an abundance of species. The magnificent crane-fly described herewith is the fourth member to be made known of a peculiar African group that includes the largest and most showy members of the genus. The other species are *Limonia rhizosema* SPEISER, *L. oresitropha* SPEISER, and *L. capensis* (ALEXANDER), distributed throughout South and Central-Africa.

Limonia vilhelmi, sp. n. Allied to *L. capensis* (ALEXANDER); wing-pattern very heavy, with unusually large brown areas at arculus, origin of *Rs* and along the cord; remaining cells of the wing heavily dotted with brown, the spots in most cases confluent and in the cells beyond the cord and the Anal cells tending to obliterate the ground-color.

Female. — Length about 14 mm; wing 18 mm.

Rostrum and palpi black, the former a little dusted with gray. Antennal scape black, the basal segment elongate;

flagellar segments broken. Head light brown, yellowish pollinose, with a narrow, black longitudinal vitta; vertex between eyes narrow.

Pronotum relatively elongate, reddish brown, the narrow scutellar region yellowish. Mesonotal præscutum golden pollinose with four conspicuous dark brown stripes, the intermediate pair narrowly separated; lateral margins of the præscutum darkened; scutal lobes darkened; scutellum brown, darker medially; postnotum brown, with a narrow black median longitudinal line. Pleura brown, variegated with darker, this including much of the anepisternum and the mesosternum, the longitudinal stripe between goldenpollinose; a small brown triangle immediately cephalad of the base of the halteres. Halteres pale brown, the extreme base of the stem and the apex of the knob yellowish. Legs with the coxae brown, pollinose; trochanters obscure yellow; femora brownish yellow, with a narrow black subterminal ring that is shorter than the yellow apex beyond; remainder of legs broken. Wings broad, light yellow, the base and costal region more suffused; entire surface with a heavy spotted and dotted brown pattern; the spots are as follows: A large area in bases of cells *Sc*, *R* and *M*; an extensive seam at origin of *Rs*, continued into cell *Sc*; very extensive seams along the cord, extending from stigma across the wing; the dots occur in all the cells, more sparse in cells *R*₁, large and confluent in the cells beyond the cord and in the Anal cells, forming broad seams at the tips of the veins; in the basal cells the dots are small but tend to fuse; in cells *C* and *Sc* the dots are small, darker brown and scattered; veins yellow, darker in the infuscated areas. Venation: *Sc*₂ nearly three times its length from the tip of *Sc*₁; *r* a little more than its length from the tip of *R*₁.

Abdomen relatively short, dark brown, the extreme caudal margins of the segments paler brown. Ovipositor small, the valves slender but short, the tergal valves gently upcurved.

Holotype, ♀, Mikeno, Birunga, altitude 3,100 meters, March 21, 1921 (PRINCE WILLIAM'S Expedition, GYLDENSTOLPE, collector).

This magnificent crane-fly is respectfully dedicated to the leader of the Swedish African Expedition of 1921, PRINCE WILLIAM. It agrees most closely with the South African *L. capensis* (ALEXANDER) in the narrow brown subterminal rings on the femora but differs from this, as well as all other species, by the broader wings with a very heavy brown pattern.

Tribe Hexatomini.

Genus *Pseudolimmophila* ALEXANDER.

1919. *Pseudolimmophila* ALEXANDER; Cornell Univ. Agr. Expt. Sta., Memoir 25: 917.

The genus *Pseudolimmophila* was proposed for the reception of a certain group of the old genus *Limmophila*, with the Nearctic *P. luteipennis* (Osten Sacken) as genotype. It is now known that Africa is the present center of this genus which here attains a variety of size and structure quite unequalled elsewhere within the range of the group. The genus was based chiefly upon notable differences in the structure of the immature stages and the adult flies are very difficult to separate in certain cases from other flies that have been placed in the old genus *Limmophila*.

