

THE CRANE-FLIES
(FAMILY TIPULIDAE, ORDER DIPTERA)

BY
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UPON THE AFRICAN REPUBLIC OF LIBERIA AND THE BELGIAN CONGO

THE CRANE-FLIES

(FAMILY TIPULIDAE, ORDER DIPTERA)

BY CHARLES P. ALEXANDER, AMHERST, MASSACHUSETTS¹

The crane-flies that were taken on the expedition of the Harvard Medical School to tropical Africa in 1926-1927 have been sent to me for determination by the collector of the material, Dr. Joseph Bequaert, to whom I extend my deepest thanks. Several of the species proved to be new to science, while still others added materially to our rather scanty knowledge of distribution of the Tipulidae of the Ethiopian Region. The most interesting series were those taken in Liberia, especially at Firestone Plantation No. 3, on the right bank of the Du River, ten miles east of Monrovia, and the small but highly interesting series from the volcanic cones of Mikeno and Karisimbi, in the eastern Belgian Congo. Through the kind interest of Dr. Bequaert, the types of the novelties are preserved in my collection.

TIPULINAE

Tipula speiseriana, new species

Belongs to the *oleracea* group; general coloration yellow and dark brown; antennae approximately as long as the combined head and thorax, the outer segments dark brown; wings broad, the whitish subhyaline area in the radial field reaching the wing-margin in cell R_5 ; vein R_3 long; male hypopygium yellow.

Male. — Length about 17-18 mm.; wing 19-20 mm.; antennae about 6 mm.

Described from alcoholic specimens.

Frontal prolongation of head brownish yellow; nasus elongate; palpi dark brown, the apices of the individual segments somewhat paler. Antennae of moderate length, in the male approximately as long as the combined head and thorax; scape obscure yellow; basal flagellar segments brownish yellow, the outer segments bicolorous, the basal enlargement being darker brown than the remainder of each segment; outer segments uniformly dark brown; longest verticils subequal to the segments; terminal segment very reduced. Head grayish, the front and narrow posterior orbits paler.

Mesonotal praescutum obscure brownish yellow, the disk almost covered by three dark brown stripes, the median stripe entire; scutal lobes extensively dark brown; a dark median triangle behind the suture; scutellum dark, with a capillary darker brown median vitta; parascutella pale; postnotal mediotergite grayish brown with a median dark brown vitta, the lateral margins pale. Pleura chiefly yellow, the ventral sternopleurite and meron infuscated. Halteres elongate, dark brown. Legs with the coxae chiefly yellow, the outer face of the middle coxae infuscated; femora and tibiae brownish yellow, their tips darkened; basitarsi yellowish brown, the tips darker; remainder of tarsi black; legs long and slender; claws small, simple. Wings broad, tinged with brown, variegated with darker brown and whitish subhyaline longitudinal stripes; the white areas include an extensive stripe in the radial field, including most of the outer portions of cells R and M and all of cell R_5 to the margin; bases of cells Cu and $1st A$ similarly whitened; costal margin yellowish brown; stigma and a broad seam in cell M along Cu , and on $m-cu$, darker brown. Venation: R_3 unusually elongate, nearly straight, approximately four times R_{1+2} ; cell $2nd A$ broad.

Abdominal tergites yellowish brown, with three brownish black stripes; sternites yellowish brown, the median line darker, the outer segments more uniformly darkened; hypopygium bright yellow. Male hypopygium with the tergite bearing the usual two truncated lobes, these densely

¹ Contribution from the Entomological Laboratory, Massachusetts Agricultural College.

set with microscopic black spinulae. Outer dististyle broad, the apex obliquely truncated to feebly concave. Inner dististyle with the lower apical angle produced into a slender curved rod, the tip blackened and acute.

Hab. BELGIAN CONGO (Kivu).

Holotype, alcoholic ♂, Kabara Camp, on southwest slope of Mt. Mikeno, altitude 10,500 feet, in subalpine zone (*Hagenia* formation), March 16, 1927 (*J. Bequaert*). *Paratopotypes*, 4 ♂♂.

Tipula speiseriana is named in honor of Dr. P. Speiser, distinguished student of the Diptera of Africa. The species seems intermediate in its characters between *T. soror* Wiedemann and *T. frater* Alexander, with short yellow antennae, and *T. eumecacera* Speiser and *T. capnioneura* Speiser, in which the antennae in the male sex extend to beyond the base of the fifth abdominal segment. It is very possible that the present species will be found to have subapterous females as is the case with several species of *Tipula* from the high mountains of equatorial Africa.

Tipula (*Acutipula*), species

Females of two distinct species, from Moala, thirty miles from the coast, north of Monrovia, Liberia, and from Paiata, on the St. Paul's River, eighty-five miles from the coast, northeast of Monrovia, Liberia, October 10, 1926 (*J. Bequaert*).

Nephrotoma ruwenzoriana Alexander

1920. *Nephrotoma ruwenzoriana* Alexander; Bull. Amer. Mus. Nat. Hist., 43: 20, pl. 4, fig. 6.
1923. *Nephrotoma ruwenzoriana* Alexander; Rev. Zool. Africaine, 11:14-16.

The type, a female, was from Mt. Ruwenzori, collected at 3,000 meters, April 15, 1914, by Dr. Bequaert. Numerous additional specimens were later recorded from Uganda and Kenya Colony, at altitudes of between 3,500 and 8,000 feet. In the present collection, a male, from Kabale, Uganda, was taken in the cultivated lower mountain zone, at 6,500 feet, by Dr. Bequaert. This specimen agrees well with the type except that the bases of abdominal segments two to four are orange-yellow. The prothorax and mesothorax are blue-black, entirely without pale colors other than a vague reddish suffusion on the postnotal mediotergite.

Nephrotoma chalybea Alexander, variety

1921. *Nephrotoma chalybea* Alexander; Ann. Mag. Nat. Hist., (9) 7: 101-103.

A male from Kisenyi, on the northern shore of Lake Kivu, 1° 35' S., 29° 15' E., in lower mountain forest at 4,400 feet. This agrees well with the type except that the blue-black coloration of the thorax and abdomen is unusually developed.

Nephrotoma fuscipennis triflava Alexander

1921. *Nephrotoma fuscipennis triflava* Alexander; Ann. Mag. Nat. Hist., (9) 7: 107.

A male from Kisenyi, north shore of Lake Kivu, February 10, 1927 (*J. Bequaert*).

Nephrotoma tumidiverticalis, new species

General coloration yellow, variegated with black; posterior region of vertex and the occiput extensively blackened; praescutum and scutum chiefly blackened, the scutellum and postnotal mediotergite orange-yellow; pleura blackened, variegated with yellow, especially on the posterior sclerites; legs with the femora yellow, the tips broadly blackened, most extensively so on the fore femora; wings brownish yellow, the stigma pale brown; abdominal tergites yellow, trivittate with black, the caudal margins of the segments further margined with black, restricting the ground-color to sublateral areas, these becoming smaller to finally obliterated on the outer segments.

Male.—Length about 13 mm.; wing 12–13 mm.

Described from alcoholic specimens.

Frontal prolongation of head high, bright yellow, restrictedly infuscated dorso-medially; nasus brownish black; palpi light brown, the terminal segment paler. Antennae (σ^7) relatively long, if bent backward extending to about opposite midlength of the second abdominal segment; scapal segments yellow, the first darker above; flagellum entirely black, the basal segments moderately incised. Head with the vertical tubercle unusually inflated, slightly compressed, the cephalic margin weakly bifid, bright yellow; posterior region of head dark brown, sending cephalad three prolongations, one along the inner margin of each eye, in addition to a narrow capillary median vitta; postgenae yellow.

