

**The Crane-Flies of South Africa in the  
Natal Museum (Diptera : Tipulidæ)**

**Part IV**

BY

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With 28 Text-figures.

THE preceding three parts under this general title were published in the 'Annals of the Natal Museum', Vol. 13, pp. 395-433, with 40 text-figures; August 30, 1956. In these three articles a total of 31 species was considered.

In continuing this survey of the unusually interesting crane-fly fauna of South Africa I have again been privileged to be able to study the rich collections in the Natal Museum, collected in chief part by its entomologist, Mr. Brian Stuckenberg. I am very greatly indebted to Mr. Stuckenberg and to the other officers of the Museum for the detailed attention that has been given to collecting these unusually fragile flies which are only too often neglected or discarded by collectors.

The species in the initial three parts were numbered consecutively and this system has been continued in the present article, the included species being numbered from 32 through 60. It is expected that this system of consecutive numbering will be continued in future parts under this same title so that an idea of total numbers so treated may be had at any time. At the present writing, the crane-flies from Africa south of the Kunene and Zambezi Rivers, total some 300 species, several of which are still in press or in manuscript.

As had been indicated in the preceding articles, several of the most interesting species have been taken in the Drakensberg Area and in certain areas of indigenous forest elsewhere in Natal. I am indebted to Mr. Stuckenberg for a brief summary of some of the more interesting of these stations and am including these accounts in order to complete the data.

*Drakensberg Area.*—Commenting on my remarks based on photographs that the peaks of the Drakensberg looked unusually rugged and barren, "The peaks do look barren in photos but that is because of their precipitous nature and altitude (10,000 ft. and over). In actual fact they receive close on 100 in. of rain per annum. The steep slopes leading up to the peaks, and the foothills, are mostly covered with dense grass and heath, and forest patches occur in the valleys. At about 4,500 ft., the rainfall has dropped to about

<sup>1</sup> Contribution No. 1250 from the Department of Entomology, University of Massachusetts.

50 in. per annum. The Berg has very many permanent torrential streams, in which at least four species of Blepharoceridæ occur, and these unite to form the major rivers of Natal. The forest pockets are never very large, perhaps at most filling one and one-half miles of a steep and narrow valley.

“*Indumeni Forest*.—The forester at Cathedral Peak informs me that the forest is at about 4,700 ft., is about three-quarters of a mile in length, and receives about 50 in. of rain per annum. The steep valley in which it lies separates two spurs which sprawl roughly north-east away from the escarpment and merge at lower altitudes into foothills.

“*Kranskop Forest*.—This is a most peculiar and interesting forest. It is the only place where I have collected *Nemopalpus capensis* Edwards. It is famous for the number of indigenous animals it contains in its cryptofauna. The forest covers the steep slopes of the Tugela valley and is best developed in the tributary valleys. The altitude is about 3,500 ft. and the area must receive a rainfall of about 40 in., probably more, but no exact figures are available.

“*Town Bush*.—A large patch of indigenous forest situated on an escarpment overlooking Pietermaritzburg. Its average altitude is about 3,500 ft. and it, also, must receive about 40 in. of rain per annum.

“*Saint Helier Estate*.—I have been to this place only once and so know little about it. From a brief examination of dipterous material collected there, it seems to have a mixed fauna, including elements from coastal bush and from forests of higher altitudes. The forest is confined in a small but deep and narrow valley and is not extensive. Altitude very approximately 1,500 ft.; rainfall probably about 25–30 in. per annum.”—Brian Stuckenberg.

*Mariepskop, Eastern Transvaal*.—In October 1956, Mr. Stuckenberg, accompanied by the veteran student of butterflies, Mr. Harold Cookson, collected at Mariepskop on the Drakensberg Escarpment in eastern Transvaal, at a general altitude of 4,400 ft. This is approximately 15 miles west of Acornhoek, 23 miles north-north-east of Pilgrims Rest, in the watershed of the Klaserie River. Stuckenberg writes that “the whole area is an unspoilt forestry reserve and contains fine patches of indigenous forest on the middle slopes. The scenery is magnificent, being rather like the Natal Drakensberg though on a somewhat smaller scale. You may find that the fauna is an extension of the Natal Drakensberg fauna, possibly with closely related but different species.”

### 32. *Longurio (Longurio) cinereilinea* (Alexander).

*Tipula cinereilinea* Alexander, 1918; Ann. S. Afr. Mus., 18: 223–224, pl. 4, fig. 18 (venation).

Known hitherto only from Eshowe, Zululand, Natal, where it was taken in 1916 by H. W. Bell-Marley and in 1943 by Lionel Bevis.

Kranskop, November 11, 1954 (B. Stuckenberg).

33. *Nephrotoma petiolata* (Macquart).

*Pachyrhina petiolata* Macquart, 1838 ; Dipt. exot., 1, 1 : 49.

A fly that appears to have been correctly identified is widespread in South Africa, from Southern Rhodesia to the Cape Peninsula.

Cathedral Peak Area, Drakensberg, Natal, 6,400 ft., March 19–23, 1955 (B. Stuckenberg).

34. *Tipula* (*Acutipula*) *phæocera* n. sp. Text-fig. 4.

Allied to *natalia* ; general coloration of head and thorax orange ; antennal flagellum black ; mesonotal præscutum with four dull brownish black stripes that are narrowly bordered at anterior ends with blackened lines ; claws of male simple ; wings weakly tinged with brown, the costal and stigmal regions a little darker, the central area of disk more hyaline ; cell  $M_1$  short-petiolate ; abdominal tergites obscure yellow, with three brownish black stripes ; male hypopygium with the median region of tergite produced, spiculose, shallowly notched at apex ; outer dististyle a flattened blade, its outer apical angle subtruncate ; inner style with the beak a compressed-flattened blade, the outer lobe heart-shaped.

*Male*.—Length about 20–21 mm.; wing 21–22 mm.; antenna about 4–4.1 mm.

Frontal prolongation of head orange, vaguely pruinose above ; nasus elongate ; palpi dark brown, the short terminal segment black. Antennæ of moderate length, if bent backward extending about to the wing root ; scape orange yellow, pedicel brownish yellow, first flagellar segment medium brown, remaining segments black, feebly incised, longer than their verticils. Head orange, the anterior vertex more testaceous, with indications of the tam-bourine organ beneath ; a scarcely indicated capillary dusky median line on posterior vertex.

Pronotum light yellow. Mesonotal præscutum yellow on humeral and lateral portions, with four dull brownish black stripes, the extreme anterior ends of central pair with short blackened dashes that represent the usual more extensive borders ; posterior interspaces grey ; scutal lobes chiefly brownish grey, the central area obscure yellow ; central part of scutellum brown, the borders yellow, parascutella pale ; mediotergite whitish yellow, vaguely more darkened on central part except behind ; pleurotergite whitened. Pleura chiefly yellowed, including the dorsopleural membrane. Halteres with stem yellowish brown, knob dark brown. Legs with coxæ and trochanters yellow ; femora brownish yellow, tips narrowly blackened, the amount subequal on all legs ; tibiæ yellowish brown, tips darker ; tarsi brownish black to black ; claws of male simple. Wings weakly tinged with brown, the costal and stigmal regions a little darker ; more hyaline areas along centre of wing to apex in cell  $R_5$  ; veins dark brown. Venation : *Rs* slightly longer than *m-cu* ; cell

$M_1$  with relatively long petiole, from about two-thirds to three-fourths  $m$ ;  $m-cu$  connecting with  $M_4$  just beyond base.

Abdomen obscure yellow, the tergites patterned with brownish black, including narrow lateral stripes and a broader central black line, all continuous or virtually so. Male hypopygium (text-fig. 4) with the median region of tergite,  $t$ , produced into a relatively narrow lobe, the apex with a shallow notch, the lobules and sides of the main lobe with blackened spicules, lateral margins of lobe hanging pendant, entirely glabrous; if the entire lobe was flattened it would thus appear much broader than its aspect from above. Outer dististyle,  $d$ , a flattened pale blade, the outer apical angle subtruncate (shown separately in figure); inner style with the beak a compressed-flattened blade, the tip obtuse; outer lobe heart-shaped or spade-like.

*Holotype*, ♂, Cathedral Peak Area, Drakensberg, Natal, 6,400 ft., March 19–23, 1955 (B. Stuckenberg). *Paratopotype*, a broken ♂.

The only similar species is *Tipula (Acutipula) natalia* Alexander, which differs in the coloration of the antennæ, thorax and abdomen, and in the structure of the male hypopygium, especially the tergite and dististyles. Both species differ from *T. (A.) pomposa* Bergroth in the simple claws of the male.

(14). *Dolichozepe (Trichodolichozepe) centrosoma* Alexander.

*Dolichozepe (Trichodolichozepe) centrosoma* Alexander, 1956; Ann. Natal Mus., 13: 410–411, fig. 18 (♂ hypopygium).

The type was from Grahamstown, Cape Province.

Town Bush, Pietermaritzburg, Natal, November 2, 1954 (B. Stuckenberg).

35. *Dolichozepe (Trichodolichozepe) panda* n. sp. Text-figs. 1, 5.

Size relatively small (wing 10 mm. or less); general coloration of notum yellow, patterned with dark brown; pleura heavily patterned; antennæ of male elongate, approximately two-thirds the wing, the basal flagellar segments bicoloured; wings strongly tinged with brown, stigma darker, obliterative areas conspicuous; abundant macrotrichia in outer wing cells; male hypopygium with the dorsal tergal plate profoundly split medially, forming two narrow smooth lobes; inner dististyle with a triangular blackened flange near base, the outer end with a pair of blackened finger-like lobes.

*Male*.—Length about 8 mm.; wing 9 mm.; antenna about 6 mm.

*Female*.—Length about 8–9 mm.; wing 8.5–10 mm.; antenna about 1.8–2 mm.

