PARC NATIONAL ALBERT
I. MISSION G. F. DE WITTE 1933-1935
Fascicule 65

NATIONAAL ALBERT PARK
I. ZENDING G. F. DE WITTE 1933-1935
Aflevering 65

BIBIONIDÆ
(DIPTERA-NEMATOCERA)

BY

D. ELMO HARDY (Honolulu, Hawaii).

The Dipterous family *Bibionidæ* was well represented in the DE WITTE expedition material and this collection has added much to our knowledge of these flies in central Africa. A large share of the species found in this collection had previously been described in the writer's report of the Ruwenzori Expedition (1) the two areas have a very similar Bibionid fauna.

The collection contained eight hundred and six specimens of *Bibionidæ*. These represented three genera and fourteen species. Two of the species are apparently undescribed.

The writer has in manuscript a monograph of the African *Bibionidæ* in which all of the known species are keyed, consequently no keys are being presented to the species occurring in this rather local area.

The writer is grateful to Drs. V. VAN STRAELEN and H. DE SAEGER, of the « Institut des Parcs Nationaux du Congo Belge » for having had the privilege of studying this important collection.

Unless otherwise mentioned all specimens recorded in this paper were collected by G. F. DE WITTE.

All the localities between [ ] are without the Park's region.

Bibio GEOFFROY.

Bibio GEOFFROY, 1762, Hist. Abrégée Ins., **2** : 568.

This genus is poorly represented in central Africa. Just a single species was present in this collection.

(1) 1948, *Ruwenzori Exped.*, vol. **1** (6) : 109-127.

Bibio afer LOEW.

Bibio afer LOEW, 1854, Neue Beitrage zur Kennt. der Diptera, **2** : 1.

This species is characterized by the yellowish to brown fumose wings and all yellow body pile. The males are all black in color while the females have the mesonotum and abdomen rufous. The short and blunt spurs of the hind tibiae are rather characteristic in both sexes.

Bibio afer is rather wide spread over eastern and central Africa. The writer has studied specimens from numerous localities ranging from Abyssinia to the Cape Province.

The DE WITTE collection contained nine specimens of this species, three females and six males, from the following localities : Nord-Est lac Gando, 2.400 m, 9-12.III.1935; Kamatembe (forêt, riv. Bishakishaki, mont Kamatembe), 2.100 m, 14-17.IV.1934; riv. Bishakishaki (Kamatembe), 2.100 m, 11-22.IV.1934; Kibga (volc. Visoke), 2.400 m, 11.II.1935; Ngesho, 2.000 m, 3-6.IV.1934; Kundhuru-ya-Tshuve (col Gahinga-Sabinyo), 2.600 m (Bambous), 15.IX.1934.

Plecia WIEDEMANN.

Plecia WIEDEMANN, 1828, Aussereup. Zweifl. Ins., **1** : 72.

This genus is well represented throughout Africa. There were nine species in the DE WITTE expedition collection, two of these are apparently undescribed.

Plecia aliena HARDY.

Plecia aliena HARDY, 1948, British Museum, Ruwenzori Exped., **1** (6) : 109-110.

This species is characterized by the all rufous thorax and by the distinctive genitalia of the male. The hind margin of the ninth sternum is developed into a pair of short, sub-acute median lobes separated by a « V » shaped cleft. The clasping structures are large and simple, they are tapered and pointed at their apices. The ninth sternum has a pair of small moundlike developments just inside the claspers, on the posterior margin.

Three specimens were present in this collection, one female and two males from the following localities : Rwindi, 1.000 m, 20-24.XI.1934; plaine Semliki, 900-1.000 m, IV-X.1937 (HACKARS).

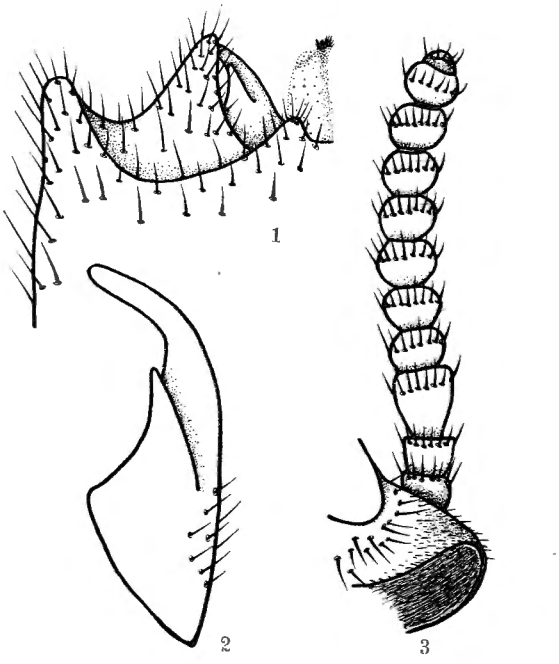
Plecia basalis HARDY.

(Figs. 1-4.)

Plecia basalis HARDY, 1948, Brit. Mus. Ruwenzori Exped., **1** (6) : 110-111.

This species belongs in the group which are entirely black except for the dorsal portion of the thorax. The scutellum and a large portion of the mesonotum are rufous; the front part of the mesonotum is brown to

blackish. It is related to *P. sana* HARDY but the genitalia are very different. The hind margin of the ninth tergum is broadly « U » shaped, this concavity extends almost to base of the segment, so that the tergum is divided into two lateral plates except for a narrow connecting sclerotized bridge. The lobes of the tergum are pointed at their apices and rather clasper-lijke. The ninth sternum is developed into a pair of large, conspicuous lobes on each side of apical margin (fig. 1). The clasping structures are long and



FIGS. 1-3. — *Plecia basalis* HARDY.
1. Hind margin of ninth sternum of male, left side;
2. Clasper of male genitalia; 3. Antennae of female.

slender at apices and each has a well developed secondary lobe at its base (fig. 2). The claspers are folded down into the genital chamber in their normal position. The aedeagus is large and conspicuous and is surrounded by a sclerotized protective sheath.