Pronotum black, obscure yellow medially. Mesonotal praescutum almost covered by three broad black stripes, the humeral region appearing as restricted yellow triangles; scutal lobes and parascutella black, the median region of the scutum pale; scutellum obscure yellow, with a brownish median area on posterior margin; postnotal mediotergite chiefly orange-yellow, slightly darkened laterally. Pleura almost entirely blackened, the dorso-pleural region pale; vague yellowish areas on the posterior portions of the anepisternum, pteropleurite, and dorsal portion of meron; pleurotergite variegated by a large yellow area. Halteres dusky, the tips of the knobs paler. Legs with the coxae black; trochanters abruptly yellow; femora yellow basally, the tips blackened, this very broad on the fore legs where only the basal fourth is yellow; on middle and hind femora the black tips are subequal and include approximately the distal sixth; tibiae dark brown, the tips narrowly blackened; tarsi black. Wings with a brownish yellow ground-color, the costal margin and cell Cu_1 more saturated; stigma oval, pale brown; basal half of stigma with about a dozen macrotrichia; vague brown seams on anterior cord; veins darker. Venation: Sc_1 preserved except at extreme tip; R_s gently arcuate, about one-third longer than the basal section of R_{4+5} ; cell M_1 sessile.

Abdomen with tergite one black, narrowly margined caudally with yellow; remaining tergites yellow, heavily trivittate with black, the caudal margins of the segments likewise blackened, restricting the yellow to sublateral areas that decrease in amount on the outer segments, on the sixth and seventh tergites being greatly reduced; eighth tergite black with a circular orange mark at base on either side of the median line; ninth tergite black, the caudal margin paler medially; sternites with the caudal margins of the individual segments extensively blackened, the amount increasing on the outer segments; hypopygium dark, the styli yellow. Male hypopygium with the tergite transverse, the caudal margin with a broad U-shaped emargination which is occupied by a flattened yellowish shelf, this further divided by a linear median notch. Eighth sternite with a weak median emargination.

Hab. BELGIAN CONGO (Kivu).

Holotype, alcoholic σ , Rueru Camp, on southwest slope of Mt. Mikeno, altitude 9,150 feet, in bamboo region, March 15, 1927 (*J. Bequaert*). *Paratopotypes*, 2 σ σ .

I cannot identify this handsome *Nephrotoma* with any of the numerous Ethiopian species so far described.

Nephrotoma, species

The following specimens, all females, are present: Bumba, Belgian Congo, 2° 10' N., 22° 30' E., December 31, 1926; Lulenga, Belgian Congo, 1° 20' S.,

29° 20' E., altitude 5,500 feet, in lower mountain forest, February 17, 1927; Behungi, Uganda, altitude 8,300 feet, in bamboo formation; Kisolo, Uganda, 1° 15' N., 29° 40' E.

LIMONIINAE

LIMONIINI

Limonia (*Limonia*) *vilhelmi* Alexander

1924. *Limonia vilhelmi* Alexander; Arkiv för Zoologi, 16, no. 18:2-3.

The unique type, a female, was from Birunga, Mt. Mikeno, altitude 3,100 meters, March 21, 1921, collected by Gyldenstolpe. A male specimen in the present series is from near the type-locality, Rueru Camp, on the southwest slope of Mt. Mikeno, altitude 9,150 feet, in bamboo region, March 15, 1927 (*J. Bequaert*).

A question of synonymy in the naming of these large mountain species of *Limonia* has arisen. In my opinion, Dr. Speiser, when describing *L. rhanthisa* (Wien. Ent. Zeitung, 40:87-88; 1923) has inadvertently created a synonym of his *L. rhizosema* (Sjöstedt's Kilimandjaro-Meru Exped., Diptera, Orthorapha Nematocera: 48-49, figs. 6-7; 1909). The original description of the latter calls only for a species with the tips of the femora blackened, no mention being made of any specimens in the type-series having a narrower subterminal dark ring. Later, in a letter to Edwards (Trans. Linn. Soc. London, Zool., (2) 15:201; 1912), Speiser mentioned one specimen in this series as having a subterminal ring, the remainder of the series having this terminal in position. When describing *rhanthisa*, Speiser restricted the name to the species with an apical dark ring rather than applying it to the form not defined in the original diagnosis of *rhizosema*. The lectotype specimen of *rhizosema* in the Riksmuseum in Stockholm has the dark femoral tips, making *rhanthisa* a strict synonym. The material in the type-series of this species (from Kilimanjaro, May to August, 1905, collected by Sjöstedt) with a subterminal dark femoral ring may pertain to *Limonia subapicalis*, new name (for *L. capensis* Alexander, Ann. So. Afr. Mus., 17:143-145, pl. 10, fig. 6; 1917, described in *Libnotes*; preoccupied by *L. capensis* Macquart, 1838), to *L. vilhelmi* Alexander, as discussed above, or may represent still another of these showy mountain forms of *Limonia*.

Limonia (*Limonia*) *firestonei*, new species

Text Fig. No. 10, 1 and 11

General coloration dark brown; antennae moniliform; wings with a brown tinge, the stigma not apparent; male hypopygium with the median lobe of the tergite produced into a finger-like lobe; apex of mesal appendage of basistyle and of the dististyle each narrowed to a spinous point.

Male. — Length about 5 mm.; wing 5.2 mm.

Described from an alcoholic specimen.

Rostrum and palpi dark brown. Antennae dark brown throughout; flagellar segments subglobular with short, glabrous necks, the terminal segment more elongate. Head dark brown.

Mesonotum dark brown, the disk of the praescutum and the scutal lobes darkest, the humeral region of the praescutum, lateral ends of the suture and the postnotum laterally more yellowish brown. Pleura extensively brownish yellow. Halteres infuscated. Legs with the coxae and

trochanters brownish yellow; remainder of legs black; posterior legs broken, but presumably with the tarsi chiefly snowy-white as in the allied *L. metatarsalba* Alexander (Cameroon). Wings (Fig. 10, 1) with a brownish tinge, the prearcular and costal regions still darker; no evident stigma; veins dark brown. Venation: Sc_1 ending about opposite three-fourths R_s , Sc_2 close to its tip; free tip of Sc_2 and R_2 in transverse alignment; $m-cu$ at the fork of M .

Abdomen, including the hypopygium, chiefly dark brown, the incisures and pleural membrane even darker. Male hypopygium (Fig. 10, 11) with the median region of the tergite produced caudad and dorsad into a conspicuous finger-like median lobe. Basistyles relatively stout, the ventromesal lobe slender, narrowed to an acute, curved, chitinized point. A single dististyle, elongate-oval, narrowed to an acute chitinized point; at near midlength with a single flattened plate that presumably represents the usual rostral prolongation, this with the outer cephalic angle produced into a spine; on face of style, opposite this prolongation, a small low tubercle that is set with two very long setae. Eighth sternite medially at caudal end with a dense brush of black setae.

Hab. LIBERIA.

Holotype, alcoholic ♂, Firestone Plantation No. 3, on right bank of Du River, ten miles east of Monrovia, July 27, 1926 (*J. Bequaert*).

L. (L.) firestonei is closest to *L. metatarsalba* Alexander, differing in the longer Sc , more transverse alignment of R_2 and free tip of Sc_2 and the shorter cell 1st M_2 . Unfortunately the male of *metatarsalba* is still unknown.

Limonia (Limonia) bequaerti, new species

Text Fig. No. 10, 2

General coloration dark brown; mouthparts and palpi reduced; antennae black, the basal flagellar segments subglobular with short apical necks; legs dark brown, the distal half of tibiae and most of tarsi white; wings with a strong brown suffusion; abundant macrotrichia in all cells of wing except those of about the basal fifth.

Female.—Length about 8.5 mm.; wing 7.4 mm.

Described from an alcoholic specimen.

Rostrum very reduced to lacking, pale, the palpi apparently 2-segmented, erect to porrect, the terminal segment darkened. Antennae black, the terminal segments broken; flagellar segments subglobular, with short glabrous apical necks, the longest verticils unilaterally arranged. Head relatively broad, dark brown, the anterior vertex about one-half wider than the diameter of the first scapal segment.