Frontal prolongation of head light yellow above, dark brown on sides and beneath; nasus yellow distally; palpi with the first segment brown, intermediate two obscure yellow, terminal segment dark brown basally, with more than the outer half obscure orange. Antennæ of male elongate, about two-thirds the wing; scape and pedicel light yellow; first flagellar segment brownish yellow, succeeding five segments dark brown, with the tips narrowly yellow, outer segments uniformly black; segments elongate-cylindrical, with

a dense white pubescence and relatively short scattered verticils. In the female, antennæ short, in cases the bicolourous nature not or but poorly indicated. Head brownish grey, darker brown on sides of posterior vertex, the anterior orbits buffy yellow.

Pronotal scutum yellow, patterned with dark brown medially and on sides, scutellum and pretergites whitened. Mesonotal præscutum brownish yellow with three conspicuous dark brown stripes; scutum pale medially, the lobes infuscated; scutellum yellow, weakly darkened basally, parascutellar darker; mediotergite buffy yellow, narrowly darkened on sides, pleurotergite whitish yellow. Pleura whitish yellow, heavily patterned with dark brown, especially on the ventral anepisternum, sternopleurite and meron, and beneath the wing root; dorsopleural membrane pale. Halteres with stem yellow, knob dark brown, the extreme tip vaguely pale. Legs with the fore coxæ dark brown, remaining coxæ whitened; trochanters white, with a dark spot on inner face; femora yellowish brown, the tips vaguely darker, the genua insensibly pale; tibiæ and tarsi brown to dark brown; claws small, simple. Wings (text-fig. 1) strongly tinged with brown, the outer cells still darker; stigma oval, dark brown; obliterative areas before and beyond stigma and across fork of *M* whitened, conspicuous; veins brown. Abundant macrotrichia in cells beyond cord from  $R_2$  to  $M_4$ , inclusive, especially numerous in  $R_5$  and  $M_1$ . Venation:  $Sc_1$  preserved as a short spur;  $R_{1+2}$  present as a pale vein; medial forks moderately deep, cell  $M_1$  about twice its petiole, in cases shorter, the two subequal; *m-cu* variable in position, from about one-third to nearly its own length before the fork of *M*.

Abdomen dark brown, the segments apically and on sides patterned with buffy yellow, the pale colour more extensive on the outer segments, especially the sternites; eighth sternite chiefly darkened; hypopygium yellow, styli brownish black. Female with cerci relatively short, heavily sclerotized; ventral shield blackened. Male hypopygium (text-fig. 5) distinctive in all structures. Ninth tergite, *t*, with the dorsal plate profoundly divided by a median notch into two smooth blackened blades; ventral plate unequally bilobed, the outer part longer, both provided with blackened spicules. Outer dististyle, *d*, of moderate length, more dilated on the proximal third or fourth; setæ of moderate length, becoming more sparse outwardly; inner style distinctive, as illustrated, with a triangular blackened flange near base; outer end or head with a pair of blackened finger-like lobes.

*Holotype*, ♂, Saint Helier Estate, Natal, December 20, 1954 (B. Stuckenberg). *Allotopotype*, ♀. *Paratopotypes*, 1 ♂, 1 ♀.

Named for Panda, nineteenth century chief of the Zulus, brother of Tchaka (Chaka).

The present fly is readily told from all other regional members of the subgenus by the elongate bicoloured antennæ and in the distinctive details of the male hypopygium, particularly the tergite and inner dististyle.

36. *Limonia (Limonia) irrorata* Enderlein.

*Limonia irrorata* Enderlein, 1912 ; Zool. Jahrb., Syst., **32** : 74-75, fig. (wing).

Hitherto known from Southern Rhodesia and the Transvaal. Cathedral Peak Hotel, Drakensberg, Natal, February 19, 1944 (B. Stuckenberg).

37. *Limonia (Limonia) shawi* (Alexander).

*Dicranomyia shawi* Alexander, 1920 ; Ann. Mag. nat. Hist. (9) **5** : 306-307.

*Limonia (Limonia) shawi* Alexander, 1956 ; Ruwenzori Expedition, 1934-35, Tipulidæ, p. 240.

Widespread throughout eastern and south-eastern Africa, southward to Natal.

Mariepskop, eastern Transvaal, altitude 4,400 ft., October 4-8, 1956 (B. Stuckenberg).

38. *Limonia (Limonia) subconfusa* n. sp. Text-figs. 2, 6.

General coloration of thorax fulvous yellow above, more yellowed on pleura ; rostrum testaceous ; antennæ pale basally, flagellar segments dark brown, oval ; wings brownish yellow, the oval stigma pale brown ; macrotrichia of veins of moderate length ;  $Sc_1$  ending at near one-third the length of the long  $Rs$  ; cell 1st  $M_2$  rectangular, nearly twice as long as broad ; male hypopygium with the rostral spines two, placed close together near base of prolongation ; mesal-apical lobe of gonapophysis long and very slender.

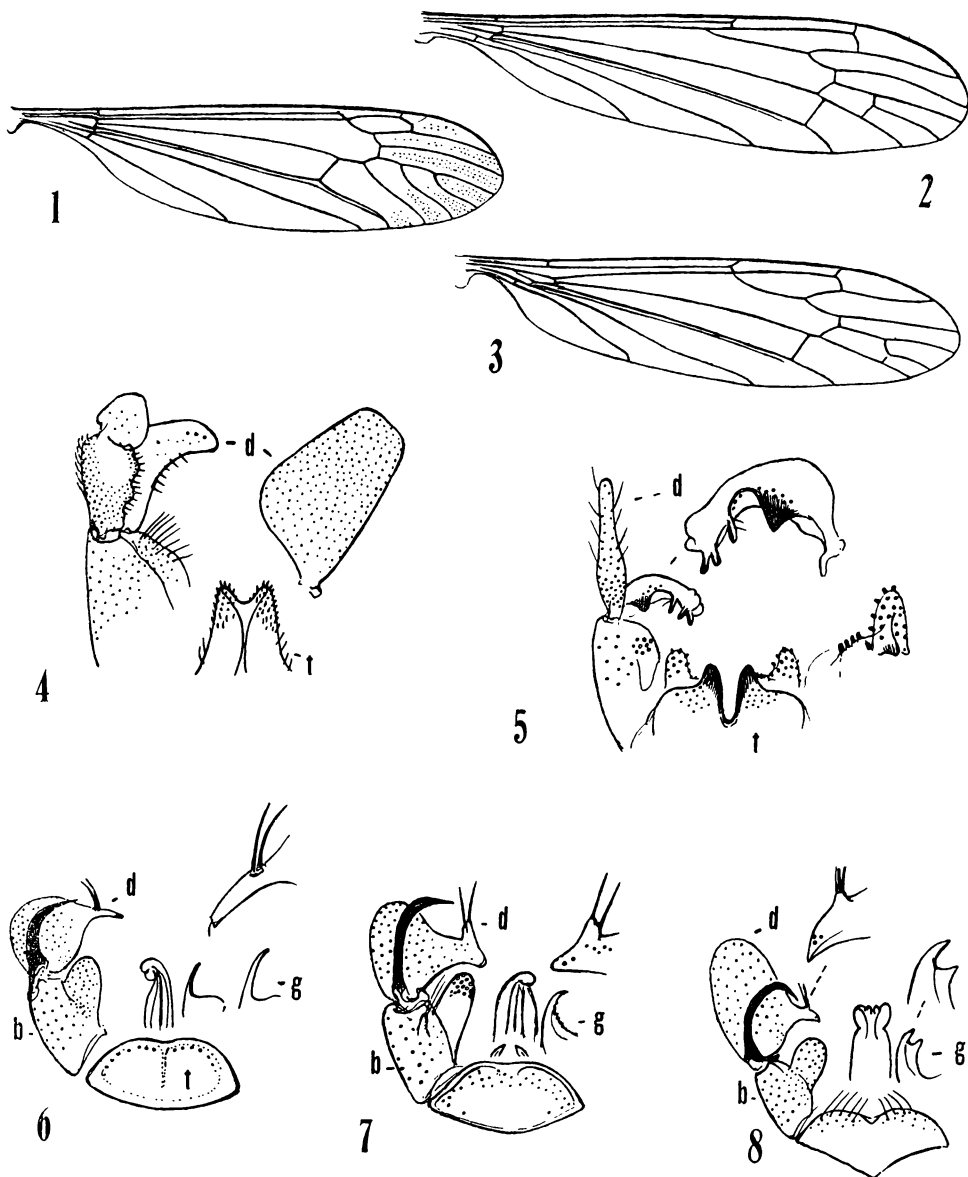
*Male*.—Length about 5-5.5 mm.; wing 6-6.5 mm.

*Female*.—Length about 6.5-7 mm.; wing 5.5-6.5 mm.

Rostrum testaceous ; palpi dark brown. Antennæ with the scape obscure yellow, more darkened outwardly ; pedicel and first flagellar segment brownish yellow, remainder of organ dark brown ; flagellar segments oval, with short apical necks, subequal to or a trifle longer than the verticils. Head above dark brown, the posterior vertex, occiput and genæ obscure yellow, the first heavily pruinose ; anterior vertex moderately wide, a little more than twice the diameter of the scape.

Thorax uniformly fulvous yellow above, the postnotum and pleura somewhat paler yellow ; vestiture of notum sparse but very long and conspicuous, erect. Halteres with stem yellow, fringed with long setæ, knob infuscated. Legs with all coxæ and trochanters light yellow ; remainder of legs more obscure yellow, the outer two tarsal segments infuscated, with a longitudinal row or comb of strong setæ on ventral face ; claws with denticles grouped at base. Wings (text-fig. 2) brownish yellow, the oval stigma pale brown ; veins pale brown, more brownish yellow in the pre-arcular and costal regions. Macrotrichia of veins shorter than in *confusa*. Venation : Compared with *confusa*,  $Sc$  shorter,  $Sc_1$  ending at near one-third the length of the longer  $Rs$  ; vein

TEXT-FIGS. 1-8.