The following general characters and tendencies of the genus may be indicated: Head strongly narrowed and prolonged behind. Pseudosutural foveæ and tuberculate pits distinct. Venation with R_{2+3} generally elongate and more or less arcuated; r usually close to R_1 ; cell M_1 usually deep, sometimes very deep, the petiole correspondingly shortened; basal deflection of Cu_1 variable in position, in many species lying far beyond midlength of the cell; anterior arculus usually lacking.

The latter character was first called to attention by Mr. EDWARD'S in connection with other primitive Hexatomine groups, notably the Epiphragmaria. The anterior arculus is lacking in all the Ethiopian species except *frugi* and the *varipes* group (*cinctifemur*, *rhodesiæ* and *varipes*). It is also present in the genotype, *luteipennis*, but must be regarded as the primitive condition in the genus.

In order to demonstrate the position of the three species described in this paper, I have prepared a key to the Ethiopian species of the group. *P. frugi* has been included twice in the key, to prevent confusion as regards the variable character of wing-spotting.

A Key to the Ethiopian species of the Genus *Pseudolimmophila*.

1. A supernumerary crossvein in cell R_2 (Subgenus *Calolimmophila* ALEXANDER). 2
- No supernumerary crossvein in cell R_2 (Subgenus *Pseudolimmophila* ALEXANDER). 3

2. Size larger (wing, ♂, over 13 mm); legs brownish black; wings with a dusky tinge, the costal region darker; faintly darker clouds along the cord and at origin of Rs .

(Uganda)

rex ALEXANDER.

Size smaller (wing, ♂, under 11 mm); legs pale brownish yellow; wings with a warm brown tinge, spotted with darker, these including a series of about five costal areas alternating with yellow interspaces; a series of five small brown dots behind vein Cu .

(Cameroun)

princeps ALEXANDER.

3. A supernumerary crossvein in cell Sc ; wing-pattern in large part ocelliform or ring-like.

(Birunga)

gyldenstolpei, sp. n.

No supernumerary crossvein in cell Sc ; wings with the clouds and spots solid or wanting. 4

4. Wings with distinct spots and clouds, in addition to the usual stigmal blotch. 5

Wings unicolorous, except for the stigma where this is present. 14

5. Basal deflection of Cu_1 before midlength of the lower face of cell $1st M_2$; (anterior arculus usually preserved). 6

Basal deflection of Cu_1 beyond midlength of the lower face of cell $1st M_2$; (anterior arculus lacking) 10

6. Anterior arculus lacking; wing-pattern in the form of large, diffuse brown clouds at arculus, origin of Rs , along the cord and outer end of cell $1st M_2$, at r and at fork of M_{1+2} .

(Natal)

spectabilis (ALEXANDER).

Anterior arculus distinctly preserved; wing-pattern not in the form of diffuse brown clouds as above. 7

7. Wing-pattern subobsolete, the seams at origin of Rs , along the cord and outer end of cell $1st M_2$ poorly defined.

(South Africa)

frugi (BERGROTH).

Wing-pattern very heavy, appearing as series of brown spots and clouds along the veins, alternating with pale interspaces. 8

8. Rs angulated and spurred at origin; R_{2+3} about equal to the basal deflection of Cu_1 , the latter near midlength of cell $1st M_2$.

(Rhodesia)

rhodesiæ (ALEXANDER).

Rs not spurred at origin; R_{2+3} longer than the basal deflection of Cu_1 . 9

9. Femora light yellow with a very narrow dark brown ring shortly before the tip of each; a series of five or six

small brown dots in cell C ; cell M_1 less than one-half its petiole.

(Southern Nigeria) *cinctifemur* ALEXANDER.

Femora dark brown throughout, the tibiae and tarsi abruptly light yellow; a series of about fifteen conspicuous brown dots in cell C ; cell M_1 longer than its petiole.

(Uganda) *varipes* ALEXANDER.

10. Wing-pattern very heavy, appearing as conspicuous spots at origin of R_s , tip of Sc_1 , along the cord and at the tips of the longitudinal veins; a very heavy and conspicuous brown seam along vein Cu .

(Birunga) *orthia*, sp. n.