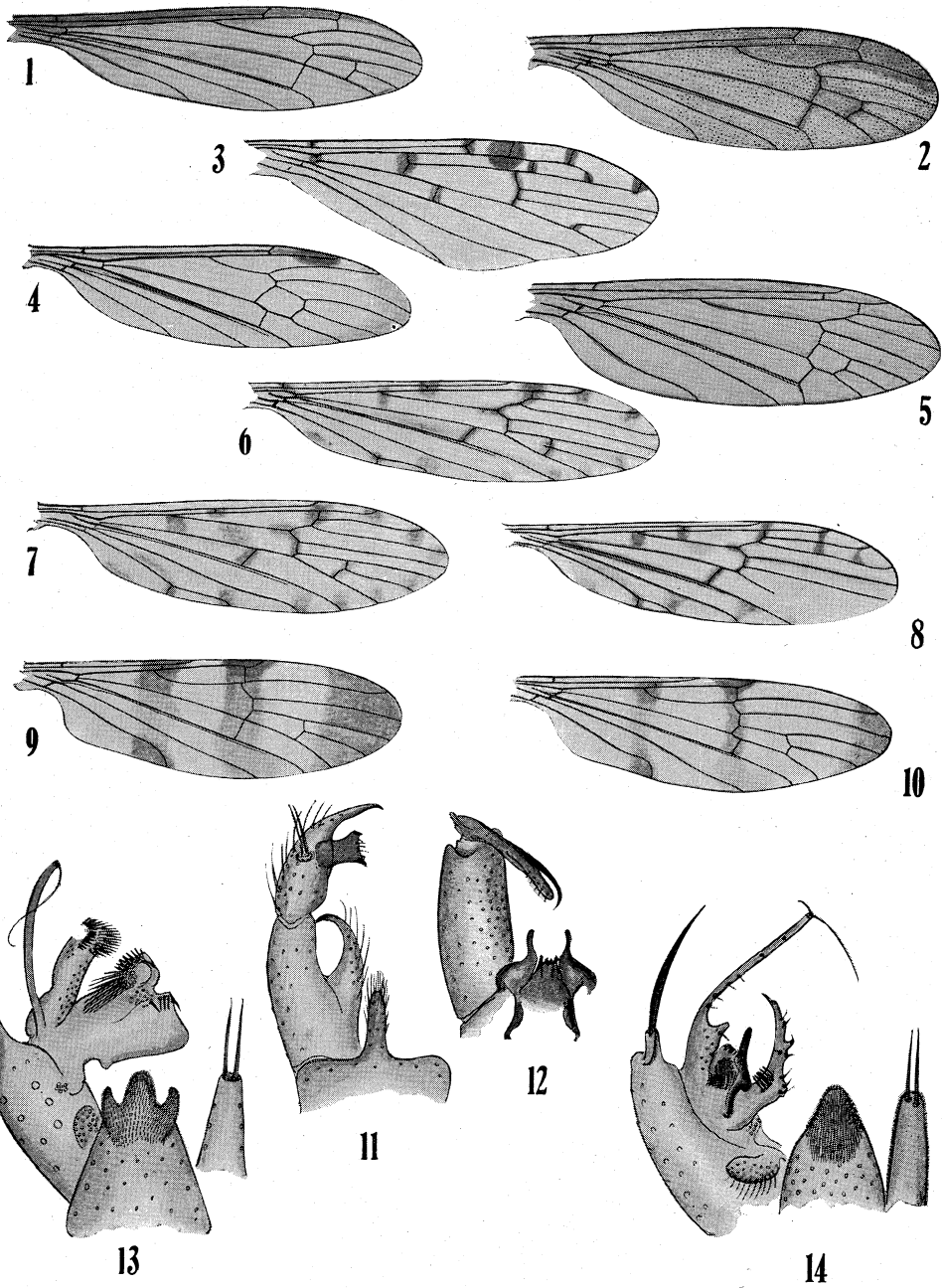
Pronotum and mesonotum dark brown, without evident markings (in alcohol). Pleura still darker brown, especially on the posterior sclerites. Halteres entirely infuscated. Legs with the coxae brown; trochanters brownish black; all legs are detached in vial with several other species but the association with the present form is evidently correct; femora dark brown, slightly paler basally; tibiae dark brown on proximal half, the distal half and the tarsi dirty white, only the terminal two tarsal segments darkened; claws long and slender, simple except for a basal setiferous tubercle. Wings (Fig. 10, 2) with a strong brown suffusion, with a vague darker brown pattern, including cell C and seams on the cord, outer end of cell 1st M_2 , R_{1+2} and R_2 , and the distal ends of cells R_2 and cephalic portion of R_3 ; veins dark brown. Conspicuous macrotrichia in all cells of wing except those of the basal fifth or sixth. Venation: Sc_1 ending opposite three-fourths R_s , Sc_2 at its tip; R_s long, arcuated; R_2 and free tip of Sc_2 in approximate alignment; basal section of R_{4+5} a little longer than $r-m$; $m-cu$ close to fork of M , subequal to distal section of Cu_1 .

Abdomen dark brown. Ovipositor with the tergal valves small and slender, upcurved; sternal valves stout and straight.

Hab. LIBERIA.

Holotype, ♀, Firestone Plantation No. 3, on the right bank of Du River, ten miles east of Monrovia, July 27, 1926 (*J. Bequaert*).

This interesting *Limonia* is named in honor of the collector, Dr. Joseph Bequaert. The only allied regional species is *L. (L.) holotricha* Alexander



TEXT FIGURE 10. — (1) *Limonia (Limonia) firestonei*, sp. n.; wing. (2) *Limonia (Limonia) bequaerti*, sp. n.; wing. (3) *Protorimarga bequaertiana*, gen. et sp. n.; wing. (4) *Helius cacoxena* (Alexander); wing. (5) *Eriocera monroviae*, sp. n.; wing. (6) *Podoneura bequaertiana*, sp. n.; wing. (7) *Podoneura anthracogramma* Bergroth; wing. (8) *Podoneura brevifurcata* Alexander; wing. (9) *Teucholabis nodipes praescutellaris*, subsp. n.; wing. (10) *Teucholabis rubrithorax* Alexander; wing. (11) *Limonia (Limonia) firestonei*, sp. n.; male hypopygium. (12) *Protorimarga bequaertiana*, gen. et sp. n.; male hypopygium. (13) *Styringomyia liberiensis*, sp. n.; male hypopygium. (14) *Styringomyia dendroides*, sp. n.; male hypopygium.

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(Cameroon) which has the same peculiar mouthparts and leg-coloration, differing in the large size and details of coloration and venation, especially the angulate R_s , reduced basal section of $R_4 + 5$ and other characters.

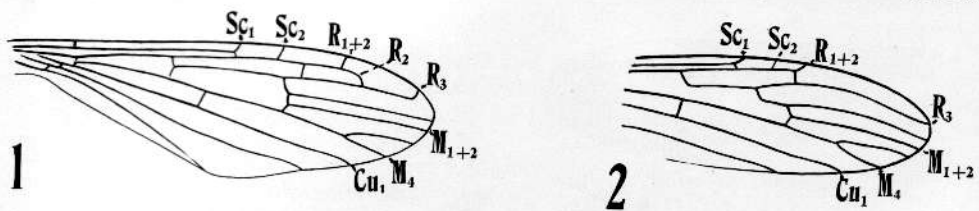
Limonia (*Rhipidia*) *miosema* Speiser

1909. *Limonia miosema* Speiser; Sjöstedt's Kilimandjaro-Meru Exped., Diptera, Orthorapha Nematocera, 50-51.

The types were from moderate altitudes (1,300-1,900 meters) on Kilimanjaro, collected in September 1905 by Sjöstedt. In the present material, a pair from Lulenga, Belgian Congo, $1^{\circ} 20' S.$, $29^{\circ} 20' E.$, altitude 5,500 feet, in lower mountain forest, March 29, 1927 (*J. Bequaert*). The rostral prolongation of the male hypopygium bears four spines, in this respect differing from the allied *L. (R.) pallidipes* (Alexander).