1. *Dolichozeza* (*Trichodolichozeza*) *pandu* n. sp.; venation. 2. *Limonia* (*Limonia*) *subconfusa* n. sp.; venation. 3. *Limonia* (*Dicranomyia*) *lawrencei* n. sp.; venation. 4. *Tipula* (*Acutipula*) *phæocera* n. sp.; male hypopygium. 5. *Dolichozeza* (*Trichodolichozeza*) *pandu* n. sp.; male hypopygium. 6. *Limonia* (*Limonia*) *subconfusa* n. sp.; male hypopygium. 7. *Limonia* (*Dicranomyia*) *lawrencei* n. sp.; male hypopygium. 8. *Limonia* (*Geranomyia*) *dischidia* n. sp.; male hypopygium.

(Hypopygial symbols: *b*, basistyle; *d*, dististyle; *g*, gonapophysis; *t*, tergite.)



$R_3$  less curved ; cell 1st  $M_2$  more elongate, rectangular, nearly twice as long as the width at midlength ; *m-cu* shortly beyond the fork of  $M$ .

Abdomen obscure yellow or brownish yellow, including the hypopygium. Ovipositor with cerci very slender, nearly straight ; hypovalvæ much longer, straight. Male hypopygium (text-fig. 6) with the tergite, *t*, transverse, narrowed posteriorly, the caudal margin very gently emarginate, the lobes thus very low ; all margins of tergal plate thickened ; setæ submarginal in position, with about eight or nine on either side. Basistyle, *b*, short, the ventromesal lobe relatively large, with numerous setæ, those at and near base smaller and more abundant. Dorsal dististyle, *d*, a short powerful curved rod, narrowed very gradually into a long acute point. Ventral dististyle relatively small, its area only a little greater than that of the basistyle ; rostral prolongation relatively slender, narrowed to the blackened apex ; rostral spines two, placed close together near base of prolongation, each spine subequal in length to the prolongation. Gonapophysis, *g*, with the mesal-apical lobe long and very slender, nearly straight. Apex of ædeagus obtuse.

*Holotype*, ♂, Kranskop, Natal, November 11, 1954 (B. Stuckenberg). *Allototype*, ♀, pinned with the type. *Paratopotype*, 1 ♀.

The most similar regional species is *Limonia* (*Limonia*) *confusa* (Alexander), described from the same locality, which differs in well-marked venational characters, as discussed above. Unfortunately I do not have the male sex of *confusa* for comparison.

### 39. *Limonia* (*Limonia*) *umbrata* (de Meijere).

*Dicranomyia umbrata* de Meijere, 1911 ; Tijds. voor Ent., 54 : 25, pl. 1, fig. 7 (wing).

*Dicranomyia umbrata* de Meijere, 1913 ; Tijds. voor Ent., 56 : 343, pl. 16, figs. 9, 10 (♂ hypopygium).

The species has a vast range in the Tropics of the Old World and likewise occurs in Tropical America, where it would appear that it has been transported by commerce. The fly bears a close resemblance to *Limonia* (*Limonia*) *marleyi* (Alexander), described from Natal, which still is very insufficiently known to me. From present evidence, the two flies are distinct though allied.

Pietermaritzburg, Town Bush, Natal, November 11, 1955 (B. Stuckenberg).

### 40. *Limonia* (*Libnotes*) *libnotina* Alexander.

*Limonia* (*Libnotes*) *libnotina* Alexander, 1934 ; Encycl. Entomol., Diptera, 7 : 50-52.

*Limonia libnotina*, Wood, 1952 ; Ann. S. Afr. Mus., 39 : 181.

Known previously from Southern Rhodesia and Cape Province, including the Cape Peninsula.

Pietermaritzburg, Town Bush, Natal, November 11, 1955 (B. Stuckenberg).

41. *Limonia (Dicranomyia) lawrencei* n. sp. Text-figs. 3, 7.

Belongs to the *tristis (liberta)* group ; general coloration grey, the præscutum with a central brown stripe ; fore and middle femora black, with yellow bases, posterior femora chiefly pale ; wings whitish subhyaline, unpatterned ; male hypopygium with the posterior border of the ninth tergite shallowly emarginate ; rostral prolongation of the ventral dististyle with two spines from a single long basal tubercle.

*Male*.—Length about 5–5.5 mm.; wing 6.5–7 mm.

*Female*.—Length about 6–6.5 mm.; wing 6.8–7 mm.

Rostrum grey ; palpi black. Antennæ black throughout ; flagellar segments oval, somewhat longer in female, subequal to the verticils. Head grey ; anterior vertex a little wider than the diameter of the scape.

Thorax grey, the præscutum with a median brown stripe, lateral markings lacking ; scutellum and postnotum more yellowed, grey pruinose. Halteres long, stem whitened, knob infuscated. Legs with coxæ dark brown, the posterior pair paler apically ; remainder of legs brownish black to black, the femoral bases yellow, in some specimens including about the proximal fourth or fifth, in others virtually lacking, the hind legs more extensively pale, with the outer third or fourth darkened. Wings (text-fig. 3) whitish subhyaline, unpatterned, even the stigma lacking ; veins brown. Venation : *Sc* ending opposite or shortly before origin of *Rs*, *Sc*<sub>2</sub> near its tip ; cell 1st *M*<sub>2</sub> long, subequal to the distal section of vein *M*<sub>1+2</sub> ; *m-cu* before fork of *M*, in cases up to its own length.

Abdomen brown, the lateral borders and outer segments darker brown or brownish black ; hypopygium dark. Male hypopygium (text-fig. 7) with the tergite transverse, narrowed posteriorly, the caudal margin weakly emarginate on midportion, the margins thickened ; rather abundant pale setæ, chiefly on posterior half of sclerite (position indicated in figure), not concentrated at the midline. Proctiger not or but slightly developed. Basistyle, *b*, with the ventromesal lobe large, with numerous setæ on outer third ; a small lobe on face of style, bearing very long yellow setæ, some longer than the tubercle itself. Dorsal dististyle large, black, moderately curved, widened on outer half, at tip narrowed into a long straight spine. Ventral dististyle, *d*, about equal in area to the basistyle ; rostral prolongation stout, the two slender spines arising from the summit of an unusually long basal tubercle, one slightly more basal than the other. Gonapophysis, *g*, with the mesal-apical lobe slender, the concave margin microscopically serrulate. Ædeagus stout, apex simple.

*Holotype*, ♂, Cathedral Peak Area, Drakensberg, Natal, 6,400 ft., March 19–23, 1955 (B. Stuckenberg). *Allotype*, ♀. *Paratopotypes*, 6 ♂♀.

I take great pleasure in dedicating this species to Dr. Reginald Frederick Lawrence, recipient of the Medal of the South African Association for the

Advancement of Science in 1955. Dr. Lawrence was with the South African Museum from 1922 to 1935, when he became Director of the Natal Museum. The fly is most similar to species such as *Limonia* (*Dicranomyia*) *contraria* Alexander and *L. (D.) marshalli* (Alexander), differing most evidently in the structure of the male hypopygium, particularly the tergite and ventral dististyle.

42. *Limonia* (*Geranomyia*) *dischidia* n. sp. Text-fig. 8.

Allied to *sex ocellata*; wings with the darkened costal areas solid or virtually so, much narrower than the interspaces; basal three subcostal interspaces with weak darkened areas; *m-cu* about three-fourths its length before the fork of *M*; male hypopygium with the setæ of tergal lobes relatively weak; rostral prolongation of ventral dististyle beyond the spines short, subacute at apex; gonapophysis with mesal-apical lobe pale, produced into two points.

*Male*.—Length, excluding rostrum, about 6 mm.; wing 6.2 mm.; rostrum about 3 mm.

Rostrum black, relatively long, approximately one-half the remainder of body; palpi black. Antennæ black, base of first flagellar segment pale; flagellar segments suboval, with inconspicuous verticils; terminal segment pointed at tip. Head above brown, with a clear grey central line from the front to the occiput, on either side behind the eyes with a darker brown spot.

Pronotum reddish brown above, yellow on sides. Mesonotal præscutum with three vague brown stripes that are virtually confluent, the central one darker; humeral and lateral parts broadly yellow; scutal lobes brown, median area and scutellum brownish yellow; mediotergite dark brown, sparsely pruinose; pleurotergite more reddened. Pleura clear light yellow, the dorsopleural region more infuscated to produce a vague stripe. Halteres dark brown, base of stem narrowly yellow. Legs with all coxæ and trochanters clear light yellow; remainder of legs brown, the femoral bases very restrictedly more yellowed. Wings weakly darkened, especially the anal and cubital cells, the disk clearer; a heavy brown pattern, including about six virtually solid costal areas that are much narrower than the interspaces, the latter with weak darkenings in cell *Sc* in the spaces between *h* and fork of *Sc*; cord and outer end of cell 1st *M*<sub>2</sub> more narrowly seamed; smaller brown spots at ends of veins *R*<sub>4+5</sub> and 2nd *A*; veins brownish yellow or light brown, darker in the patterned areas. Venation: *Sc* long, *Sc*<sub>1</sub> ending shortly beyond the fork of *Rs*, *Sc*<sub>2</sub> at its tip; *m-cu* about three-fourths its length before fork of *M*.

