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DIPTERA (NEMATOCERA)
TIPULIDAE

BY

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Chapter III

Diptera (Nematocera): Tanyderidae, Ptychopteridae, Tipulidae

By CHARLES P. ALEXANDER

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Introduction

At the suggestion of Dr. PER BRINCK I have prepared a somewhat detailed account of the known crane-fly fauna of South Africa. The geographical limits here adopted include all of continental Africa south of the Cunene and Zambezi Rivers, or the approximate latitude of 16° South. The basis for this study has been the collections made by the members of the Swedish Expedition to South Africa in 1950—1951. The general account of the itinerary and accomplishments of this expedition has been given in the initial volume of "South African Animal Life", including the introduction by Professor BERTIL HANSTRÖM, and the initial two chapters by BRINCK and RUDEBECK, the first summarizing the results of Swedish exploration of South African animal life over the past two centuries, the second chapter providing a detailed list of localities visited by members of the expedition. This latter account, with maps and descriptions of the various established collecting stations, should be consulted in connection with the following account. The field personnel of the 1950—1951 expedition included Dr. PER BRINCK, as entomologist, with Mrs. GUNVOR BRINCK, and Dr. GUSTAF RUDEBECK, as ornithologist, with Mrs. INGA RUDEBECK, all of whom participated fully in the collecting and other activities of this outstanding survey. I cannot sufficiently express my thanks and appreciation to the BRINCKS and RUDEBECKS for the time and care devoted to the collection and preservation of the Tipulidae. Types and other materials based upon this expedition are preserved in the museum of the Zoological Institute of the University of Lund.

Under a separate caption I have discussed the progressive development of our knowledge of the crane-flies of South Africa. In order to supplement this record I would like to express my thanks to various other entomologists and collectors who have added to our knowledge

of the subject. Three of these have been outstanding in their contributions over the years, these being Dr. KEPPEL A. BARNARD and Mr. BRIAN A. STUCKENBERG, both of whom have collected extensively in South Africa, and Mr. COURTENAY A. SMITHERS, now of Sydney, Australia, who worked especially in Southern Rhodesia. Others who have made collections of these flies include Mrs. PAMELA USHER STUCKENBERG, in Moçambique; Mr. LIONEL BEVIS, of the Durban Museum, in Natal and Basutoland; the late Mr. ALEXANDER CUTHBERTSON, in Southern Rhodesia; and various collectors and contributors to the South African Museum prior to 1920, including especially Mr. H. W. BELL-MARLEY, in Natal; Mr. W. E. JONES in Zululand, Natal; Mr. R. M. LIGHTFOOT, and Mr. R. W. E. TUCKER, in Cape Province and the Transvaal. Still others who made collections of these flies include Dr. H. G. WOOD, while engaged in research for his graduate thesis, assisted by Mr. C. W. THORNE; Dr. L. A. PÉRINGUEY, from prior to 1888 to his death in 1924; and Mr. H. K. MUNRO, chiefly in 1919—1920, in Natal and the Transvaal. Still other collectors have taken specimens of these flies, such as Mr. NOËL L. H. KRAUSS, in Natal and Southern Rhodesia, Mr. A. J. T. JANSE in the Transvaal, Mr. and Mrs. A. JACOT-GUILLARMOD, in Basutoland, Dr. G. H. SATCHELL in Cape Province, Natal and the Transvaal (in 1953), and Dr. ROWLAND E. TURNER in Cape Province. Numerous other persons whose co-operation has been acknowledged in earlier papers have taken still fewer specimens. To all of these friends and co-workers I wish to express my deep thanks for their efforts in making known the crane-fly fauna of South Africa.

In the present report I have provided keys to the species and higher groups, together with brief specific diagnoses, and detailed distribution. The included figures, all based on local species, illustrate the venation of all genera and important subgenera and are to be used in conjunction with the keys to the genera. No attempt has been made to figure further species, excepting the various novelties, but detailed references to previously published illustrations are cited under the individual species.

It is believed that now we have a fair basic knowledge of the crane-flies of South Africa but there remain various areas from which no collections have been made or where such are very fragmentary and insufficient. Thus no materials have been available from Bechuanaland or Swaziland, and insufficient collections from the Orange Free State and from South West Africa. The most satisfactory series are from the Southwest Cape, Natal and Southern Rhodesia, those from the north of Cape Province, Basutoland, Transvaal and Moçambique being less complete. Despite the conscientious collecting that has been accomplished it seems certain that many further species remain to be discovered in this faunal area.

Historical development of our knowledge of the Crane-Flies of South Africa

The first species of Tipulidae to be made known from South Africa were described during the first half of the 19th century by MACQUART, WALKER, and WIEDEMANN, followed somewhat later by a few others proposed by LOEW and RONDANI. The first paper to be devoted solely to South African crane-flies was by BERGROTH in 1888, this being based on materials

submitted by the then Director of the South African Museum, Dr. LOUIS A. PÉRINGUEY. In 1917 and 1921 ALEXANDER published two further papers, again being based on materials submitted for study by Dr. PÉRINGUEY, these reports providing the first indication of the richness and diversity of the Tipulid fauna of the Cape. In succeeding years and to the present date, many further species from various parts of South Africa have been described by ALEXANDER, including the majority of the forms now known from the area.

In 1952 there appeared an important paper by WOOD, adding a relatively small number of species to the fauna and presenting a most outstanding account of the immature stages and biology of many of the species known from the Southwest Cape. A very few further species of these flies from South Africa were described in 1912 by EDWARDS and ENDERLEIN, while still other forms described from elsewhere were later discovered in South Africa, including species described by FABRICIUS, BIGOT, OSTEN SACKEN, DE MEIJERE, RIEDEL, and SPEISER.

The list of species of Tipulidae here considered includes a total of 357 species, distributed in 44 genera and 73 subgenera, described by 14 workers. In addition, the family Tanyderidae, including the so-called "primitive crane-flies", has a single genus and species; the Ptychopteridae has only the genus *Ptychoptera*, with two local species.

General Facies of the South African Tipulidae

The family Tipulidae commonly is divided into three subfamilies, the Tipulinae, Cylindrotominae, and Limoniinae. The Tipulinae may be divided into the more primitive types, the Longuriini, an intermediate group having branched antennae in the male sex, the Ctenophorini, and the more specialized genera comprising the Tipulini. The Limoniinae similarly divides into five tribes, the Limoniini, Lechriini, Pediciini, Hexatomini, and Eriopterini. In the South African fauna there are no representatives of the Cylindrotominae, Ctenophorini, or Pediciini, all such being quite absent from the entire Ethiopian region.

In the Tipulinae, the commonest groups in South Africa are *Longurio*, *Nephrotoma*, and *Dolichopeza*, all with numerous species. *Tipula*, the dominant genus of the subfamily throughout much of the world here is represented only by relatively few species that fall in four of the five subgenera known from continental Africa. The Lechriini is represented only by a single species of the genus *Ceratolimnobia*. The Limoniinae, comprising the bulk of the species and including virtually all of the small sized forms, is exceptionally well represented, the most characteristic genera in the various tribes being as follows: Limoniini—*Limonia*, *Antocha*, *Helius;* Hexatomini—*Austrolimnophila*, *Hexatoma*, *Elephantomyia;* Eriopterini — *Gonomyia*, *Trentepohlia*, *Baeoura*, *Erioptera*, and *Toxorhina*.

The fauna of the Southwest Cape, including Cape Peninsula and adjoining Cape Province, has a few characteristic genera, as *Longurio*, *Nephrotoma*, *Dolichopeza*, *Limonia*, *Platylimnobia*, *Austrolimnophila*, *Pseudolimnophila*, *Limnophila* (*Elporiomyia*), *Elephantomyia*, *Gonomyia* (*Progonomyia*), *Limnophilomyia*, *Baeoura*, and *Tasiocera*. Of the above, *Platylimnobia*, *Limnophila* (*Elporiomyia*), and *Limnophilomyia* (*Eulimnophilomyia*) are restricted to the Southwest Cape.

The East African element is very characteristic, many genera reaching Natal and somewhat fewer the eastern Cape Province. The most characteristic of such East African elements include *Megistocera; Ctenacroscelis;* all subgenera of *Tipula; Limonia,* subgenera *Metalimnobia, Rhipidia, Pseudoglochina, Thrypticomyia, Euglochina; Thaumastoptera; Helius; Dicranoptycha; Orimarga; Austrolimnophila (Phragmocrypta); Pseudolimnophila (Calolimnophila); Hexatoma; Elephantomyia; Atarba; Conosia; Clydonodozus; Quathlambia; Gnophomyia (Eugnophomyia); Gonomyia (Idiocera);* all subgenera of *Trentepohlia; Rhabdomastix; Teucholabis; Gymnastes; Hovamyia; Baeoura; Ormosia (Trichotrimicra); Cheilotrichia (Cheilotrichia); Erioptera,* subgenera *Podoneura, Erioptera,* and *Meterioptera; Molophilus; Toxorhina; Styringomyia.*

Subapterism

A rather high percentage of species in the local fauna has the wings reduced in size, this condition occurring commonly in *Longurio* and in all known species of two endemic genera *Platylimnobia* and *Quathlambia.* In *Longurio,* the subapterous condition varies according to the species, some being hemipterous, others with the wings greatly reduced, smaller than the knob of the halter. By the scale of wing reduction in the Diptera proposed by BEZZI[1] different species range from group 4, having the wings reduced in size but with the venation distinguishable, to groups 5, with wings reduced to scales and with indistinct venation, and 6, with the wings profoundly atrophied, approximating the condition of the halteres. Of BEZZI's group 8, where the wings are entirely lacking, no species exists in the African fauna and elsewhere only one case is known to me, the subgenus *Roraimomyia* ALEXANDER, of the genus *Limnophila,* in tropical America, where both wings and halteres are quite lacking.

In the local species *of Longurio,* a few species are subapterous in both sexes, in some with the wings extremely reduced (group 6 of BEZZI's scale); in various other species the males are fully winged, the females subapterous and often physogastric, with the abdomen greatly distended with enclosed eggs. A small proportion of the local species are full winged in both sexes. Further notes on this condition in *Longurio* are given later in this report.

Platylimnobia formerly was known only by a few species having greatly reduced wings (BEZZI's group 6) but a new species discovered by the South African Expedition (*Platylimnobia brinckiana* sp. n.) has the wings better preserved (group 4) but still distinctly atrophied. From the venation of this latter species it has been necessary to transfer the genus from the tribe Eriopterini, where it appeared to belong when the wing venation was unavailable for use, to the Limoniini. The superficially similar genus *Quathlambia* likewise falls in group 6, with greatly reduced wings. This genus, based on other available structural characters, undoubtedly falls close to *Idiognophomyia* and is the first reported case of subapterism in this particular group of flies.

The subapterous species of crane-flies found in Tropical Africa have been discussed by me in another paper.[2] Here representatives of five genera have subapterous representatives,

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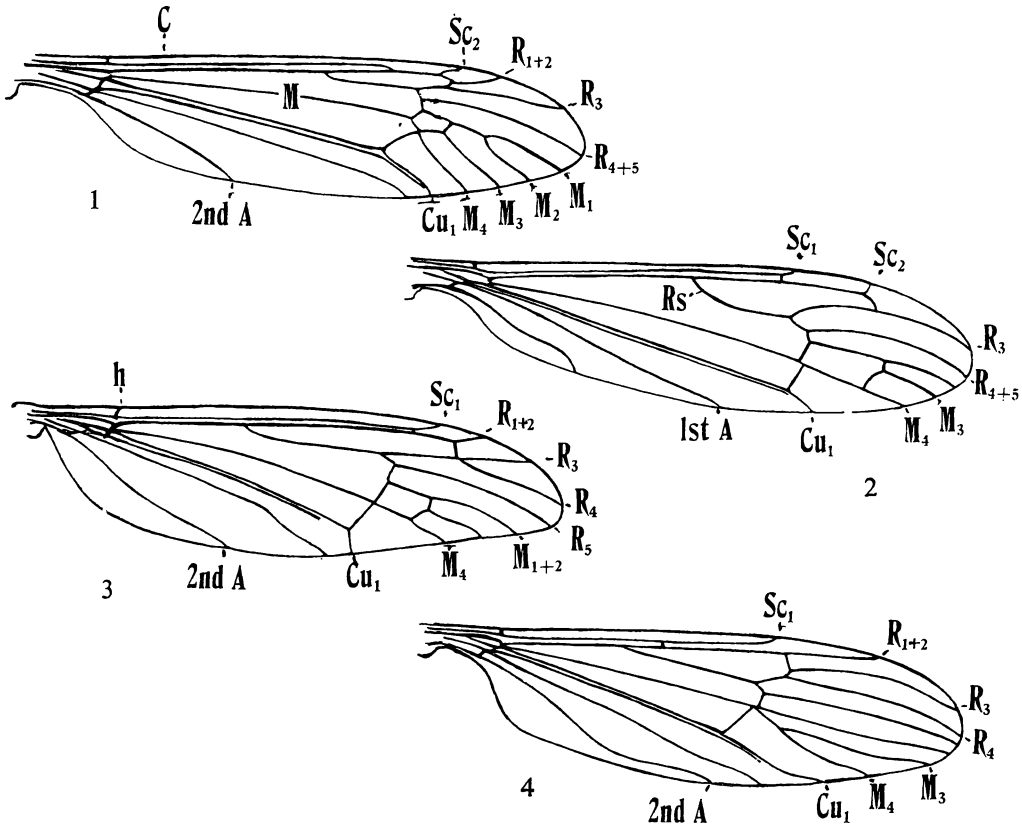
[1] BEZZI, MARIO. Riduzione e scomparsa delle ali negli insetti ditteri. Rev. di Sci. Naturali, 7: 85–182, 11 figs.; 1916.

[2] ALEXANDER, C. P. Ruwenzori Expedition 1934–35, 1, no. 7 Tipulidae, pp. 129–380, 221 figs.; 1956.



Figs. 1-4. Venation. — 1. *Tipula* (*Tipula*) *soror* WIEDEMANN — Tipulinae. — 2. *Limonia* (*Limonia*) *subapicalis* ALEXANDER — Limoniini. — 3. *Hexatoma* (*Eriocera*) *preposita* ALEXANDER — Hexatomini. — 4. *Erioptera* (*Erioptera*) *peringueyi* BERGROTH — Eriopterini.
(Symbols: *A* = Anal; *C* = Costa; *Cu* = Cubitus; *M* = Media; *R* = Radius; *Rs* = Radial sector; *Sc* = Subcosta).

Nephrotoma, *Tipula*, *Limonia*, *Austrolimnophila*, and *Molophilus*, all different from the three genera in the South African fauna that show this condition. Elsewhere in the world, the subapterous Tipulidae gradually are becoming better known and it may be stated that now there are known such representatives in all three subfamilies, the Cylindrotominae having been discovered only recently in the Himalayas. In the Limoniinae, subapterous representatives now are known in the tribes Limoniini, Pediciini, Hexatomini, and Eriopterini, with none discovered to this date in the Lechriini. At the time of publication of BEZZI's report on wing reduction in the Diptera, only 38 instances were known in the entire family, of which three cases pertained to tropical Africa (*Tipula*, 2 species; *Limonia*, 1 species).

Wing Venation

In the classification of the Diptera, including the Tipulidae, the venation of the wings is of primary importance and should be thoroughly understood and appreciated by any worker

in the order. Because of this importance, primary stress has been placed on this subject in the present paper and the venation of the various genera has been discussed in some detail in the keys. A series of four figures (figs. 1–4) interprets the venation in the type genera of the four principal groups in the fauna — *Tipula*, *Limonia*, *Hexatoma*, and *Erioptera*, while elsewhere in the report figures of the other genera are provided.

It may be noted that here, as in all other papers on the Tipulidae published by me in the past more than 30 years, the venation of the radial field has been interpreted differently from the view previously accepted. According to this interpretation there are two distinct tendencies of specialization that I have called, *1*, the cephalization of vein R_2 and its capture by vein R_1 to form R_{1+2}, and, *2*, the capture of vein R_4 by R_{2+3} to form an element R_{2+3+4}. Following this belief there is no true radial crossvein (*r*) in the order Diptera and what has been interpreted as being this element actually is vein R_2. The subject is of importance and I am herewith listing a series of papers by C. P. ALEXANDER where the matter is discussed in detail and which may be consulted by interested students of the Tipulidae.

A new interpretation of the wing-venation of the Pediciine crane-flies (Tipulidae, Diptera). Ent. News, 29: 201–205, pl.; 1918.

The interpretation of the radial field of the wing in the nematocerous Diptera, with special reference to the Tipulidae. Proc. Linn. Soc. New South Wales, 52: 42–72, 92 figs; 1927.

The Oriental Tipulidae in the collection of the Indian Museum. Part I. Rec. Ind. Mus., 29: 167–214, 23 figs., 1 pl. (ref. pp. 169–172, pl. 13, with 10 venational figs.); 1927.

A comparison of the systems of nomenclature that have been applied to the radial field of the wing in the Diptera. IV. Internat. Cong. Ent., 2: 700–707, 3 pls.; 1929.

In CURRAN, C. H., The families and genera of North American Diptera, pp. 512, pls., figs (ref. pp. 38–39, figs.); 1934.

The Diptera or true flies of Connecticut, 1: 183–486, figs. 18–55 (ref. pp. 200–201); 1942.

Notes on the tropical American species of Tipulidae (Diptera). VI. The tribe Limoniini, genus *Limonia*: subgenera *Limonia*, *Neolimnobia*, *Discobola* and *Rhipidia*. Rev. de Ent., 21: 161–221, 42 figs. (ref. p. 171, 9 diagrams, showing the venational range in the genus *Limonia*); 1950.

Taxonomic Account

The three families here considered as being crane-flies actually are not closely related and represent two distinct superfamilies in the Diptera, the Tanyderidae and Ptychopteridae being in the Psychodoidea, the Tipulidae the sole existing family in the Tipuloidea.

Key to the Families of South African Crane-flies

1. Wings with five branches of radius attaining the margin (fig. 6). . . . . Tanyderidae
— Wings with not more than four branches of radius attaining the margin 2
2. Wings with a single Anal vein (fig. 7) . . . . . Ptychopteridae
— Wings with two Anal veins (figs. 1–4). . . . . Tipulidae

FAMILY Tanyderidae

ALEXANDER, C. P. Genera Insectorum, Fasc. 189: 1–13, pl.; 1927.
ALEXANDER, C. P. Diptera of Connecticut, Fasc. 1: 183–184; 1942.
PEUS, FRITZ. In ERWIN LINDNER'S *Die Fliegen*, Lief. 200: 1–9, 15 figs; 1958.

One of the most primitive groups in the Diptera, including within our faunal limits the very isolated genus and species *Peringueyomyina barnardi* ALEXANDER. The family embraces a total of 10 genera, with 33 species described to this date, in addition to the local genus, these being in the Holarctic region, *Protoplasa* OSTEN SACKEN (1 species), *Protanyderus* HANDLIRSCH (6); Oriental region, *Protanyderus* (3); Australasian region, *Mischoderus* HANDLIRSCH (5, New Zealand); *Eutanyderus* ALEXANDER (2, southeastern Australia); *Nothoderus* ALEXANDER (1, Tasmania); *Radinoderus* HANDLIRSCH (11, Australian-Papuan); Neotropical region, *Tanyderus* PHILIPPI (1, Chilean subregion); *Neoderus* ALEXANDER (1, Chilean subregion), and *Araucoderus* ALEXANDER (1, Chilean subregion).

The immature stages of *Protoplasa* and *Peringueyomyina* have been discovered, the latter being discussed briefly below. The larvae and pupae of *Protoplasa* occur in wet sandy soil along the margins of major streams (detailed references in ALEXANDER, 1942; PEUS, 1958).

Peringueyomyina ALEXANDER

Peringueyomyina ALEXANDER, Ann. S. Afr. Mus., 18: 232–233; 1921.

Rostrum elongate, exceeding in length the combined head and thorax (fig. 5 A); palpi four-segmented, at apex of rostrum. Antennae 16-segmented, setaceous. Tibiae spurred. Wings unpatterned except for the faintly indicated stigmal darkening. Male hypopygium (fig. 5, D) with the basistyle very long and slender; dististyle elongate, with about 30 spines along the inner margin.