Following is the first description of the female. *Head* : Rostrum well developed, about three-fourths as long as the head and folded against the underside of head when at rest. Antennae with eleven well defined segments (fig. 3). The apex of the pedicel is yellowish, the remainder of the antennae black. Front carinated, with a prominent tubercle in middle just above antennae and a ridge extending to ocelli. Head densely grayish

pubescent, eyes distinctly pilose. *Thorax :* Mesonotum and scutellum chiefly rufous. Anterior median portion of mesonotum discolored with brown, this brown area extends half the length of the mesonotum between the longitudinal furrows. The humeral ridges and pleura are blackish, tinged faintly with reddish brown. The prothorax, legs and abdomen are

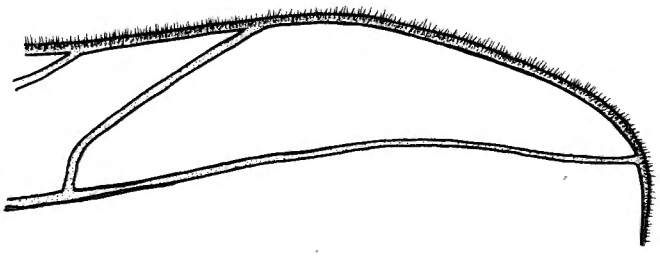


FIG. 4. — *Plecia basalis* HARDY.
Apex of anterior margin of wing.

black. The mesonotum is almost devoid of pile, the abdomen is moderately covered with black pile. *Wings* : Rather dark brownish fumose. Vein R_{3+4} more elongate than in most species of *Plecia*, it is almost one-half as long as vein R_5 (fig. 4).

Length : body, 6,5 mm; wings, 10 mm.

This species has been known previously only from the Holotype male collected in the Kigesi Dist., Uganda.

The DE WITTE collection contained two specimens, a male and a female : Kivu, Kalondo (lac Ndaraga, Mokoto), 1.750 m, 22-27.III.1934; lac Kanyamenoni, vers volc. Musule, 2.300 m, 14.VIII.1934.

Plecia bilobata HARDY.

(Fig. 5.)

Plecia bilobata HARDY, 1948, Brit. Mus. Ruwenzori Exped., **1** (6) : 113-114.

This species belongs in the group which have the mesonotum and scutellum all red and the remainder of the body and legs black. It is distinguished from the related species by genital structures of the male. The genitalia show relationship to *P. basalis* HARDY, the ninth tergum is deeply cleft on the hind margin, the sternum is bilobate on each side and each clasping structure has a secondary lobe. The secondary lobes of the claspers are preapical in position (fig. 5) and the development of the hind margin of the ninth sternum differs from that of *basalis* (compare figs. 5 and 1).

This species is widely distributed and apparently common throughout central Africa. The writer has recorded it from many localities in Uganda, Belgian Congo, Tanganyika, Sierra Leone and Abassinia.

Forty nine specimens were in the collection, forty three males and six females, from the following localities : Ruanda, Ruhengeri (sources Kirii), 1.800-1.825 m., 1.X.1934; Rwindi, 1.000 m, 20-24.XI.1934; Ruanda, Ruhengeri (Moruguhu), 1.800-1.925 m, 6.II.1935; Kivu, Rutshuru, 1.285 m, 29-31.V. 1935; Burunga (Mokoto), 2.000 m, 15-16.III.1934; Kivu, Ngesho, 2.000 m,

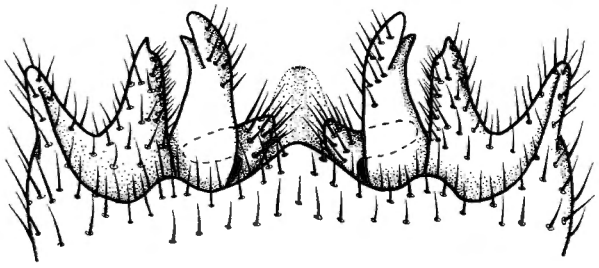


FIG. 5. — *Plecia bilobata* HARDY.
Hind margin of ninth sternum of male, ventral view.

3-6.IV.1934; [Uele, Buta, 450 m, IV.1935]; lac Mokoto (col Kishule), 23.IX.1935 (Mission H. DAMAS); Sud lac Edouard, riv. Rwindi, 1.000 m, 4.II.1936 (Coll. L. LIPPENS).

Plecia wittei n. sp.

(Figs. 6-9.)

In general characteristics this species appears to be related to *P. erubescens* SPEISER. The male genital characters, however, show it to be closely allied to *P. curta* HARDY. It is distinguished from this species by the all black body color, antennae with only eight distinct segments in the male and the median development of the ninth tergum bilobate. Comparison of the other genital characters, as given below, will differentiate these species.

Male. — *Head* : Antennae with only eight distinct segments, the last two are very closely joined or fused (fig. 6). Antennae brown, with a yellowish to rufous tinge. All head pile black, eyes bare. Rostrum short, the sclerotized portion of the face below the antennae is not as long as the first three antennal segments. Ocellar tubercle well developed and devoid of hairs except on the posterior surface. *Thorax* : Entirely black with a faint rufous tinge in the ground color of the humeri and pleura. The thorax is densely grayish pollinose, or microscopically pubescent and all opaque. The mesonotal furrows are rather deep and very distinct. The furrows extend from a large sunken area just in front of the scutellum to a depressed area behind each humeral ridge. Mesonotum almost bare, with sparsely scattered recumbent, pale hairs down the sides of the furrows. Halteres brown to blackish with a slight rufous tinge. They are long and

slender, equal in length to the mesonotum. *Legs* : Dark brown with a reddish tinge. All segments slender, vestiture black. *Wings* : Pale brownish yellow fumose, stigmata brown. Vein R_{3+4} vertical at basal one-third and then sharply bent at almost a right angle (fig. 7). Vein R_{3+4} is about one-fourth as long as R_5. The petiole of M_{1+2} from the $r-m$ crossvein to the forking of the veins is just two times longer than the crossvein. The $m-cu$ crossvein is one and one-half longer than the