Protorimarga, new genus

General form of body elongate and attenuated as in *Orimarga* and *Diotrepha*, the meral region being greatly reduced, the sternopleurite and prothoracic region correspondingly lengthened. Rostrum short; maxillary palpi short, 4-segmented, the basal segment longest. Antennae 16-seg-



TEXT FIGURE 11. — Venational symbols: Cu = Cubitus; M = Media; R = Radius; Sc = Subcosta

- (1) Venation of *Protorimarga bequaertiana*, gen. et sp. n.
(2) Venation of *Orimarga*, sp.

mented; first segment elongate, the flagellar segments passing through globular to long-oval. Legs long and slender, the segments with scattered semi-erect setae; claws elongate, in male with an acute subappressed tooth on outer face at near midlength. Wings (Fig. 11, 1, and Fig. 10, 3) broad, especially in the much developed anal field, widest just beyond the ending of vein *2nd A*; costal margin of wing opposite the stigmal region considerably dilated, widening the cells in this region, this very possibly a sexual character. Venation: *Sc* long, *Sc*₁ ending beyond midlength of the long *R*_s, *Sc*₂ at its tip; free tip of *Sc*₂ long and conspicuous; *R*_s long; *R*₂ strongly arcuated and recurved, *R*₁₊₂ being perpendicular; a supernumerary crossvein in cell *R*₁ between the free tip of *Sc*₂ and *R*₁₊₂ and shortly beyond the level of *r-m*; tip of *R*₃ bent strongly cephalad at about a right angle; a long spur or crossvein at the bend of the angulated *R*_s, connecting posteriorly with vein *M* or nearly so; medial field as in *Orimarga*; *m-cu* about opposite one-third the length of *R*_s; both anal veins very long, gently divergent. Male hypopygium (Fig. 10, 12) with the basistyles elongate. Dististyles long, fused except at tips, the outer style terminating in a slender curved point, the inner style nearly as long, fleshy, setigerous. Gonapophyses appearing as heavily chitinized plates that are produced into short rods that are directed caudad. Aedeagus very short.

Genotype. — *Protorimarga bequaertiana*, sp. n. (Ethiopian Region).

The remarkable fly that is here made the type of a new genus of the subtribe Orimargaria presents some puzzling venational features. I believe the radial field has been correctly interpreted, as above, but there may be some dispute

concerning this. The alternative explanation would call the free tip of Sc_2 , as above, a supernumerary crossvein, with the remainder of the venation about as interpreted. The three genera of the *Orimargaria* now known may be separated as follows:

1. A supernumerary crossvein in cell R_1 between the origin of R_s and R_2 ; anal region of wing greatly expanded, the veins long.

Protorimarga, gen. n.

No supernumerary crossvein in cell R_1 ; anal region of wing narrowed, the veins, especially *2nd A*, correspondingly reduced. 2.

2. Cell M_3 of wing present; *m-cu* underneath R_s .

Orimarga Osten Sacken.

Cell M_3 of wing lacking; *m-cu* some distance before origin of R_s .

Diotrepha Osten Sacken.

Protorimarga, as known, is solely Ethiopian. *Orimarga* has been found in all the major regions of the world. *Diotrepha* is Neotropical, invading the southern portions of the Nearctic Region.

Protorimarga bequaertiana, new species

Text Figs. Nos. 10, 3 and 12, and 11, 1

General coloration dark brown, the head and mesonotum more pruinose; first antennal segment brownish black, the remainder obscure yellow; knobs of halteres dark brown; femora chiefly dark brown, with a narrow subterminal white ring; wings whitish, with a heavy, chiefly costal dark brown pattern.

Male.—Length about 6.5 mm.; wing 3.6 mm.

Described from an alcoholic specimen.

Rostrum and palpi brownish black. Antennae with the basal segment brownish black, the remainder of the organ obscure yellow, the outer segments somewhat darker; outer flagellar segments more elongated; verticils of segments relatively inconspicuous. Head dark gray; anterior vertex relatively narrow, about one-half wider than the diameter of the first scapal segment.

Pronotum brown. Mesonotum chiefly bluish gray, the humeral region of the praescutum more obscure yellow, the lateral margins behind the pseudosutural foveae darker brown. Pleura chiefly dark brown, the dorso-pleural region paler; a very narrow pale longitudinal vitta crosses the sternopleurite, the sclerite ventrad of this darker brown. Halteres white, the knobs dark brown. Legs with the fore coxae and trochanters pale brown, the remaining coxae and trochanters brownish black; femora obscure yellow basally, passing into dark brown, before the tips with a narrow white ring, the dark tips approximately three times as wide as the subterminal annulus; tibiae dusky, the extreme base narrowly white, the tips more broadly blackened; tarsi chiefly brownish white. Wings (Fig. 10, 3) whitish, with a distinct, chiefly costal, dark brown pattern, including about ten areas, the largest surrounding the free tip of Sc_2 , confluent with a narrower seam along the cord; the other spots surround h and the arculus; origin of R_s and its spur; tip of Sc ; the supernumerary crossvein in cell R_1 ; R_{1+2} ; perpendicular base of R_2 ; perpendicular tip of R_3 ; *m-cu* and a small spot at the fork of M_{3+4} ; veins whitish, very indistinct, darker in the infuscated areas. Wings considerably dilated in the costal region, opposite the cord, this possibly a character of the male sex; anal region considerably dilated, especially the outer end of cell *1st A*; cell *2nd A* elongate, the outer end pointed. Venation as discussed under the generic diagnosis.

Abdomen chiefly dark brown, the lateral margins of the sclerites narrowly pale; hypopygium brownish black. Male hypopygium (Fig. 10, 12) with the basistyles relatively elongate, the mesal face unarmed except for somewhat more numerous setae. Other characters of the hypopygium as defined under the genus.

Hab. LIBERIA.

Holotype, alcoholic ♂, Firestone Plantation No. 3, on right bank of Du River, ten miles east of Monrovia, July 26, 1926 (*J. Bequaert*).

This unusually interesting crane-fly is named in honor of the collector, Dr. Joseph Bequaert, distinguished authority on the fauna and geography of tropical Africa.

Helius cadoxena (Alexander)

1920. *Rhamphidia cadoxena* Alexander; Ann. Mag. Nat. Hist., (9) 6:22.

The unique type, a female, was from Ilesha, southern Nigeria, taken August 17, 1910, by Captain L. E. H. Humfrey. In the present series, a second female, from the Firestone Plantation No. 3, Du River, Liberia, July 27, 1926, collected by Dr. Bequaert. The wing is shown in Fig. 10, 4.

HEXATOMINI

Eriocera monroviae, new species

Text Fig. No. 10, 5

Male. — Length about 13–15 mm.; wing 13–15 mm.

Female. — Length about 14 mm.; wing 12 mm.

Described from alcoholic specimens.

Characters as in *E. leonensis* Alexander, differing chiefly in the details of coloration, especially of the thoracic pleura and abdomen.

Mouthparts very reduced. Antennae short in both sexes; scape yellow; flagellum dark. Head orange.

Mesonotum with the praescutum and anterior scutal lobes virtually covered by black stripes, on the former restricting the pale color to the restricted humeral region and posterior interspaces; posterior portion of scutal lobes, median area of scutum, the scutellum and postnotum yellow. Pleura chiefly obscure yellow, only the dorsal region and anepisternum darkened; cephalic margin of the sternopleurite and the cephalic face of the coxae lined with brown. Legs with the coxae chiefly yellow, especially the fore coxae; trochanters obscure yellow; remainder of legs black, the femoral bases narrowly obscure yellow, more broadly so on the femora. Wings (Fig. 10, 5) with a strong brown suffusion, the base and costal cell more suffused; veins darker. Venation: R_s unusually long; R_2 shorter than $R_2 + 3$; $R_1 + 2$ exceeding $R_2 + 3 + 4$; cell M_1 lacking; $m-cu$ about one-third its length beyond the fork of M .

Abdomen chiefly yellow, including the basal segments and the hypopygium, the subterminal segments, especially of the sternites, blackened.

The female is similar to the male but has the legs shorter, the fore femora with a vague sub-terminal pale annulus.

Hab. LIBERIA.

Holotype, alcoholic ♂, Banga, in deep woods, October 24, 1926 (*J. Bequaert*).

Allotype, ♀, Firestone Plantation No. 3, right bank of Du River, August 2, 1926 (*J. Bequaert*). *Paratopotypes*, 2 ♂♂; *paratype*, ♂, in copula with the female.