Readily told from all other known recent genera by the elongate rostrum and the unpatterned wings. In the latter respect the single known species agrees with the genus *Macrochile* LOEW, from the Baltic Amber (Upper Eocene).

Peringueyomyina barnardi ALEXANDER

(Figs. 5, 6)

Peringueyomyina barnardi ALEXANDER, Ann. So. Afr. Mus., 18: 233–234 (fig., wing); 1921.
Peringueyomyina barnardi ALEXANDER, Genera Insectorum, Fasc. 189, Tanyderidae: 6–7, fig. 15 (wing), figs. 16, 17 (head), fig. 18 (♂ hyp.); 1927.
Peringueyomyina barnardi WILLIAMS, Jour. N. Y. Ent. Soc., 41: 15, pl. 4, fig. 22 (wing); 1933.
Peringueyomyina barnardi WOOD, Ann. So. Afr. Mus., 39: 10–17, figs. 1, 2 (larval details), fig. 3 (pupa); 1952.

Male. — Length about 8.5–9 mm.; wing 10–11 mm.; rostrum about 3.7–3.8 mm.; antenna about 2.3–2.4 mm.

Mesonotum brownish yellow with three indistinct darker stripes; rostrum and antennae black; wings yellowish, unpatterned except for the faintly darkened stigma; abdominal

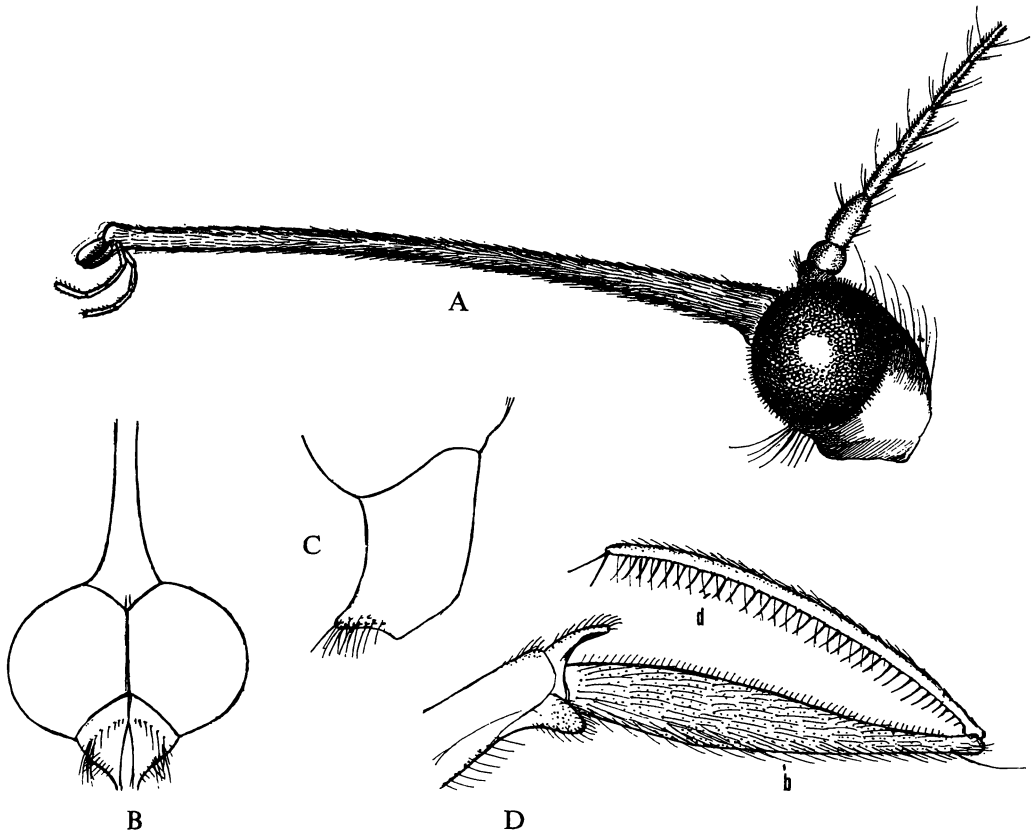


Fig. 5. *Peringueyomyina barnardi* ALEXANDER. — A. Lateral aspect of head. — B. Ventral aspect of head. — C. Hind coxa, lateral aspect. — D. Male hypopygium, lateral aspect. (Symbols: *b*, basistyle; *d*, dististyle).

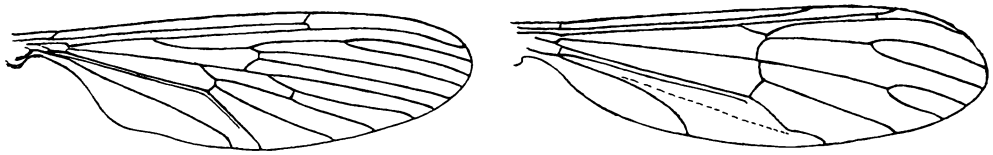
segments yellow, their posterior borders brown, outer segments, including the hypopygium, brown (figs. 5, 6).

Restricted to Cape Province where it is locally common, particularly at Oudebosch and Hermitage Kloof. WOOD and THORNE found the immature stages in white gravelly sand spits along the margins of small forest streams, the pupae occurring in somewhat drier ridges above the water level.

Cape Province: Oudebosch, 1500 feet, January 1919 (BARNARD); type; Hottentot-Hollands Mts., 3000 feet, March 1919 (BARNARD); paratype. Later materials: Oudebosch, January 1933, 1934; Landrost, January 1933; French Hoek Pass, April 1935; Palmiet River, March 1932; Hermitage Kloof, January 1938 (WOOD, 1952: 17).

FAMILY Ptychopteridae

ALEXANDER, C. P. Genera Insectorum, Fasc. 188: 1—12, pl.; 1927.
ALEXANDER, C. P. Diptera of Connecticut, Fasc. 1: 184—187; 1942.
PEUS, FRITZ. In ERWIN LINDNER'S *Die Fliegen*, Lief. 200: 10—43, 52 figs. (as Liriopeidae); 1958.



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Figs. 6-7.—6. *Peringueyomyina barnardi* ALEXANDER; venation. — 7. *Ptychoptera capensis* ALEXANDER; venation.

An unusually interesting group of flies, with two species of the typical genus *Ptychoptera* occurring in the local fauna. The family includes a total of three recent genera, with 60 species, *Ptychoptera* (51), *Bittacomorphella* (7), and *Bittacomorpha* (2). *Bittacomorpha* is Nearctic, with one species on each coast of North America; *Bittacomorphella* occurs in eastern North America (1), western North America (3), Japan (2), and Thailand (1). *Ptychoptera* is essentially Holarctic, with a few species invading the Oriental region, into Burma and as far east as Java. Africa is relatively rich in species, with three endemic forms in Madagascar. No species have been discovered in the Neotropical and Australasian regions.

The very distinctive immature stages have been discussed in the general references given above. They occur in saturated mud, with excessive organic decay, such as in swamps and marshes.

Ptychoptera MEIGEN

Liriope MEIGEN; Nouv. Class. Mouch., p. 14 (nom. nud.); 1800.
Ptychoptera MEIGEN; Illiger's Mag., 2: 262; 1803.

Key to South African *Ptychoptera*

1. Mesonotum and pleura shiny orange, without markings; wings yellowed, restrictedly patterned with brown, including a narrow seam over cord and spots at Sc_2, forks of R_4+_5 and M_1+_2; outer veins not seamed with brown; dark band at cord with even margins; abdomen yellowish orange, the tergites brownish black mid dorsally (fig. 7). (Natal, Transvaal) . . . . . *capensis* ALEXANDER
— Anterior sclerites of mesonotum chiefly black, the posterior part, with the pleura, yellow; wings obscure whitish, more heavily patterned with dark brown, including a band at cord and conspicuous seams along the outer veins; dark band at cord with margins conspicuously indented or erose; abdominal tergites black, the bases of segments four and five obscure yellow (fig. 8). (Southern Rhodesia) . . . . . *stuckenbergi* ALEXANDER

Ptychoptera capensis ALEXANDER

(Fig. 7)

Ptychoptera capensis ALEXANDER, Ann. So. Afr. Mus., 17: 139–140, pl. 10, fig. 1 (wing); 1917.

Male. — Length about 8 mm.; wing 8–8.5 mm.
Female. — Length about 9–9.5 mm.; wing 10–11 mm.

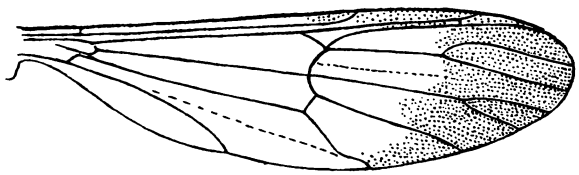


Fig. 8. *Ptychoptera stuckenbergi* ALEXANDER; venation.

Head black; mesonotum orange, without markings; wings light yellow, with brown seams at cord and over the outer forks; outer cells of wing pubescent (fig. 7).

Natal: Zululand, M'fongosi, February 1914 (W. E. JONES), types; Eshowe, 1650 feet, January 1957 (N. L. H. KRAUSS). — **Transvaal:** Kaapmuiden, Lot 30, De Kaap Block B, October 5—7, 1919 (H. K. MUNRO).

Ptychoptera stuckenbergi ALEXANDER

(Fig. 8)

Ptychoptera stuckenbergi ALEXANDER, Bull. Brooklyn Ent. Soc., 51: 78—79; 1956.

Female. — Length about 9 mm.; wing 8.5 mm.

Anterior sclerites of mesonotum chiefly black, posterior parts and pleura yellow; wings whitish gray, patterned with brown; vein R_2 transverse; abdomen black, patterned with yellow, genital segment orange (fig. 8).

Southern Rhodesia: Inyanga National Park, near Inyanga, January 14, 1955 (B. STUCKENBERG & P. GRAHAM).

FAMILY Tipulidae

ALEXANDER, C. P. The crane-flies of New York. Part I. Distribution and taxonomy of the adult flies. Cornell Univ., Agr. Exp. Sta. Mem. 25: 765—993, 12 text figs., 354 plate figs.; 1919.

—— The crane-flies of New York. Part II. Biology and Phylogeny. Cornell Univ., Agr. Exp. Sta. Mem. 38: 691—1133, 539 plate figs.; 1920.

—— The crane-flies (Tipulidae, Diptera). Deutsche Limnologische Sunda-Expedition. Archiv für Hydrobiol., Suppl. Bd. 9, Tropische Binnengewässer, Bd. 2, pt. 36: 135—191, 2 pls.; 1931. (Bibliography of immature stages 1920—1930. Summary of larval habitats of Tipulidae).

—— Diptera of Connecticut, Fasc. 1: 196—486, 55 figs.; 1942.

PIERRE, CLAUDE, Genera Insectorum, Tipulinae. Fasc. 186: 1—68, 5 pls.; 1926.

The family Tipulidae, comprising the true crane-flies, is the largest family in the Diptera, with nearly 12,000 species, the known local fauna comprising less than 3 percent of the described forms. The family as a whole is virtually world-wide in distribution, with species occurring to within about 500 miles of the North Pole and to altitudes of 17,000 feet in the Himalayas and to 18,000 feet in the Bolivian Andes.

The immature stages of the majority of the species require some degree of moisture, very many occurring in saturated soil, commonly in marshes and bogs or near the margins of lakes and streams, particularly in hilly or mountainous sections. Other species occur in fungi, saturated moss cushions, decaying vegetation, rotting wood that is permeated by

fungous mycelia, and in a variety of other ecological habitats. A relatively few species are strictly aquatic, in the local fauna including the genus *Antocha*. A basic account, with detailed references to other papers on crane-fly biology, will be found in the ALEXANDER 1920 and 1931 references above cited. In more recent years many students in North America, Europe and Japan have published various further papers, chiefly on the Tipulinae. For the South African fauna, the detailed study by WOOD, cited constantly in this report, is quite invaluable. The adult flies occur in humid or shaded conditions, usually in the vicinity of the places from which they emerged. Many species frequent open swamps, bogs and moors, some occurring under apparently much drier conditions than is usual in the family.

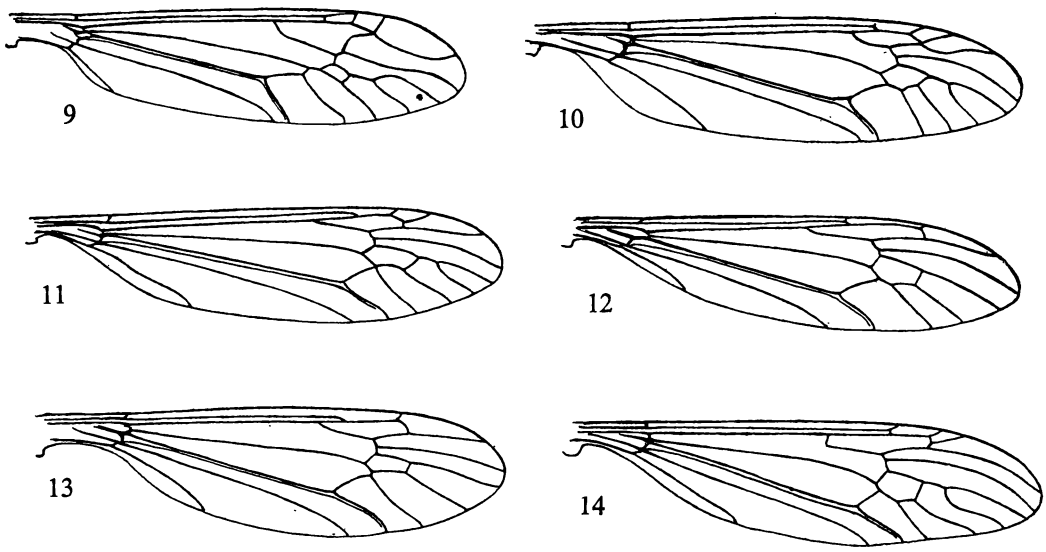
Key to Subfamilies and Tribes

1. Terminal segment of maxillary palpus usually elongate, exceeding in length the preceding two or three combined; nasus usually distinct, in cases bifid; antennae commonly 13-segmented (exceptions in *Longurio*); wings with vein Sc_1 present (*Megistocera*, *Ctenacroscelis*, *Longurio*, *Nephrotoma*), atrophied in more specialized forms (*Tipula*); vein Cu_1 constricted at $m-cu$, the latter at or close to fork of M_{3+4} (*Tipula*, *Longurio*), before the fork in *Megistocera*, *Nephrotoma*, *Dolichopeza* and some *Tipula*; body size large, commonly with the wing 8 to 10 mm., or more . . . . . *Tipulinae*
— Terminal segment of maxillary palpus short, subequal in length to the preceding one; no distinct nasus; antennae rarely with 13 segments (6–10, some Hexatomini; 14, some Limoniini; 16, some Limoniini, Hexatomini, Eriopterini); wings with vein Sc_1 present; vein Cu_1 straight, not constricted at $m-cu$, the latter before the fork of M_{3+4}, usually far before, at or near the fork of M, in cases before this fork (some Limoniini, Eriopterini); body size small, commonly with the wing less than 8 mm. (*Limoniinae*) 2
2. Wings with two or three branches of R reaching the margin 3
— Wings with four branches of R reaching the margin 8
3. Two branches of R reach the margin (fig. 117). (Eriopterini: *Toxorhina*, in part) . . . . . *Eriopterini*
— Three branches of R reach the margin 4
4. Front of head extended into a long slender rostrum, half the body length or more. (Hexatomini: *Elephantomyia*; Eriopterini: *Toxorhina*) . . . . . *Hexatomini*, *Eriopterini*
— Front of head, if produced, shorter. (Limoniini: *Helius*) 5
5. Antennae 14-segmented . . . . . *Limoniini*
— Antennae either 16-segmented or with 12 or fewer segments. (Hexatomini: *Hexatoma*) 6
6. Antennae with not more than 12 segments. (Hexatomini: *Hexatoma*) . . . . . *Hexatomini*
— Antennae 16-segmented 7
7. Vertex of head produced into a long pale appendage (corniculus) . . . . . *Lechriini*
— Vertex without a well-developed tubercle. 8
8. Tibial spurs present . . . . . *Hexatomini*
— Tibial spurs lacking . . . . . *Eriopterini*

In some cases, including a few species in the local fauna, the number of antennal segments is reduced by the more or less complete fusion of two or more of the basal flagellar segments.

Key to Genera containing subapterous Tipulidae

1. Tibiae spurred: antennae normally 13-segmented, in cases the number reduced to 9, 10, 11 or 12 (*Longurio*) . . . . . *Tipulinae*
— Tibiae without spurs; antennae either with 11 or 12 segments, or with 16 . . . . . *Limoniinae* 2
2. Antennae with 11, 12 or 16 segments; legs with normal setae only; male hypopygium with a single biramous dististyle; ovipositor with valves long and sclerotized (*Platylimnobia*) . . . . . *Limoniini*



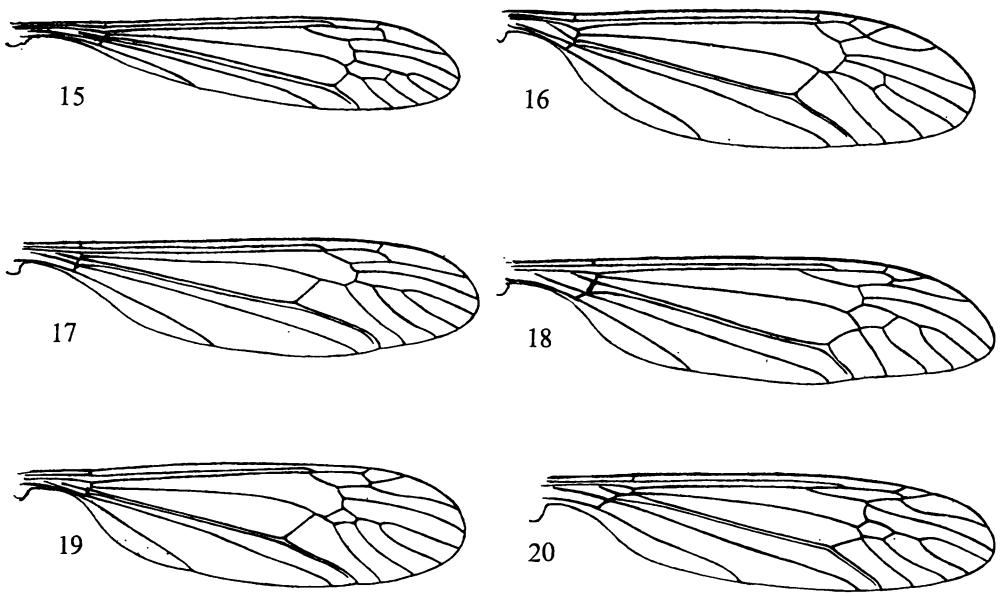
Figs. 9-14. Venation. — 9. *Megistocera filipes filipes* (FABRICIUS). — 10. *Ctenacroscelis brunneus basiproductus* ALEXANDER. — 11. *Longurio bonae spei* (BERGROTH). — 12. *Idiotipula confluens* ALEXANDER. — 13. *Xenotipula munroi* ALEXANDER. — 14. *Longurio* (*Leptotipula*) *limnophiloides* (ALEXANDER).