Wing-pattern light, the spots relatively small (*distigma*) or else pale and diffuse; no dark seam along vein Cu . 11

11. Wing with at least a dozen small but rather conspicuous brown spots, a double one marking the usual stigmal blotch, the outer spot at r , the inner at the fork of R_{2+3} .

(British Central-Africa) *distigma* (ALEXANDER).

Wings with the spots pale and diffuse. 12

12. R_{2+3} one-half of the basal section of R_2 .

(Cape Colony) *medialis* (ALEXANDER).

R_{2+3} longer and more arcuated, at least two-thirds the basal section of R_2 . 13

13. Wings grayish yellow, the pattern pale and diffuse; veins R_2 and R_3 parallel or nearly so throughout their length, cell R_2 being unusually narrow at the wing-margin, not more than one-half wider than cell R_3 .

(British East Africa) *diffusa* (ALEXANDER).

Wings pale brown, the spots small but more clearly defined; vein R_2 diverging gradually from vein R_3 so cell R_2 at the margin is wide, more than twice cell R_3 .

(Birunga) *birungana*, sp. n.

14. Basal deflection of Cu_1 before midlength of the lower face of cell 1st M_2 . 15

Basal deflection of Cu_2 beyond midlength of the lower face of cell 1st M_2 ; (anterior arculus lacking). 17

15. General coloration light orange-brown, the pleura pale yellow; r on R_2 immediately beyond the fork of R_{2+3} ; R_2 short, diverging strongly from vein R_3 so cell 2nd R_1 at the wing-margin is only about two-thirds cell R_2 .

(Southern Rhodesia) *aurantiaca* ALEXANDER.

General coloration brown or brownish gray, the pleura pruinose or plumbeous; r on R_2 about its own length

beyond the fork of R_{2+3} ; vein R_2 longer, so cells 2nd R_1 and R_2 are more nearly equal in width at the wing-margin, or cell R_2 narrower. 16

16. Size smaller (wing, ♂, under 9 mm); tips of the femora darkened; R_1 beyond r about one-half longer than this crossvein; veins R_2 and R_3 divergent toward tips.

(South Africa) *frugi* (BERGROTH).

Size larger (wing, ♂, 10 mm); femora entirely pale brownish yellow; R_1 beyond r fully twice this crossvein; veins R_2 and R_3 generally parallel.

(Uganda) *senex* ALEXANDER.

17. Wings with a strong fulvous tinge, more saturated apically, more yellowish at base.

(Madagascar) *fulvipennis* ALEXANDER.

Wings varying from yellowish to nearly hyaline. 18

18. Wings strongly tinged with yellow.

(Transvaal) *transvaalica* (ALEXANDER).

Wings pale brown to subhyaline. 19

19. Size larger (wing, ♂, 7.8 mm or more); wings slightly tinged with brown. 20

Size small (wing, ♂, 7.2 mm or less); wings yellowish gray to nearly hyaline. 21

20. Head reddish brown; R_s short, strongly arcuated at origin; Sc beyond origin of R_s short, less than twice the strongly arcuated R_{2+3} ; basal deflection of R_{4+5} longer than m .

(Natal) *natalensis* (ALEXANDER).

Head light gray; R_s long, Sc beyond the origin of R_s nearly three times the slightly arcuated R_{2+3} ; basal deflection of R_{4+5} very short, subobsolete.

(Cape Colony) *griseiceps* (ALEXANDER).

21. Wings nearly hyaline, the stigma scarcely apparent; tibial apices dark brown; petiole of cell M_1 about one-third vein M_1 .

(Madagascar) *recens* ALEXANDER.

Wings pale yellowish gray, the stigma pale grayish; legs uniformly brownish yellow; petiole of cell M_1 only one-fourth of vein M_1 .

(Tanganyika Territory) *claduroneura* (SPEISER).

Pseudolimmophila gyldenstolpei, sp. n. Wings with an abundant brown pattern that is in part ocelliform; a supernumerary crossvein in cell Sc ; m one-half longer than the outer deflection of M_3 ; basal deflection of Cu_1 from three-fourths to four-fifths the length of the cell.