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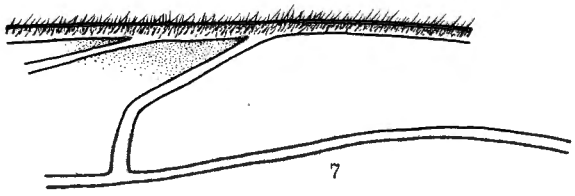

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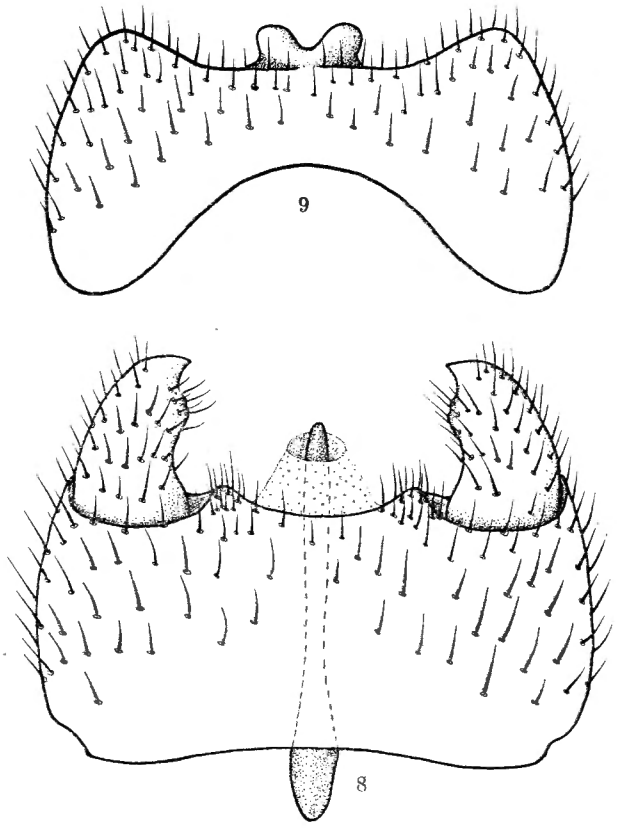
FIGS. 6-7. — *Plecia wittei* n. sp.
6. Apex of antenna; 7. Portion of costal margin of wing.

basal section of vein M_{3+4}. The anal vein extends to the wing margin although it is faint in the apical portion. *Abdomen* : Dark brownish black, thickly black haired. *Genitalia* : The ninth sternum is two times wider than long, is rather simple in development and has only a pair of small lobes on the apical margin inside the clasping structures. Directly behind the median portion of the sternum is a large gibbose membranous area which surrounds the aedeagus. The claspers are large and thick, simple in shape. They are one-half as wide as long and are pointed at their apices (fig. 8). The ninth tergum is about two times longer than its greatest length. The median portion of the hind margin is developed into a heavily sclerotized process which is divided into two lobes at its apex, these are separated by a « V » shaped cleft (fig. 9). The posterior margin of the tergum is rather deeply concave.

Length : body, 4,5-5,8 mm; wings, 6,0-7,0 mm.

Female. — Antennae distinctly nine segmented. Head short, from a direct dorsal view it is wider than long. The front is raised in the central portion but is not strongly gibbose or tuberculated. The compound eyes are short oval in shape and extend to the lower portion of the face. Otherwise fitting the description of the male, except for sexual characters.



FIGS. 8-9. — *Plecia wittei* n. sp.
8. Ninth sternum of male; 9. Ninth tergum of male.

Length : body, 5,7 mm; wings, 7,8 mm.

Holotype male and allotype female : Ruanda, volc. Vishoke, 2.800-3.300 m, 13-14.II.1935. Paratypes : One hundred and twenty three males and one female, same data as the type.

The type, allotype and one hundred and four paratypes have been returned to the « Institut des Parcs Nationaux du Congo Belge ». The remainder have been deposited in the following entomological museums :

the U. S. National Museum, the British Museum, the American Museum, the Snow Entomological Collection at the University of Kansas and the Bishop Museum, Honolulu, Hawaii.

Plecia ephippium SPEISER.

Plecia ephippium SPEISER, 1910, Sjostedts Kiliman, Meru Exped., **2** (10) : 38.

This is a large easily recognized species, characterized from all other *Plecia* known to the writer by having the cubital cell closed and petiolated. The thorax is entirely rufous except for a black band which extends along

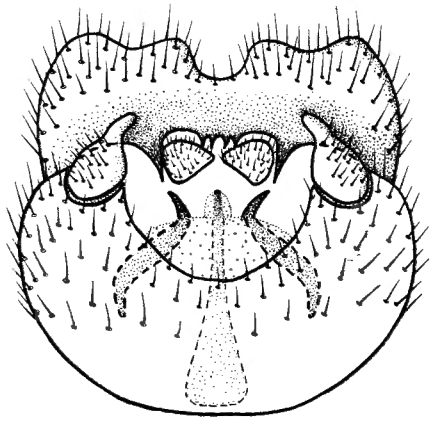


FIG. 10. — *Plecia octodentata* HARDY.
End view of male genitalia. (The view of the sternum and claspers is somewhat contorted due to the angle from which they are drawn.)

the upper margins of the pleura from the prothorax to the wing bases. The antennae of the males are distinctly ten segmented, those of the female are twelve segmented counting the small nipple-like apex.

Length of male : body, 11-12 mm; wings, 12,5-13,5 mm.

Length of female : body, 12,5-13,5 mm; wings, 14,5-15,5 mm.