Abdominal tergites brown, sternites yellowed; hypopygium dark. Male hypopygium (text-fig. 8) with the tergite transverse, the posterior border shallowly emarginate to form two low lobes; setæ relatively weak. Basistyle, *b*, with the ventromesal lobe simple. Dorsal dististyle a curved sickle, the long tip acute. Ventral dististyle, *d*, large and fleshy, its total area about two and one-half times that of the basistyle; two slightly unequal spines from a single tubercle, the longer spine from the summit, the other on the side; rostrum

beyond the spines relatively short, the apex subacute. Gonapophysis, *g*, with mesal-apical lobe pale, relatively long, at apex produced into two points separated by a broad notch. *Æ*deagus relatively broad, the apical lobes obtuse.

*Holotype*, ♂, Saint Helier Estate, near Hillcrest, Natal, May 31, 1955 (B. Stuckenberg).

Although it obviously is allied to *Limonia* (*Geranomyia*) *sexocellata* (Alexander) and *L. (G.) tugela* Alexander, the present fly is apparently distinct in the diagnostic characters listed above. In the nature of the wing pattern and structure of the male hypopygium, it is closer to *tugela* yet distinct.

43. *Austrolimnophila* (*Austrolimnophila*) *canuta* n. sp. Text-figs. 9, 14.

Size relatively large (wing 8 mm. or more); general coloration of mesonotum blackened, pruinose; præscutum with four poorly differentiated brown stripes; antennæ black, the pedicel a little paler, flagellar verticils small; wings with a brownish tinge, stigma darker; macrotrichia of veins long and conspicuous; *m-cu* at near two-thirds the length of cell 1st  $M_2$ ; male hypopygium with the tergal lobes obtuse, glabrous; outer dististyle terminating in a blackened spine, with about six small spinules near its base; inner style with delicate erect setæ; central mass of phallosome stout, terminating in two lobes that are cup-like at tips.

*Male*.—Length about 8–8.5 mm.; wing 8–9 mm.; antenna about 1.6–1.7 mm.

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

Rostrum above brownish grey, more yellowed beneath; palpi dark brown. Antennæ black, the pedicel slightly paler; flagellar segments subcylindrical, gradually decreasing in length outwardly, longer than the verticils. Head dark grey; anterior vertex relatively narrow.

Pronotum brownish grey, scutellum more testaceous. Mesonotal præscutum with the disk chiefly occupied by four poorly differentiated brown stripes, the humeral and lateral portions more greyish; setæ sparse but long and conspicuous; posterior sclerites blackened, sparsely pruinose, especially the mediotergite. Pleura and pleurotergite chiefly pale brown, pruinose, without pattern; dorsopleural membrane dusky. Halteres infuscated, base of stem restrictedly pale. Legs with the coxæ pale brown, sparsely pruinose; trochanters pale basally, the outer half darker; remainder of legs brown, darker outwardly; interpolated scales very slender. Wings (text-fig. 9) with a brownish tinge, the stigma still darker; veins and macrotrichia darker brown, the latter long and conspicuous. Venation: *Sc* relatively long,  $Sc_1$  ending about opposite midlength  $R_{2+3+4}$ ,  $Sc_2$  near its tip;  $R_2$  a trifle longer than  $R_{1+2}$ ; cell  $M_1$  about three times its petiole; cell 1st  $M_2$  subrectangular, *m-cu* at near two-thirds the length.

Abdomen elongate ; tergites dark brown, basal sternites obscure brownish yellow, on the fourth and succeeding segments becoming dark brown ; hypopygium black. Male hypopygium (text-fig. 14) with the tergite transverse, narrowed posteriorly, the caudal border with two obtuse glabrous lobes that are separated by a broad U-shaped notch ; proctiger conspicuous, widened outwardly and produced into two obtuse darkened lobes. Outer dististyle, *d*, narrowed to a slender blackened outer portion that is extended into a long point, with about six or seven small spinules on outer margin at base of spine, surface of body of style with long conspicuous setæ ; inner style subequal in length, gently curved to the obtuse tip, the surface except near apex with delicate erect setæ. Phallosome, *p*, including small slender lateral apophyses from dilated bases and a stout central mass that divides at tip into two lobes, their apices concave or cup-like.

*Holotype*, ♂, Town Bush, Pietermaritzburg, Natal, November 2, 1954 (B. Stuckenberg). *Allotopotype*, ♀. *Paratopotypes*, ♂♀, November 11, 1955 (B. Stuckenberg).

The fly is quite distinct from other regional species having unpatterned wings in the coloration of the body, venation, and structure of the male hypopygium.

#### 44. *Austrolimnophila* (*Austrolimnophila*) *luteipleura* Alexander.

*Austrolimnophila luteipleura* Alexander, 1949 ; Proc. Roy. ent. Soc. Lond. (B), **18** : 156-157.

The types, represented by females only, were from the Chirinda Forest, Southern Rhodesia, taken in November 1930 by Cuthbertson. I cannot note any significant differences in the females of the present material and regard the identification as being correct.

Indumeni Forest, Cathedral Peak Area, Natal, 4,700 ft., February 3, 1954 ; February 19, November 5, 1955 (B. Stuckenberg).

Kranskop, Natal, November 11, 1954 (B. Stuckenberg).

Town Bush, Pietermaritzburg, Natal, November 2, 1954, November 11, 1955 (B. Stuckenberg).

#### 45. *Austrolimnophila* (*Austrolimnophila*) *pleurostria* n. sp. Text-figs. 10, 15.

Size small (wing of male 7 mm.) ; general coloration of mesonotal præscutum very pale brown, with three more yellowed stripes ; pleura yellow, with an incomplete longitudinal stripe ; wings strongly suffused with brown, stigma slightly darker ; male hypopygium with the tergal lobes very low, with ill-defined margins ; outer dististyle at apex narrowly blackened and bispinous ; phallosome including a simple slender ædeagus, subtended by curved horn-like gonapophyses.

*Male*.—Length about 6 mm.; wing 7 mm.

Rostrum obscure yellow ; palpi dark brown. Antennæ with scape yellowish

brown, pedicel darker brown, flagellum brownish black to black; organ relatively short, if bent backward ending some distance before the wing-root; flagellar segments oval, the outer ones more elongate, verticils short. Head buffy, the centre of the posterior vertex restrictedly darker; anterior vertex broad.

Pronotum light brown, scutellum more yellowed. Mesonotal præscutum with the ground very pale brown, with three more yellowed stripes, the lateral borders darker brown; scutum brown, the extreme anterolateral parts yellow; scutellum brown, sparsely pruinose; postnotum yellow, mediotergite slightly pruinose on central portion. Pleura yellow, with an incomplete brown longitudinal stripe, extending from the propleura across the ventral anepisternum and dorsal pteropleurite; dorsopleural membrane light yellow. Halteres dark brown, the base of stem restrictedly yellow. Legs with the coxæ and trochanters pale yellow; remainder of legs obscure yellow, the vestiture darkened; interpolated scales very slender. Wings (text-fig. 10) strongly suffused with brown, the stigma slightly darker; pre-arcular and costal regions a trifle more yellowed; veins and macrotrichia brown, the latter long and conspicuous. Venation:  $Sc_1$  ending about opposite midlength of  $R_{2+3+4}$ ,  $Sc_2$  a short distance from its tip;  $R_{2+3+4}$  subequal to  $m-cu$ ;  $R_{1+2}$  and  $R_2$  subequal; cell  $M_1$  about one-half longer than its petiole;  $m-cu$  at near one-third the length of cell 1st  $M_2$ .

Abdominal tergites dark brown, sternites paler; hypopygium brownish yellow. Male hypopygium (text-fig. 15) with the tergite transverse, the posterior border with a broad U-shaped emargination, the lobes low and obtuse, their edges membranous and not clearly delimited. Basistyle,  $b$ , with a small lobe on mesal face before apex. Outer dististyle,  $d$ , cylindrical, narrowed outwardly, the distal end bispinous, heavily blackened, axial spine longer and strongly curved, the smaller outer spine straight, style conspicuously hairy; inner style subequal in length, almost straight, with delicate erect setæ on basal portion. Phallosome,  $p$ , including small curved horns that are presumed to be interbases, and a central mass that includes two outer horns that are considered to be gonapophyses, the central ædeagus at apex simple and slender.

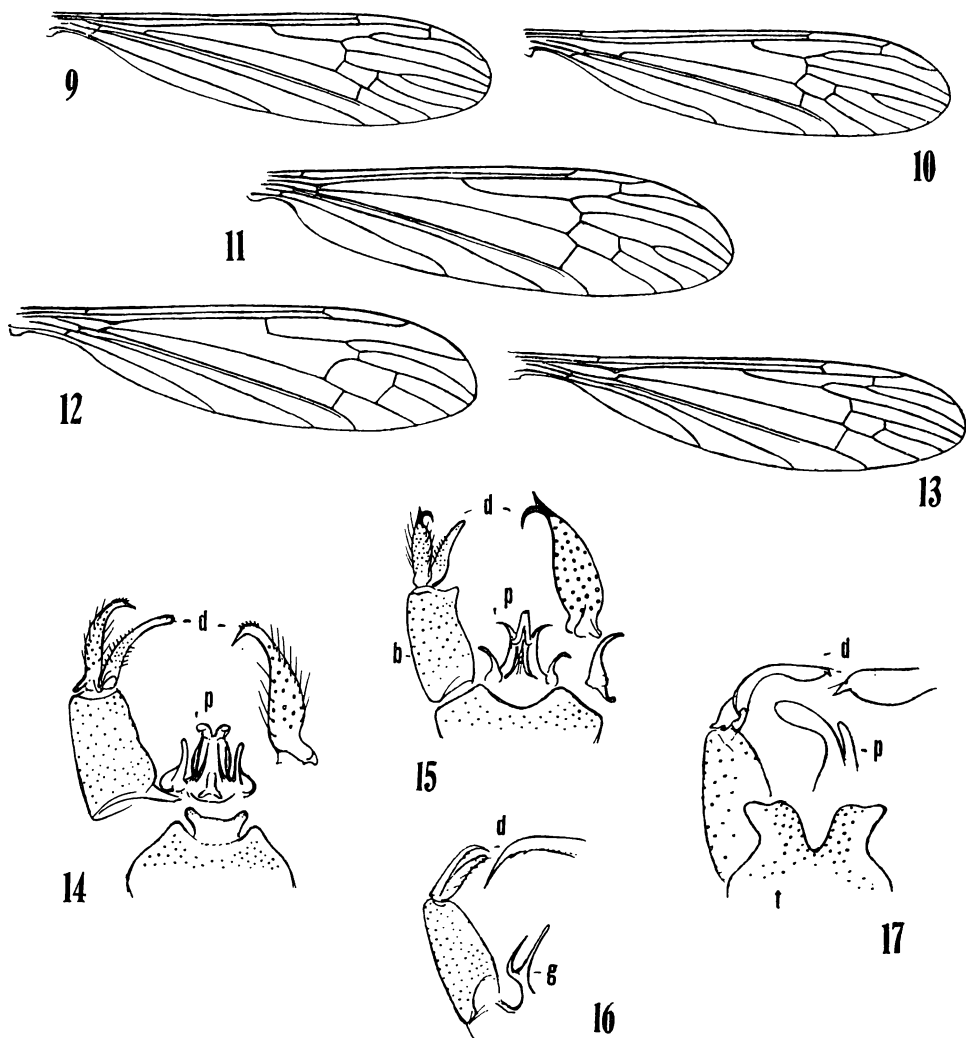
*Holotype*, ♂, Saint Helier Estate, near Hillcrest, Natal, December 20, 1954 (B. Stuckenberg).