Male. — Length 9 mm; wing 10.5 mm.

Rostrum and palpi dark brown. Antennæ with the scape dark brown, sparsely pollinose, the second segment light brown; flagellum broken. Head dark gray.

Pronotum reddish brown. Mesonotum discolored, in life apparently light gray, the præscutum with three brown stripes; lateral margin of the sclerite behind the pseudosutural foveæ darker brown; scutellum and postnotum dark, gray pruinose. Pleura dark brown, gray pruinose, with a narrow longitudinal velvety-black stripe extending from the cervical sclerites across the propleura and anepisternum. Halteres yellow, the knobs brown. Legs with the coxæ dark brown, gray pruinose; trochanters yellowish brown, pruinose; femora pale brown, near midlength passing gradually into deep brown, the tips darkest; tibiæ and tarsi pale brown, the terminal segments of the tarsi broken. Wings tinged with brown, with a handsome darker brown ocelliform pattern; cell *C* uniformly but faintly darkened; a solid circular area at the supernumerary crossvein in cell *Sc*; a larger circular area at the origin of *Rs*, this with a narrow dark center, the cloud extending from *C* to *M*; stigma large, oval; ocellate rings with the cord, outer end of cell 1st *M*₂ and fork of *M*₁₊₂ as centers, the rings pale brown, the extreme centers darker brown, the intermediate space being of the pale ground-color; solid pale brown rings at the tips of all the longitudinal veins (except *R*₄₊₅), the largest at *R*₂; a series of about nine small circular brown clouds along vein *Cu*; veins dark brown. Venation: A supernumerary crossvein in cell *Sc*, at midlength of the distance between arculus and the origin of *Rs*; *Sc* long, *Sc*₁ ending a short distance before the fork of *Rs*, *Sc*₂ at its tip and longer than it; *Rs* long, weakly angulated at origin; *r* about twice its length from the tip of *R*₁ and a little more than three times its length beyond the fork of *R*₂₊₃; *R*₂₊₃ arcuated, twice the deflection of *Cu*₁; cell 1st *M*₂ irregular in shape, *m* being one-half longer than the outer deflection of *M*₃ and meeting *M*₁₊₂ as a symmetrical fork, the petiole of cell *M*₁ nearly twice the basal deflection of *Cu*₁; basal deflection of *Cu*₁ far out beneath cell 1st *M*₂, opposite the proximal end of *m* and from three-fourths to four-fifths the length of the cell; anterior arculus lacking.

Abdomen dark brown, including the hypopygium; basal sternites with the median area obscure yellow. Male hypopygium (text-figure 1) with the outer dististyle (*od*) terminating in a long, gently curved blackened hook; inner style (*id*) beyond midlength narrowed into a slender apex.

Holotype, ♂, Karissimbi, Birunga, altitude 2,800 meters,

March 22, 1921 (PRINCE WILLIAM'S Expedition, GYLDENSTOLPE, collector).

This interesting and very distinct crane-fly is named in honor of the collector.

Pseudolimnophila orthia, sp. n. General coloration dark; basal flagellar segment a little brightened at base; wings tinged with yellow, with a very heavy banded, spotted and striped brown pattern; cell 1st *M*₂ small; cell *M*₁ about equal to its petiole.

Female. — Length 10 mm; wing 10.5 mm.

Rostrum and palpi black. Antennæ with the elongate basal segment of the scape brown, the second segment a little darker; flagellum brownish black, the extreme base of the first flagellar segment obscure yellow; flagellar segments elongate-oval. Head dark brown, discolored.