— Antennae with 16 segments; legs with abundant flattened scales, additional to the normal setae; male hypopygium with two separate dististyles; ovipositor with the valves reduced to blunt lobes (*Quathlambia*) . . . . . *Eriopterini*

SUBFAMILY Tipulinae

Key to the Genera

1. *Sc* very long, extending to beyond the fork of *Rs* and almost reaching the free tip of Sc_2; R_2+_3 strongly angulated at near midlength; *m—cu* on M_4 far before the base of cell *1st* M_2; antennae of male excessively lengthened, approximately four times the wing (fig. 9) . . . . . *Megistocera*
— *Sc* shorter; R_2+_3 not angulated; *m—cu* very rarely on M_4 (in certain *Nephrotoma*); antennae of male shorter, the longest (some *Longurio*) approximately as long as the wing 2
2. Anal region of wing extensive, cell *2nd* A produced basad of the arculus; vein R_3 strongly arcuated at near midlength, markedly narrowing the cell; apex of femur with a comb of small blackened spinoid setae (fig. 10) . . . . . *Ctenacroscelis*
— Anal region of wing more restricted, narrowed at or near the level of the arculus; vein R_3 not conspicuously arcuated, the cell not constricted; apex of femur without spinoid setae 3
3. Cell M_2 open by atrophy of basal section of vein M_3, the outer medial field thus appearing pectinate; *m—cu* far before the fork of *M*; R_1+_2 atrophied or weakly preserved (figs. 17, 29) . . . . . *Dolichopeza*
— Cell *1st* M_2 closed; *m—cu* commonly beyond the fork of *M* (before in most *Nephrotoma* and some *Tipula*); R_1+_2 commonly preserved (lacking in some *Longurio*) 4
4. Sc_2 opposite or shortly beyond origin of the very short *Rs*, Sc_1 preserved, in cases atrophied; usually no vein M_3+_4, M_4 arising separately at or before the base of cell *1st* M_2; *m—cu* commonly before fork of M, in rarer cases at or beyond the fork on M_3+_4 or base of M_4; cell M_1 sessile, rarely short-petiolate (fig. 16) . . . . . *Nephrotoma*



Figs. 15-20. Venation. — 15. *Goniotipula cuneipennis* ALEXANDER. — 16. *Nephrotoma tincta* (WALKER). — 17. *Dolichopeza* (*Trichodolichopeza*) *hirtipennis* ALEXANDER. — 18. *Tipula* (*Acutipula*) *pomposa* BERGROTH. — 19. *Tipula* (*Schummelia*) *scylla* ALEXANDER, sp. n. — 20. *Tipula* (*Oreomyza*) *draconis* ALEXANDER, sp. n.

— Sc_2 ending some distance beyond origin of the longer *Rs*, commonly at or near midlength of this vein; Sc_1 commonly preserved (*Longurio*) or atrophied (*Tipula*); *m—cu* at or close to fork of M_3+_4, rarely at or before the fork of *M* (*Longurio*; some *Tipula*); cell M_1 usually long-petiolate, lacking in *Idiotipula*, *Xenotipula* and some *Longurio* 5

5. Cell M_1 of wings lacking (figs. 12, 13) 6
— Cell M_1 present 8
6. Wings very long and narrow, approximately seven times as long as broad . . . . . *Longurio*, in part
— Wings broader, approximately four times as long as broad 7
7. Tibial spurs lacking (fig. 12) . . . . . *Idiotipula*
— Tibial spurs present (fig. 13) . . . . . *Xenotipula*
8. Anal angle of wing practically lacking, presenting a petiolate appearance; Sc_1 atrophied; branches of *Cu* widely separated, the space between near the base about one-half as wide as the main cubital cell behind it; male hypopygium with a single dististyle; ovipositor with short fleshy valves (fig. 15) *Goniotipula*
— Anal angle of wings developed, wing base short; Sc_1 commonly preserved in *Longurio*, atrophied in *Tipula*; vein Cu_2 lying close to Cu_1, the intervening cell narrow and inconspicuous, much narrower than the main cubital cell behind it; male hypopygium with two dististyles (except in rare species of *Longurio*); ovipositor with valves elongate, sclerotized (except in a few *Longurio* of the *Macromastix* type) 9
9. Vein Sc_1 of wings commonly preserved; antennae of males of certain species lengthened, with inconspicuous verticils; male hypopygium of generalized structure, basistyle produced, inner dististyle commonly with rows or groups of spinoid setae (figs. 11, 22, 24) . . . . . *Longurio*, in part
— Vein Sc_1 atrophied; antennae of male short or only moderately lengthened, flagellar segments usually with long conspicuous verticils; male hypopygium more complex in structure, basistyle commonly fused with the tergite to form a nearly continuous ring; inner dististyle without groups of spinoid setae (figs. 1, 18, 19, 20) . . . . . *Tipula*

Megistocera WIEDEMANN

Maekistocera WIEDEMANN; Dipt. exot., 1: 41; 1821.
Megistocera WIEDEMANN; Aussereur. zweifl. Ins., 1: 55; 1828.

Two recent species of *Megistocera* are recognized, one in the New World, the second with a vast palaeotropical range. This is represented by the typical race, here discussed, and a second widespread cline in southern Asia and Australasia, *Megistocera filipes fuscana* WIEDEMANN.

Megistocera filipes filipes (FABRICIUS)

(Fig. 9)

Tipula filipes FABRICIUS; Syst. Antl., p. 25; 1805.
Megistocera bicauda SPEISER; Kilimandjaro — Meru Exped., Dipt. 10, Orthorrhapha, 4: 53–54; 1909.
Megistocera bicauda ALEXANDER; Ann. So. Afr. Mus., 17: 158–159, pl. 11, fig. 23 (wing); pl. 13, fig. 42 (ovipos.); 1917.
Megistocera hirsuta ALEXANDER; Ann. So. Afr. Mus., 17: 159–160, pl. 11, fig. 24 (wing); 1917.

Male. — Length about 15–16 mm.; wing 20–22 mm.; antenna about 80–85 mm.
Female. — Length about 13–14 mm.; wing 20–21 mm.

General coloration of thorax gray or grayish yellow, praescutum with four brownish gray stripes; in male, thorax densely provided with long pale erect setae, in female with normal short setae; antennae of male very long, approximately four times the wing, of female short; wings whitened, stigma pale to darker brown (fig. 9).

Cape Province: Dunbrody, Blue Cliff, April 2, 1912. — **Natal:** Winkle Spruit, December 1916 (C. AKERMAN). — **Moçambique:** Quelimane, Lourenço Marques, December 20, 1908 (C. W. HOWARD); Luabo, January 5, 1957 (USHER).

Ctenacroscelis ENDERLEIN

Ctenacroscelis ENDERLEIN; Zool. Jahrb., Syst., 32: 1–2; 1912.

Ctenacroscelis is most numerous in species in southern and eastern Asia, with fewer representatives in the eastern Palaearctic and Australasian regions. In Africa, a small number of species occur in Madagascar and its satellite islands, and a further few on the mainland, including two in the local fauna. The genus includes the largest known crane-flies, some of the species having a wing span of more than four inches.

Key to South African *Ctenacroscelis*

1. Petiole of cell M_1 long, subequal to m; claws of male toothed; male hypopygium with tergal lobes long and narrow; inner dististyle slender, much narrower than the outer dististyle, at base produced into a strong tubercle (fig. 10). (Tropical and southeastern Africa) . . . . *brunneus basiproductus* ALEXANDER
— Cell M_1 with its petiole very short to virtually lacking; claws of male simple; male hypopygium with the tergal lobes short and broad; inner dististyle stouter, at its widest point nearly equal to the outer dististyle, the base not produced. (Natal: Drakensberg) . . . . . *quathlambicus* ALEXANDER

Ctenacroscelis brunneus (BIGOT)

Tipula albovittata MACQUART, in error; Dipt. exot., 1, 1: 53–54; 1838.
Tipula brunnea BIGOT; Ann. Soc. ent. France, (3) 7: 121, pl. 3, fig. 2; 1859.
Tipula rubiginosa BIGOT; in MAILLARD, Note sur l'île de la Réunion, 2, Dipt., p. 37; 1863.
Ctenacroscelis albovittatus ALEXANDER, in error; Ann. So. Afr. Mus., 17: 163–164, pl. 11, fig. 27 (wing), pl. 14, fig. 57 (♂ hyp.); 1917.
Ctenacroscelis albovittatus ALEXANDER, in error; Mauritius Inst. Bull., 3: 287, fig. 3 (♂ hyp.); 1956.

Ctenacroscelis brunneus basiproductus ALEXANDER

(Fig. 10)

Ctenacroscelis brunneus basiproductus ALEXANDER; Ann. Natal Mus., 15: 2, figs. 2-3 (♂ hyp.); 1960.

There has been confusion in the naming of the commonest species of the genus on the African mainland. As will be seen from the above synonymy, this was long considered to be identical with *Ctenacroscelis albovittatus* (MACQUART) of Mauritius, while the later described *C. brunneus* (BIGOT) was placed as a synonym. Still later it appeared that *albovittatus* was distinct though closely allied to *brunneus* and, further, that the continental material was separable from typical *brunneus* of Madagascar and its satellite islands and was described under the above name.

Male. — Length about 18–19 mm.; wing 21–22 mm.

General coloration light brown, praescutum with four brown stripes that are lined narrowly with darker, pleura with a narrow brown dorsal stripe; femora brown, tips broadly blackened, claws of male toothed; wings light brown, restrictedly patterned with pale areas and small darker seams, the latter at the anterior cord, *m–cu* and at tips of veins *Cu* and *2nd A*; *m–cu* at or beyond midlength of M_{3+4}; inner dististyle of hypopygium with a strongly developed basal lobe (fig. 10).

Natal: Krantz Kloof, February — October 1, 1916 (H. W. BELL-MARLEY); M'fongosi, Zululand, February 1912 (W. E. JONES); Umbilo, Durban, April 28, 1942 (L. BEVIS). — **Transvaal:** Kaapmuiden, October 30, 1918 (R. W. TUCKER); October 8, 1919 (H. K. MUNRO). — **Moçambique:** Gorongoza Mountain, west slope, 840 meters, September 1957 (B. STUCKENBERG); type of subspecies. — **Southern Rhodesia:** Salisbury, May 12, 1914, paratype; Que Que, Bultitude, paratype; Zimbabwe, near Fort Victoria, January 29, 1955 (B. STUCKENBERG).

Ctenacroscelis quathlambicus ALEXANDER

Ctenacroscelis quathlambicus ALEXANDER; Ann. Natal Mus., 13: 419–421, fig. 28 (♂ hyp.); 1956.

Male. — Length about 18–20 mm.; wing 19–23.5 mm.; antenna about 2.9–3.1 mm.

General coloration of mesonotum buffy, praescutum with four dark gray stripes that are narrowly bordered by dark brown, lateral margins more broadly darkened; antennae 12-segmented; tips of femora broadly dark brown; claws of male simple; wings obscure brownish yellow, vaguely patterned with pale brown, especially in the outer radial field; cell M_1 very short-petiolate to virtually sessile; male hypopygium with tergal lobes broad and obtuse; inner dististyle broad, especially just beyond midlength.

Natal: Cathedral Peak Area, Drakensberg, 6400 feet, March 19—23, 1955 (B. STUCKENBERG); Umkomazana, December 21, 1938 (L. BEVIS).

Longurio LOEW

Longurio LOEW; Berlin. Ent. Zeitschr., 13: 3; 1869.

Longurio is essentially an antipodal genus, with many species occurring in southern South America, South Africa, Madagascar, Australia, and New Zealand, very strongly indicating an antarctic origin. Only a few species extend into the northern hemisphere, one of these being the genotype (*testaceus* LOEW, of eastern North America).

The genus is unusually well represented in South Africa, with a very few further species known from tropical Africa to this date. Many of the local species are subapterous, particularly in the female sex, others have fully winged males and subapterous females, while a small number are fully winged in both sexes. The degree and nature of wing reduction has been indicated in the key and again in the discussion of the individual species. Dr. WOOD was able to rear most of the species occurring in the Southwest Cape and known at the time of his studies, 1932–1939. The immatures of the various species live in earth or in soil beneath leaf mold, some being found in relatively dry soil in mountainous sections. A surprisingly large proportion of the species live in association with plants of the monocotyledonous family Restionaceae under dry to virtually xerophytic conditions.

A supposed genus, *Macromastix* OSTEN SACKEN, was later proposed for species allied to the Australian *Longurio costalis* (SWEDERUS), now known to include a host of species, chiefly in the Australasian fauna, separable from typical *Longurio* chiefly by the structure of the ovipositor, where the valves are short and fleshy instead of being long and sclerotized, as in the typical subgenus. No strong supporting characters for the separation of the males have been found and it has become increasingly difficult to maintain the group even as a subgenus. In the local fauna, *caffer*, *coronatus*, and *silvester* will belong to *Macromastix*, if this is maintained. Formerly a few of the local species of *Longurio* were placed in the Australian genus *Habromastix* SKUSE, chiefly on the basis of structure of the male antennae. The genotype of *Habromastix* has strong spinoid setae on the inner dististyle of the male hypopygium, quite as in many species of typical *Longurio*, and here too the group is beginning to be difficult to define and maintain as distinct. The local species that suggest *Habromastix* in the nature of the antennae include *africanus*, *aspropodus*, *niphopodus*, and *rhodesiae*, all with the inner dististyle lacking spinoid setae and evidently not as close to typical members of *Habromastix* as had been believed. For the present I am not assigning the various species of *Longurio* to any particular subgenus while awaiting more materials which will surely be forthcoming. In the above discussion of the male hypopygium, the term "spinoid setae" has been applied to the spinelike armature of the inner dististyle. Despite their appearance these are not true spines but strongly modified setae, arising from setigerous punctures.

Three splinter groups, each with a single known species, are closely related to *Longurio* and may perhaps better be considered as being subgenera thereof. These groups, *Idiotipula*, *Xenotipula*, and the somewhat more isolated *Goniotipula* are treated as genera, following the discussion of *Longurio*.

The following local species of *Longurio* still are known only from the male sex, females unknown: *Longurio africanus*, *albicubitalis*, *anoplostylus*, *basuticanus*, *cinereilineus*, *drakens-*

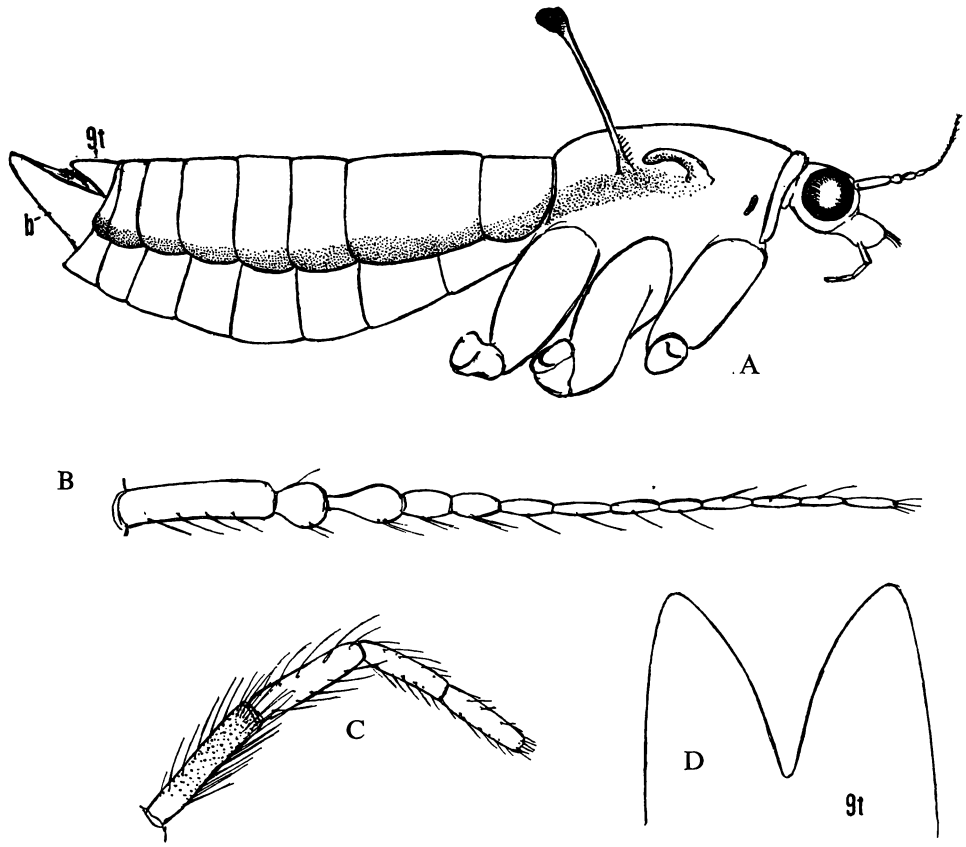


Fig. 21. *Longurio micropteryx* ALEXANDER. — A. Lateral aspect of male. — B. Antenna of male. — C. Palpus of male. — D. Male hypopygium.
(Symbols: *b*, basistyle; *t*; tergite).

bergensis, *inaequipes*, *minusculus*, *mitiformis*, *mosselensis*, *niphopodus*, *piger*, *rhodesiae*, *rubroniger*, *spinosus*, *syndactylus*, and *versfeldi*. The following species still are known only from the female sex, males unknown: *Longurio eshowensis*, *melanopterus*, *mossambicensis*.

Key to South African *Longurio*

Males

1. Fully-winged; *m—cu* at or close to the fork of *M*. (fig. 14). (Subgenus *Leptotipula* ALEXANDER) (Natal) . . . . . *limnophiloides* (ALEXANDER)
— Fully-winged or with the wings more or less atrophied; when fully-winged, *m—cu* beyond the fork of *M*, usually at or close to fork of M_{3+4} (except in *jonesi*, with conspicuously striped wings and greatly lengthened antennae). (Typical *Longurio* LOEW) 2
2. Wings reduced in size, not longer than the halteres 3
— Wings fully-developed 7
3. Antennae 9-segmented, terminal segment elongate, about equal to the preceding three combined. (Cape Province, Peninsula) . . . . . *flagellatus* WOOD

— Antennae with more than nine segments, terminal segment not so elongated 4
4. Antennae 10-segmented; wings reduced in size to a scale, about equal to the knob of the halter. (Cape Province) . . . . . *dolichoros* WOOD
— Antennae with more than ten segments 5
5. Antennae 11-segmented; wings about one-half the length of the stem of the halter; spinoid setae of inner dististyle of hypopygium four or five. (Cape Province). . . . . *spinosus* WOOD
— Antennae with more than eleven segments 6
6. Antennae 12-segmented; inner dististyle of male hypopygium with 16 to 18 spinoid setae. (Cape Peninsula) . . . . . *chionoides* ALEXANDER
— Antennae 13-segmented; inner dististyle of male hypopygium with 8 to 11 spinoid setae (fig. 21). (Cape Peninsula) . . . . . *micropteryx* ALEXANDER
7. Cell M_1 lacking; wings very narrow, at least six times as long as broad, brown, in medial field striped longitudinally with white. (Cape Province) . . . . . *minusculoides* WOOD
— Cell M_1 present; wings wider, about four times as long as broad 8
8. Wings with an evident pattern, brown, striped longitudinally with whitish 9
— Wings uniform in color except for the more darkened stigma or whitened obliterative areas, not striped as above 15
9. The pale longitudinal stripe in the cubital field, vein *Cu* whitened; (inner dististyle of hypopygium with beak cleaverlike, basal lobe with seven spinoid setae) (figs. 22, 23). (Cape Province) *albicubitalis* sp. n.
— The pale longitudinal stripe chiefly in the medial field, vein *Cu* dark 10
10. Antennae short to medium, not exceeding one-fourth the length of body 11
— Antennae elongate, exceeding one-half the length of body 13
11. Brown and white wing pattern contrasted, clearly defined, including white areas before stigma and in bases of outer medial cells; veins beyond cord with numerous macrotrichia, including all outer medial branches; male hypopygium with inner dististyle bifid at tip, without spinoid setae. (Cape Province) . . . . . *stuckenbergi* ALEXANDER
— Brown and white wing pattern more diffuse, the pale color including chiefly a broad central stripe and bases of the cubital and anal cells, no white spot before stigma; veins unusually glabrous, including the outer medial branches; inner dististyle of male hypopygium with spinoid setae 12
12. Large species (wing about 18—19 mm.); inner dististyle of hypopygium long and slender, with 18 or 19 spinoid setae. (Cape Province). . . . . *belloides* ALEXANDER
— Smaller species (wing 10—12 mm.); inner dististyle of hypopygium with about 13 spinoid setae. (Cape Province, Peninsula) . . . . . *bonae spei* (BERGROTH)
13. Wing pattern highly contrasted, brown and white; legs bicolored, femora black, tibiae yellow; antennae elongate, subequal to the body; *Sc* long, Sc_2 ending shortly before fork of *Rs*; *m—cu* at fork of *M*. (Natal) . . . . . *jonesi* (ALEXANDER)
— Whitened wing pattern broad and diffuse, especially in *mosselensis*; legs brownish black; antennae shorter than the body; *Sc* shorter, Sc_2 ending some distance before fork of *Rs*; *m—cu* at or close to fork of M_{3+4} 14
14. Wings of normal width, less than four times as long as broad; antennae short, about one-fourth the length of body, flagellar segments cylindrical, with inconspicuous verticils; inner dististyle of hypopygium with 8 or 9 spinoid setae. (Natal) . . . . . *inaequipes* ALEXANDER
— Wings narrow, about five times as long as broad; antennae longer, approximately three-fourths the length of body, flagellar segments elongate, with coarse erect setae or verticils; inner dististyle of hypopygium without spinoid setae. (Cape Province) . . . . . *mosselensis* (ALEXANDER)
15. Antennae very long, subequal to the body, flagellar segments elongate, with erect pale setae but without verticils; tarsi yellow or snowy white (unknown in *africanus*); inner dististyle of hypopygium with apex produced into a blackened spine, surface without spinoid setae 16
— Antennae shorter, about two-thirds the body or less; tarsi not white 19
16. Wings with *m—cu* shortly before fork of M_{3+4}; conspicuous whitened markings before and beyond stigma but lacking in cell 1*st* M_2. (Natal) . . . . . *africanus* (ALEXANDER)

— Wings with *m—cu* usually at or before midlength of M_3+_4, more distal in some *rhodesiae*; a conspicuous obliterative area in cell 1*st* M_2 17

17. Femora and tibiae yellow, tips narrowly black, tarsi yellow; apical margin and outer wing veins narrowly seamed with darker. (Southern Rhodesia) . . . . . *rhodesiae* ALEXANDER

— Femora brown, tarsi snowy white 18

18. Wings strongly darkened, with conspicuous whitened obliterative areas before and beyond stigma and in cell 1*st* M_2; hypopygium with dististyles elongate, the inner style extended into a long spine. (Moçambique) . . . . . *aspropodus* ALEXANDER

— Wings less evidently darkened, whitened areas lacking or very reduced; hypopygium with dististyles short and stout inner style compact. (Natal) . . . . . *niphopodus* ALEXANDER

19. Antennae of moderate length, approximately two-thirds the body or less 20

— Antennae short, if bent backward not or scarcely attaining the wing root 23

20. Wings with *m—cu* before midlength of M_3+_4; antennae from about one-third to nearly one-half the body, 12-segmented, terminal segment long, basal flagellar segment long, terminal flagellar segment short, vestiture abundant, small and inconspicuous, without verticils; claw with a small microscopically bifid tooth; hypopygium with dististyles broadly united at base to appear mitten-shaped, without spinoid setae. (Natal) . . . . . *mitiformis* ALEXANDER

— Wings with *m—cu* beyond the fork of M_3+_4 on M_4; antennae from one-third to two-thirds the body; claws simple; hypopygium not as above 21

21. Antennae about two-thirds the body, flagellar segments with coarse erect verticils or setae, terminal segment very small, oval; inner dististyle of hypopygium without spinoid setae (figs. 24, 25). (Cape Province) . . . . . *anoplostylus* sp. n.