Most similar to species such as *Austrolimnophila* (*Austrolimnophila*) *percineta* Alexander and *A. (A.) pleurolineata* Alexander, differing very evidently in the structure of the male hypopygium.

46. *Pseudolimnophila* (*Pseudolimnophila*) *auranticollis* n. sp. Text-figs. 11, 16.

Thorax uniformly fulvous orange to yellow, abdomen beyond the basal segments black, hypopygium fulvous; antennæ and legs black, the femoral bases very narrowly paler; wings with a strong brownish tinge, the narrow stigma poorly defined.

TEXT-FIGS. 9-17.



9. *Austrolimnophila* (*Austrolimnophila*) *canuta* n. sp.; venation. 10. *Austrolimnophila* (*Austrolimnophila*) *pleurostria* n. sp.; venation. 11. *Pseudolimnophila* (*Pseudolimnophila*) *auranticollis* n. sp.; venation. 12. *Elephantomyia* (*Elephantomyia*) *pringlei* n. sp.; venation. 13. *Limnophilomyia transvaalensis* n. sp.; venation. 14. *Austrolimnophila* (*Austrolimnophila*) *canuta* n. sp.; male hypopygium. 15. *Austrolimnophila* (*Austrolimnophila*) *pleurostria* n. sp.; male hypopygium. 16. *Pseudolimnophila* (*Pseudolimnophila*) *auranticollis* n. sp.; male hypopygium. 17. *Limnophilomyia transvaalensis* n. sp.; male hypopygium.

(Hypopygial symbols: b, basistyle; d, dististyle; g, gonapophysis; p, phallosome; t, tergite.)

*Male*.—Length about 7–7.5 mm.; wing 8–8.5 mm.

*Female*.—Length about 9 mm.; wing 10 mm.

Rostrum obscure yellow to light brown; palpi black. Antennæ black, scape more pruinose; flagellar segments cylindrical, relatively long but shorter than their verticils. Head dark grey; a slightly raised oval area on anterior vertex, the latter slightly more than twice the diameter of the scape.

Thoracic notum fulvous orange, unpatterned, the postnotum and pleura clearer orange yellow. Halteres infuscated, base of stem somewhat paler. Legs with all coxæ and trochanters orange; remainder of legs black, only the femoral bases restrictedly obscure yellow. Wings (text-fig. 11) with a strong brownish tinge, the pre-aricular region a trifle more yellowed; stigma small, narrow, poorly defined; veins brown. Venation:  $Sc_1$  ending about opposite fork of  $R_s$ ;  $R_{2+3}$  and  $R_2$  subequal; basal section of  $R_5$  conspicuous; cell  $M_1$  variable in length, from about one-half longer to nearly twice the length of its petiole;  $m-cu$  beyond fork of  $M$ , in cases to about one-half its length.

Abdominal tergites beyond the more yellowed basal ones brownish black, proximal sternites paler; hypopygium fulvous. Male hypopygium (text-fig. 16) with the outer dististyle,  $d$ , straight on basal half, thence very gradually curved and narrowed to the long acute tip, the lower edge scabrous; inner style nearly as long, narrowed to the obtuse tip, surface with abundant long setæ. Gonapophysis,  $g$ , unequally bispinous, the inner spine longer and straight.

*Holotype*, ♂, Mariepskop, Eastern Transvaal, 4,400 ft., October 4–8, 1956 (B. Stuckenberg). *Allotopotype*, ♀, pinned with the type. *Paratopotypes*, 3 ♂.

The most similar regional species is *Pseudolimnophila* (*Pseudolimnophila*) *aurantiaca* Alexander, of Southern Rhodesia, which differs in the coloration of the body, antennæ, legs and wings, and in the details of venation.

#### 47. *Elephantomyia* (*Elephantomyia*) *pringlei* n. sp. Text-fig. 12.

General coloration of thorax grey, conspicuously patterned with black; antennæ black throughout; halteres yellow; legs dark brown to black; wings whitish subhyaline, very heavily patterned with brown; branches of  $R_s$  diverging outwardly; cell 1st  $M_2$  very large, its inner end arcuated.

*Female*.—Length, excluding rostrum, about 9 mm.; wing 8.8 mm.; rostrum about 5.2 mm.

Rostrum of moderate length, black throughout. Antennæ black, 15-segmented, short; first flagellar segment enlarged, remainder abruptly smaller, the outer ones longer, with elongate verticils. Head brownish grey in front, the posterior vertex more buffy brown, with a conspicuous darker brown central stripe; anterior vertex moderately wide, about twice the diameter of the scape.

Cervical sclerites and dorsum of pronotum dark brown, the sides buffy



grey. Mesonotal præscutum with the ground grey on sides, more fulvous on the narrow interspaces; disk with three very conspicuous black stripes, the central one very vaguely divided by paler at posterior end; lateral præscutal border behind the humeri less evidently darkened; scutal lobes black, the central region more silvery; scutellum dark brown, with a narrow silvery central vitta; mediotergite dark brown, with a broad grey central triangle, the narrowed end directed backward; pleurotergite paler brown. Pleura grey, striped longitudinally with brown on the ventral anepisternum and ventral sternopleurite. Halteres obscure yellow, the knobs more obscured. Legs with the coxæ light brown, the fore pair darker; trochanters light brown; femora brownish yellow basally, the tips passing into black; tibiæ dark brown; tarsi brownish black; segments of legs with scattered erect bristles, additional to the abundant normal setæ; tibial spurs lacking; claws slender, gradually narrowed to the tips. Wings (text-fig. 12) with the ground whitish subhyaline, prearcular field strongly yellowed; a very extensive and heavy brown pattern on disk, only a little less extensive than the pale ground; the major dark areas are at origin of *Rs*, stigma and cord, outer end of cell 1st *M*<sub>2</sub> and tip of vein *R*<sub>2</sub>; more extensive washes in cells *M* and *Cu*, with further major darkenings in cells *M*<sub>4</sub> and outer end of 1st *A*; cell 2nd *A* weakly and uniformly darkened; veins brown, yellow in the pre-arcular field. Venation: *Sc*<sub>1</sub> ending about opposite two-thirds *Rs*, *Sc*<sub>2</sub> slightly longer; *Rs* strongly angulated at origin; cell *R*<sub>2</sub> at stigma approximately twice as wide as cell *R*<sub>5</sub>; branches of *Rs* gradually diverging outwardly, cell *R*<sub>2</sub> at margin only a little more extensive than cell *R*<sub>3</sub>; cell 1st *M*<sub>2</sub> very large, inner end arcuated; *m-cu* at near midlength of *M*<sub>3+4</sub>.

Abdomen with the basal segments dark brown, the intermediate ones paler, especially on the broad posterior margins. Ovipositor with the cerci very long and slender.

*Holotype*, ♀, Kranskop, Natal, October 12, 1956 (B. Stuckenberg).

Respectfully dedicated to the Director of the Natal Museum, Dr. John Adam Pringle. This attractive fly is readily distinguished from other Ethiopian species of the genus by the very heavily patterned wings, with the details of venation quite distinct. Other species having the wings darkly patterned, including *Elephantomyia* (*Elephantomyia*) *satura* Alexander and *E. (E.) pseudosimilis* Alexander, have the markings much paler and less extensive.

#### 48. *Gnophomyia* (*Eugnophomyia*) *elegans* (Wiedemann).

*Limnobia elegans* Wiedemann, 1830; Aussereur. zweifl. Ins., 2: 617.

*Eriocera elegans*, Schiner, 1868; Novara Reise, Diptera, p. 42.

*Gnophomyia elegans*, Alexander, 1917; Ann. S. Afr. Mus., 17: 151, pl. 11, fig. 15 (wing).

*Gnophomyia* (*Eugnophomyia*) *elegans*, Alexander, 1947; Rev. de Ent., 18: 73.

This striking fly is known from Natal and Cape Province.

Hilton Road, near Pietermaritzburg, Natal, December 13, 1953 (B. Stuckenberg).

49. *Gonomyia (Gonomyia) mimetica* Alexander.

*Gonomyia (Gonomyia) mimetica* Alexander, 1921; Ann. S. Afr. Mus., 18: 198, pl. 3, fig. 14 (venation), pl. 4, fig. 23 (♂ hypopygium).

Known from Natal and Cape Province.