The writer has seen this species from numerous localities in Kenya, Uganda, Tanganyika, Belgian Congo and Rhodesia.

Seventy five specimens were in the DE WITTE collection, sixteen females and fifty nine males, from the following localities : Ruanda, Ninda (Ruhengeri), 2.150 m, 21-22.IX.1934; région Kibumba, 2.000 m, VI.1935; Rutshuru, 12-24.VI.1934; forêt Mayumbu (Nyamuragira), 2.100 m, 14-26.VI.1935; Sud Karisimbi : Nyabirehe, 2.400 m, 22.II.1935; Burunga (Mokoto), 2.000 m, 17-19.III.1934; Burumbi (volc. Muhavura), 2.325 m, 5.IX.1934; Tshumba (Mushari), 2.100 m, 28.IV-1.V.1934; Nyarusambo, 2.000 m, 2.VII.1934.

Plecia octodentata HARDY.
(Fig. 10.)

Plecia octodentata HARDY, 1948, Brit. Mus. Ruwenzori Exped., **1** (6) : 117-118.

This is a moderate sized species belonging in the group which has the thorax entirely rufous. It is distinguished by the unusual development of the male genitalia. The inner margin of the anterior portion of the ninth tergum is developed into a shelf-like area extending back into the genital chamber and visible only from an end view. The margin of this structure is developed into a group of spine-like processes. It has a strong spine on each side and a series of small one between these two (fig. 10). From a direct dorsal view the ninth tergum has a deep « U » shaped concavity in the middle of its hind margin. The aedeagus is surrounded by a large, membranous gibbosity and has a pair of lateral accessory structures (fig. 10), readily seen from direct ventral view. The clasping structures are simple and abruptly tapered near the apices.

Length : body, 6,5-7,5 mm; wings, 8,5-11 mm.

The species was described from Uganda and the Belgian Congo.

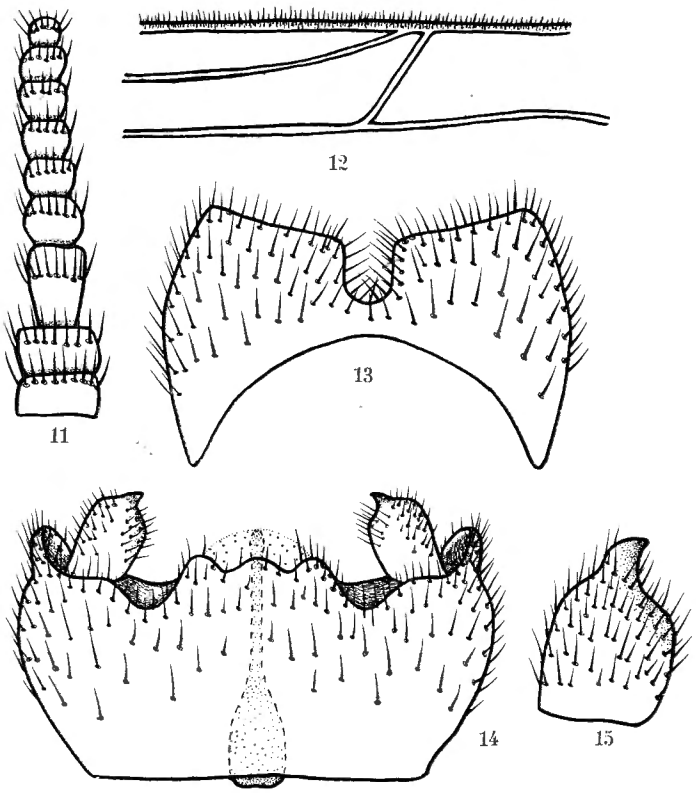
Seven specimens were in the DE WITTE collection, five males and two females, from the following localities : Kivu, Rutshuru, 1.285 m, 1-6.VI. 1935; Gitebe (volc. Nyamuragira), 2.324 m, 14-26.VI.1935; Kivu, Tshengelero (près Munagana), 1.750 m, 17.VIII.1934.

Plecia robusta n. sp.
(Figs. 11-15.)

This is a rather large, all black species, related to *P. erubescens* SPEISER but differing from this and all other known species by the development of the male genitalia. The ninth tergum, sternum and the clasping structures are very different from *P. erubescens*.

Male. — *Head* : All black including vestiture and appendages. Rostrum inconspicuous and resting close to the underside of the head. The antennae are nine segmented and about equal in length to the head from ocelli to antennae bases. The first flagellar segment is elongate, equal in length to the second and third flagellar segments combined. The apical segment is well defined and globose in shape (fig. 11). *Thorax* : Entirely opaque brownish black with a faint grayish pubescence visible in some lights. Thorax bare except for some sparse, recumbent pale pile along the mesonotal furrows and around the margins of the mesonotum. Scutellum slightly concave on the hind margin. Halteres elongate, almost as long as the mesonotum. *Legs* : All black, all joints long and slender, densely black haired. *Wings* : Rather dark yellow-brown fumose, more brownish along the costal margin. The stigma is just slightly darker than the other

membrane in the costal area. Vein R_{3+4} is straight and forms about a 70° angle with vein R_5 (fig. 12). Vein R_{1+2} ends very close to the tip of R_{3+4}. Vein M_{1+2} beyond the $r-m$ crossvein is about two times longer than the crossvein. Anal vein distinct, extending to the wing margin. Cubital cell not at all narrowed. *Abdomen* : Dark brownish black, densely covered with black hairs. *Genitalia* : The cleft in the middle of the hind margin



FIGS. 11-15. — *Plecia robusta* n. sp.

11. Antenna; 12. Portion of anterior margin of wing; 13. Ninth tergum of male; 14. Ninth sternum of male; 15. Clasper of male genitalia.

of the ninth tergum extends three-fourths the length of the tergum, as measured through the medial portion (fig. 13). The ninth sternum is short and broad, it is about two times wider than long. The hind margin is developed into three rounded median lobes and a moderately produced lobe on each posterior lateral margin (fig. 14). The claspers are short and thick, the apical portion is rather abruptly pointed (fig. 15). The swollen portion of the clasper is about as wide as long.