Pronotum dark brown, the posterior margin brighter. Mesonotum and pleura dark brown, any natural bloom that may have been present destroyed, traces of a gray pruinosity persisting on the mesosternum; dorso-pleural membranes obscure yellow. Halteres light brown, the knobs a little darker, the base of the stem yellow. Legs with the coxæ brownish yellow, the fore coxæ darker; trochanters brown; remainder of the legs broken. Wings tinged with yellow, with a very heavy brown pattern, all of these areas being solid; this pattern is distributed as follows: A spot at *h*; another at arculus, connected with a broad conspicuous stripe along vein *Cu*; a large rectangular area at origin of *Rs*, extending from costa to media; a large circular area at tip of *Sc*₁; stigma brown, connected with seams along the cord, the base of cell *R*₂ being extensively suffused, the extreme base of cell *R*₃ remaining clear; outer end of cell 1st *M*₂ seamed with brown; conspicuous marginal brown clouds at the tips of all the longitudinal veins; an oblique fascia extending

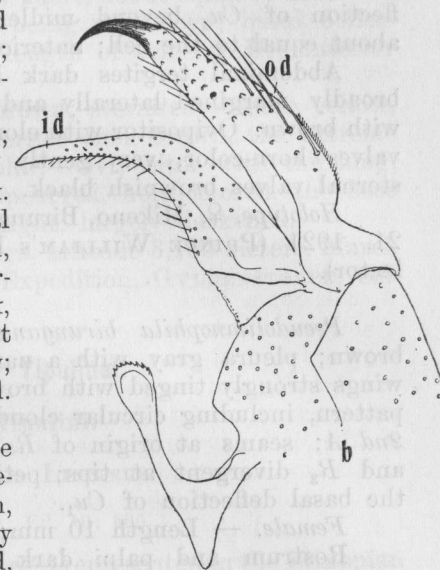


Fig. 1. Male hypopygium of *Pseudolimnophila gyldenstolpei*, sp. n.

b = basistyle.
id = inner dististyle.
od = outer dististyle.

from the tip of R_2 to the fork of M_{1+2} , crossing cells R_2 , R_3 and near midlength of R_3 ; veins dark brown. Venation: Sc_1 ending opposite the fork of R_s , Sc_2 a short distance from its tip, Sc_1 alone about three times Sc_2 ; r bisecting the setiferous stigma, nearly three times its length from the tip of R_1 ; R_s long, angulated at origin; R_{2+3} about twice the basal deflection of Cu_1 , strongly arcuated at midlength; veins R_2 and R_3 diverging at tips; cell 1st M_2 small, pentagonal, the basal deflection of Cu_1 beyond midlength; petiole of cell M_1 long, about equal to the cell; anterior arcus lacking.

Abdominal tergites dark brown, the sternites yellowish, broadly margined laterally and less distinctly across the base with brown. Ovipositor with elongate valves, the acicular tergal valves horn-color, very gently upcurved; the stouter, straight sternal valves brownish black.

Holotype, ♀, Mikenno, Birunga, altitude 3,100 meters, March 21, 1921 (PRINCE WILLIAM'S Expedition, GYLDENSTOLPE collector).

Pseudolimnophila birungana, sp. n. General coloration brown; pleura gray with a narrow black longitudinal stripe; wings strongly tinged with brown, with a sparse darker brown pattern, including circular clouds at tips of veins R_2 , R_3 and 2nd A ; seams at origin of R_s and along the cord; veins R_2 and R_3 divergent at tips; petiole of cell M_1 about equal to the basal deflection of Cu_1 .

Female. — Length 10 mm; wing 10.8 mm.

Rostrum and palpi dark brown. Antennæ dark brown, the second scapal segment brighter; basal segment of the flagellum scarcely brightened at base; flagellar segments oval. Head dark gray, yellowish pollinose anteriorly.

Mesonotal praescutum dark brown, the humeral region more pollinose, the sclerites discolored; scutal lobes and scutellum dark brown; postnotum heavily gray pruinose. Pleura dark brown, light or silvery gray pruinose, with a narrow but distinct black stripe extending from the cervical sclerites across the propleura, anepisternum and pteropleurite. Mesosternum weakly darkened. Halteres brown, the base of the stem passing into yellowish. Legs with the coxæ brown, pruinose; trochanters brownish yellow; femora brown, the bases a trifle paler; tibiae and tarsi dark brown. Wings with a strong brownish tinge and with a very sparse brown pattern; stigma large, oval, brown; pale brown clouds at origin of R_s ; along the anterior cord and as conspicuous circular clouds at the tips of veins R_2 and R_3 ; less distinct seams on the posterior cord, outer end of cell 1st M_2 and at the tips of veins Sc and 2nd A ;