The West African species of *Eriocera*, *leonensis* Alexander, *commutabilis* Alexander, *flavocincta* Alexander, and *monroviae*, sp. n., are obviously closely allied and are separated chiefly on details of coloration. The following key to the Ethiopian species of *Eriocera* shows this relationship.

1. Cell M_1 of the wings present.
(Madagascar) *obscura* (Bigot).
2. Cell M_1 of the wings lacking. 2.
2. $R_2 + 3 + 4$ subequal to or shorter than $R_3 + 4$, R_2 far basad of the fork of R_4 .
(Seychelles) *luteipennis* Edwards.
- $R_2 + 3 + 4$ much longer than $R_3 + 4$, the latter in most cases lacking, R_4 forking basad
of R_2 3.

3. Macrotrichia in apical cells of wings.
(Seychelles) *obscuripennis* Edwards.
No macrotrichia in cells of wings..... 4.
4. Cell M_2 confluent with M_3 , there being no discal and only three posterior cells.
(Seychelles) *ferruginea* (Edwards).
Cell 1st M_2 and 2nd M_2 distinct from M_3 5.
5. Wings brown, with three white marginal spots in the radial field.
(Mozambique) *albonotata* (Loew).
Wings not patterned as above..... 6.
6. Femora brown, with a broad yellow ring before the tips, this exceeding in area the dark tips.
(Ivory Coast) *flavocincta* Alexander.
Femora uniform in color or with a narrow vague pale ring on the fore legs, in the latter cases (*monroviae*, *evanescens*) this band much narrower than the darkened apex..... 7.
7. R_2 beyond the fork of R_{3+4} on R_3 , subequal to R_{2+3} 8.
 R_2 before, at or close to the fork of R_{3+4} 12.
8. Wings with a strong dark brown to blackish tinge, without distinct markings..... 9.
Wings brighter, with a heavy brown pattern, especially along the cord.
(Cameroons) *helophila* Alexander.
9. Cell 1st M_2 small, all veins beyond the cell elongated, approximately twice the cell or longer; R_{1+2} elongate, much longer than cell 1st M_2 .
(Cameroons) *evanescens* Alexander.
Cell 1st M_2 large, the veins beyond correspondingly shortened, M_4 shorter than the cell; R_{1+2} of moderate length, shorter than cell 1st M_2 10.
10. Thorax entirely black or brownish black; legs entirely black.
(Nigeria) *commutabilis* Alexander.
At least the scutellum and postnotal mediotergite yellow..... 11.
11. Thoracic pleura and most of coxae black or brownish black; abdomen beyond the base black.
(Sierra Leone) *leonensis* Alexander.
Thoracic pleura and coxae chiefly pale; abdomen chiefly yellow, including the hypopygium, the subterminal segments blackened.
(Liberia) *monroviae*, sp. n.
12. Size small (wing 7 mm.); antennae short in both sexes; valves of ovipositor elongate, chitinized; wings whitish, the veins conspicuously seamed with darker.
(Seychelles) *fuscinervis* Edwards.
Size large (wing over 9 mm.); if small in size (*capensis* and allies), antennae of male greatly elongated; valves of ovipositor short and fleshy..... 13.
13. Size small (wing 9 mm. or less); valves of ovipositor short and fleshy; antennae of male greatly lengthened; R_2 before the fork of R_{3+4} , cell R_3 small, vein R_3 much shorter than R_{2+3+4} 14.
- Size large (wing 11 mm. or more); valves of ovipositor elongate, chitinized; antennae of male greatly lengthened; R_2 at or just beyond the fork of R_{3+4} ; cell R_3 elongate, vein R_3 approximately as long as R_{2+3+4} 16.
14. General coloration brown; legs yellowish brown, the femora and tibiae tipped with darker.
(Transvaal) *humilis* Alexander.
General coloration black; legs black or brownish black..... 15.
15. Size larger (wing, ♂, 8.5-9 mm.).
(Transvaal) *capensis* Alexander.
Size small (wing, ♂, 7 mm.).
(Nigeria to Nyasaland) *pusilla* Alexander.
16. General coloration shiny black; legs black; wings with the costal margin dark brown.
(Nyasaland) *nyasicola* Alexander.
General coloration gray or brown, the mesonotal praescutum with four darker brown stripes; femora yellowish, narrowly tipped with brown; wings with the costal margin but little suffused..... 17.
17. Wing-pattern more uniform, the stigma small, not preceded and followed by subhyaline areas; R_2 usually equal to or longer than R_{2+3+4} ; R_s long, more than twice R_{2+3+4} .
(Sierra Leone to Nyasaland) *tumidiscapa* Alexander.

Wing-pattern conspicuously variegated, with a distinct but restricted dark pattern; stigma preceded and followed by whitish subhyaline areas; R_3 shorter than $R_2 + 3 + 4$; R_s shorter, only about one-half longer than $R_2 + 3 + 4$.
(French Congo) *globiceps* Alexander.

***Eriocera tumidiscapa* Alexander**

1920. *Eriocera tumidiscapa* Alexander; Ann. Mag. Nat. Hist., (9) 6: 363-364.

The types were from Sierra Leone and Nyasaland. In the present series, the following Liberian specimens occurred: ♂, Du River, July 28, 1926; ♀, Lenga Town, August 16, 1926 (*J. Bequaert*).

ERIOPTERINI

***Conosia irrorata* (Wiedemann)**

1828. *Limnobia irrorata* Wiedemann; Aussereur. zweifl. Ins., 1: 574.

A small male from Monrovia, Liberia, July 1926. Other material from Lisala, Belgian Congo, 2° 10' N., 21° 30' E., in lowland rain forest, December 1926 (*J. Bequaert*).

***Clydonodozus puncticosta* Alexander**

1920. *Clydonodozus puncticosta* Alexander; Ann. Mag. Nat. Hist., (9) 6: 341-343.

The type, a female, was from Kambali, Sierra Leone, March 22, 1912, collected by J. J. Simpson. A second female was in the present collection, from Firestone Plantation No. 3, right bank of the Du River, Liberia, July 26, 1926 (*J. Bequaert*).

***Clydonodozus schoutedeni*, new species**

General coloration of thorax fulvous, the praescutum with a capillary brown median line on anterior portion; head brownish black; legs yellow, the femoral and tibial tips narrowly darkened; wings yellowish, with a restricted dark pattern, most evident as a seam along the cord and a marginal suffusion in the radial field; abdominal sternites with an interrupted series of brown dagger-shaped dashes.

Male.—Length about 13 mm.; wing 12 mm.

Described from an alcoholic specimen.

Head brownish black, the palpi and antennae dark brown.

Mesonotum fulvous, the praescutum conspicuously compressed in front, with a capillary dark brown median line that becomes obsolete far before the suture. Pleura chiefly obscure fulvous yellow, the margins of the sclerites somewhat darker. Halteres yellow, the base of the stem a little more dusky. Legs with the outer faces of the coxae slightly darkened; trochanters obscure yellow; femora yellow, the tips narrowly dark brown; tibiae brownish yellow, the tips very narrowly and indistinctly darkened; tarsal segments obscure yellow, the tips of the individual segments distinctly darkened. Wings (male) broad, widest opposite the end of cell *2nd A* as common in this sex of the genus; general coloration yellow, the prearcular and costal regions more saturated; outer margin of the radial field narrowly darkened; stigma small and diffuse, darkened, connected with a narrow vague seam along the cord; an indistinct cloud at origin of R_s ; less evident clouds at outer end of cell *1st M*₂ and the fork of M_{1+2} ; veins chiefly yellow, darker in the clouded areas. Venation: Sc_2 lying proximad of the fork of R_s ; R_s relatively long, angulated at origin; cell *1st M*₂ of moderate size, its proximal end pointed; *m-cu* lying proximad of the level of *r-m*; cell M_1 subequal to its petiole; vein *2nd A* sinuous at outer end.

Abdominal tergites yellow; sternites concolorous, with a series of median dark brown areas, these broadly interrupted at posterior margins of the segments, strongly constricted at cephalic end of each area; these dagger-shaped marks are clearly defined on sternites three to seven, inclusive; a more or less distinct subterminal dark ring; hypopygium yellow.