Indumeni Forest, Cathedral Peak Area, Natal, March 22, 1955; November 5, 1955 (B. Stuckenberg).

50. *Trentepohlia (Trentepohlia) humeralis zuluensis* Alexander.

*Trentepohlia (Trentepohlia) humeralis zuluensis* Alexander, 1956; Durban Mus. Nov., 4: 322-323.

The status of the present race still remains in question and more material of the typical form will be necessary to finally settle its validity.

Eshowe, Zululand, Natal, November-December 1943 (L. Bevis).

Pietermaritzburg, Natal, March 27, 1955 (B. Stuckenberg).

51. *Limnophilomyia transvaalensis* n. sp. Text-figs. 13, 17.

Size relatively large (wing of male 7 mm. or more); general coloration of præscutum obscure yellow, the restricted interspaces darker; pleura and pleurotergite testaceous yellow, unpatterned; antennæ of male elongate, flagellar segments with dense erect black setæ; tibiæ entirely brown, tarsi abruptly snowy white; wings strongly darkened; male hypopygium with the lateral tergal extensions conspicuous; dististyle relatively stout, narrowest at near midlength, tip acute; phallosome relatively stout, the outer margin at near midlength with a strong lobe.

*Male*.—Length about 6-7 mm.; wing 7-8 mm.; antenna about 5.8-6 mm.

*Female*.—Length about 6.5 mm.; wing 6.5 mm.

Rostrum small, testaceous yellow; palpi brownish black. Antennæ of male elongate, as shown by the measurements; scape and pedicel small, the former brown, the latter light yellow, flagellum black; flagellar segments elongate-cylindrical, very densely clothed throughout the length with dense erect black setæ but no clearly differentiated verticils. Head dark brown.

Pronotum small, brown. Mesonotal præscutum almost covered by three obscure yellow stripes, the very narrow darker interspaces restricted to the anterior half; scutal lobes obscure yellow; scutellum infuscated, parascutella pale; mediotergite infuscated, paler laterally. Pleura and pleurotergite testaceous yellow, unpatterned. Halteres with stem obscure yellow, darker outwardly, knob dark brown. Legs with the coxæ and trochanters yellow; femora brown, vaguely brightened basally; tibiæ brown; tarsi of all legs abruptly and entirely snowy white. Wings (text-fig. 13) strongly darkened, stigma scarcely differentiated; veins brown. Conspicuous macrotrichia on veins of outer half of wing. Venation: Vein  $R_2$  distinct, variable in position, from before to beyond the fork of  $R_{2+3+4}$ .

Abdominal tergites dark brown, sternites, especially the more basal ones, paler; hypopygium brownish yellow. Male hypopygium (text-fig. 17) with the tergite, *t*, produced into two conspicuous lobes, each of which is farther produced into a glabrous extension, the inner part of each lobe with unusually strong setae. Dististyle, *d*, relatively stout, narrowest at near midlength, just before tip more dilated on lower surface; tip acute, with a strong seta. Phallosome, *p*, relatively stout, the outer margin at near midlength with a strong lobe or appendage, pale at tip.

*Holotype*, ♂, Mariepskop, Eastern Transvaal, 4,400 ft., October 4–8, 1956 (B. Stuckenberg). *Allotopotype*, ♀, pinned with type. *Paratopotypes*, 4 ♂.

The most similar species is *Limnophilomyia stuckenbergi* Alexander, now known from several stations in Natal. This differs in the pattern of the legs, including the narrow white tibial tips, and in the details of structure of the male hypopygium, especially the tergite. A further still undescribed species from the Matengo Highlands, Southern Tanganyika, is more distantly related.

52. *Rhabdomastix (Sacandaga) indigena* n. sp. Text-figs. 18, 22.

Size medium, wing about 5 mm. or less; general coloration of thorax dark brown, without distinct pattern, pleura uniformly dark brownish grey; antennae black throughout, if bent backward extending about to the wing root; legs brownish black; wings with a strong dusky tinge, stigma very slightly darker brown; distance on costa between veins  $R_{1+2}$  and  $R_3$  about one-half the latter vein or less; cell 1st  $M_2$  irregular, *m* being much longer than the basal section of  $M_3$ ; male hypopygium with the outer dististyle slightly expanded at tip, the larger apical spine appressed; gonapophysis pale, acutely pointed at tip.

*Male*.—Length about 4.2–4.5 mm.; wing 4.5–4.8 mm.; antenna about 1.4–1.5 mm.

*Female*.—Length about 5 mm.; wing 5 mm.

Rostrum dark brown; palpi black. Antennae black throughout, relatively long, as shown by the measurements, if bent backward extending about to the wing root; flagellar segments long-oval, with a long dense white pubescence, the more proximal segments with single longer verticils, these becoming shorter and less conspicuous on the outer segments. Head dark brown; anterior vertex broad.

Pronotum greyish brown. Mesonotal præscutum chiefly dark brown, without stripes, the sides more greyish; pseudosutural foveae brownish black; posterior sclerites of notum dark brown, sparsely pruinose. Pleura uniformly dark brownish grey; dorsopleural region darkened. Halteres yellow. Legs with coxae brownish yellow; trochanters testaceous yellow; remainder of legs brownish black, the femoral bases not or scarcely brightened. Wings (text-fig. 18) with a strong dusky tinge, the stigma very slightly darker;

pre-arcular field a trifle paler; veins pale brown. Macrotrichia on veins  $R_4$ ,  $R_5$  and outer branches of  $M$  and  $Cu_1$ . Venation:  $Sc$  long,  $Sc_1$  ending about opposite two-thirds  $Rs$ ;  $R_3$  erect, separated on margin from  $R_{1+2}$  by a distance about equal to one-half its length or less; cell 1st  $M_2$  small, irregular,  $m$  being longer and usually much longer than the basal section of  $M_3$ ;  $m-cu$  at near midlength of  $M_{3+4}$ ; vein 2nd  $A$  gently sinuous.

Abdomen dark brown; hypopygium brownish black. Male hypopygium (text-fig. 22) with the outer dististyle,  $d$ , slightly expanded at tip, the single enlarged apical spine appressed, the remaining outer surface with scabrous points or roughenings; inner style much shorter, strongly narrowed at outer end. Gonapophysis,  $g$ , appearing as a long pale rod, the slightly expanded head terminating in an acute point.

*Holotype*, ♂, Kranskop, Natal, October 12, 1956 (B. Stuckenberg). *Allotype*, ♀, pinned with type. *Paratopotype*, ♂.

Readily told from the only other described regional species, *Rhabdomastix* (*Sacandaga*) *afra* Wood, in the larger size, body coloration, venation, and details of structure of the male hypopygium.

### 53. *Cryptolabis* (*Bæoura*) *cooksoni* n. sp. Text-figs. 19, 23.

General coloration of thorax greyish brown, pleura clearer grey; antennæ, palpi and legs black; wings strongly blackened, cell 1st  $M_2$  closed; male hypopygium with the tergal border heavily blackened; dististyle small, beak stout, blackened, the tip obtuse; phallosome consisting of a pair of stout blackened spines.

*Male*.—Length about 4.5 mm.; wing 5 mm.

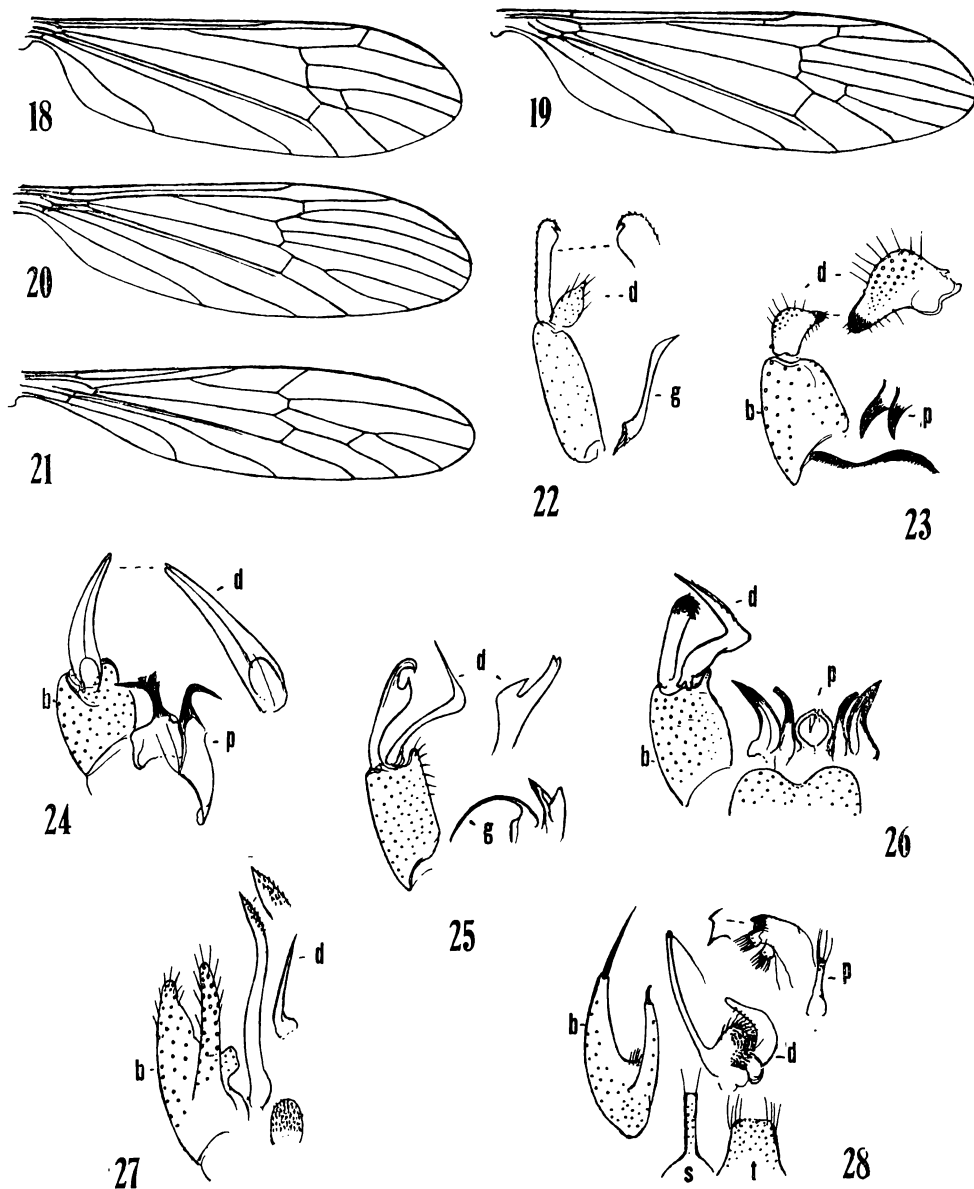
*Female*.—Length about 4.5 mm.; wing 5 mm.