Length : body, 8 mm; wings, 10,3 mm.

Female. — Unknown.

Holotype male : riv. Bishakishaki (Kamatembe), 2.100 m, 11-12.IV.1934.

Paratypes : four males, three same data as type; one from Kamatembe (forêt, riv. Bishakishaki, mont Kamatembe, 2.100 m, 14-17.IV.1934). Type and two paratypes returned to the « Institut des Parcs Nationaux du Congo Belge ». One paratype deposited in the U. S. National Museum and one in the Bishop Museum.

Plecia sana HARDY.

(Fig. 16.)

Plecia sana HARDY, 1948, Brit. Mus. Ruwenzori Exped., **1** (6) : 118-119.

This species belongs in the group of *Plecia* which have the mesonotum all rufous except for a brownish discoloration on the anterior median

FIG. 16. — *Plecia sana* HARDY.
Right clasper of male genitalia
showing part of the hind margin of the ninth sternum.

portion. The scutellum is rufous except for a narrow longitudinal black stria down the middle. The pleura and remainder of body and appendages are black.

P. sana is best characterized by the development of the male genital structures. The ninth tergum is large and strongly forcipate. The lateral lobes are long and slender and acutely pointed at their apices. The tergum is two times longer than the ninth sternum. The sternum is short and broad and is produced into two moderately strong lobes on each side of the hind margin. The claspers fold back into the genital chamber and are not clearly visible from a direct ventral view. They are slender on their apical halves and rather thickened at their bases. Each clasper has a pair of small, rounded basal lobes on the ventral surface (fig. 16).

Length : body, 5-5,5 mm; wings, 6-6,3 mm.

The female is unknown.

The species was described from Uganda. One specimen was in the DE WITTE collection : Kivu, Rutshuru, 1.285 m, 12.VII.1935.

Plecia ugandænsis HARDY.

(Figs. 17-18.)

Plecia ugandænsis HARDY, 1948, Brit. Mus. Ruwenzori Exp., **1** (6) : 119-121.

This is a moderately large species which has the thorax all rufous. It is easily distinguished from all related species by the male genital

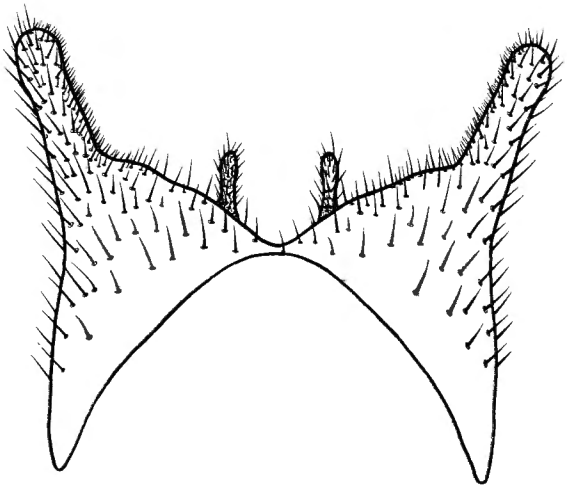


FIG. 17. — *Plecia ugandænsis* HARDY.
Ninth tergum of male.

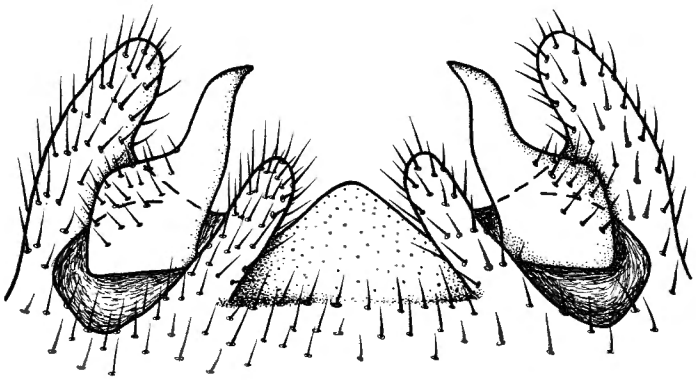


FIG. 18. — *Plecia ugandænsis* HARDY.
Ninth sternum of male.

characters. The antennae are ten segmented in the male and eleven segmented in the female and the wings are paler yellow fumose than in the other African species of this complex.

The ninth tergum is strongly forcipate, the lateral lobes are long and slender, rather blunt at apices (fig. 17). The hind margin of the ninth sternum has a well developed densely haired and obtuse lobe on each side of each clasper and a mound-like membranous area in the middle (fig. 18). The claspers are thick at bases, slender and pointed at apices (fig. 18), they fold into the genital chamber when at rest.

Length : body of male and female, 7,5-8 mm; wings of both sexes, 10-11 mm.

The species was described from several localities in Uganda and South Rhodesia.

Six specimens, one male and five females, were in the DE WITTE collection from the following localities : Tshamugussa (Bweza), 2.250 m (Bambous), 10.VIII.1934; Tshamugussa, 8-15.VIII.1934; Burunga (Mokoto), 2.000 m, 15-16.III.1935; Ruanda, Nyabitsindi (entre volc. Visoke-Musule), 2.400 m, 18.II.1935.

Philia MEIGEN.

Philia MEIGEN, 1800, Nouv. Class. Mouch., 20.

This genus is common throughout Africa. The DE WITTE collection contained four species of *Philia.*

Philia erythræa (BEZZI).

(Figs. 19-20.)

Dilophus erythræus BEZZI, 1905, Firence Boll. Soc. Ent. Ital., **37** : 205-206.