Hab. BELGIAN CONGO.

Holotype, alcoholic ♂, Koteli, on the Itimbiri River (between Buta and Djamba), January 20, 1925 (*H. Schouteden*).

Clydonodozus schoutedeni is named in honor of the collector, Dr. H. Schouteden. The species is most similar to species such as *C. angustifasciatus* Alexander, in the wing- and leg-pattern, differing in the coloration of the thorax, wings, and abdomen.

The known Ethiopian species of *Clydonodozus* may be separated by the following key:

1. Costal cell of wing with a series of ten or more supernumerary crossveins and spurs. 2.
 Costal cell of wing without such supernumerary crossveins and spurs. 3.
2. General coloration of mesonotum reddish brown; cells of wing excepting cell *C* without dark spots and dots; femora dull yellow, the tips narrowly darkened.
 (Sierra Leone, Liberia) *puncticosta* Alexander.
 General coloration of mesonotum ashy-gray; wings with a series of abundant brown spots and dots along all veins; legs chiefly brownish black, only the femoral bases somewhat paler.
 (Belgian Congo: Upper Uele) *cinereithorax* Alexander.
3. Wings with a very extensive brown pattern, there being a broad crossband along the cord that completely fills cell *1st M*₂ 4.
 Wings with the dark pattern less extensive, at least the center of cell *1st M*₂ pale. 5.
4. Femora yellow, the tips blackened, with a conspicuous brownish black subterminal ring; wing-disk beyond the cord largely pale, the brown spot at fork of *M*₁₊₂ not connected with the other dark areas.
 (Kenya Colony) *pulchripes* Alexander.
 Femora yellow, the tips abruptly blackened, but with no subterminal darkening; wing-disk beyond the cord extensively clouded, the areas confluent.
 (Belgian Congo) *naevi* Alexander.
5. Legs with the femora dark brown or black with only the bases pale; wings yellowish with the costal margin more or less infuscated, at least distally; other veins of wing less heavily seamed with dusky; usually with no transverse dark band along cord. 6.
 Legs with the femora yellow, the extreme tips narrowly darkened; wings yellowish, the costal cell concolorous or more saturated yellow; a more or less distinct dark seam along the cord. 8.
6. Costal border of wing broadly and conspicuously dark brown, the remainder of wing almost uniformly pale.
 (Belgian Congo: Upper Uele) *fumicostatus* Alexander.
 Costal border of wing only narrowly or inconspicuously darkened, usually more so at outer end, the remainder of wing with a distinct pattern. 7.
7. Wings streaked longitudinally with brown, the costal region infuscated, interrupted at the stigma by the pale yellow cell *Sc*₁; cell *1st M*₂ more elongate, its proximal end pointed; *R*₂₊₃₊₄ very short to lacking.
 (Uganda) *pallidistigma* Alexander.
 Wings clouded and banded along the cord; costal region infuscated, the stigma dark brown; cell *1st M*₂ short, the basal section of *M*₁₊₂ subequal to the second section; *R*₂₊₃₊₄ subequal to or longer than *m-cu*.
 (Ashanti, Cameroon, French Congo) *brevicellula* Alexander.
8. Mesonotal praescutum with three or four distinct black or brownish black stripes. 9.
 Mesonotal praescutum fulvous, unmarked or with a central darkening on anterior portion only. 10.
9. Median praescutal stripe entire; abdomen with a nearly continuous brownish black median stripe on sternites.
 (Uganda) *angustifasciatus* Alexander.
 Median praescutal stripe divided by a pale vitta, producing four stripes; abdomen with the median vitta on sternites broken into brown dashes.
 (Uganda) *interruptus* Alexander.

10. Tibiae conspicuously dark brown; R_s relatively short, less than R_3 .
 (Cameroon) *fulwithorax* Alexander.
 Tibiae yellow, the tips weakly darkened; R_s longer than R_3 .
 (Belgian Congo: Itimbiri) *schoutedeni*, sp. n.

Lecteria triacanthos Alexander

1920. *Lecteria triacanthos* Alexander; Ann. Mag. Nat. Hist., (9) 5:59-61.

Several of both sexes from Firestone Plantation No. 3, right bank of the Du River, Liberia, July 26, 1926 (*J. Bequaert*).

Trentepohlia (Trentepohlia) speiseri africana, new subspecies

Female. — Length about 7-8 mm.; wing 6 mm.

Described from alcoholic specimens.

Differs from typical *speiseri* Edwards (Ann. Mag. Nat. Hist., (8) 12:204, fig.; 1913) of southern Asia chiefly in details of coloration.

Rostrum pale, both palpi dark brown. Antennae dark brown throughout. Mesonotal praescutum reddish yellow with three well-indicated brown stripes; scutellum and postnotum darker brown. Pleura dark brown. Legs chiefly yellow, the tips of the femora and tibiae slightly darkened; posterior tibiae (♀) with three powerful black setae just before tips; terminal tarsal segments darkened. Wings with a heavy brown pattern, the area above the anterior cord very broad, reaching the costa and without a pale center; pale central area of cell R_3 very restricted; brown seams along the cord, Cu and R_5 very broad and conspicuous. Venation: R_s subequal to the basal section of R_3 .

Hab. Tropical Africa, LIBERIA.

Holotype, alcoholic ♀, Firestone Plantation No. 3, right bank of the Du River, July 27, 1926 (*J. Bequaert*).

I feel assured that the African material that has been referred to *speiseri* represents at least a distinct race, characterized by the distinct praescutal stripes and the more darkened tips to the femora and tibiae. Edwards (*loc. cit.*) recorded it from the Gold Coast, Sierra Leone, Belgian Congo, and Uganda. Speiser (Berlin. Ent. Zeitschr., 52:135; 1907, as *exornata*) recorded it from Cameroon. I have seen it from several Cameroon stations and the fly appears to be common and widely distributed. By my key to the African species of *Trentepohlia* (Rev. Zool. Afric., 14:177-180; 1926), the form runs to *speiseri*, but difficulties are encountered at couplet 21 because of the slightly darkened femoral tips.

Trentepohlia (Mongoma) albilata Alexander

1920. *Trentepohlia (Mongoma) albilata* Alexander; Ann. Mag. Nat. Hist., (9) 5:56-58.

One of each sex from the Firestone Plantation No. 3, right bank of the Du River, Liberia, July 27, 1926 (*J. Bequaert*).

Gonomyia (Gonomyia) liberiensis, new species

General coloration dark brown; antennal scape pale yellow above, dark brown beneath; thoracic pleura striped longitudinally with whitish; femora with a broad subterminal brown ring; wings grayish, variegated with whitish and darker brown; outer radial and medial cells uniformly grayish; posterior margins of abdominal segments whitened; male hypopygium with three dististyles, the outer two elongate and chitinized.

Male. — Length about 4 mm.; wing 3.5 mm.

Female. — Length about 5 mm.; wing 4-4.2 mm.

Described from alcoholic specimens.

Rostrum and palpi brownish black. Antennae with the scapal segments pale yellow above, dark brown beneath; basal flagellar segments yellow, short and crowded, with short verticils; outer flagellar segments dark brown, linear, with very long verticils, as in this sex in many species of the genus. Head above pale, the center of the vertex darkened.

Mesonotal praescutum and scutum dark brown, paler laterally; scutellum dark brown, abruptly and conspicuously margined with whitish; postnotum dark. Pleura chiefly dark brown, with a broad whitish longitudinal stripe extending from and including the fore coxae, passing above the other coxae to the abdomen; dorsal pleurites somewhat paler brown than the sternopleurite and meron. Halteres pale, the knobs infuscated. Legs with the coxae pale, the middle and hind coxae narrowly darkened basally; femora brownish yellow, brighter basally, with a broad darker brown subterminal ring, the tips narrowly pale yellow; tibiae brownish yellow, the tips narrowly darkened; tarsi passing into dark brown. Wings with a grayish tinge, sparsely variegated with whitish subhyaline and darker brown; stigma brown, connected with a vague seam along the cord; narrower seams at origin of *Rs*; outer end of cell *1st M*₂ and on *R*₃; preareolar region, cell *C* and conspicuous areas before and beyond the stigma whitish; ends of radial and medial cells not pale, as in *sobrina*; a vague transverse paling across the wing-disk just beyond the cord; veins pale brown, darker in the infuscated areas. Venation: *Sc*₁ ending shortly before the origin of *Rs*, *Sc*₂ not far from its tip; *R*₃ nearly perpendicular at origin, the cell relatively small; *m-cu* just before the fork of *M*.