veins dark brown. Venation: Sc_1 ending immediately beyond the fork of R_s , Sc_2 at its tip and a little the longer; R_s elongate, angulate at origin; R_{2+3} long, arcuated, from one-third to one-half longer than the basal deflection of Cu_1 ; r a little more than its own length from the tip of R_1 and near two-fifths the length of R_2 ; veins R_2 and R_3 gradually diverging, cell R_2 at the wing-margin about two and one-half times cell R_3 ; petiole of cell M_1 relatively short, about equal to the basal deflection of Cu_1 , cell M_1 thus being very deep; basal deflection of Cu_1 at three-fifths the length of cell 1st M_2 ; anterior arcus lacking.

Abdominal tergites dark brown; sternites obscure yellow, the lateral margins of the sclerites dark brown, the extreme bases narrowly of the same color. Ovipositor with the long, slender tergal valves gently upcurved, horn-colored, the base dark brown; sternal valves straight, largely darkened.

Holotype, ♂, Mikenno, Birunga, altitude 3,100 meters, March 21, 1921 (PRINCE WILLIAM'S Expedition, GYLDENSTOLPE, collector).

Subfamily Tipulinæ.

Tribe Tipulini.

Genus *Tipula* LINNÆUS.

1758. *Tipula* LINNÆUS; Syst. Natur., Ed. 10: 585.

The great genus *Tipula* is well represented in the Ethiopian fauna. Two undescribed species were included in the present material.

Acutipula, subgenus nov.

Legs long and slender; tarsal claws of the male toothed (except in *camerounensis* ALEXANDER). Venation with R_s , R_{2+3} and cell R_2 tending to be crowded towards the costa, cell R_2 being very small and with its proximal end pointed; cells M_1 and 1st M_2 large and full.

Type of the subgenus. — *Tipula gaboonensis* ALEXANDER
(West Africa).

The above new group is proposed for a great assemblage of chiefly African *Tipulæ* in which the tarsal claws of the male are distinctly toothed and the venational tendencies of the obliteration of the radial cells, with a corresponding increase of the medial field, is well demonstrated.

The following Ethiopian species belong to *Acutipula*:

Tipula alphaspis SPEISER, *T. alphaspis nyasæ* ALEXANDER, *T. bartletti* ALEXANDER, *T. camerounensis* ALEXANDER, *T. daho-miensis* ALEXANDER, *T. ellenbergeri* ALEXANDER, *T. gabooensis* ALEXANDER, *T. hova* ALEXANDER, *T. jocosa* ALEXANDER, *T. kenia* ALEXANDER, *T. langi* ALEXANDER, *T. langi rubricapilla* ALEXANDER, *T. leonensis* ALEXANDER, *T. masai* ALEXANDER, *T. meliuscula* ALEXANDER, *T. neavei* ALEXANDER, *T. milanjensis* ALEXANDER, *T. pomposa* BERGROTH, *T. oryx* ALEXANDER, *T. ruwenzori* ALEXANDER, *T. ruwenzori ankolensis* ALEXANDER, *T. silinda* ALEXANDER, *T. victoria* ALEXANDER and *T. zambe-ziensis* ALEXANDER.

In addition, *T. capnioneura* SPEISER, *T. cinnamomea* RIEDEL, *T. ellioti* ALEXANDER, *T. eumecacera* SPEISER, *T. imperfecta* RIEDEL and *T. kinangopensis* (RIEDEL) are very possibly members of the group. The Australian *Tipula dielava* ALEXANDER and *T. leptoneura* ALEXANDER likewise belong to *Acutipula*.

Tipula (Acutipula) sjöstedti, sp. n. General coloration light yellow, the præscutum and scutum with conspicuous brown marks; scape yellow, the flagellum brown; wings grayish yellow, the anterior cord and basal deflection of Cu_1 seamed with brown; abundant macrotrichia on vein R_3 ; a brown subterminal ring on abdomen.