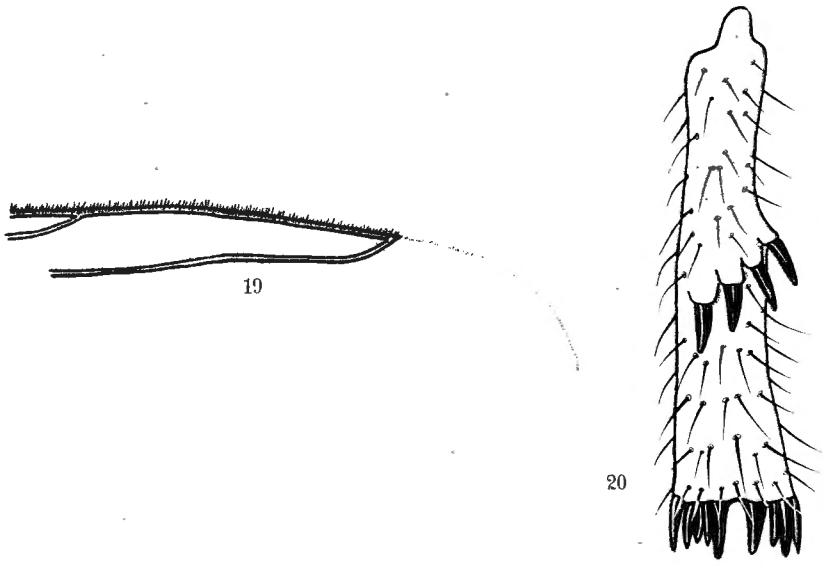
This species is very distinctive and can be readily recognized by the pale, usually colorless anterior veins in the wing, the shortened costa and pale colored halteres.

The males are chiefly shining black except for the yellowish to whitish colored halteres. The front femora are often rufous and the other femora are often rufous tinged. The wings are whitish hyaline and no stigma is present in the males. The costa and anterior veins are pale yellowish white in color and the posterior veins are colorless. The costa ends at or but slightly beyond the apex of the radial sector (R_{3+4+5}) (fig. 19). The front tibiae each possess a single row of four spines, above the apical set, these are arranged obliquely just beyond the middle of the segment (fig. 20).

Male length : 3,5-4 mm; wings, 3-4,2 mm.

Females. — Typically the dorsum of the thorax is chiefly rufous, combs and the area between shining black; also with a shining black median stripe extending part way down the mesonotum behind the posterior comb. The propleura are all rufous. The front coxae and front and middle femora are rufous except for their brownish apices and the hind femora are rufous at their bases. Different specimens vary in coloration from the typical condition to those which have the thorax entirely shining black

except for the dark red humeral ridges and propleura. The front coxae and femora of these individuals are dark red, as is the middle femora, except for the black apices. The wings are not so milky as in the male and the stigma is colored a pale brownish. The costal vein from the stigma to the apex, the radial veins and the basal section of the median vein are colored pale yellow to very slightly brownish. The section of the costa before the stigma is pale yellowish to white. The subcostal vein is completely hyaline as are the posterior veins.



FIGS. 19-20. — *Philia erythræa* BEZZI.
19. Apex of costal margin of wing; 20. Front tibia.

Length : body, 3,5-4,5 mm; wings, 3,7-4,7 mm.

This species was described from Eritrea. The writer has studied large series of specimens from many localities widespread over Africa and Arabia. It is apparently most abundant in Northeastern and Central Africa.

The collection contained four hundred and twenty four specimens of this species, two hundred and ninety six males and one hundred and twenty eight females, from the following localities : Kibati, 1.900 m, 10-19.III.1934; Rutshuru, 15.IX.1933-6.I.1934; Burunga (Mokoto, 9-24.III. 1934; Kivu, Ngesho, 2.000 m, 3-6.IV.1934; Burunga, W. Kamatembe, 2.000 m, 9-10.III.1934; Kivu, Rutshuru, 1.285 m, 6-8.VI.1934; Kivu, Rutshuru (riv. Musugereza), 1.100 m, 10.VII.1935; Kanabayongo (Kabasha), 1.760 m, 2.XII.1934; Nyarusambo, 2.000 m, 2.VII.1934; Rwindi, 1.000 m, 20-24.XI. 1934; Kivu, Luofu, 1.700 m, 10.XII.1934; Kivu, Kalondo (lac Ndaraga, Mokoto), 1.750 m, 22-27.III.1934; Kivu, Rutshuru (riv. Kanzarue), 1.200 m,

16.VII.1935; Ruanda, Ruhengeri (sources Kirii), 1.800-1.825 m, 2.X.1934; mont Sesero (près Bitashimwa), 2.000 m (Bambous), 2-3.VII.1934; Sake (Kivu), 19-22.II.1934; Kivu, Rutshuru (riv. Fuku), 1.250 m, 5.VII.1935; Ruanda, Ruhengeri (riv. Penge), 1.800-1.825 m, 1.X.1934; Kivu, Tshumba (Mushari), 2.100 m, 28.IV-1.V.1934; Kivu, Nyongera (près Rutshuru), 1.218 m (Butumba), 18.VII.1935; Ruanda, Kansenze (pied volc. Karisimbi), 2.400 m, 4.III.1935; Ruanda, Burambi (volc. Muhavura), 2.325 m, 5.IX.1934; Kivu, Kinyamahura (Djomba), 1.800 m, 23.VIII.1934; Kisenyi (Kivu), 13-15.IV. 1935 (Mission H. Damas); Ngoma (lac Biuniu), 3-10.IV.1935 (Mission H. Damas); Kalondo (Kivu), 6-9.VIII.1935 (Mission H. Damas); [lac Kivu, île Idjwi : Luvominga, 27.IX.1935 (Mission H. Damas)].

Philia lucida Hardy.

(Fig. 21.)

Philia lucida Hardy, 1948, Brit. Mus. Ruwenzori Exped., **1** (6) : 125-126.