— Antennae less than two-thirds the body, flagellar segments with delicate pale setae but without verticils; inner dististyle of hypopygium with spinoid setae 22

22. Antennae about one-half the body, flagellum with very abundant relatively long pale setae; inner dististyle of hypopygium with four or five stout spinoid setae on a low crest. (Basutoland) . . . . . *basuticanus* ALEXANDER

— Antennae over one-third the body, flagellum with abundant delicate setae; inner dististyle of hypopygium with seven or eight slightly retrorse spinoid setae. (Natal: Drakensberg) *drakensbergensis* ALEXANDER

23. Size small (wing of male 8 mm.); hypopygium with a single dististyle that divides beyond midlength into two small unarmed lobes or substyles; (outer wing veins glabrous). (Natal) *syndactylus* ALEXANDER

— Size larger (wing exceeding 8 mm.); hypopygium not as above 24

24. Antennae 10-segmented; body brownish yellow with a dorsal ashy stripe extending the entire length of body; (outer wing veins with abundant macrotrichia). (Natal) . . . . . *cinereilineus* (ALEXANDER)

— Antennae not 10-segmented; body coloration not as above 25

25. Antennae with fewer than 13 segments 26

— Antennae 13-segmented 28

26. Antennae very short, with only 8 or 9 segments, basal flagellar segments more or less fused; (claws with tooth at extreme base). (Natal) . . . . . *rubroniger* ALEXANDER

— Antennae longer, 12-segmented 27

27. Nasus present, slightly bifid; antennal flagellum light yellow; wings yellowed; inner dististyle of hypopygium with 16 to 18 spinoid setae. (Cape Peninsula) . . . . . *chionoides* (ALEXANDER)

— Nasus lacking; antennal flagellum black; wings darkened, especially along costal border; inner dististyle of hypopygium with 9 or 10 spinoid setae; (outer wing veins glabrous). (Southern Rhodesia) . . . . . *piger* ALEXANDER

28. Terminal antennal segment longer than the penultimate, bearing an elongate modified bristle or setoid structure that exceeds the segment in length; (thorax orange yellow, unpatterned; head black, pruinose, nasus simple; abdomen brown). (Cape Province, Cape Peninsula) . . . . . *minusculus* ALEXANDER

— Terminal antennal segment not so modified 29

29. Hypopygium with tergite profoundly incised forming elongate unmodified lobes; a single pubescent dististyle, stout basally, tapering to a hooked sclerotized point. (Cape Province, Cape Peninsula) . . .

. . . . . *caffer* (ALEXANDER)

— Hypopygium not as above 30

30. Hypopygium with tergite deeply notched forming stout bristly lobes, lower surface of each lobe farther produced into a slender lobule that is provided near tip with about three blackened teeth and additional setae; (outer radial and medial veins with macrotrichia). (Cape Province, Cape Peninsula) . . . . . *coronatus* (ALEXANDER)

— Hypopygium not as above 31

31. Mesonotal praescutum yellow with three confluent dark brown stripes, pleura orange yellow with a brown girdle on mesepisternum and mesosternum; inner dististyle of hypopygium with 6 or 7 spinoid setae; (antennae with outer segments long and slender, terminal one small). (Cape Province) . . . . . *silvester* WOOD

— Mesothorax not patterned as above; inner dististyle of hypopygium with 18 to 26 spinoid setae . . . 32

32. Size large (wing 16 × 4.5 mm.); terminal segment of antenna shorter than the penultimate; inner dististyle of hypopygium with dorsal lobe long and low, with 25 or 26 small spinoid setae; beak relatively short, its lower notch gentle. (Cape Province) . . . . . *capicola* ALEXANDER

— Size smaller (wing 13 × 3 mm.); terminal segment of antenna longer than the penultimate; inner dististyle with dorsal lobe short and elevated, with 18 to 22 small spinoid setae; beak longer, its lower notch angular. (Cape Province) . . . . . *versfeldi* WOOD

Females

(Key adapted from WOOD, 1952: 107—108).

1. Fully-winged species; (longitudinal veins beyond cord with macrotrichia) 2

— Wings reduced in size, in cases to about four times the length of the halteres, in others to mere scales 5

2. Tarsi and tips of posterior tibiae snowy white; (wings tinged with blackish, obliterative areas conspicuous). (Moçambique, Southern Rhodesia) . . . . . *aspropodus* ALEXANDER

— Tarsi not whitened 3

3. Wings tinged with brown, not striped; (cell M_1 very deep, its petiole about one-third *m*). (Natal) . . . . . *eshowensis* ALEXANDER

— Wings brown, conspicuously striped longitudinally with white 4

4. Femora black, tibiae yellow with darkened tips; wings with *m—cu* at or close to fork of *M*; cell 1*st* M_2 widest at outer end, *m* long; antennal flagellum darkened. (Natal) . . . . . *jonesi* (ALEXANDER)

— Femora and tibiae brownish yellow, tips narrowly dark brown; wings with *m—cu* some distance beyond fork of *M*; cell 1*st* M_2 widest at base, *m* short; proximal five antennal segments yellow, remainder dark brown. (Moçambique) . . . . . *mossambicensis* (ALEXANDER)

5. Ovipositor with valves, especially the cerci, short and obtuse (*Macromastix* type) 6

— Ovipositor with valves, especially the cerci, long and sclerotized (*Longurio* type) 8

6. Wings relatively long, hemipterous, about one-half the body or approximately four times the halteres; outer four flagellar segments, in cases, tending to fuse and become deformed, reducing the number of apparent antennal segments to nine; (total length of posterior leg 17.9 mm.). (Cape Province) . . . . . *silvester* WOOD

— Wings much reduced, subequal in length to the halteres; antennae normal, 13-segmented 7

7. Legs short, total length of posterior pair about 10 mm.; wings about one-fourth longer than the halteres, costal border strongly bent at near one-third the length. (Cape Province, Cape Peninsula) . . . . . *caffer* (ALEXANDER)

— Legs long, total length of posterior pair about 21 mm.; wings about one-fourth longer than the halteres, costal border nearly straight. (Cape Province, Cape Peninsula) . . . . . *coronatus* (ALEXANDER)

8. Antennae with fewer than 12 segments, viz. 9 to 11 9

— Antennae with either 12 or 13 segments 12

9. Antennae with 9 segments, the terminal one about one-half longer than the penultimate; (total length of posterior leg 8.8 mm.). (Cape Province, Cape Peninsula) . . . . . *flagellatus* WOOD

— Antennae with 10 or 11 segments 10
10. Antennae 10-segmented, segments seven to nine short and crowded, broader than long, verticils coarse, longer than the segments, terminal segment longer; legs short and stout, black (total length of fore leg 10.8 mm; general coloration of mesonotum dark brown; wings stenopterous, nearly twice the halteres, uniformly blackened; ovipositor with cerci relatively short, tips obtuse.). (Cape Province) . . . . . *melanopterus* (ALEXANDER)
— Antennae 11-segmented 11
11. Wings very reduced, about the size of the knob of the halteres; (total length of posterior leg 16.5 mm.). (Cape Province) . . . . . *dolichoros* WOOD
— Wings longer, stenopterus, approximately one-sixth the body or slightly longer than the entire halter; antennae with segments long-oval, exceeding their verticils, the outer two or three tending to become fused; ovipositor with both cerci and hypovalvae long and sclerotized, tips of cerci subacute, of hypovalvae sharply pointed; total length of posterior leg 17.5 mm. (Cape Province) *stuckenbergi* ALEXANDER
12. Antennae with 12 segments; (total length of posterior leg to 19 mm.). (Cape Peninsula) . . . . . *chionoides* ALEXANDER
— Antennae with 13 segments 13
13. Size large (length about 20 mm., wing 2.5 mm.; ovipositor 5 mm.; total length of posterior leg to 27 mm.). (Cape Province) . . . . . *belloides* ALEXANDER
— Size smaller 14
14. Wings darkened, with a whitened area near apex; (total length of posterior leg 20.5 mm.). (Cape Province, Cape Peninsula) . . . . . *bonae spei* (BERGROTH)
— Wings uniformly colored 15
15. Wings moderately long, approximately twice the halteres; (total length of posterior leg 17.4 mm.). (Cape Province) . . . . . *capicola* ALEXANDER
— Wings reduced, shorter than the halteres 16
16. Wings very reduced, about one-third the halteres; (total length of posterior leg 11.4 mm.). (Cape Peninsula) . . . . . *micropteryx* ALEXANDER
— Wings longer, about two-thirds the halteres; (thorax dark brownish yellow, praescutum patterned with brown; total length of posterior leg 19.4 mm.). (Cape Province) . . . . . *minusculoides* WOOD

SUBGENUS Leptotipula ALEXANDER

Leptotipula ALEXANDER; Ann. So. Afr. Mus., 17: 160; 1917.

Represented only by the subgenotype, *Longurio (Leptotipula) limnophiloides* (ALEXANDER).

Longurio (Leptotipula) limnophiloides (ALEXANDER)

(Fig. 14)

Leptotipula limnophiloides ALEXANDER; Ann. So. Afr. Mus., 17: 160–162, pl. 11, fig. 22 (wing), pl. 13, fig. 43, pl. 4, fig. 54 (♂ hyp.); 1917.
Leptotipula limnophiloides ALEXANDER; Durban Mus. Novit., 4: 313; 1956.

Male. — Length 7.6 mm.; wing 8.2 mm.; antenna about 4.8 mm.

Thorax brownish yellow, praescutum with three rather indistinct darker stripes, pleura yellow, variegated with brown; antennae of male elongate, 12-segmented; femora brown, tips black, with an equal subterminal yellow ring, tibiae and tarsi brown. Wings (fig. 14) clear, weakly infuscated in cells *R*, *M* and outer radial field, patterned with pale brown; *m–cu* at or shortly beyond fork of *M*. Abdominal tergites bicolored, black basally, apices

broadly silvery, patterned with yellow; hypopygium black, inner dististyle with outer margin fringed with long setae; beak slender, fingerlike, with a subtending flattened blade.

Natal: Clairmont, August 1915 (H. W. BELL-MARLEY), type; Durban, 1922 (Mr. R. M. LIGHTFOOT), August 1920 (C. VAN DER MERWE); Umbilo, Durban, August 18, 1942 (L. BEVIS).

SUBGENUS Longurio LOEW

Longurio africanus (ALEXANDER)

Habromastix africana ALEXANDER; Ann. So. Afr. Mus., 18: 218–219, pl. 4, fig. 17 (wing), pl. 4, fig. 25 (♂ hyp.); 1921.

Male. — Length 11 mm.; wing 11 mm.; antenna 10.5 mm.

General coloration dark brown; antennae of male elongate, flagellar segments with a dense erect pale pubescence; wings dusky, with whitened spots before and beyond the dark brown stigma.

Natal: Kranskop, November 1917 (K. A. BARNARD), type.

Longurio albicubitalis sp. n.

(Figs. 22, 23)

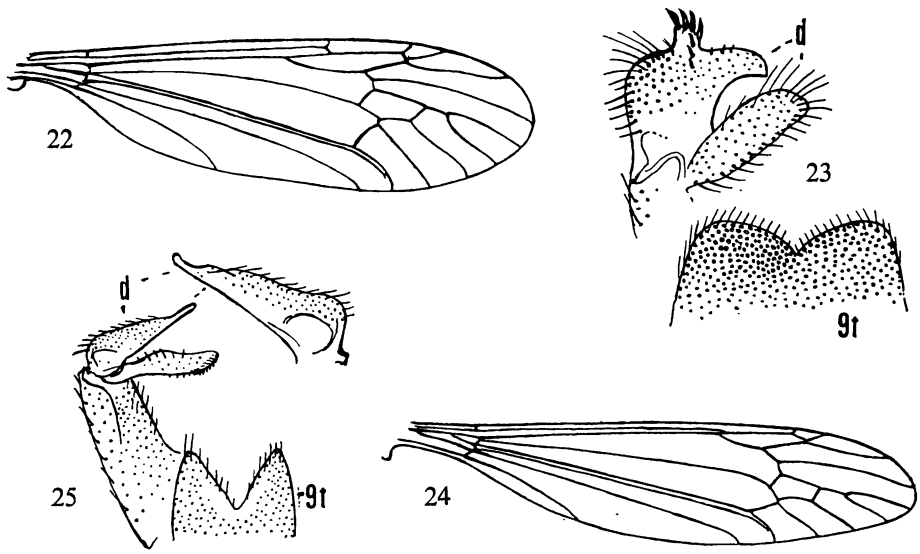
Size medium (wing of male 15 mm.); general coloration brownish yellow to reddish brown, praescutum with four more yellowed stripes; antennae short; legs obscure yellow, outer tarsal segments darker; wings pale brown, with a conspicuous longitudinal whitened stripe along vein *Cu*, extending the entire length of the wing; male hypopygium with the beak of the inner dististyle cleaverlike, at its base with a lobe or tubercle bearing four strong spinoid setae, with others at its base.

Male. — Length about 15 mm.; wing 15 mm.; antenna about 2 mm.

Described from an alcoholic specimen.

Frontal prolongation of head yellow, slightly darker on sides; nasus stout, with conspicuous setae; palpi yellow, terminal segment about one-third longer than the penultimate, proximal segments with conspicuous black setae. Antennae of male short; proximal three segments light brown, outer segments pale; first flagellar segment stout, succeeding segments becoming more slender, the outer ones cylindrical, longer than their verticils. Head yellow, with a more reddened area on orbits; vertical tubercle low and inconspicuous; a longitudinal group of short black setae on either side of midline of posterior vertex.

Pronotum obscure yellow, vaguely patterned with darker. Mesonotal praescutum reddish brown, with four more yellowed stripes; vestiture very small, pale; a chestnut brown Y-shaped darkening at point of the V-shaped suture, the stem extended backward onto the midline of the scutum; scutal lobes yellow, restrictedly patterned with reddish brown; scutellum yellow, parascutella darker; mediotergite light yellow, pleurotergite yellow, the katapleurotergite darker yellow. Pleura yellow, with a broad brown dorsal longitudinal stripe from the propleura to the wing root, with a restricted darkening beneath the base of the halteres. Halteres with stem yellow, knob slightly darker. Legs with coxae yellow, with short inconspicuous setae; trochanters yellow; remainder of legs obscure yellow, outer



Figs. 22-25. — 22. *Longurio albicubitalis* ALEXANDER, sp. n.; venation. — 23. *Longurio albicubitalis* ALEXANDER sp. n.; male hypopygium. — 24. *Longurio anoplostylus* ALEXANDER, sp. n.; venation. — 25. *Longurio anoplostylus* ALEXANDER, sp. n.; male hypopygium.
(Symbols: *d*, dististyle; *t*, tergite).

tarsal segments darker; leg segments with short dense dark colored setae; claws small, simple. Wings (fig. 22) pale brown, with a conspicuous whitened longitudinal stripe along vein *Cu*, extending from base to margin, the microtrichia of the pale area somewhat smaller than elsewhere; stigma large, more yellowed; veins pale brown, *Cu* whitened. Macrotrichia of veins sparse, beyond cord lacking or virtually so except on R_{4+5} and M_{1+2} in the vicinity of *m*; basad of cord with scattered trichia on veins *M* and Cu_1; *Sc* glabrous except for a series of eight punctures just distad of *h*; costal fringe very short and dense. Venation: *Rs* long, gently arcuated; petiole of cell M_1 shorter than *m*; cell *1st* M_2 long, *m–cu* on vein M_4, shortly beyond its transverse base.

Abdomen stout, brownish yellow, posterior borders of tergites slightly darker, especially the narrow margins; surface of tergites with abundant microscopic pale setae; dorsopleural membrane brown, strongly protuberant on central part. Male hypopygium (fig. 23) with the tergite, *t*, large, posterior border with a shallow V-shaped emargination, the lobes very broad; dorsal surface of outer half of tergal plate densely covered with setae of moderate length. Outer dististyle, *d*, flattened, tip obtuse, setae of moderate length; inner style with the beak cleaverlike, provided with extremely minute setae; body of style rounded, with numerous strong setae directed backward; at base of beak with a lobe or tubercle that bears four strong black spinoid setae, with three further smaller similar ones lying more on the body of the style. Gonapophysis appearing as a flattened paddlelike blade.

Cape Province: Bloukrans River, Tzitzikama Forest, 20 miles ENE of Plettenbergbaai, January 14, 1951; swept from luxuriant vegetation at edge of dense indigenous forest (BRINCK—RUDEBECK). Loc. no. 139. Holotype, alcoholic ♂.

In its slightly darkened wings with a conspicuous whitened longitudinal stripe, the present fly superficially resembles species such as *Longurio bonae spei* (BERGROTH) or *L. belloides* ALEXANDER. All such regional species have the whitened longitudinal stripe differently arranged, lying in the medial field, with vein *Cu* darkened and heavily seamed with brown. The structure of the male hypopygium is distinctive.

Longurio anoplostylus sp. n.

(Figs. 24, 25)

Size medium (wing of male 8.5–9 mm.); general coloration brownish gray; antennae of male elongate, terminal segment greatly reduced; wings weakly suffused, costal border and cubital field darker; vein R_{1+2} preserved or partly atrophied; male hypopygium with the inner dististyle a long pale blade, without spinoid setae.