Male. — Length about 16 mm; wing 17.5 mm.

Frontal prolongation of head orange-yellow, with a narrow lateral darker line; nasus long, clothed with long hairs; palpi pale yellowish brown, the tip darker. Antennæ relatively short, if bent backward not reaching the wing-root; scape bright yellow, flagellum dark brown, the base of the segments slightly enlarged, the lower face weakly incised; verticils conspicuous. Head orange-yellow.

Pronotum sulphur-yellow, the sides darker. Mesonotal præscutum sulphur-yellow, darker in front, with four narrow, dark brown stripes that are very conspicuous, the intermediate pair separated from one another by a brownish yellow vitta; scutal lobes each with two conspicuous brown spots; scutellum brownish testaceous; mediotergite of postnotum yellow with a median brown marking that develops into paired circular dark spots at the caudal margin of the sclerite. Pleura yellow, the propleura, ventral margin of anepisternum, and dorsal and ventral margins of the postnotal pleurotergite weakly infuscated; mesosternum and meron more strongly infuscated. Halteres relatively slender, brown, the apices of the knobs paler. Legs with the coxæ and trochanters fulvous; femora yellowish brown,

the tips narrowly darker brown; tibiae similar, the tips very narrowly infuscated; tarsi slender, gradually passing into black; claws toothed. Wings with a grayish yellow tinge, the base and cell Sc a little darker; stigma elongate, small, brown; a brown seam on the anterior cord and another along the basal deflection of Cu_1 ; other clouds at arculus and at the tip of vein Cu_2 , with a less conspicuous seam along vein Cu ; veins dark brown, the costal veins more yellowish. Conspicuous elongate macrotrichia on most veins; a series of about 27 on R_3 , only the distal fifth of the vein being glabrous. Venation: R_s and R_{2+3} almost in alignment and lying very close to R_1 , cell 1st R_1 thus being unusually narrow; R_3 long, at least one

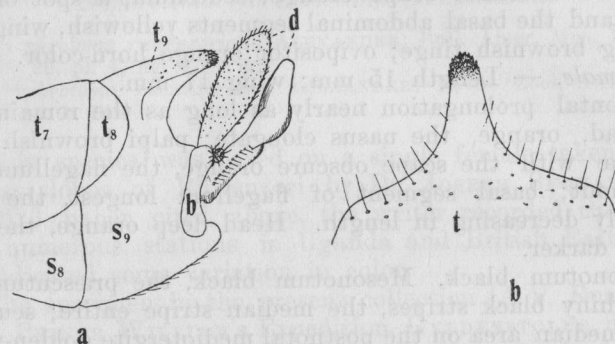


Fig. 2. a. Lateral aspect of male hypopygium of *Tipula (Acutipula) sjöstedti*, sp. n., from the dry holotype.

b. Dorsal aspect of 9th tergite of same.

b = basistyle.

d = dististyles.

s = sternites 8 and 9.

t = tergites 7, 8 and 9.

and one-half the basal deflection of Cu_1 ; petiole of cell M_1 longer than m ; fusion of M_3 and Cu_1 about equal to the basal section of M_3 .

Abdomen with the basal tergite yellow, tergites two to four more rufous-yellow, the lateral margins of the sclerites narrowly infuscated, interrupted at both base and apex of the segments; on segments five to seven, the tergites become infuscated to form a rather conspicuous subterminal ring; hypopygium obscure yellow; sternites obscure rufous yellow, only the eighth sternite a little infuscated. Male hypopygium (Text-figure 2 a) with the sclerites fused into a continuous ring; ninth tergite (2 b) tapering gradually to a rather slender median lobe that terminates in a few blackened denticles. Ninth sternite (S9) extensive, the basistyle (b) appearing as a narrow collar-

like portion; outer dististyle (d) rather long, pale, narrowed at base and less strongly so at apex, covered with small setæ. Ventral notch of sternite with yellow setæ. Eighth sternite (S8) unarmed.