This species belongs in the group which have the anterior veins of the wing pale yellow or whitish and the stigmata hyaline in the males. It is distinguished from other species in this complex by the arrangement of spines on the front tibiae, the all black legs of the male, black halteres and elongate costa.

The front tibiae are very slender and each has four rather obtuse spines arranged in an oblique row just beyond the middle of the segment (fig. 21). The pile is all pale yellowish. The color of the wing veins is very similar to that of *P. erythræa* (Bezzi) but the costa extends half way between the apices of R_s and M_1. The hind margin of the ninth tergum is straight and the claspers are acute at their apices.

Length of body and wings : 4-5 mm.

Female. — The wings are lightly yellowish fumose, sometimes distinctly brownish on anterior margin. The stigmata are brown and most of the anterior veins are faintly tinged with brown. The basal portion of the costa and the subcostal vein are pale yellow. The mesonotum varies in color from rufous with a broad, shining black, median vitta to all black. The front and middle coxae and all femora are rufous.

Length : body, 4-4,5 mm; wings, 4,5-5 mm.

This species was described from the Kigezi Dist., Uganda and was also recorded from Kenya.

Forty-three specimens were in the de Witte collection, nineteen males and twenty-four females, from the following localities : Ruanda, Karisimbi, vers le Sud, riv. Bikwi, 3.000 m, 26.II.1935; Kabara (volc. Mikeno), 3.200 m, 15-16.VII.1934; Kivu, Kalondo (lac Ndaraga, Mokoto), 1,750 m, 22-27.III. 1934; Ruanda, Nyabirehe (pied volc. Karisimbi), 2,400 m, 22.II.1935; Ruanda, volc. Visoke, 2.800-3.300 m, 13-14.II.1935; Nyarusambo, 2.000 m, 2.VII. 1934; lac Kanyamenoni, vers volc. Musule, 2.300 m, 14-VIII-1934; Mayumbu

*

(volc. Nyamuragira), 2.100 m, 14-26.VI.1935; mont Sesero, près Bitashimwa (Bambous), 2.000 m, 1-2.VIII.1934; Ruanda, mont Tamira (près lac Gando), 2.600 m, 11.III.1935; Gitebe (volc. Nyamuragira), 2.324 m, 14-26.VI.1935; Nyasheke (volc. Nyamuragira), 1.820 m, 14-26.VI.1935; Shamuheru (volc. Nyamuragira), 1.843 m, 15.VI.1935; vers Rweru (volc. Mikeno), 2.400 m,

FIG. 21. — *Philia lucida* HARDY. Front tibia.

FIG. 22. — *Philia nupta* SPEISER. Front tibia.

12.VII.1934; Ruanda, lac N'Gando (pied volc. Karisimbi), 2.400 m, 6.III.1935; Kivu, Ngesho, 2.000 m, 3-6.IV.1934; Ruanda, Kansenze (pied volc. Karisimbi), 2.400 m, 4.III.1935; Kivu, Rutshuru (Buhanya), 1.200 m, 6.VII.1935; Kivu, Rutshuru (riv. Puku), 1.250 m, 5.VII.1935.

Philia nupta SPEISER.

(Fig. 22.)

Philia nupta SPEISER, 1914, Berl. Zeits. Deutsch. Ent. Ges., **1**.

This species is easily recognized by its strongly swollen hind tarsi (in the males), the long thirteen segmented antennae and by the arrangement of spines on the front tibiae. The front tibiae each have a pair of strong spines situated near the basal 1/4 to 1/5 of the segment and a single large spine located near the middle (fig. 22). The coxae and femora are reddish in color, those of the front legs are bright yellowed. The hind tibiae are

strongly swollen at their apices and the basitarsi of the hind legs are only about two and one-half times longer than wide.

Length of male : body, 5-6 mm; wings, 4,6-5,2 mm.

Length of female : body, 4,5-5 mm; wings, 5-5,5 mm.

Type locality : Dschang, Cameroons.

The writer has identified the species from many localities in Africa, as will be reported in the forthcoming monograph.

Just a single male specimen was in the DE WITTE collection : Kivu, Rutshuru, 1.285 m, 23-25.XII.1933.

Philia vicaria HARDY.

(Figs. 23-35.)

Philia vicaria HARDY, 1948, Brit. Mus. Ruwenzori Exped., **1** (6) : 127.

This species is related to *P. nupta* SPEISER, but is readily distinguished by its slender hind legs, all pale pile and differently arranged spines on the front tibiae.