Abdominal segments dark brown, the caudal margins of the segments narrowly white. Male hypopygium with three distinct dististyles, the outermost a long, simple flattened blade; second style shorter, entirely blackened, curved into a crook at apex; inner style small, pale and fleshy, setiferous, terminating in two stouter setae. Gonapophyses appearing as flattened rods, the tips narrowed into glabrous blackened spines, divergent, their bases pale, clothed with abundant yellow setulae.

Hab. LIBERIA.

Holotype, alcoholic ♂, Banga, September 7, 1926 (*J. Bequaert*). *Allotopotype*, ♀. *Paratopotypes*, 1 ♂, 2 ♀♀.

Gonomyia liberiensis is allied to *G. (G.) noctabunda* Alexander and *G. (G.) sobrina* Alexander, differing conspicuously from the former in the structure of the male hypopygium. Unfortunately, *sobrina* is still known only from the unique type female. It differs from the present species in the wing-pattern and details of coloration.

Podoneura Bergroth

1888. *Podoneura* Bergroth; Entomol. Tidskr., 9: 133, fig. 2.

1914. *Podoneura* Riedel; Voy. Alluaud et Jeannel en Afrique Orientale, Ins. Dipt. 3, Nematocera polyneura, p. 83.

1917. *Podoneura* Alexander; Ann. South African Mus., 17: 151, pl. 10, fig. 14.

1921. *Podoneura* Alexander; *Ibid.*, 18: 197.

The genus *Podoneura* was proposed for the single species, *P. anthracogramma* Bergroth, from Cape Colony. Later, Riedel recorded the species from Kenya and Tanganyika (Kilimanjaro, at high altitudes, 2,400–3,000 meters). Still more recently I have recorded it from several additional stations in South Africa.

A second species, *P. brevifurcata* Alexander, has recently been described from N'gwese, Lake Kivu, in the Belgian Congo. The discovery of the very distinct new species described herein as *P. bequaertiana* is of unusual interest. The three species of the genus now known may be separated by the following key:

1. The fork of vein *2nd A* very small, the longer or cephalic branch only a little greater than *m-cu* and without macrotrichia; *m-cu* less than its own length before the fork of *M*.
(Fig. 10, 8). *brevifurcata* Alexander.

- The fork of vein *2nd A* larger and more sprawly, the longer branch approximately twice *m-cu* and provided with macrotrichia; *m-cu* more than its length before the fork of *M*..... 2.
2. Legs variegated, black, all femora with the apex and a subterminal ring yellow. (Fig. 10, 7).
anthracogramma Bergroth.
bequaertiana, sp. n.
- Legs uniformly blackened. (Fig. 10, 6).

The wing-pattern (Fig. 10, 6, 7, 8) of all three species is very similar. The character of a spur within cell *1st M*₂, together with the shape of the fork of vein *2nd A* is probably a variable character or else there remain still other species close to *anthracogramma* to be defined.

Podoneura bequaertiana, new species

Text Fig. No. 10, 6

Characters as in *P. anthracogramma*; legs entirely black.

Male. — Length about 5 mm.; wing 6 mm.

Described from an alcoholic specimen.

Rostrum pale; palpi dark brown. Antennae with the scape light yellow, the flagellum brownish black; flagellar segments oval, the outer segments more elongate. Head dark, the orbits more pruinose.

Mesonotal praescutum and scutum chiefly dark, probably pruinose in fresh specimens; scutellum chiefly obscure yellow, darkened medially at base; postnotum dark. Pleura chiefly pale, variegated longitudinally with dark brown, this including extensive areas on the sternopleurite and meron; a narrower, more dorsal, dark stripe. Halteres pale, the base of the knobs dark brown, the tips conspicuously pale. Legs with the fore coxae and trochanters dark brown; remaining coxae and trochanters brownish yellow; remainder of legs uniformly brownish black, the femora unvariegated. Wings (Fig. 10, 6) relatively narrow, the ground-color creamy, with a conspicuous but restricted grayish brown pattern, appearing as seams at origin of *Rs*; *Sc*₂; *R*₂, connecting posteriorly with a seam along the cord; outer end of cell *1st M*₂; *m-cu*; rounded marginal clouds at ends of veins *R*₁₊₂, *R*₃, *M*₃ and all remaining veins, including the forked second anal vein; apical clouds on *R*₄, *R*₅, and *M*₁₊₂ much less distinct; veins pale, darker in the infuscated areas. Venation: *Sc*₁ ending opposite *r-m*; *Rs* long and straight; a conspicuous spur at union of *m* and *M*₃, jutting basad into cell *1st M*₂, much as in *Hoplolabis*; *m-cu* far before the fork of *M*; fork of vein *2nd A* about as in *anthracogramma* Bergroth.

Abdominal tergites dark brown, the sternites a little paler. Male hypopygium with the outer dististyle long and slender, gradually narrowed to an acute point, at near two-thirds the length on outer margin with a small acute lateral branch. Inner dististyle shorter, appearing as a broadly flattened blade, its apex obtuse. Gonapophyses blackened, appearing as simple horns, narrowed to slender curved points.

Hab. BELGIAN CONGO (Kivu).

Holotype, alcoholic ♂, Lukumi Camp, northern slope of Mt. Karisimbi, altitude 11,370 feet, in subalpine zone, *Erica* formation, March 19, 1927 (*J. Bequaert*).

I take great pleasure in dedicating this fine new *Podoneura* to Dr. Bequaert, to whom I am greatly indebted for many favors in the past.

Teucholabis rubrithorax Alexander

Text Fig. No. 10, 10

1920. *Teucholabis rubrithorax* Alexander; Ann. Mag. Nat. Hist., (9) 6: 25-26.

The unique type was from Aburi, Gold Coast, collected by W. H. Patterson. In the present series, a male, Du River, Liberia, July 26, 1926 (*J. Bequaert*).

The thorax is as in the type with the exception of a small dark spot on the posterior lateral portions of the praescutum. The wing-pattern is shown (Fig. 10, 10). The male hypopygium is very similar in structure to *T. nodipes* Speiser, but the coloration of the body and wings is very different.

***Teucholabis nodipes nodipes* Speiser**

1913. *Teucholabis nodipes* Speiser; Deutsch. Ent. Zeitschr., 1913: 136-137, fig. 7.

The types were from Duala, Cameroon, collected in July. In the present collection, a male from Suahkoko, Liberia, eighty miles northeast of Monrovia, September 5, 1927 (*J. Bequaert*).

***Teucholabis nodipes praescutellaris*, new subspecies**

Text. Fig. No. 10, 9

Male. — Length about 6.5-7 mm.; wing 5.5-6 mm.

Female. — Length about 7 mm.; wing about 5-5.2 mm.

Generally similar to *T. nodipes* Speiser, differing only in details of the coloration. The orange color of the pronotum is extended caudad to include the whole anterior fourth of the praescutum. Fore coxae orange, middle and posterior coxae black; fore and middle trochanters orange, posterior trochanters black. The wing is shown (Fig. 10, 9).

Hab. LIBERIA.

Holotype, alcoholic ♂, Firestone Plantation No. 3, right bank of the Du River, July 26, 1926 (*J. Bequaert*). *Allotopotype*, ♀, in copula with the type. *Paratopotype*, 1 ♂.