Male. — Length about 9.5–10 mm.; wing 8.5–9.2 mm.; antenna about 6.4–6.5 mm. Described from alcoholic specimens.

Frontal prolongation of head dark brown, slightly paler on sides; nasus lacking, replaced by a pencil of reddish bristles; palpi dark brown, terminal segment paler, short, subequal to preceding two combined. Antennae of male elongate, as shown by the measurements; scape and pedicel brownish black, flagellum black; flagellar segments very long cylindrical, with relatively sparse stiff bristles over the whole surface, normal setae much shorter than in *mosselensis*; terminal segment reduced to a subglobular button. Head brownish black; vertical tubercle very conspicuous, elevated into a compressed-flattened point.

Pronotum light brown. Mesonotum almost uniformly dark brownish gray, without clearly differentiated pattern; parascutella and pleurotergite paler brown; vestiture of praescutal interspaces and the scutellum reduced to tiny yellow setae. Pleura with propleura and mesepisternum dark brownish gray, pteropleurite paler, the dorsal end slightly darkened; dorsopleural membrane buffy. Halteres elongate, light brown, knob darker; stem with scattered subappressed setae. Legs with coxae yellowish brown, anterior faces darker; trochanters dark brown; femora black, tibiae dark brown, the tips blackened, tarsi black; claws small, simple. Wings (fig. 24) weakly suffused, costal border and the space between the cubital branches darker brown, more intense than the small stigma; veins brown. Macrotrichia on R_{4+5}, outer branches of M, Cu_1, lacking on *Rs* and its anterior branch, all sections of M_{1+2} and basal section of M_3; basad of cord with trichia on outer half of M, lacking on both anal veins; prearcular anal vein with a few trichia, more concentrated at base. Venation: *Sc* short, Sc_2 ending just beyond origin of *Rs*; R_{1+2} short, in the type with tip atrophied; petiole of cell M_1 subequal to or a little longer than *m*; cell *1st* M_2 long.

Abdomen long, tergites dark brown, sternites slightly paler. Male hypopygium (fig. 25) with the tergite, *t*, large, posterior border with a deep V-shaped emargination, the lateral lobes narrowly obtuse at tips; vestiture long but pale and relatively inconspicuous. Dististyles, *d*, long, the outer a little longer, appearing as a relatively narrow pale blade, slightly dilated at midlength, apex somewhat thickened and provided with numerous small setae, disk with longer pale setae; inner style pale brown throughout, broad basally, narrowed

very gradually to the small obtuse tip; surface of basal three-fourths with numerous long pale setae but entirely without spinoid armature, as common in the genus.

Cape Province: Elands Height, 15 miles SW of Mount Fletcher, altitude circa 6000 feet, March 9, 1951; swept from grassy hill slope (BRINCK—RUDEBECK), Loc. no. 217. Holotype, alcoholic ♂. Paratopotypes, 2 alcoholic ♂♂.

Longurio anoplostylus is most nearly allied to *L. mosselensis* (ALEXANDER) in the unarmed dististyles of the male hypopygium, differing in the much shorter antennae and in the shorter broader wings with the venational details distinct.

Longurio aspropodus ALEXANDER

Longurio (*Longurio*) *aspropoda* ALEXANDER; Ann. Natal Mus., 14: 132–134, fig. 1 (♂ hyp.); 1957.

Male. — Length about 9–10 mm.; wing 9–10.5 mm.; antenna about 11–12 mm.

Winged in both sexes; mesonotum light brown, posterior sclerites more yellowed; legs brownish black, tarsi and outer ends of posterior tibiae white; wings tinged with blackish, with conspicuous obliterative areas; ovipositor elongate, valves feebly sclerotized; male hypopygium with outer dististyle bifid at apex.

Moçambique: Spungabera, near Mount Selinda, January 21, 1955 (B. STUCKENBERG). — **Southern Rhodesia:** Chirinda Forest, January 25, 1955 (B. STUCKENBERG), type.

Longurio basuticanus ALEXANDER

Longurio (*Longurio*) *basuticanus* ALEXANDER; Durban Mus. Novit., 4: 294–295, fig. 8 (venation), fig. 11 (♂ hyp.); 1956.

Male. — Length about 7 mm.; wing 10–11 mm.; antenna 3.8–4 mm.

General coloration gray, praescutum with four scarcely differentiated brownish gray stripes; antennae of male approximately one-half the body; legs brownish black; wings broad, uniformly pale brown, cell M_1 deep; male hypopygium with tergal lobes truncate; crest of inner dististyle small, with four or five blackened spinoid setae.

Basutoland: Rafanyane Valley, January 21, 1947 (L. BEVIS), type.

Longurio belloides ALEXANDER

Longurio belloides ALEXANDER; Ann. So. Afr. Mus., 18: 215–216; 1921.
Longurio belloides WOOD; Ann. So. Afr. Mus., 39: 121–125, fig. 37 (ad); 1952.

Male. — Length 18–20 mm.; wing 18–19 mm.

Female. — Length 20–21 mm.; wing 2.5 mm.; ovipositor about 5 mm.

Male fully-winged; female subapterous. General coloration light brown, praescutum usually with four brownish gray stripes; apex of nasus bifid; antennae relatively short; wings brownish gray with a subhyaline longitudinal stripe at near midwidth, involving the

radial and medial fields, bases of anal cells pale; ovipositor with elongate cerci; hypopygium with inner dististyle long, slender, with about 18 spinoid setae.

As is the case with many of the South African species of *Longurio*, the immature stages occur in soil, commonly at or near a clump of *Restio* sp.

Cape Province: River Zonder End Peak, 5400 feet, January 1919 (BARNARD), type; Great Winterhoek Peak, February 1934, January 1939 (WOOD); Babylons Tower, March 1939 (WOOD).

Longurio bonæ spei (BERGROTH)

(Fig. 11)

Tipula bonae spei BERGROTH; Ent. Tidskr., 9: 138–139; 1888.
Longurio bonae spei ALEXANDER; Ann. So. Afr. Mus., 17: 163, pl. 13, fig. 48, pl. 14, fig. 55 (♂ hyp.); 1917.
Longurio bonae spei WOOD; Ann. So. Afr. Mus., 39: 127–130, fig. 38 (ad), fig. 39 (pupa); 1952.

Male. — Length about 10.2–11 mm.; wing 12.3–12.5 mm.

Female. — Length 9–10 mm.; wing about as long as halter.

Male fully-winged; female subapterous. Mesonotal praescutum dark brown, pruinose, with still darker stripes; wings suffused with brown, striped longitudinally with white, with further brightenings in cells *Cu* and *1st A*; hypopygium with inner dististyle long and slender, with about 13 blackened spinoid setae (fig. 11).

Immature stages in soil at bases of *Restio* clumps that skirt open boulder-strewn river banks.

Cape Province: Echo Valley, Cape Peninsula, April 1932, 1933 (WOOD); Red Gods, Cape Peninsula, March 1937 (WOOD); Stellenbosch, type; Babylons Tower, March 1939; Jonkershoek, October 1926; Palmiet River, May 1937; Voorkoeden Farm, Caledon, April 1938 (WOOD).

Longurio caffer (ALEXANDER)

Tipula caffra ALEXANDER; Ann. So. Afr. Mus., 17: 171–172, pl. 12, fig. 33 (wing); 1917.
Tipula caffra WOOD; Ann. So. Afr. Mus., 39: 58–65, fig. 17 (ad.), fig. 18 (larva), fig. 19 (pupa); 1952.

Male. — Length about 10 mm.; wing 10.6 mm.

Female. — Length about 10–11 mm.; wings slightly longer than the halter.

Male fully-winged; female subapterous. General coloration blackish, yellow pollinose, praescutum with four brown stripes; antennae black; wings of male brownish gray, costal field light yellowish brown, wings of female slightly longer than the halter; ovipositor with valves short, fleshy (*Macromastix* type); hypopygium with tergite profoundly incised, lobes triangular, apices subacute; a single dististyle that tapers to a sclerotized point.

Immature stages in rich dry soil, the larvae burrowing to a depth of from six to nine inches beneath soil covered by a thick carpet of rotting leaves. Others have been found among *Restio* clumps under conditions quite similar to those described for *Longurio coronatus* (WOOD, 1952).

Cape Province: Fernwood Ravine, Cape Peninsula, May 1935 (WOOD). Sneeuwgat Valley, Winterhoek Mts., Tulbagh, 3600 feet, April 1916 (LIGHTFOOT), type; French Hoek Pass, April 1935 (WOOD).

Longurio capicola ALEXANDER

Longurio capicola ALEXANDER; Ann. So. Afr. Mus., 18: 214–215; 1921.
Longurio capicola WOOD; Ann. So. Afr. Mus., 39: 115–121, fig. 35 (ad., larva), fig. 36 (pupa); 1952.

Male. — Length about 14 mm.; wing 16 mm.

Female. — Length about 18 mm.; wing 4 mm.

Male fully-winged; female hemipterous. General coloration brown, patterned with darker; nasus bifid; wings of male yellowish brown; legs of male elongate, of female short and stout; ovipositor with large and powerful valves; hypopygium with inner dististyle relatively short and broad, basal enlargement with about 25 small spinoid setae.

Immature stages in soil beneath a thick carpet of rotting leaves, three or four inches thick, under shaded conditions. Adult males rest on grasses and other plants, their legs widespread, the wings held at a right angle. Dr. WOOD found the species associated with other crane-flies, as *Nephrotoma petiolata*, *Limonia* (*Libnotes*) *libnotina*, *L.* (*L.*) *flavopyga*, and *L.* (*L.*) *subapicalis*.

Cape Province: River Zonder End Peak, 3600 feet, January 1919 (BARNARD), type; Oudebosch, December 1920 (LIGHTFOOT), January 1933, 1934, September 1937 (WOOD).

Longurio chionoides (ALEXANDER)

Tipula chionoides ALEXANDER; Ann. So. Afr. Mus., 17: 164–165, text-fig. 2 (lat. aspect ♀), pl. 13, fig. 44 (ad.); 1917.
Longurio chionoides WOOD; Ann. So. Afr. Mus., 39: 131–135, fig. 40 (ad., pupa); 1952.

Male. — Length 12–14.8 mm.; wings normally greatly reduced.

Female. — Length 15–17 mm.; wing about 0.9 mm.

Normally subapterous in both sexes, in some localities (Kirstenbosch) male fully-winged, female hemipterous (see WOOD 1952: 135). General coloration yellowish brown, without distinct pattern; nasus bifid; antennae 12-segmented, short, flagellum light yellow; legs of female shorter than in the male; hypopygium with inner dististyle with from 16 to 18 spinoid setae.

WOOD's description of the female antenna disagrees with his figure or key. The immature stages occur in soil.

Cape Province: Kirstenbosch, November 1932; Fernwood, Cape Peninsula, January, October 1933, November 1932.

Longurio cinereilineus (ALEXANDER)

Tipula cinereilinea ALEXANDER; Ann. So. Afr. Mus., 18: 223–224, pl. 4, fig. 18 (wing); 1921.

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

General coloration brownish yellow, with a broad ashy dorsomedian stripe extending from the frontal prolongation of head to the end of abdomen, barely interrupted at the abdominal sutures; antennae short, 10-segmented; wings brownish yellow, stigma pale

brown; hypopygium with inner dististyle provided with five or six spinoid setae arranged in two unequal groups.

Natal: Eshowe, Zululand, December 1916 (H. W. BELL-MARLEY), type; November—December 1943 (BEVIS); Kranskop, November 11, 1954 (B. STUCKENBERG).

Longurio coronatus (ALEXANDER)

Tipula coronata ALEXANDER; Ann. So. Afr. Mus., 17: 169—170, pl. 12, fig. 32 (wing), pl. 13, fig. 50, pl. 14, fig. 61 (♂ hyp.); 1917.

Tipula coronata WOOD; Ann. So. Afr. Mus., 39: 49—58, fig. 13 (ad. ♂), fig. 14 (ad. ♀), fig. 15 (larva), fig. 16 (pupa); 1952.

Male. — Length 8—8.7 mm.; wing 9.5—11.5 mm.

Female. — Length 8—9, when gravid to 15 mm.; wing reduced, slightly longer than the halter.

Male fully-winged; female subapterous, physogastric. General coloration dark gray pruinose, mesonotum faintly patterned with darker; antennae short, outer segments slender; wings of male brownish gray, stigma darker; ovipositor with valves short and fleshy (*Macromastix* type); hypopygium with tergite deeply notched, lateral lobes beneath produced into a lobule that is tipped with about three blackened spinoid setae; outer dististyle short, spatulate, inner style subtriangular, with six spinoid setae.

The enormously swollen abdomen of the female contains up to 350 black eggs that are deposited in dry soil, often about the bases of clumps of *Restio* species. The young larvae burrow to a depth of from nine to twelve inches, feeding on the *Restio* rootlets. When grown, the larvae move upwards to soil level and pupate. (WOOD, 1952).

Cape Province: Cape Peninsula, Oranjezicht, May 1931; Echo Valley, April 1931; Red Gods, April 1937; Grotto, May 1931; Chapmans Peak, May 1934 (WOOD), Winterhoek Mountains, Tulbagh, 3600 feet, April 1916 (R. M. LIGHTFOOT), types; also 4000—6000 feet, April 1916 (BARNARD); Hottentot-Hollands Mts., 4000 feet, March 1919 (BARNARD); Seven Weeks Poort Berg, December 1928; Fonteintjiesberg, March 1929; Ruiterbosch, February 1932; Meirings Poort Berg, February 1932; Zebasberg, April 1933; Slanghoek Peak, March 1938; Palmiet River, April 1936; Waaihoek Kloof, April 1928; French Hoek Pass, April 1935 (WOOD).

Longurio dolichoros WOOD

Longurio dolichoros WOOD; Ann. So. Afr. Mus., 39: 154—158, fig. 47 (ad., larva, pupa); 1952.

Male. — Length 8.5—11 mm.

Female. — Length 11.5—12 mm.

Wings reduced to mere scales in both sexes, about equal in size to the knob of the halter. Thorax of male orange yellow, praescutum margined with black, in female dark brown pruinose; antennae 10-segmented; female physogastric but with long slender legs; hypopy- with inner dististyle bearing a short tubercle set with six spinoid setae.

The immature stages live in soil along small streams among clumps of *Restio* species.

Cape Province: Langebergen, Swellendam area, October 1925, January 1935; Vreyersberg, 2000 feet, October 1937; Coloniebos, Swellendam area, September 1938 (WOOD).

Longurio drakensbergensis ALEXANDER

Longurio drakensbergensis ALEXANDER; Ann. Natal Mus., 13: 421–422, fig. 24 (ven.), fig. 29 (♂ hyp.); 1956.

Male. — Length about 7.5 mm.; wing 8 mm.; antenna about 3.1–3.2 mm.

General coloration buffy brown, praescutum with three slightly darker stripes; antenna of male of moderate length; wings broad, suffused with brown, prearcular and costal fields darker; R_{1+2} atrophied, *m–cu* long, arcuated; hypopygium with inner dististyle having 7 or 8 slightly recurved spinoid setae; aedeagus long and conspicuous.

Natal: Cathedral Peak Hotel, Drakensberg, February 19, 1955 (STUCKENBERG), types.

Longurio eshowensis ALEXANDER

Longurio eshowensis ALEXANDER; Ann. Natal Mus., 14: 370–371, fig. 5 (ven.); 1960.

Female. — Length about 14 mm.; wing 12 mm.; antenna about 3 mm.

General coloration of mesonotum light brown, without distinct pattern; frontal prolongation of head light yellow, disk of vertex extensively infuscated; wings strongly tinged with pale brown, costal border and stigma only slightly darker; cell M_1 deep, its petiole about one-third *m*; macrotrichia of veins sparse; ovipositor with long straight cerci.

Natal: Eshowe, Zululand, 1650 feet, January 1957 (N. L. H. KRAUSS), type.

Longurio flagellatus WOOD

Longurio flagellatus WOOD; Ann. So. Afr. Mus., 141–146, fig. 43 (ad., larva), fig. 44 (larva, pupa); 1952.

Male. — Length 5.5–7 mm.; wings microscopic.

Female. — Length 6–7 mm., ovipositor 2 mm.; wings microscopic.

General coloration dark brown, mesothorax flattened; antenna 9-segmented, of moderate length, about three times the head, last segment very long, in male equal to preceding three segments combined; wings microscopic, only about one-third the length of knob of halter; valves of ovipositor very long, comprising about one-third the body length; hypopygium with inner dististyle elongate, with ten spinoid setae on outer third.

Larvae in soil at bases of *Restio* clumps along margins of narrow, swiftly flowing mountain streams, the pupae lying just beneath the surface.

Cape Province: Cape Peninsula, Kasteels Poort, August 1932, 1933, July 1934; Blinkwater, August 1933 (WOOD); Witte River, September, October 1933; Jonkershoek, July 1937; French Hoek Pass, September 1935, October 1936; Verkoeden Farm, Caledon, May 1938 (WOOD).

Longurio inæquipes ALEXANDER

Longurio (*Longurio*) *inaequipes* ALEXANDER; Durban Mus. Novit., 4: 295–297, fig. 10 (ven.), fig. 12 (♂ hyp.); 1956.

Male. — Length about 10 mm.; wing 11.5 mm.; antenna about 2.5 mm.

Head and thorax light gray, praescutum with four light brown stripes; legs brownish

black, posterior tarsi very long; wings weakly darkened with a whitened central stripe o the whole length; vein R_{1+2} preserved; inner dististyle of hypopygium with 8 or 9 spin setae.

Natal: Umkomazana, December 21, 1938 (BEVIS), type.

Longurio jonesi (ALEXANDER)

Habromastix jonesi ALEXANDER; Ann. So. Afr. Mus., 18: 219–220, pl. 4, fig. 21 (wing); 1921.

Male. — Wing 12 mm.

Female. — Length 17–18 mm.; wing 12.3–12.5 mm.

General coloration brownish gray, praescutum with four dark brown stripes; antenna male elongate, approximately as long as body; legs with femora black, tibiae light yello tips and outer tarsal segments darkened; wings striped longitudinally with brown and whi the major pale areas in cells *R*, *M*, R_5, centers of outer medial cells and base of *1st* cubital vein darkened; *m–cu* at fork of *M*.

Natal: M'fongosi, Zululand, December 1916 (W. E. JONES), type.

Longurio melanopterus (ALEXANDER)

Tipula melanoptera ALEXANDER; Rev. Zool. Bot. Africaine, 19: 337–338, fig. (head); 1930.

Female. — Length about 11 mm.; wing 3.3 mm.

General coloration dark brown; maxillary palpi and antennae reduced, the latter 1 segmented, shorter than the head; vertical tubercle conspicuous; halteres and legs blac wings blackened, about twice as long as the halteres; ovipositor with valves relatively sho cerci nearly straight.

Cape Province: Port St. Johns, Pondoland, October 1923 (R. E. TURNER), type.

Longurio micropteryx ALEXANDER

(Fig. 21)

Longurio micropteryx ALEXANDER; Ann. So. Afr. Mus., 18: 217–218; 1921.
Longurio micropteryx WOOD; Ann. So. Afr. Mus., 39: 135–141, fig. 41 (ad.), fig. 42 (pupa); 1952.

Male. — Length 8.5–9 mm.; wings greatly reduced.

Female. — Length 8–11.5 mm.; wings similar.

General coloration brownish yellow in male, darker in female; thoracic pleura and abd men with blackened lateral stripe; mesonotum flattened; nasus simple, rounded; antenn 13-segmented; wings less than one-third the halteres in both sexes; outer half of inner dis style of hypopygium with from 8 to 11 spinoid setae (fig. 21).

Dr. WOOD found the immature stages in moist soil beneath a carpet of dead leave associated with *Longurio caffer*, *L. chionoides*, and *Goniotipula cuneipennis*. Other specime

occurred in dryer soil at the bases of *Restio* clumps, burrowing at random in search for the rootlets of this plant and here associated with *Longurio coronatus*, *L. flagellatus*, and *Nephrotoma antennata*.

Cape Province: Cape Peninsula, Table Mountain, spring 1919 (R. W. TUCKER), type; Kirstenbosch, November 1932, June 1934; Fernwood, September 1934, June, July 1934, November 1933; Isolation Valley, July 1934; Red Gods, May 1935; Kasteels Poort, August 1933, May, October 1934 (WOOD).