Rostrum and palpi black. Antennæ black throughout; basal flagellar segments oval, the outer ones more elongate, with a pale pubescence and sparse verticils. Head dark brown.

Pronotum dark brown, the scutellum and pretergites very restrictedly obscure yellow. Mesonotum almost uniformly greyish brown, the præscutum with a slightly darker central area; pseudosutural foveæ linear; postnotum and pleura clearer grey; dorsopleural membrane dark. Halteres infuscated. Legs with coxæ black, pruinose; trochanters dark brown; remainder of legs black. Wings (text-fig. 19) strongly blackened, with pale longitudinal streaks in cell R adjoining vein  $M$ , and in cell 1st  $A$  immediately behind the vein; veins dark brown. Venation:  $R_{2+3+4}$  about one-half longer than the basal section of  $R_5$ , subequal to  $R_{2+3}$ , the latter oblique to suberect; cell 1st  $M_2$  closed, shorter than vein  $M_4$ ;  $m-cu$  at midlength of  $M_{3+4}$ ; vein 2nd  $A$  straight.

Abdomen, including ovipositor and male hypopygium, black. Ovipositor with the valves short, fleshy, setiferous, the cerci broadly obtuse at tips. In the allotype female, the abdomen is filled with very large black eggs, the chorion

TEXT-FIGS. 18-28.



18. *Rhabdomastix* (*Sacandaga*) *indigena* n. sp.; venation. 19. *Cryptolabis* (*Baeoura*) *cooksoni* n. sp.; venation. 20. *Erioptera* (*Meterioptera*) *ablusa* n. sp.; venation. 21. *Styringomyia* *stuckenbergi* n. sp.; venation. 22. *Rhabdomastix* (*Sacandaga*) *indigena* n. sp.; male hypopygium. 23. *Cryptolabis* (*Baeoura*) *cooksoni* n. sp.; male hypopygium. 24. *Tasiocera* (*Dasymolophilus*) *cyrtacantha* n. sp.; male hypopygium. 25. *Erioptera* (*Meterioptera*) *ablusa* n. sp.; male hypopygium. 26. *Erioptera* (*Meterioptera*) *quadripilata* n. sp.; male hypopygium. 27. *Molophilus* (*Molophilus*) *natalicolus* n. sp.; male hypopygium. 28. *Styringomyia* *stuckenbergi* n. sp.; male hypopygium.

(Hypopygial symbols: b, basistyle; d, dististyle; p, phallosome; s, sternite; t, tergite.)

smooth and unsculptured. Male hypopygium (text-fig. 23) with the posterior tergal border heavily thickened, black, smooth. Basistyle, *b*, short and stout, blackened, its tip obtuse; body of style paler, with numerous coarse setæ. Phallosome, *p*, consisting of a pair of stout blackened spines that curve gently to the acute tips.

*Holotype*, ♂, Mariepskop, Eastern Transvaal, 4,400 ft., October 4–6, 1956 (B. Stuckenberg). *Allotopotype*, ♀, pinned with type. *Paratopotypes*, ♂♀.

Named in honour of Mr. Harold Cookson, veteran Lepidopterist, who accompanied Mr. Stuckenberg on this expedition to the Eastern Transvaal. The fly is entirely distinct from the other regional members of the genus in the closed cell 1st  $M_2$  of the wings. In the male hypopygial characters, especially the dististyle, it is most like species such as *Cryptolabis* (*Bæoura*) *brumata* (Wood) and *C. (B.) witzenbergi* (Wood).

54. *Tasiocera* (*Dasymolophilus*) *cyrtacantha* n. sp. Text-fig. 24.

Size relatively large (wing approximately 4 mm. or more); general coloration brownish black to black; male hypopygium with the dististyle terminal, entirely pale, without armature; phallosome including a pair of blackened strongly curved hooks and an unpaired black central structure that narrows into a long straight spike.

*Male*.—Length about 3.3–3.6 mm.; wing 3.8–4.5 mm.

Rostrum dark brown; palpi black. Antennæ short, black throughout; flagellar segments oval to long-oval, shorter than the verticils. Head brownish black.

Thorax uniformly brownish black, with very long conspicuous setæ. Halteres brownish black. Legs with coxæ and trochanters brownish testaceous; remainder of legs brownish black to black. Wings with a blackish tinge; veins pale brown but darker than the ground; macrotrichia, including the very long costal fringe, black. Venation: Cell 1st  $M_2$  apparently closed.

Abdomen, including hypopygium, black, conspicuously hairy. Male hypopygium (text-fig. 24) with the basistyle, *b*, short and stout. Dististyle, *d*, entirely pale, narrowed gradually to the blunt tip; no armature but with a low ridge or carina extending the whole length. Phallosome, *p*, including a pair of blackened, strongly curved hooks lying side by side, and an unpaired blackened structure that is presumed to represent the ædeagus, appearing as a flattened plate that narrows abruptly into a black spine, this further narrowed and angulated into a long straight spike, at the bend with three or four smaller projections.

*Holotype*, ♂, Town Bush, Pietermaritzburg, Natal, July 5, 1956 (B. Stuckenberg). *Paratopotypes*, 2 ♂.

In the structure of the male hypopygium, *Tasiocera* (*Dasymolophilus*) *cyrtacantha* is quite distinct from the other South African members of the

subgenus, including *T. (D.) eriopterooides* (Alexander), *T. (D.) liliputana* (Alexander) and *T. (D.) probosa* Alexander. In its hypopygium, it is more like certain Tropical African species, including *T. (D.) biacufera* Alexander and *T. (D.) dignissima* Alexander, yet is entirely distinct in the details of structure, particularly of the dististyle and phallosome.

55. *Tasiocera (Dasymolophilus) probosa* Alexander.

*Tasiocera (Dasymolophilus) probosa* Alexander, 1956 ; Ruwenzori Expedition 1934–35, Tipulidæ. pp. 340–342, fig. 165 (♂ hypopygium).

Described from various stations in Uganda and Kenya.

Masongwaan Forest, Cathedral Peak Area, Natal, March 23, 1955 (B. Stuckenberg). Stuckenberg states that this forest is in the next valley to that which contains the Indumeni Forest and is similar in every respect except that it is smaller and less dense.

Karkloof, near Howick, Natal, April 17, 1955 (B. Stuckenberg).

56. *Ormosia (Trichotrimicra) hirtipennis* (Alexander).

*Trimicra (Trichotrimicra) hirtipennis* Alexander, 1921 ; Ann. S. Afr. Mus., 18 : 195–196.

The types were from Kranskop (Krantzkop), Natal, taken in November 1917 by Barnard.

Indumeni Forest, Cathedral Peak Area, Natal, March 22, 1955 (B. Stuckenberg). Kranskop, November 11, 1954 (B. Stuckenberg).

57. *Erioptera (Meterioptera) ablusa* n. sp. Text-figs. 20, 25.

General coloration of entire body pale yellow ; antennæ pale, apex of pedicel darkened ; wings pale yellow, *m-cu* about three-fourths its length beyond the fork of *M*, vein 2nd *A* straight, Anal veins divergent ; male hypopygium with the outer dististyle entirely pale, bifid ; apex of inner style and the gonapophyses appearing as long slender spines.

*Male*.—Length about 3.3 mm.; wing 4 mm.

Rostrum and palpi yellow. Antennal scape yellow, pedicel yellow, its outer end brownish black, flagellum very pale brown, basal two flagellar segments short, suture distinct ; succeeding segments more elongate, with very long verticils ; terminal segment larger and about one-third longer than the penultimate. Head light yellow.

Thorax entirely light yellow, the præscutum somewhat more saturated. Halteres yellow. Legs with the coxæ and trochanters pale yellow ; remainder of legs obscure yellow, the colour appearing still darker because of darker setæ. Wings (text-fig. 20) pale yellow throughout ; veins and trichia a little darker but very inconspicuous against the ground. Venation : Veins  $R_2$  and  $R_{2+3}$  subequal ; *m-cu* about three-fourths its length beyond the fork of

$M$  or shortly before midlength of  $M_{3+4}$ ; vein 2nd  $A$  straight, not at all sinuous at outer end, the anal veins strictly divergent.

Abdomen, including hypopygium, yellow. Male hypopygium (text-fig. 25) with both dististyles,  $d$ , terminal; outer style entirely pale, expanded outwardly, shallowly notched, the short inner arm triangular, the longer outer blade microscopically bidentate at tip; inner style subequal in length or slightly longer, the basal two-thirds straight, the outer third narrowed and bent at a right angle into a slender spine. Gonopophysis,  $g$ , appearing as a long and very slender gently curved spine.

*Holotype*, ♂, Kranskop, Natal, October 12, 1956 (B. Stuckenberg).