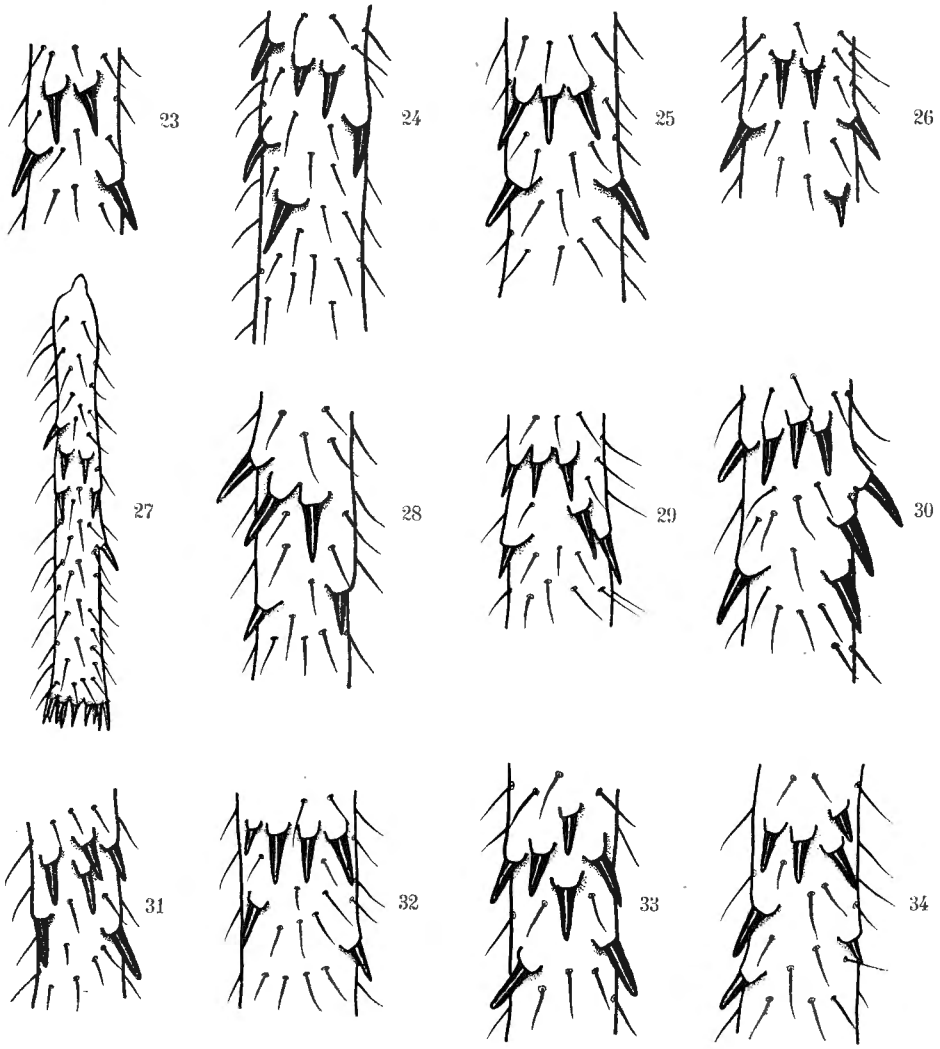
This has proved to be an extremely variable species. The number and arrangement of the spines on the front tibiae are usually very reliable specific characters. The writer has studied thousands of *Philia* from all parts of the world but has never before seen such wide ranges of variation within a species. The tibial spines above the apical set, in *P. vicaria* vary in number from four to eight and the only consistent character found, with regard to their arrangement, is that they are located near the middle of the tibia. The spines are rather closely grouped, usually in two irregular rows. The spines not only differ in arrangement and number but also in size and several cases were found, in the series at hand, where the spines of the right front tibia would be quite different from those of the left tibia.

Some of the specimens have the tibial spines arranged nearly like those of *P. crassicrus* (LUNDSTRÖM) but the tibiae are not short and thick, the spines are arranged near middle of segment and the body pile is yellow, not black.

The typical *vicaria* have four spines arranged in two rather closely set rows (fig. 23) near the middle of the segment. Some specimens have been seen which have three spines in the top set and two below and still others with various combinations of arrangements in number, size and position (as shown in figs. to 24-33).

The wings are usually faintly yellowish fumose with pale brownish yellow anterior veins and stigmata. Some specimens have very pale to hyaline anterior veins and colorless stigmata.

The front femora are usually dark reddish, tinged with blackish and the coxae, middle and hind femora are rufous. The front femora are often all rufous without the discolorations. All leg segments are slender, the hind tarsi are not at all swollen.



FIGS. 23-34. — *Philia vicaria* HARDY.

23. Spines in middle of front tibia of typical *vicaria*; 24-33. Variations in arrangement number and shape of spines on front tibiae (26, 27, 34 and 31 are of the right front tibiae, the others are of the left tibiae).

The ninth tergum is straight on the hind margin. The claspers appear to be pointed on their inner apices, as seen from a ventral view. From a lateral view they are rather truncate at their apices (fig. 35).

Length : body and wings, 4-6 mm.

Female. (This is the first description of the female.) — All pile yellow. *Head* : Sides polished black, middle of the front finely rugose and subshining. The head is slightly longer than wide from a dorsal view but the face is very short, not at all produced beyond the bases of the antennae. The compound eyes are about equal in length to that portion of the head behind the eyes. The antennae are eleven segmented, the last two segments are closely joined. *Thorax* : All shining black, except for a reddish tinge on the humeral ridges and sides of the scutellum. The stems of the halteres are yellowish to reddish, the knobs are black. The teeth of the thoracic combs are blackish, tinged faintly with red. The anterior comb has six to eight well developed teeth on each side, separated in the middle

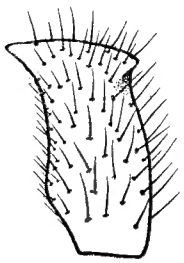


FIG. 35. — *Philia vicaria* HARDY.
Right clasper of male genitalia, lateral view.

of the mesonotum by about the width of two teeth. The posterior comb is not divided in the middle and is made up of twenty or more small black teeth. *Legs* : As in the male, the front coxae and femora are reddish, discolored with brown to black, the middle and hind femora and coxae are chiefly rufous. *Wings* : Distinctly yellowish to faintly brownish fumose. The anterior veins and stigmata are brown and the posteriors are yellow. The costal margin is usually tinged with brown. The wings are much longer than those of the males.

Length : body, 5,4-6 mm; wings, 7-8 mm.

The species was described from Uganda.

There were fifty-six specimens in the collection, thirty-two females and twenty-four males, from the following localities : Nyasheke (volc. Nyamuragira), 1.820 m, 14-16.VI.1935; Kivu, Kalondo (lac Ndaraga, Mokoto), 1.750 m, 22-27.III.1935; Shamuheru (volc. Nyamuragira), 1.843 m. 15.VI. 1935; Muhavura, 3.900 m, 1-11.IX.1934; sommet Visoke, 3.770 m, 13-14.II. 1935; Ruanda, volc. Gahinga (sommet), 3.475 m, 19.IX.1934; Ruanda, volc. Sabinyo, vallée Rwebeya, 3.000 m, 26.IX.1935.

INDEX ARRANGED ALPHABETICALLY.

GENERA.

SPECIES.

CONTENTS