Longurio minusculoides WOOD

Longurio minusculoides WOOD; Ann. So. Afr. Mus., 39: 151–154, fig. 45 (ad.); 1952.

Male. — Length 10–11 mm.; wing 8×1 to 1.2 mm.

Female. — Length 11–13 mm.; wings greatly reduced.

General coloration of thorax orange yellow, abdomen dark brown; antennae 13-segmented; wings of male relatively short and very narrow, as shown by the measurements, in female, wings about two-thirds the length of halteres; cell M_1 lacking; dark brown with a narrow whitened longitudinal stripe in medial field, extending the whole length of wing; inner dististyle of hypopygium with 5 or 6 spinoid setae.

Immature stages occurring in soil among the roots of *Restio* clumps.

Cape Province: Vreyersberg, between Herbertsdale and Van Wyksdorp, altitude 2000 feet, October 1937 (WOOD).

Longurio minusculus ALEXANDER

Longurio minusculus ALEXANDER; Ann. So. Afr. Mus., 17: 162–163, pl. 11, fig. 26 (wing), pl. 13, fig. 51, pl. 14, fig. 56 (♂ hyp.); 1917.
Longurio minusculus WOOD; Ann. So. Afr. Mus., 39: 110–114, fig. 33 (ad), fig. 34 (larva); 1952.

Male. — Length 8.2–9.6 mm.; wing 8.8–10.3 mm.

General coloration of thorax orange yellow, unpatterned; abdomen brownish; head black, pruinose; antennae short, scape and pedicel yellow, flagellum brownish black, the terminal segment with a single very long modified setoid structure (WOOD, fig. 33 b); wings light gray, costa more yellowed, stigma pale; inner dististyle of hypopygium with from 6 to 9 spinoid setae arranged in two groups.

WOOD found the immature stages in dry rich soil beneath a scanty layer of moist leaves on the steep sides of wooded ravines, some distance from flowing streams. In the higher mountains, the males occur among the low clumps of *Restio* and other grasses and shrubs. It seems virtually certain that the female is subapterous.

Cape Province: Table Mountain, Cape Peninsula, March 1918; Landdrost Kloof, Hottentot-Hollands Mts., 4000 feet, 1915 (BARNARD), type, also January 1933; Ruiterbosch, February 1932; French Hoek Pass, December 1932; Steenbras, December 1925; Zuurvlakte, November 1932; Hermitage Kloof, January 1938 (WOOD).

Longurio mitiformis ALEXANDER

Longurio mitiformis ALEXANDER; Ann. Natal Mus., 14: 371–372, fig. 1 (♂ hyp.), fig. 6 (ven.); 1960.

Male. — Length about 8.5 mm.; wing 8 mm.; antenna about 3.4 mm.

General coloration of thorax yellow; legs brownish yellow, claws of male toothed; wings tinged with brown, stigma darker, cell M_1 petiolate; hypopygium with posterior border of tergite truncate; a single mitten-shaped dististyle.

Natal: Ngoye Forest, Zululand, February 17—19, 1957 (STUCKENBERG).

Longurio mossambicensis (ALEXANDER)

Tipula mossambicensis ALEXANDER; Bull. Mus. Hist. Nat. (Paris), 1920: 135–136; 1920.

Female. — Length 13.7 mm.; wing 11.8 mm.

General coloration of thorax brown, pleura paler; antenna with proximal six segments light yellow, outer ones dark brown, verticils of flagellar segments very minute; femora and tibiae brownish yellow, tips broadly dark brown, tarsi light brown, outer segments black; wings brown, streaked longitudinally with white, including a central area from the outer ends of cells *R* and *M* through *1st* M_2 and R_5 to the wing tip; *m–cu* some distance beyond fork of *M*; ovipositor with cerci long, acicular, nearly straight.

Moçambique: Vallée du Pungoué, Guengere, 1906 (G. VASSE); type in Paris Museum.

Longurio mosselensis (ALEXANDER)

Habromastix mosselensis ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 14: 96–97; 1945.

Male. — Length about 10 mm.; wing 10 × 1.8 mm.; antenna about 7.5 mm.

General coloration gray, praescutum with four brown stripes; flagellar segments long-cylindrical, with scattered black spinoid setae; legs brown, outer tarsal segments black; wings unusually narrow, as shown by the measurements, grayish subhyaline, stigma, costa and a seam along *Cu* brown; cell *1st* M_2 long; hypopygium with two dististyles, without spinoid setae.

Cape Province: Mossel Bay, May 1921 (R. E. TURNER).

Longurio niphopodus ALEXANDER

Longurio niphopoda ALEXANDER; Ann. Natal Mus., 13: 422–423, fig. 25 (ven.), fig. 30 (♂ hyp.); 1956.

Male. — Length about 10–10.5 mm.; wing 10.5–11 mm.; antenna about 8.5–9 mm.

General coloration light brown, thoracic pleura yellow; legs yellowish brown, tibiae and tarsi snowy white; wings weakly infuscated, unpatterned except for the dark brown stigma; cell M_1 longer than its petiole; *m-cu* at near midlength of M_{3+4}; abdomen bicolored, segments

yellow with outer fourth dark brown; inner dististyle of hypopygium without spinoid setae, terminating in a flattened blackened beak.

Natal: Kranskop, November 11, 1954 (STUCKENBERG).

Longurio piger ALEXANDER

Longurio (Longurio) piger ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 14: 97–98; 1945.

Male. — Length about 10 mm.; wing 12 mm.; antenna about 2 mm.

General coloration dark brown; antennae short, 12-segmented, flagellum black; nasus lacking; vertical tubercle entire, very high and conspicuous; femora and tibiae brownish yellow, tips narrowly blackened; wings brown, costal border narrowly darker, veins unusually glabrous, R_{1+2} entire; abdomen yellow, both the tergites and sternites with a broad black median stripe, more expanded on outer segments, hypopygium blackened; inner dististyle of hypopygium with 9 or 10 strong spinoid setae.

Southern Rhodesia: Chirinda Forest, 3600 feet, November 1930 (CUTHBERTSON).

Longurio rhodesiae (ALEXANDER)

Habromastix rhodesiæ ALEXANDER; Occas. Pap. Nat. Mus. So. Rhodesia, 6: 1–2, fig. 1 (ven.); 1937.

Male. — Length 14–14.5 mm.; wing 14–15.4 mm.; antenna about 16–17.5 mm.

General coloration of thorax reddish yellow, polished; flagellar segments with coarse erect pale setae; femora yellow, tips narrowly blackened; wings strongly tinged with brown, costal field more saturated, apical margin and veins beyond cord narrowly seamed with brown; abdomen yellow, posterior borders of tergites narrowly blackened, hypopygium black; inner dististyle of hypopygium terminating in two blackened spines, without further spinoid setae.

Southern Rhodesia: Chirinda Forest, November 1930 (CUTHBERTSON), type; Chirinda Forest, January 25, 1955 (STUCKENBERG); Leopard Rock, Vumba Mts., January 16, 1955 (STUCKENBERG).

Longurio rubroniger (ALEXANDER)

Tipula rubronigra ALEXANDER; Ann. So. Afr. Mus., 18: 222–223, pl. 4, fig. 19 (wing); 1921.

Male. — Length 11.5–12 mm.; wing 13.5–14.8 mm.

General coloration of thorax shiny yellow, praescutum with three indistinct dark brown stripes; antennae very short, with 8 or 9 segments; legs black, hind tarsi very long and slender, greatly exceeding those of the other legs; wings broad, gray, indistinctly streaked longitudinally with whitish; abdomen black, hypopygium small, simple in structure; inner dististyle pale, unarmed except for a small subterminal spine and two tiny apical teeth.

Natal: Kranskop, November 1917 (BARNARD), types; Town Bush, Pietermaritzburg, November 2, 1954 (STUCKENBERG).

Longurio silvester WOOD

Longurio silvester WOOD; Ann. So. Afr. Mus., 39: 146–151, fig. 45 (ad.), fig. 46 (pupa); 1952.

Male. — Length 12–13 mm.; wing 13×3.5 mm.

Female. — Length 10–11 mm.; wing 6×0.8–1 mm.

General coloration dark yellow, praescutum with three dark brown stripes, pleura yellow to orange; antennae short, scape and pedicel yellow, flagellum dark brown, outer segments slender; legs light brown, tips of femora and tibiae blackened; wings of male pale yellowish brown, costal border darkened; female physogastric, ovipositor with fleshy valves (*Macromastix* type); inner dististyle of hypopygium sparsely provided with 6 or 7 stout spinoid setae.

Immature stages in damp humus soil beneath a thick carpet of rotting leaves (WOOD).

Cape Province: Harkerville Forest, Knysna District, September 1938 (WOOD).

Longurio spinosus WOOD

Longurio spinosa WOOD; Ann. So. Afr. Mus., 39: 158–160; 1952.

Male. — Length 8–9.5 mm.; wings reduced.

Mesonotum brownish yellow, praescutum with four dark brown stripes; antennae 11-segmented, relatively short; wings of male short, about one-half the length of the halter; femora yellow, tips darkened, tibiae and tarsi brown; hypopygium with inner dististyle with 4 or 5 spinoid setae.

Dr. WOOD records the larvae as living amongst the rhizoids of a thick moss carpet in the shelter of a rocky pinnacle (THORNE).

Cape Province: Meirings Poort, Spitzkop, 5000 feet, February 1932, January 1935 (WOOD and THORNE).

Longurio stuckenbergi ALEXANDER

Longurio (*Longurio*) *stuckenbergi* ALEXANDER; Ann. Natal Mus., 13: 407–408, fig. 22 (♂ hyp.); 1956.

Male. — Length 10–11 mm.; wing 10.5–11 mm.; antenna 1.5 mm.

Female. — Length about 8.5–9 mm.; wing 2 mm.

General coloration of thorax gray, praescutal disk with four brown stripes; femora reddish brown, tips brownish black, tarsi black; wings of male dark brown, conspicuously striped longitudinally with whitish, lying chiefly in the central third, with further pale areas in cells *Cu* and *1st A*; in female, wings reduced, long and narrow; both dististyles of hypopygium long and slender, simple, appearing chelate, inner style forked near apex.

Cape Province: Grahamstown, March 30, 1953 (STUCKENBERG), associated with *Elytropappus rhinocerotis;* types. Five miles NW of Grahamstown, several males floating in a water-filled grid along road, March 3, 1951 (BRINCK—RUDEBECK).

Longurio syndactylus ALEXANDER

Longurio (Longurio) syndactylus ALEXANDER; Ann. Natal Mus., 13: 396–397, fig. 6 (♂ hyp.); 1956.

Male. — Length about 8 mm.; wing 8 mm.

General coloration gray, praescutum with two intermediate brown stripes; halteres long and slender, knob brownish black; legs black, femoral bases obscure yellow; wings tinged with brown, *C* and *Cu* somewhat darker; hypopygium with a single dististyle that divides at near midlength into outer and inner substyles, without spinoid setae.

Natal: Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG).

Longurio versfeldi WOOD

Longurio versfeldi WOOD; Ann. So. Afr. Mus., 39: 125–127, fig. 38 (ad); 1952.

Male. — Length 11 mm.; wing 13×3 mm.

Mesonotal praescutum yellowish brown, with four blackish brown stripes, the intermediate pair narrowly separated, pleura yellowish brown; antennae short, 13-segmented; legs yellowish brown, tips of femora and tibiae darkened; wings pale yellowish brown, darker on costal border and along vein *Cu*; abdominal tergites blackish brown, sternites paler, hypopygium yellowed; inner dististyle of hypopygium short and broad, outer margin protuberant, with from 18 to 22 spinoid setae, beak relatively long.

Cape Province: Voorkoeden Farm, Caledon, at foot of Zwartberg Mt., May 23—26, 1935 (M. VERSFELD).

Idiotipula ALEXANDER

Idiotipula ALEXANDER; Ann. So. Afr. Mus., 18: 220–221; 1921.

To date known only by the genotype, discussed herewith.

Idiotipula confluens ALEXANDER

(Fig. 12)

Idiotipula confluens ALEXANDER; Ann. So. Afr. Mus., 18: 221–222, pl. 4, fig. 16 (wing), pl. 4, fig. 24 (♂ hyp.); 1921.

Male. — Length 7.5–8 mm.; wing 8.4–9.2 mm.; antenna 13.5–14 mm.

Female. — Wing 10 mm.

General coloration of thorax yellowish brown, praescutum with four darker brown stripes, pleura gray pruinose; legs yellow, tips of femora and tibiae darkened, tarsi brown; wings infuscated, R_{1+2} atrophied; abdominal tergites dark brown, lateral and posterior margins paler; inner dististyle of hypopygium with 10 to 12 small spinoid setae near outer end (fig. 12).

Natal: M'fongosi, Zululand, February, April, May 1917 (W. E. JONES), types; Pietermaritzburg, 1917 (CONRAD AKERMAN).

Xenotipula ALEXANDER

Xenotipula ALEXANDER; Ann. Mag. Nat. Hist. (9) 8: 171; 1921.

The genotype and only known species is discussed herewith.

Xenotipula munroi ALEXANDER

(Fig. 13)

Xenotipula munroi ALEXANDER; Ann. Mag. Nat. Hist., (9) 8: 171–173; 1921.

Male. — Length about 6–6.5 mm.; wing 8.5–9 mm.

Female. — Length about 6 mm.; wing 5–6.3 mm.

Mesonotum brownish testaceous, unpatterned, pleura more yellowed; antennae very short, 12-segmented, first flagellar enlarged, a fusion of two segments, terminal segment elongate, subequal to two preceding segments combined; legs very long, claws small, simple; wings yellowish gray, stigma brown; R_{1+2} present; *m–cu* at fork of M_{3+4}, outer medial veins glabrous; inner dististyle of hypopygium flattened, emarginate on lower edge at base of beak, outer tubercle with four or five strong spinoid setae (fig. 13).

Dr. MUNRO found this interesting fly on a very dry steep hillside that was covered with original bush and trees, the undergrowth not very dense, the ground covered with dead leaves. Adults were flying close over the ground or resting on the leaves, many of the males evidently searching for the females. It is probable that the males mate with the females while the latter are newly emerged and still teneral, a not uncommon occurrence in the Tipulidae.

Natal: Ambleside, near Port Shepstone, August 23, 1920 (H. K. MUNRO), types.

Goniotipula ALEXANDER

Goniotipula ALEXANDER; Ann. So. Afr. Mus., 18: 213; 1921.

A monotypic genus that is considered herewith.

Goniotipula cuneipennis ALEXANDER

(Figs. 15, 26)

Goniotipula cuneipennis ALEXANDER; Ann. So. Afr. Mus., 18: 213–214; 1921.
Goniotipula cuneipennis WOOD; Ann. So. Afr. Mus., 39: 160–167, fig. 48 (ad., larva), fig. 49 (pupa); 1952.

Male. — Length 8.5–8.6 mm.; wing 8.5×1.6 mm.; antenna about 3 mm.

General coloration of mesonotum brownish gray, praescutum with three indistinct darker brown stripes, pleura blackened, pruinose; antennae relatively long, 12-segmented, flagellar segments elongate, verticils virtually lacking, very sparse, subequal in length to the pubescence. Wings narrow, grayish, cell *Sc* and the stigma brown; R_{1+2} atrophied; abdominal tergites blackened, patterned laterally with yellow; hypopygium with tergite emarginate; dististyle with a curved blackened subterminal spine at base of beak, outer and lower faces of style with setae (figs. 15, 26).

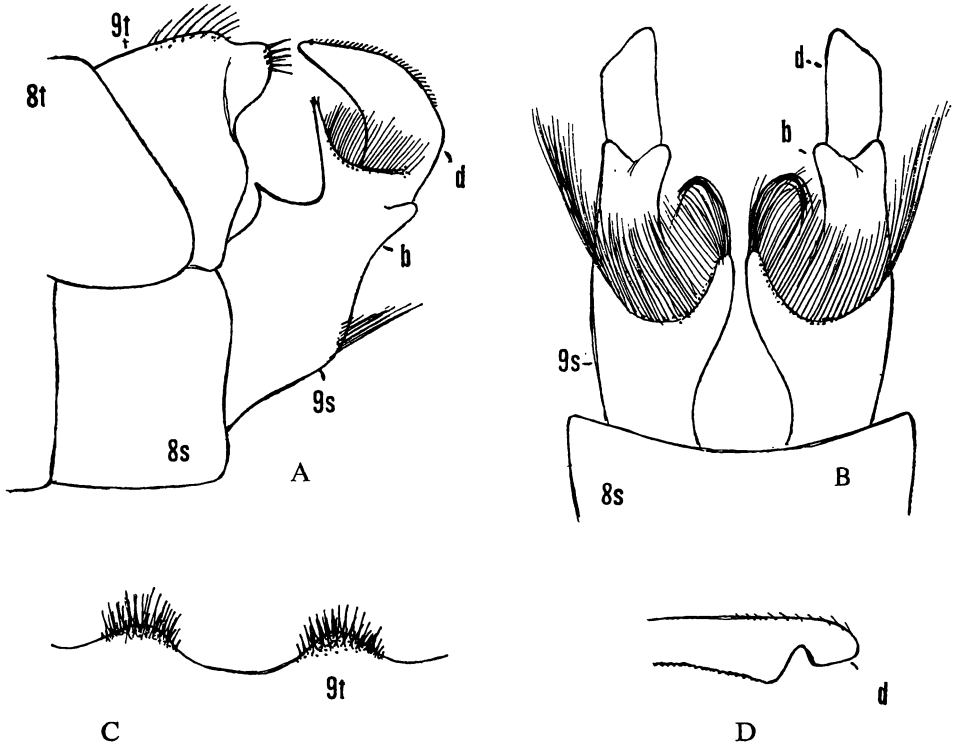


Fig. 26. *Goniotipula cuneipennis* ALEXANDER; male hypopygium. A. Lateral aspect. — B. Ventral aspect. — C. Ninth tergite, dorsal aspect. — D. Dististyle, lateral aspect.
(Symbols: *b*, basistyle; *d*, dististyle; *s*, sternite; *t*, tergite).

WOOD found the immature stages in moist rich soil beneath a carpet of rotting leaves. The adults swarm about over the ground, the males constantly searching for the females, in cases mating with the latter while they are in a teneral condition.

Cape Province: Fernwood, Cape Peninsula, December 1934; Kirstenbosch, Cape Peninsula, November 1932 (WOOD); Caledon, October 1918 (PÉRINGUEY), type.

Nephrotoma MEIGEN

Pales MEIGEN; Nouv. Class. Mouch., p. 14 (nom. nud.); 1800.
Nephrotoma MEIGEN; Illiger's Mag., 3: 262; 1803.
Pachyrrhina MACQUART; Hist. Nat. Ins., Diptera, 1: 88; 1834 (variant spellings *Pachyrhina*, *Pachyrhyna*).

Nephrotoma is a major genus, best represented in the Holarctic, Oriental, and Ethiopian regions, with relatively few further species in Australasia and the Neotropics. In the Ethiopian region, the genus includes numerous continental species, with fewer in Madagascar and Réunion but not occurring in the other Mascarene islands, as at present known.

In their general appearance several of the local species are very similar to one another

and are very difficult to separate. The key provided at this time of necessity has been based on the male sex. Many of the species still are known from few specimens and it will require more abundant materials to enable us to prepare a more satisfactory key. Various forms described by early workers were based on individual female specimens, are considered by me to be unrecognizable, and are omitted from the present key. Such species are *Nephrotoma aurantiaca* (MACQUART, 1838), *N. capensis* (RONDANI, 1865), *N. delegorguei* (MACQUART, 1846), and *N. vicaria* (WALKER, 1848). Four further such forms, *N. antennata* (WIEDEMANN, 1821), *N. crocea* (LOEW, 1866), *N. petiolata* (MACQUART, 1838), and *N. tincta* (WALKER, 1856) have been more or less satisfactorily determined and are included in the key. However I still consider the identity of *petiolata* as being in question. The species described by WOOD as being this seems rather to pertain to *N. crocea* or some other approximately similar form, the coloration of the thoracic pleura seeming to confirm this view.

The more numerous species of *Nephrotoma* known from Tropical Africa have been considered by the writer in the Ruwenzori Report, Tipulidae, 1956.