*Erioptera* (*Meterioptera*) *ablusa* is the most distinct species of the subgenus so far discovered in the Ethiopian region. In its general appearance it is most similar to *E. (M.) subaurea* Bergroth, differing especially in the venation, as the position of  $m-cu$  and strictly divergent anal veins, and the structure of the male hypopygium, especially the outer dististyle. All other species of the subgenus have the outer dististyle a simple club, its apex provided with blackened spiculate points. With the discovery of more material, it may be found desirable to place the present fly in a subgeneric group distinct from *Meterioptera*.

58. *Erioptera* (*Meterioptera*) *quadripilata* n. sp. Text-fig. 26.

General coloration of thorax grey, posterior border of scutellum yellowed; head, including rostrum, chiefly yellowed; halteres with stem white, knob dark brown; legs yellow, the colour obscured by darker scales and setæ; wings weakly tinged with brown; male hypopygium with four blackened gonapophyses, the outer pair stout, terminating in an acute spine, inner apophyses slender.

*Male*.—Length about 3.8 mm.; wing 4.5 mm.

Rostrum light yellow; palpi black. Antennæ with scape darkened, flagellum, especially the proximal segments, paler; outer flagellar segments elongate, with conspicuous verticils. Head above chiefly yellow, the lower surface more obscured.

Pronotum dark medially, the pretergites pale. Mesonotum chiefly grey, the præscutum more darkened medially; posterior border of scutellum yellowed. Pleura of unique type badly crushed, apparently variegated brown and paler; dorsopleural region pale. Halteres with stem white, knob conspicuously dark brown. Legs with coxæ and trochanters testaceous yellow; remainder of legs yellow, the colour obscured by dark setæ and elongate scales; outer tarsal segments not darkened. Wings weakly tinged with brown, the pre-arcular and costal regions clear yellow; veins very pale brown. Venation:  $Sc_2$  opposite origin of  $Rs$ : vein 2nd  $A$  sinuous on apical third.

Abdominal tergites brown, sternites somewhat paler, subterminal segments dark brown, forming a ring; hypopygium light brown. Male hypopygium



(text-fig. 26) with the posterior border of tergite broadly emarginate, forming distinct obtuse lobes. Basistyle, *b*, with the apical lobe slender, terminating in five or six long setæ that are subequal in length to the lobe. Outer dististyle, *d*, a flattened club, at apex with the usual grouping of recurved spines; inner style with the apical blade about equal in length to the base, with numerous scattered setæ. Phallosome, *p*, with four blackened elements or apophyses, as in *quadrispicata*; outer apophysis stout, slightly curved, narrowed to an acute point; inner apophysis smaller and more slender, curved, the apex abruptly truncate and feebly notched (possibly broken at tip but the condition apparently normal).

In *quadrispicata*, the blackened apophyses are shorter and more slender, especially the inner pair which terminate in acute points. Ninth tergite with posterior border almost truncate, with a very small and shallow median emargination.

*Holotype*, ♂, Town Bush, Pietermaritzburg, Natal, November 11, 1955 (B. Stuckenberg).

The most similar species in the Ethiopian fauna is *Erioptera* (*Meterioptera*) *quadrispicata* Alexander, of Southern Rhodesia, which differs especially in the body and leg colouration, the yellow halteres, and in the details of structure of the male hypopygium, particularly the gonapophyses.

59. *Molophilus* (*Molophilus*) *natalicolus* n. sp. Text-fig. 27.

Belongs to the *gracilis* group and subgroup; general coloration of mesonotum brownish black, the præscutum more greyish brown medially; antennæ short, black, basal segments yellow; halteres pale yellow; legs dark brown; wings strongly infuscated; male hypopygium with the basistyle trilobed at apex, the dorsal lobe long and slender; dististyles very unequal, the shorter inner style a needle-like rod.

*Male*.—Length about 3.5 mm.; wing 4 mm.; antenna about 0.75 mm.

*Female*.—Length about 3.5 mm.; wing 4.2 mm.

Rostrum and palpi black. Antennæ relatively short, as shown by the measurements; black, scape and pedicel yellow; flagellar segments oval, the segments with a dense white pubescence and moderately long verticils. Head dark brown.

Pronotum yellow, including the pretergites, the sides brownish black. Mesonotal præscutum with a broad greyish brown median stripe that is narrowly bordered by darker brown, the lateral borders paler; vestiture long and conspicuous, black; posterior sclerites of notum brownish black. Pleura brownish black. Halteres pale yellow. Legs with the coxæ and trochanters brownish testaceous; remainder of legs dark brown, the colour in part produced by abundant dark vestiture. Wings strongly infuscated; veins brown, macrotrichia still darker, very long and conspicuous. Venation:  $R_2$  nearly in transverse alignment with  $r-m$ ; petiole of cell  $M_3$  less than twice  $m-cu$ .

Abdomen, including hypopygium, brownish black. Male hypopygium (text-fig. 27) with the basistyle, *b*, at apex trilobed, the dorsal lobe long and slender, with setæ to the apex; mesal and ventral lobes shorter and more obtuse. Dististyles, *d*, two, very unequal in relative size, the longest a gently sinuous rod, its tip acute, before apex on outer surface with microscopic spinulæ; inner style a slender needle-like rod, its base more dilated.

*Holotype*, ♂, Kranskop, Natal, November 11, 1954 (B. Stuckenberg).  
*Allotopotype*, ♀.

This is the first record of occurrence of a member of the genus in South Africa. The species is most similar to certain more northern forms, as *Molophilus* (*Molophilus*) *plebejus* Alexander, differing decisively in the structure of the male hypopygium.

60. *Styringomyia stuckenbergi* n. sp. Text-figs. 21, 28.

Allied to *edwardsiana*; size large (wing of male 8 mm. or more); general coloration of body brownish black to black, mesonotum patterned with brownish yellow; ventral thoracic pleura abruptly yellow; antennæ black; legs chiefly black, tarsi, especially the posterior pair, chiefly pale; wings strongly blackened; abdomen black; valves of ovipositor finger-like; male hypopygium with the sternite very narrow, tergite broad; basistyle with the two setiferous tubercles widely separated; phallosome with a pair of hairy lobes before apex.

*Male*.—Length about 8·8·5 mm.; wing 5·8–6 mm.

*Female*.—Length about 7 mm.; wing 6 mm.

Rostrum dark brown; palpi brownish black. Antennæ dark brown to brownish black; flagellar segments oval. Head dark brown, the post-antennal area and a central line on posterior vertex obscure yellow; bristles erect to proclinate.

Pronotum yellow above, dark brown on sides. Mesonotal præscutum brownish black, with three more brownish yellow stripes, the central one continued backward over the midregion of scutum to the tip of scutellum; postnotum, including the pleurotergite, dark brown. Dorsal pleurites, including the dorsopleural membrane, brownish black, the ventral pleurites and sternum abruptly pale yellow. Halteres infuscated. Legs with all coxæ and trochanters pale yellow, the fore coxæ narrowly more darkened at extreme base; femora black, bases yellowed, on middle legs including more than the proximal third; tibiæ black, the narrow bases yellow, midtibia with vague indications of an obscure yellow ring beyond midlength; fore tarsi light brown, paler at base, middle and hind tarsi yellow, the former with the tips of the segments darkened, the latter with only the terminal segment darkened; fore tibia with about six or seven strong erect setæ. Wings (text-fig. 21) with a strong blackish tinge, the costal border to end of *Sc* yellowed; slightly

darker areas at anterior cord and over vein  $R_5$ ; paler areas in bases of cells  $Cu$  and 1st  $A$ ; veins brown. Venation: Anterior branch of  $Rs$  oblique; cell 2nd  $M_2$  varying from petiolate to barely sessile; vein 2nd  $A$  curved evenly to the margin.

Abdomen black, central region of sternites vaguely paler. Ovipositor with valves elongate, subequal, finger-like. Male hypopygium (text-fig. 28) with the tergite,  $t$ , broad, its posterior border truncate or virtually so, with several strong setae close to tip. Sternite,  $s$ , very long and narrow, with setae virtually to the tip, with a pair of apical bristles that are scarcely more modified. Basistyle,  $b$ , with a single outer spine from an elongate basal tubercle, the spine slender; a second tubercle on mesal face of style at base, abruptly tipped with a short black spine. Dististyle,  $d$ , with the outer arm long and slender, provided with the usual elongate apical bristle; inner arm of style a long curved blade, with a row of setae on its lower margin; intermediate style with two groups of strong black setae, opposable to one another. Phallosome,  $p$ , broad, the short black apex bispinous, subtended on either side by a short finger-like lobe that is tipped with a brush of long black setae.

*Holotype*, ♂, Kranskop, Natal, October 12, 1956 (B. Stuckenberg). *Allotopotype*, ♀, pinned with the type. *Paratopotypes*, 5 ♂.

I am greatly pleased to name this further very interesting crane-fly in honour of the collector, Mr. Brian Stuckenberg, who has added so strikingly to our knowledge of the Diptera of South Africa. Although its type of coloration is entirely different, the structure of the male hypopygium clearly shows that *Styringomyia stuckenbergi* is most closely allied to species such as *S. edwardsiana* Alexander and *S. xenophallus* Alexander, and not to species related to *S. leucopeza* Edwards and a few allied forms. These latter agree well in general coloration but have the hypopygial structure quite distinct.

Mr. Stuckenberg's observations on the resting and flying habits of the present fly are of great interest, particularly the latter, which had not previously been discussed for members of the genus *Styringomyia*.

"Flies in swarms over stream in forest, resembling a swarm of mayflies in that the individuals move rapidly up and down. Very distinctive in flight the fore legs being held *upwards* and *forwards*, the middle and hind legs pressed together and directed *posteriorly*. A similar position is assumed when at rest, when they closely resemble a spider that is found in the same locality."—B. Stuckenberg.