Holotype, ♂, Sabinio, Birunga, 1921 (PRINCE WILLIAM'S Expedition, GYLDENSTOLPE, collector).

This very distinct species is named in honor of Dr. YNGVE SJÖSTEDT, leader of the Swedish Zoological Expedition to Kili-
mandjaro and Meru in 1905—1906.

Tipula (Tipula) nephrotomoides, sp. n. Greatly resembling *Nephrotoma fuscipennis* (KARSCH); general coloration black, the head and antennal scape orange; scutellum, a spot on postnotum and the basal abdominal segments yellowish, wings with a strong brownish tinge; ovipositor orange horn-color.

Female. — Length 15 mm; wing 17 mm.

Frontal prolongation nearly as long as the remainder of the head, orange, the nasus elongate; palpi brownish black. Antennæ with the scape obscure orange, the flagellum black throughout; basal segment of flagellum longest, the others gradually decreasing in length. Head deep orange, the orbits a little darker.

Pronotum black. Mesonotum black, the præscutum with three shiny black stripes, the median stripe entire; scutellum and a median area on the postnotal mediotergite golden-yellow. Pleura entirely brownish black. Halteres dark brown throughout. Legs black throughout. Wings with a strong brown tinge, cells *C* and *Sc* darker brown; stigma a little paler than the costal region; brown clouds at origin of *Rs* and along the cord, and as a narrow seam along the wing-margin; longitudinal veins indistinctly seamed with darker; conspicuous oblitative bullæ before the stigma and across cell 1st *M*₂; veins dark brown. Venation: *Rs* elongate, one-third longer than *R*₂₊₃; *R*₃ gently arcuated, bent toward *R*₄₊₅, which, however, is not bent toward it; petiole of cell *M*₁ about one and two-thirds *m*; *m-cu* very long, placed more than its length beyond the fork of *M*.

Abdomen with the basal half of tergite one dark brown, the apical half orange-yellow; tergite two orange-yellow, the lateral margin at base narrowly darkened; tergites three to seven deep black; sternites similar but segments two and three orange-yellow; tergite eight brownish orange; genital segment, including the elongate valves of the ovipositor orange horn-color.

Holotype, ♀, Karissimbi, Birunga, altitude 2,800 meters, March 22, 1921 (PRINCE WILLIAM'S Expedition, GYLDENSTOLPE, collector).

The resemblance of this conspicuous fly to a large *Nephrotoma fuscipennis* (KARSCH) is startling, but the venation shows that it is a true *Tipula*.

Genus *Nephrotoma* MEIGEN.

1803. *Nephrotoma* MEIGEN; Illiger's Mag., 2: 262.

1834. *Pachyrrhina* MACQUART; Hist. Nat. Ins., Dipt., 1: 88.

The genus *Nephrotoma* is abundantly represented in the Ethiopian Region. The present collection included a single species.

Nephrotoma ruwenzoriana ALEXANDER.

1920. *Nephrotoma ruwenzoriana* ALEXANDER; Bull. Amer. Mus. Nat. Hist., 43: 20, pl. 4, fig. 6 (wing).

1923. *Nephrotoma ruwenzoriana* ALEXANDER; Revue Zool. Africaine, 11, Fasc. 1: 14—16.

This species was based on a single female taken on the western slopes of Ruwenzori by Dr. JOSEPH BEQUAERT. In the 1923 paper cited above, the writer recorded the species from numerous stations in Uganda and British East Africa, and indicated some variation in color.

The specimen in the present collection (A ♀, Ruanda området; PRINCE WILLIAM'S Expedition, GYLDENSTOLPE, collector) is smaller than the type and differs moreover in the following regards: The yellowish marking at base of postnotal mediotergite is reduced to an obscure yellow circular area; abdominal tergites two to four with basal-lateral obscure orange markings; sternites two to four largely of this same color, the segments narrowly margined laterally and posteriorly with dark brown. In spite of this increase of orange coloration on the abdomen, the specimen seems to be correctly referred to *N. ruwenzoriana*.

Tryckt den 3 juni 1924.