Key to South African *Nephrotoma*

Males

1. General coloration of body blackened, including the anterior thoracic pleura and all coxae; a large yellow area on the pleurotergite; wings strongly darkened (fig. 16). (Natal, Transvaal, Southern Rhodesia) . . . . . *tincta* (WALKER)
— General coloration of body yellow or orange (darker in *edwardsi*), pleura and coxae chiefly yellowed; wings subhyaline or weakly tinted, if more darkened, the color appearing as seams along the veins 2
2. *m—cu* at or beyond the fork of *M*; (*Rs* longer, more or less arcuated, Sc_2 distinctly beyond its origin) 3
— *m—cu* before the fork of *M*; (*Rs* usually shorter and straighter, with Sc_2 close to its origin). 6
3. Size large (wing of male over 14 mm.); color of thorax dusky brown, praescutum with three ill-defined darker brown stripes; abdomen dull orange yellow, outer segments, including hypopygium, blackened. (Natal, Transvaal) . . . . . *edwardsi* ALEXANDER
— Size smaller (wing of male usually less than 13 mm.); thorax and abdomen not colored as above; (antenna of male very long, about two-thirds the length of body, if bent backward extending about to base of fourth abdominal segment). 4
4. Mediotergite with a central darkened stripe; wings with cell *C* and outer radial field undarkened; abdomen orange, unpatterned. (Cape Province, Peninsula) . . . . . *antennata* (WIEDEMANN)
— Mediotergite without a central darkened stripe; wings with cell *C* and outer radial field patterned with darker; abdomen orange yellow, outer segments weakly patterned. 5
5. Size small (wing, male, about 13 mm.); all praescutal stripes polished black; wings with cell *C* and outer radial field darkened; *m—cu* oblique, straight; stigmal trichia present; (occipital brand polished black, conspicuous). (Basutoland) . . . . . *moshesh* ALEXANDER
— Size larger (wing, male about 15 mm.); central praescutal stripe chestnut brown, margined laterally with black; wings strongly patterned with brown, including seams along the veins and a central streak in cell *R*; *m—cu* suberect, gently arcuated; no stigmal trichia. (Cape Province) *umbripennis* ALEXANDER
6. Antennae very long, about two-thirds the body or extending to or beyond the base of the fourth abdominal segment. 7
— Antennae shorter, about one-half the body or less, extending to the base of abdomen or less. 8
7. Size large (wing, male, 16 mm.); wings brownish yellow, costal border not darkened, stigma dark brown; abdominal tergites brownish yellow, blackened laterally, more extensively so on segments six to eight. (Cape Province) . . . . . *strenua* ALEXANDER

— Size smaller (wing to 12 mm.); wings whitish subhyaline, costal border narrowly darkened; abdomen extensively dark brown, hypopygium yellow. (Southern Rhodesia) . . . . . *smithersiana* ALEXANDER

8. Antennal flagellum conspicuously bicolored, yellow, bases of segments brownish black. (Natal) . . . . . *hemichroa* ALEXANDER

— Antennal flagellum black or indistinctly patterned, not bicolored. 9

9. Praescutal disk uniformly blackened or with the pale interspaces vaguely indicated; (wing tip more or less darkened). 10

— Praescutum with three distinctly separated stripes. 13

10. Wings strongly darkened, especially the apex; outer radial cells with abundant macrotrichia, especially cell R_5 where about the outer half of cell is included; (outer abdominal segments black; eighth sternite unmodified; mediotergite with long pale procumbent setae). (Moçambique) *gorongozæ* ALEXANDER

— Wings less evidently darkened (apex suffused in *fumidapicalis*); macrotrichia of cells more restricted or lacking, if present, in outer ends of cells only. 11

11. No macrotrichia in outer wing cells; hypopygium with eighth sternite produced into a tonguelike lobe. (Southern Rhodesia) . . . . . *cuthbertsoni* ALEXANDER

— Outer wing cells with macrotrichia; hypopygium with eighth sternite unmodified. 12

12. Mediotergite and scutellum with numerous short black setae; wings with cell M_4 narrow, m—cu approximately one-half the distal section of Cu_1; second section of vein M_1+_2 with macrotrichia; outer abdominal segments, including hypopygium, black. (Moçambique, Southern Rhodesia, northwards) . . . . . *fumidapicalis* ALEXANDER

— Mediotergite without such setae; wings with cell M_4 broad, especially basally, m—cu exceeding two-thirds the distal section of Cu_1; veins comprising cell *1st* M_2 glabrous; abdomen orange yellow, basal five segments with broad blackened median marks, subterminal segments blackened, hypopygium reddish orange. (Southern Rhodesia) . . . . . *mossambica* ALEXANDER

13. Thoracic pleura yellow, heavily patterned with dark brown or black. 14

— Thoracic pleura yellow, with more reddened areas. 15

14. Femora yellow, tips narrowly blackened, the amount subequal on all legs; mediotergite clear yellow, unpatterned; abdomen orange yellow, very restrictedly patterned with darker; (coxae darkened anteriorly; trichia of stigma and outer wing cells very sparse or lacking). (See also couplet 26) (fig. 27). (Cape Province, Natal, Basutoland) . . . . . *basutoensis* sp. n.

— Fore femora chiefly blackened; mediotergite with a ⊥-shaped blackened area; abdominal tergites with a conspicuous pattern, including a virtually continuous median black stripe, hypopygium fulvous; (occipital brand very large; wings with costal border narrowly infuscated; no trichia in stigma or wing cells). (Basutoland) . . . . . *lerothodi* ALEXANDER

15. Abdomen orange or yellow, with a blackened subterminal ring, the intermediate tergites (segments three to five) unpatterned or scarcely so. 16

— Abdomen orange or yellow, the intermediate tergites usually distinctly patterned with darker; if darkened, ring lacking. 18

16. Male hypopygium with posterior border of eighth sternite entire, convexly produced, with abundant strong black setae; (outer dististyle long and slender, length about six times the greatest width; inner style with dorsal crest extending virtually to apex of beak, its margin microscopically serrulate). (Cape Province, Natal, Transvaal) . . . . . *unicingulata* ALEXANDER

— Male hypopygium with posterior border of eighth sternite emarginate, provided with yellow setae. 17

17. Male hypopygium with dorsal crest of inner dististyle extending virtually to apex of beak; eighth sternite extensive, its posterior border broadly and shallowly emarginate, with long incurved yellow setae, remaining surface with scattered setae over entire surface excepting basal fourth. (Cape Province, Natal) . . . . . *marshalli* ALEXANDER

— Male hypopygium with dorsal crest of inner dististyle not reaching apex of beak; eighth sternite with numerous setae of moderate length, lacking on midline (fig. 28). (Cape Province) . . . . *tzitzikamae* sp. n.

18. Intermediate abdominal tergites with complete blackened rings. 19

— Intermediate abdominal tergites with the dark pattern reduced to central spots or virtually lacking. 21

19. Median praescutal stripe with paler center; propleura darkened; no macrotrichia in cell R_5 of wings; hypopygium blackened. (Moçambique) . . . . . *tigrina* ALEXANDER
— All praescutal stripes solidly black; propleura yellow; outer end of cell R_5 with macrotrichia; hypopygium orange; (abdominal tergites two and three with black rings, a broad black subterminal band). 20
20. Occipital brand small, dark brown, very distinct; antennae short, flagellum black, base of first segment yellowed; outer dilation of flagellar segment subequal in length to basal swelling; abdominal tergites four and five patterned with black. (Southern Rhodesia, northwards) . . . . . *tigrinoides* ALEXANDER
— Occipital brand very indistinct, virtually lacking; antennae longer, flagellum entirely black; outer dilation of flagellar segment more extended, about twice as long as the basal swelling; abdomen with tergites four and five unpatterned. (Moçambique) . . . . . *tricincta* ALEXANDER
21. Abdomen with a blackened subterminal ring, intermediate tergites with darkened triangles or spots. 22
— Darkened abdominal pattern restricted, without bands or subterminal rings, including median spots only (in some *petiolata* forming a weak partial subterminal ring). 24
22. Wings with stigma very pale, scarcely darker than the ground; (male hypopygium with dorsal crest of inner dististyle low, not elevated posteriorly; antennae relatively short, less than one-third the body length). (Moçambique) . . . . . *leucostigma* ALEXANDER
— Wings with stigma dark brown, conspicuous 23
23. Antenna with basal flagellar segments weakly bicolored, light brown, the basal enlargement darker brown or brownish black; wings with cell *Sc* and narrow tip darkened, cell M_1 sessile; hypopygium with eighth sternite produced, blackened, with black setae, the median ones yellowed. (Moçambique, Southern Rhodesia, northwards) . . . . . *livingstonei* ALEXANDER
— Antenna with flagellum black; wings with cell *Sc* yellow, cell M_1 short-petiolate to narrowly sessile; hypopygium with eighth sternite with apex broadly yellowed, fringed with yellow setae. (Cape Province, Natal, Transvaal, Southern Rhodesia) . . . . . *petiolata* (MACQUART); in part
24. Praescutal stripes solidly blackened. 25
— Median praescutal stripe paler than the laterals or with a pale central dividing vitta. 27
25. Femora with tips blackened, broadest on fore pair; propleura and sides of pronotum not infuscated; wings with cell M_1 usually short-petiolate. (Cape Province, Natal, Transvaal, Southern Rhodesia) . . . . . *petiolata* (MACQUART), in part
— Femora yellowed, tips narrowly blackened, the amount subequal on all legs; propleura and sides of pronotum infuscated (paler in some *basutoensis*); wings with cell M_1 sessile. 26
26. Hypopygium with the outer basal lobe of inner dististyle produced into a blackened flange terminating above in one or two spines (see also couplet 14). (Cape Province, Natal, Basutoland) . . . . . *basutoensis* sp. n., in part
— Hypopygium with the outer basal lobe of inner dististyle entirely unblackened. (Cape Province, Natal, Transvaal) . . . . . *crocea* (LOEW)
27. Propleura reddened, not forming a transverse girdle; (eighth sternite with a median emargination, fringed with abundant long yellow setae). (Cape Province, Natal, Southern Rhodesia) . . . *clanceyi* ALEXANDER
— Propleura and fore coxa infuscated, forming a short transverse girdle. 28
28. Central praescutal stripe brownish yellow, bordered laterally by darker; hypopygium with inner angles of tergal lobes strongly produced; beak of inner dististyle stout; eighth sternite very shallowly emarginate, with relatively few setae. (Moçambique) . . . . . *luaboensis* ALEXANDER
— Central praescutal stripe black, narrowly divided by a pale vitta; hypopygium with inner angles of tergal lobes not produced; beak of inner dististyle slender; eighth sternite very feebly emarginate, with few setae. (Southern Rhodesia) . . . . . *oligochaeta* ALEXANDER

Nephrotoma antennata (WIEDEMANN)

Tipula antennata WIEDEMANN; Dipt. exot., 1: 28; 1821.
Tipula antennata WIEDEMANN; Aussereur. zweifl. Ins., 1: 53; 1828.
Pachyrrhina antennata BERGROTH; Ent. Tidskr., 9: 140; 1888.

Nephrotoma antennata ALEXANDER; Ann. So. Afr. Mus., 17: 177, pl. 12, fig. 38 (wing), pl. 14, fig. 64 (♂ hyp.); 1917.

Nephrotoma antennata WOOD; Ann. So. Afr. Mus., 39: 67–75, fig. 20 (ad.), fig. 21 (larva), fig. 22 (pupa); 1952.

Male. — Length 12–13.5 mm.; wing 13–13.5 mm.

General coloration orange-yellow, praescutum with three dark stripes, the median one paler, divided by a velvety black central vitta; mediotergite with a central dark line; pleura yellow, patterned with dark brown; antennae of male elongate, if bent backward extending about to base of fourth abdominal segment; abdomen deep orange, unpatterned.

WOOD records the species as being very abundant during the autumn months (April, May). The immature stages occur in rich soil along margins of forest streams and in soil beneath clumps of *Restio* species.

Cape Province: Platteklip, Table Mt., April 1933; Isolation Valley, May 1933, April 1934; Camps Bay, April 1934, all Cape Peninsula; French Hoek Pass, April 1935 (WOOD).

Nephrotoma aurantiaca (MACQUART)

Pachyrhina aurantiaca MACQUART; Dipt. exot., 1, pt. 1: 48; 1838. Adapted from original description.

Female. — Length 12 mm.

Rusty orange. Frontal prolongation of head ferrugineous, nasus black, palpi blackish. Antennae with basal two segments yellow, flagellum black. Eyes black. Prothorax rusty, with a black band on either side, reaching the fore coxa. Mesonotal praescutum with three polished black stripes; scutal lobes black; mediotergite with posterior margin and a central vitta black; pleura unspotted. Legs yellowish rufous, tips of femora blackened. Halteres brownish. Wings slightly yellowed; stigma pale. Sides of abdominal segments three to six each with a small oblong black mark.

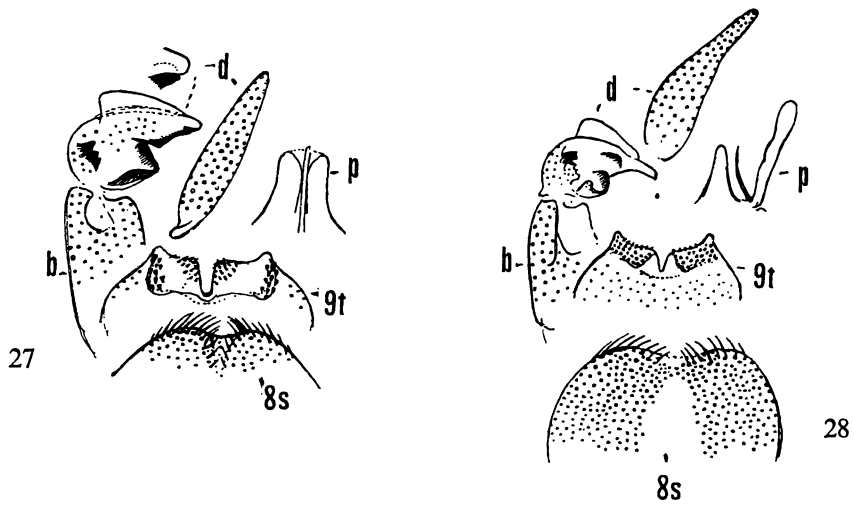
Cape Province: "Cape", collected by M. DELALANDE; a female.

Specific status uncertain; type a female.

Nephrotoma basutoensis sp. n.

(Fig. 27)

Size medium (wing about 11 mm.); head orange-yellow, brand elongate-triangular, sending a capillary line onto the vertical tubercle; praescutum pale yellow with three polished black stripes, scutal lobes with black centers, scutellum and mediotergite clear yellow; pleura light yellow, patterned with dark brown, including sides of pronotum; halteres yellow; femora yellow, tips blackened, subequal in amount on all legs; wings weakly tinged with pale brown, stigma darker; abdomen orange yellow, virtually unpatterned except for a central row of spots on tergites, eighth sternite more extensively darkened but not forming a ring; hypopygium with outer basal lobe of inner dististyle a broad blackened plate produced into two spines.



Figs. 27-28. — 27. *Nephrotoma basutoensis* ALEXANDER, sp. n.; male hypopygium. — 28. *Nephrotoma tzitzikamae* ALEXANDER, sp. n.; male hypopygium.
(Symbols: *b*, basistyle; *d*, dististyle; *p*, phallosome; *s*, sternite; *t*, tergite).

Male. — Length abouth 11–12 mm.; wing 10–12 mm.; antenna about 4.3–5 mm.

Female. — Length about 13–15 mm.; wing 10.5–13 mm.

Frontal prolongation of head orange yellow, nasus black, elongate; palpi with basal three segments brown, incisures pale, terminal segment longer than the preceding three combined, paling to yellowish white. Antennae with scape light yellow, pedicel and first flagellar segment deeper yellow, the latter weakly darkened at tip; succeeding segments vaguely bicolored, brown, the small basal enlargement darker brown; segments weakly incised, much longer than the verticils. Head orange yellow; occipital brand elongate-triangular, pale brown, sending a capillary line cephalad onto the slightly bifid vertical tubercle; a faint brown spot on orbits at narrowest point of vertex.

Pronotum yellow medially, the sides and propleura dark brown. Mesonotal praescutum yellow with three polished stripes, the central one in cases more intensely darkened than the laterals, the latter outcurved, expanded and paler brown at the margin; scutum yellow, each lobe with a major black area that includes the outer end of the suture; scutellum and postnotum clear yellow, posterior border of mediotergite a trifle more fulvous, pleurotergite yellow. Pleura light yellow, usually with conspicuous dark brown areas on anepisternum and ventral sternopleurite, the latter darker; in cases the dark areas paler, more reddened. Halteres yellow, base of knob more darkened, with abundant short dark setae. Legs with coxae yellow, anterior face brownish black, very extensive on fore legs, least evident on posterior pair; trochanters yellow; femora yellow, tips rather narrowly but conspicuously blackened, the amount virtually equal on all legs; tibiae obscure yellow, tips darker, tarsi passing into brown. Wings weakly tinged with brownish yellow, prearcular and costal regions, especially cell *Sc*, paler yellow; stigma small, oval, dark brown; veins brown. Stigmal

trichia very sparse, only about seven or eight; no trichia in the cells. Venation: Cell M_1 sessile to punctiform; *m–cu* a short distance before fork of *M*.

Abdomen orange yellow, virtually unpatterned except for very small suboval pale brown spots at midlength of the tergites just before the posterior border; first tergite with two such areas at extreme base; lateral margins in male with vague interrupted darkenings, eighth sternite more extensively dark brown; remaining sternites and hypopygium clear yellow. In female the spots are slightly more distinct and lateral margins narrowly darkened; cerci straight, tips narrowly obtuse. Male hypopygium (fig. 27) with the tergite transverse, lateral lobes broad, separated by a narrow emargination. Outer dististyle, *d*, relatively long and narrow, the length exceeding five times the greatest width; inner style with beak relatively short and obtuse, lower beak very extensive, its edge folded or curled; dorsal crest glabrous, beginning just back of the beak, ending precipitously at near two-thirds the length of style; outer basal lobe a broad blackened plate, terminating in two or three relatively inconspicuous teeth or spines. Aedeagus short and broad, apophyses very pale and feebly sclerotized. Eighth sternite, *s*, with two rounded lobes provided with abundant long yellow setae, incurved toward the midline which is pale, membranous.

Basutoland: Mokhotlong, 7000 feet, April 6, 1951, swept from vegetation along stony mountain stream (BRINCK—RUDEBECK), Loc. no. 266. Holotype alcoholic ♂, Allotopotype, alcoholic ♀ with type. Paratopotypes, 2 alcoholic ♂, with types; paratypes, ♂♀; Nazareth Mission Station, 20 miles ESE of Maseru, 6250 feet, March 24, 1951, in evening over marshy ground near spring (BRINCK—RUDEBECK), Loc. no. 245; Mamathes, 5 miles ENE of Teyateyaneng, March 29, 1951, dry hilly country with small stony streams, 1 alcoholic ♂, at light (BRINCK—RUDEBECK), Loc. no. 252; Bokong P. O., December 26, 1946, ♂, (L. BEVIS); Makhapung Dip, December 25—26, 1946, ♂♀, (BEVIS), — **Natal:** Umkomazana, December 21, 1938 1 ♂, (BEVIS). — **Cape Province:** Mount Frère, March 6, 1951, 1 alcoholic ♂, at light in grassland (BRINCK—RUDEBECK), Loc. no. 207.

By the key typical specimens run to the vicinity of *Nephrotoma lerothodi* ALEXANDER but some specimens (Mamathes and Mount Frère) are paler, with slightly longer antennae, though with identical male hypopygium.

Nephrotoma capensis (RONDANI)

Pachyrhyna capensis RONDANI; Arch. Canestr., 3: 91–92; 1865. Adapted from original description.

Female. — Length 18–19 mm.