The African species of *Teucholabis* may be distinguished as follows:

- | | |
|---|--|
| 1. Mesothorax chiefly shiny black, this including the posterior coxae..... | 2. |
| Mesothorax shiny reddish, including the coxae..... | 3. |
| 2. Mesothorax entirely shiny black, the fore and middle coxae orange. | |
| (Liberia, Cameroon, French Congo) | <i>nodipes nodipes</i> Speiser. |
| Mesothorax with anterior fourth of the praescutum orange; middle coxae black. | |
| (Liberia) | <i>nodipes praescutellaris</i> , subsp. n. |
| 3. Brown markings on the wing extensive, the dark apex subequal to the pale subapical band; dark band along cord broad. | |
| (Ashanti) | <i>latifascia</i> Alexander. |
| Brown markings on the wing less extensive, the dark apex scarcely one-half as wide as the pale subapical band; dark band along cord narrow. | |
| (Liberia, Gold Coast) | <i>rubrithorax</i> Alexander. |

***Ceratocheilus gilesi* Edwards**

1911. *Ceratocheilus gilesi* Edwards; Ann. Mag. Nat. Hist., (8) 8: 283.

The type was taken at sea off the West African coast. Two specimens in the present collection from Monrovia, Liberia, July 1926 (*J. Bequaert*). The species is now known to have a wide range in West Africa.

***Ceratocheilus longirostris* Wesché**

1910. *Ceratocheilus longirostris* Wesché; Journ. Linn. Soc. London, 30: 359, figs. 4, 10.

1919. *Ceratocheilus nigripleura* Alexander; Bull. Mus. Hist. Nat. Paris, 1919: 611.

One male, from Lukolela, Belgian Congo, 1° 10' S., 17° 10' E., in lowland rain forest, taken at light, December 16, 1926 (*J. Bequaert*).

The African species of *Ceratocheilus* may be separated by the accompanying key:

1. Wings unspotted.
(West Africa) *gilesi* Edwards.
- Wings spotted or clouded with darker..... 2.
2. Anterior branch of *R*_s very short and straight so that cell *R*₂ is almost triangular in outline; a series of four equidistant brown spots in cell *M*; rostrum light yellow.
(Ivory Coast, Cameroon) *flavirostris* Alexander.
- Anterior branch of *R*_s longer, cell *R*₂ not triangular in outline; no series of brown spots in cell *M*; rostrum dark..... 3.
3. Anterior branch of *R*_s very long, subequal to the combined *R*_s and basal section of *R*₅; wing-pattern very heavy, dark brown, including a large U-shaped mark at tips of *Sc* and *R*₁₊₂, this extending caudad to vein *M* or virtually so; a heavy dark area at arculus reaches costa.
(Southern Nigeria, Cameroon) *edwardsi* Alexander.
- Anterior branch of *R*_s shorter; wing-pattern less distinct, the area at tip of *Sc* not extended caudad to vein *M*; arcular area, when present, small and not reaching costa. 4.
4. Wing-markings faint; no brown spot surrounding *Sc*₂.
(Seychelles) *seychellarum* Edwards.
- Wing-markings more distinct; a brown spot surrounding *Sc*₂..... 5.
5. At least three dark brown areas reach costa, situated at tips of *Sc*₁, *R*₁₊₂ and *R*₃; rostrum longer (in male, about 5 mm.).
(Liberia to Belgian Congo) *longirostris* Wesché.
- A single dark costal mark, placed at tip of *R*₁₊₂; rostrum shorter (in male, about 3 mm.).
(Southern Nigeria to Belgian Congo) *cornigerum* (Speiser).

Ceratocheilus flavirostris is the most distinct of the Ethiopian species. The remaining five represent a closely allied group that are separated chiefly on details of the wing-pattern, being arranged in the following order, from the first, with immaculate wings, to the last with the most heavily patterned wings: *gilesi*, *seychellarum*, *cornigerum*, including *winn-sampsoni* Wesché, *longirostris*, including *nigripleura* Alexander, and *edwardsi*.

Styngomyia liberiensis, new species

Text Fig. No. 10, 13

Male. — Length about 7–8 mm.; wing 5–5.5 mm.

Female. — Length about 6 mm.; wing 4.6–4.7 mm.

Described from alcoholic specimens.

Allied to *S. annulipes* Enderlein (East Africa, Madagascar, Seychelles), *S. occidentalis* Edwards (Gold Coast), and *S. mahensis* Edwards (Seychelles) in the prominent lateral shoulders on the ninth tergite of the male hypopygium, differing especially in the details of structure of the hypopygium.

Antennae with both scapal segments black, the flagellum yellow. Head dark. Mesonotum chiefly pale, variegated with dark lines. Legs yellow, the femoral and tibial rings narrow and relatively ill-defined, the femoral rings much narrower than the pale ring enclosed. Wings yellow, with a sparse brown pattern, as in *annulipes*; anterior branch of *R*_s entirely pale; vein 2nd *A* spurred at origin. Abdomen chiefly pale, variegated, especially caudally and laterally, with brown. Male hypopygium (Fig. 10, 13) with the lateral shoulders of the ninth tergite nearly straight, blackened only at tips, clothed with setae to the blackened portions. In *mahensis* and allies the shoulders are blackened almost to their bases, setiferous only on the proximal portion and strongly incurved. Ninth sternite narrowed to the simple apex, bearing two long approximated setae. Basistyle with the lateral apical lobe long, fully one-half the length of the apical seta. In *mahensis*, the lobes are very short, much less than the weak apical seta. The complex dististyle is about as figured, the details quite distinct from *mahensis* and allies.

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Holotype, alcoholic ♂, Monrovia, July 8, 1926 (*J. Bequaert*). *Allotopotype*, ♀, July 8, 1926. *Paratopotypes*, 2 ♂♂, July 8, 1926.

Styringomyia dendroides, new species

Text. Fig. No. 10, 14

Male. — Length about 6–6.5 mm.; wing about 3.8–4 mm.

Female. — Length about 5.5 mm.; wing about 3.6–3.7 mm.

Described from alcoholic specimens.

Palpi extensively pale, especially the terminal segment. Antennae with the first scapal segment dark beneath, pale dorsally; second segment dark; flagellum chiefly pale. Head pale.

Pronotum dark, extensively pale medially. Mesonotum chiefly pale yellow, rather delicately marked with brown lines; praescutum with the delicate median brown vitta divided behind; scutal lobes narrowly ringed with brown; scutellum pale; postnotal mediotergite dark with a pale median vitta. Pleura yellow. Legs with the dark femoral rings well-marked but narrow and occurring on the upper half only, the entire ventral surface of femora immaculate; tibial rings similarly distinct. Wings yellow, with a sparse brown pattern, including spots or seams at *r-m*; fork of *M*₂ and *M*₃; *m-cu* and the distal end of vein 2nd *A*; veins yellow, dark in the infuscated areas. Venation: Vein 2nd *A* simple, the cell broad.

Abdomen yellow, the tergites with geminate brown spots on caudal margin, these somewhat more extensive on the subterminal segments; less evident brown lateral lines on segments; hypopygium pale; sternites immaculate. Male hypopygium (Fig. 10, 14) with the ninth tergite a broad simple lobe, the caudal margin narrow and obtuse, densely set with setae. Ninth sternite pale, the apex simple, bearing two long setae that are obliquely placed on apex. Basistyle terminating in a small acute pale spine, the opposite angle produced into a stout lobe that bears the usual seta, this unusually broad and flattened. Dististyle complex, shaped about as in the figure, the innermost arm unusually slender and bearing spines and branches along the entire length. Aedeagus appearing as two blackened obtuse lobes (not figured).

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Holotype, alcoholic ♂, Monrovia, July 8, 1926, at light (*J. Bequaert*). *Allotopotype*, ♀. *Paratopotypes*, 2 ♂♂.

By Edwards' key to the species of *Styringomyia* (Trans. Ent. Soc. London, 1914:210–212; 1914), the present form runs to and beyond couplet 16 which includes only Asiatic species. *S. dendroides* is amply distinct from the regional species in the structure of the male hypopygium, especially the dististyle.

Styringomyia vittata Edwards

1914. *Styringomyia vittata* Edwards; Trans. Ent. Soc. London, 1914:217–218, figs. 23, 60–63.

A pair, Firestone Plantation No. 3, right bank of the Du River, Liberia, July 26, 1926 (*J. Bequaert*). This is one of the most common and widely distributed species of the genus, ranging from West Africa to Natal.