Testaceous yellow. Head with front yellow, without pattern, occipital brand blackened; palpi yellowed. Antennae brownish rufous, scape and pedicel more yellowed, bases of flagellar segments fuscous. Mesonotal praescutum with three broad black stripes, scutellum, postnotum and pleura unpatterned. Halteres yellow. Legs yellow, tips of femora and tibiae obscure fuscous, tarsi black. Wings slightly yellowed, stigma subquadrate, blackish; veins slender, slightly bordered by darker. Abdominal tergites yellowish rufous, terminal segment black; basal tergite bivittate with darker, intermediate tergites patterned with dark brown.

Cape Province: "Cape", according to SPINOLA.

Specific status uncertain; type a female.

Nephrotoma clanceyi ALEXANDER

Nephrotoma clanceyi ALEXANDER; Durban Mus. Novit., 4: 297–299, fig. 4 (♂ hyp.); 1956.

Male. — Length about 13–14 mm.; wing 12–14 mm.; antenna about 5–5.2 mm.

General coloration yellow, praescutum with three polished brown stripes, pleurotergite whitened, posterior end dark brown; femora yellow, tips narrowly blackened, the amount subequal on all legs; wings brownish yellow, stigma dark brown; abdomen orange, tergites two to eight each with an oval dark brown central area; hypopygium with outer apical angle of tergite produced; inner dististyle with beak very broad and obtuse, outer basal lobe without blackened points; eighth sternite with long incurved yellow setae.

Cape Province: Kirstenbosch, Cape Peninsula, November 5, 1950, among vegetation along stony stream in shady valley (BRINCK—RUDEBECK), Loc. no. 25. — **Natal:** Eshowe, Zululand, November—December 1943 (BEVIS). — **Southern Rhodesia:** Victoria Falls, April 19, 1948 (BEVIS), type.

Nephrotoma crocea (LOEW)

Pachyrhina crocea LOEW; Berlin. Ent. Zeitsch., 10: 58; 1866.

Male. — Length about 11 mm.; wing 12 mm.

Bright honey yellow; occipital brand lancet-like, narrowed anteriorly; terminal segment of palpus yellow; flagellar segments black, bases inconspicuously enlarged; sides of pronotum and pleura darkened; praescutum with three broad subequal clearly defined brownish black stripes, anterior ends of laterals outcurved; femora brownish yellow, tips narrowly blackened; wings weakly yellowish brown, costal cell brownish yellow, stigma and veins blackish brown; abdomen yellow, tergites two to six each with a triangular blackish brown area, barely indicated on segments one and seven; hypopygium honey yellow.

The above is translated from the original. I am not certain that this species has been correctly identified in the past and have transferred most of WOOD's records for *N. petiolata* to this species.

Cape Province: Caffraria; Loew's type in the Winthem Collection, Vienna; Newlands, Cape Peninsula, December 1939, September 1944 (WOOD); Langeberg, Tradouwpas, 900 feet, January 4, 1951 (BRINCK—RUDEBECK), Loc. no. 111; Hex River Mountains, Worcester, 1886 (PÉRINGUEY); Oudebosch, September 1933, January 1934; Du Toits Kloof, April 1934; Cold Bokkeveld, October 1934; Schoemans Poort, January 1938; Skurfteberg, October 1937 (WOOD); Kokstad, Griqualand, November 1935 (BEVIS), possibly *petiolata.* — **Natal:** Estcourt, September—October 1896 (G. A. K. MARSHALL); Ulundi, 5000—6500 feet, September 1896 (G. A. K. MARSHALL); Port Natal, British Museum No. 1855—96; M'fongosi, Zululand, December 1915 (W. E. JONES). — **Transvaal:** Bloksberg, Johannesburg, (C. H. PEAD), British Museum 1907—250; Piet Retief, October 6, 1903 (R. CRAWSHAY), British Museum 1904—44; Pretoria Park, February 1914 (Miss G. BRINCKNER), British Museum 1914—184. — **South West Africa:** Waterberg, Damaraland, February 1920 (TUCKER).

Nephrotoma cuthbertsoni ALEXANDER

Nephrotoma cuthbertsoni ALEXANDER; Durban Mus. Novit. 4: 299–301, fig. 5 (♂ hyp.); 1956.

Male. — Length about 13.5—14 mm.; wing 13.5–14 mm.

General coloration yellow, praescutal disk chiefly blackened, the pale interspaces very

narrow or lacking; frontal prolongation yellow, occipital brand very indistinct; postnotum without blackened setae; wings brownish yellow, tips darkened, a brownish cloud on anterior cord; abdomen orange yellow with a blackened subterminal ring; male hypopygium blackened; eighth sternite produced into an elongate median tongue subtended by hairy lateral lobes.

Southern Rhodesia: Vumba Mountains, in kloof forest, 5000—5500 feet, October 1935 (CUTHBERTSON).

Nephrotoma delegorguei (MACQUART)

Pachyrhina Delegorguei MACQUART; Dipt. exot., suppl. 1: 11, pl. 1, fig. 6; 1846.

Adapted from original description.

Head orange; nasus black; outer palpal segments infuscated. Antennae pale yellow, bases of flagellar segments slightly darkened. Vertex with a brown vitta. Thorax orange, praescutum with three black stripes, pleura yellowed. Legs with coxae yellow, remainder of legs brown, tips of femora blackened. Wings yellowed, veins slightly seamed with brown; stigma brown. Abdomen orange, posterior margin of tergites with a more or less triangular blackened mark.

Caffraria, collected by M. DELEGORGUE.

Specific status uncertain; type a female.

Nephrotoma edwardsi ALEXANDER

Nephrotoma edwardsi ALEXANDER; Ann. So. Afr. Mus., 17: 173—174, pl. 12, fig. 35 (wing); 1917.

Male. — Length 14.5 mm.; wing 14.7 mm.

Thorax dusky brown, praescutum with three darker brown stripes; legs black, femoral bases yellowed; wings pale gray, cell *C* and stigma dark brown; veins *Rs*, R_2, R_3, R_{4+5} and *Cu* seamed with brown; *m—cu* at fork of *M*; abdomen orange yellow, outer segments, including hypopygium, black.

Natal: Port Natal, 1855 (British Museum, 55—96); Pietermaritzburg, 1916 (C. AKERMAN); Inchanga, March 24, 1954 (STUCKENBERG); Hilton Road, near Pietermaritzburg, February 1950 (P. GRAHAM). — **Transvaal:** Barberton, October 1911 (H. EDWARDS), type.

Nephrotoma fumidapicalis ALEXANDER

Nephrotoma fumidapicalis ALEXANDER; Ann. Mag. Nat. Hist. (9) 7: 103—105; 1921.

Male. — Length 11.5—12.5 mm.; wing 12—13 mm.; antenna about 7 mm.

General coloration orange yellow, praescutum and scutum with a single major polished black area; postnotum and scutellum with numerous short black setae; legs black, femoral bases broadly yellow; wings smoky brown, apex darker; abdomen orange yellow, segments two to five with lateral and posterior margins broadly blackened, segments six to nine black; eighth sternite unmodified.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG). — **Southern Rhodesia:** Mount Chirinda, 3000 feet, June 8, 1911 (C. F. M. SWYNNERTON), part of type material; Chirinda Forest, January 25, 1955 (STUCKENBERG).

Nephrotoma gorongozae ALEXANDER

Nephrotoma gorongozae ALEXANDER, Ann. Natal Mus., 15: 3—4, fig. 5 (♂ hyp.); 1960.

Male. — Length about 12.5–13 mm.; wing 13–14 mm.; antenna about 6–6.5 mm.

General coloration of thorax yellow, praescutal disk, scutal lobes and scutellum uniformly polished black; antennal flagellum black; legs black, femoral bases narrowly yellowed; claws toothed; wings brownish yellow, outer fifth darker brown; abdominal tergites brownish orange with a central black stripe, outer three segments black; hypopygium with the tergal lobes rounded, spinulose; inner dististyle massive, outer basal lobe a short straight spine; posterior border of eighth sternite virtually truncate, unarmed.

Moçambique: West side of Gorongoza Mt., 1200 meters, September 1957 (STUCKENBERG).

Nephrotoma hemichroa ALEXANDER

Nephrotoma hemichroa ALEXANDER; Durban Mus. Novit., 4: 301–302; 1956.

Female. — Length about 16 mm.; wing 14 mm.; antenna about 3 mm.

General coloration yellow, praescutum with three brownish black stripes; antennal flagellum conspicuously bicolored, segments yellow, bases brownish black; prothorax uniformly yellow; fore femora black, basal fourth yellowed; wings strongly yellowed, including costal border, stigma dark brown; abdominal tergites yellow, segments two to seven with broad blackened triangles, expanded into narrow rings on segments six and seven.

Natal: Eshowe, Zululand, November—December 1943 (BEVIS).

Nephrotoma lerothodi ALEXANDER

Nephrotoma lerothodi ALEXANDER; Durban Mus. Novit., 4: 302–304, fig. 2 (ven.), fig. 7 (♂ hyp.); 1956.

Male. — Length about 10–11 mm.; wing 10–11 mm.; antenna about 4.5–5 mm.

General coloration light yellow and black, the pattern highly contrasted; antennae black; occipital brand very large; mesonotum and pleura yellow, heavily patterned with black; no macrotrichia in stigma or outer wing cells; abdominal tergites yellow, conspicuously patterned with black; dorsal crest of inner dististyle high, glabrous.

Basutoland: Lehaha La Sekhonyana, December 29, 1946 (BEVIS); Makhapung Dip, 8000 feet, January 23, 1955 (BEVIS); Molikaliko, January 7, 1954 (BEVIS); Rafanyane Valley, January 2, 1947, near Son Pass, December 24, 1938 (BEVIS); Thabana Ntlenyana, 10,700 feet, January 20, 1955 (BEVIS).

Nephrotoma leucostigma ALEXANDER

Nephrotoma leucostigma ALEXANDER; Ann. Natal Mus., 15: 4—6, fig. 6 (♂ hyp.); 1960.

Male. — Length about 12 mm.; wing 12 mm.; antenna about 3.5 mm.

General coloration yellow, praescutum with three polished black stripes; scutal lobes and

suture extensively blackened; pleura yellow with reddened areas; femora black, yellowed basally, narrowly so on fore pair; wings whitish subhyaline, stigma scarcely indicated; no macrotrichia in stigma or outer wing cells; abdominal tergites yellow, patterned, seventh and eighth segments blackened; hypopygium with outer dististyle relatively short and broad, inner style with the outer basal lobe a slender rod.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG).

Nephrotoma livingstonei ALEXANDER

Nephrotoma livingstonei ALEXANDER; Ann. Mag. Nat. Hist., (9) 7: 115–117; 1921.

Male. — Length about 11.3–11.5 mm.; wing 12.5 mm.

General coloration yellow; three black praescutal stripes, the outer pair outcurved, median stripe divided at anterior end; occipital brand pale, inconspicuous; fore femora dark brown, posterior pair brownish yellow, tip darkened; wings pale brown, apex and a seam over anterior cord darkened; abdomen orange, basal tergites posteriorly with a median black mark, subterminal segments blackened to form a ring, hypopygium orange; eighth sternite projecting, blackened, with long dark-colored setae, the median ones yellowed.

Moçambique: Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Chirinda Forest, 3600 feet, November 1930 (CUTHBERTSON); also January 25, 1955 (STUCKENBERG).

Nephrotoma luaboensis ALEXANDER

Nephrotoma luaboensis ALEXANDER; Ann. Natal Mus., 15: 6—7, fig. 7 (♂ hyp.); 1960.

Male. — Length about 10–10.5 mm.; wing 11–11.5 mm.; antenna about 5 mm.

Mesonotal praescutum yellow, with three stripes, the central one brownish yellow, bordered by darker, lateral stripes polished black, pleura and pleurotergite conspicuously patterned yellowish white and dark brown; femora brownish yellow, tips narrowly blackened; wings weakly tinted, costal region more yellowed; abdominal tergites orange yellow, with a central row of brown spots, outer segments more extensively blackened, hypopygium yellow; inner dististyle with a blackened flange near base.

Moçambique: Luabo, October 1957 (USHER).

Nephrotoma marshalli ALEXANDER

Nephrotoma marshalli ALEXANDER; Ann. Mag. Nat. Hist. (9) 7: 117–118; 1921.

Male. — Length about 12.3–12.5 mm.; wing 13–14 mm.

Mesonotal praescutum yellow, with three black stripes, lateral pair with anterior ends outcurved; head orange, occipital brand large, light brown; femora brown, tips brownish black, remainder of legs more blackened; wings gray, the extreme tip more darkened; abdomen orange, subterminal segments blackened to form a ring, hypopygium orange.

Cape Province: Port St. Johns, Pondoland, February 5—26, 1924 (R. E. TURNER). — **Natal:** Ulundi, 5000—6500 feet, September 1896 (G. A. K. MARSHALL), type.

Nephrotoma moshesh ALEXANDER

Nephrotoma moshesh ALEXANDER; Durban Mus. Novit., 4: 304, 305, fig. 1 (ven.), fig. 6 (♂ hyp.); 1956.

Male. — Length about 11–12 mm; wing 12–13 mm.; antenna about 7.5–8 mm.

General coloration light yellow, praescutum with three polished black stripes; antennae of male elongate; head orange, occipital brand triangular, shiny black; wings whitish, patterned with pale brown, including costal field, outer end of radial field and seams over veins beyond cord; *m–cu* at or beyond fork of *M*; abdomen chiefly ferruginous, tergites patterned with darker, on subterminal segments forming a weak ring.

Basutoland: Rafanyane Valley, January 2, 1947 (BEVIS), type; Jordan Valley, Likhahleng Pass, January 6, 1954 (BEVIS); Makhapung Dip, 8000 feet, January 23, 1955 (BEVIS); Molikaliko, January 7, 1954 (BEVIS); Qachas Nek, December 30, 1938 (BEVIS); near Semonkong, January 13, 1954 (BEVIS).

Nephrotoma mossambica ALEXANDER

Nephrotoma mossambica ALEXANDER; Ann. Mag. Nat. Hist. (9) 5: 350–351; 1920.

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

Close to *unicingulata*; general coloration of mesonotum whitish yellow, praescutum with three almost confluent black stripes; legs brownish black, femoral bases paler; abdominal tergites orange yellow, basal five segments each with an extensive black central area, segments six to eight ringed with black, hypopygium reddish orange.

Southern Rhodesia: Chirinda Forest, October 1905 (G. A. K. MARSHALL), type.

Nephrotoma oligochaeta ALEXANDER

Nephrotoma oligochaeta ALEXANDER; Ann. Natal Mus., 14: 135–137, fig. 4 (♂ hyp.); 1957.

Male. — Length about 13 mm.; wing 12 mm.; antenna about 5.2 mm.

General coloration yellow, patterned with dark brown and black; central praescutal stripe paler medially; occipital brand pale; propleura and fore coxa dark brown; femora brownish yellow, tips brownish black, the amount subequal on all legs; wings subhyaline, cells *C* and *Sc* slightly darkened; abdominal tergites yellow, each with a brownish black spot before margin, not forming bands; eighth sternite with short sparse setae.

Southern Rhodesia: Zimbabwe, near Fort Victoria, January 29, 1955 (STUCKENBERG), type.

Nephrotoma petiolata (MACQUART)

Pachyrrhina petiolata MACQUART; Dipt. exot., 1, 1: 49; 1838.
Nephrotoma petiolata ALEXANDER; Ann. So. Afr. Mus., 17: 179–180, pl. 12, fig. 41 (wing); 1917.
Nephrotoma petiolata WOOD; Ann. So. Afr. Mus., 39: 75–78, fig. 23 (ad.); 1952.

Male. — Length 13–14 mm.; wing 13–13.5 mm.

General coloration yellow, praescutum with three black stripes, mediotergite and pleura yellow, without clear pattern; antenna of male reaching base of abdomen, flagellum black; halteres infuscated; legs yellow, tips of femora extensively blackened, especially the fore

pair; wings faintly darkened; cell M_1 short-petiolate to narrowly sessile; abdomen orange yellow, unpatterned or with small blackened diamond-shaped areas on intermediate tergites, subterminal segments more extensively darkened.

Although MACQUART'S type is a female it is assumed that the present recognition of the species is correct. As previously indicated under *crocea*, I feel that the specimens determined as being *petiolata* by WOOD actually belong to the former species. For his species, WOOD found the immature stages and worked out the life cycle. The eggs are laid in soil in forest clearings, the larvae living in the upper three inches of soil, feeding on the rootlets of trees.

Cape Province: Kokstad, Griqualand, November 1935 (BEVIS). — **Natal:** Eshowe, Zululand, November—December 1943 (BEVIS); Tugela Valley, National Park, 5000 feet, April 3, 1951, in insect trap in meadow near stream (BRINCK—RUDEBECK), Loc. no. 258. — **Transvaal:** Pilgrims Rest (Miss SCHUNKE). — **Southern Rhodesia:** Machike, August 1913.

Nephrotoma smithersiana ALEXANDER

Nephrotoma smithersiana ALEXANDER; Jour. Ent. Soc. S. Afr., 22: 51—53, fig. 1 (ven.), fig. 11 (♂ hyp.); 1959.

Male. — Length about 10—11 mm.; wing 10.5—12 mm.; antenna about 7—7.5 mm.

General coloration orange and black; antennae of male elongate, flagellum black, segments strongly incised; wings whitish subhyaline, costal border narrowly infuscated; abdomen dark brown, base and hypopygium yellowed; inner dististyle of hypopygium with dorsal crest high and pale, fringed with microscopic setulae.

Southern Rhodesia: Salisbury, April 17 — May 30, 1956, March 29 — April 12, 1957 (SMITHERS), type.

Nephrotoma strenua ALEXANDER

Nephrotoma strenua ALEXANDER; Ann. So. Afr. Mus., 17: 174—175, pl. 12, fig. 36 (wing), pl. 14, fig. 63 (♂ hyp.); 1917.

Male. — Length about 14.5 mm.; wing 16 mm.; antenna about 9 mm.

General coloration of mesonotum brownish yellow, praescutum with three polished black nearly confluent stripes, pleura patterned with yellow and reddish brown; occipital brand not evident; antennal flagellum bicolored; femora brownish yellow, tips dark brown; wings brownish yellow, apex slightly darkened; abdominal tergites dull brownish yellow, lateral borders darkened, on the subterminal segments including also the posterior margins; hypopygium yellowed.

Cape Province: St. Matthews, King William's Town District, 1894 (R. M. LIGHTFOOT), type.

Nephrotoma tigrina ALEXANDER

Nephrotoma tigrina ALEXANDER; Ann. So. Afr. Mus., 17: 177—179, pl. 12, fig. 39 (wing), pl. 14, fig. 67 (♂ hyp.); 1917.

Male. — Length about 13.6 mm.; wing 12.4 mm.; antenna about 6 mm.

Thorax yellow, praescutum with three black stripes, the median one with a paler central line, pleura patterned with reddish, propleura darker; fore femora extensively blackened,

posterior pair with narrowly darkened tips; abdominal segments yellow, tergites ringed with black, on segments six to eight forming a ring, hypopygium chiefly blackened.

Moçambique: Lourenço Marques, February 13, 1909 (C. W. HOWARD), same locality, 1911 (J. B. PAULUS); 1909 (J. DE O. S. DE AZEVEDO), British Museum 1910—105.

Nephrotoma tigrinoides ALEXANDER

Nephrotoma tigrinoides ALEXANDER; Ann. Mag. Nat. Hist. (9) 7: 113—114; 1921.

Male. — Length about 10.5 mm.; wing 10.5 mm.

Mesonotum yellow, praescutum with three polished black stripes, mediotergite glabrous, yellow, apical two-fifths black; wings nearly hyaline, cell *Sc* darker, macrotrichia in apex of cell R_5; abdominal tergites orange, patterned with black, including a subterminal ring, hypopygium orange.

Southern Rhodesia: Chirinda Forest, January 25, 1955 (STUCKENBERG).

Type from Mount Mlanje, Nyasaland.

Nephrotoma tincta (WALKER)

(Fig. 16)

Tipula tincta WALKER; Ins. Saunders., 1, Diptera, p. 444; 1856.
Pachyrrhina tincta BERGROTH; Ent. Tidskr., 9: 140—141; 1888.
Nephrotoma tincta ALEXANDER; Ann. So. Afr. Mus., 17: 179, fig. 40 (wing), fig. 66 (♂ hyp.); 1917.

Male. — Length about 11—12 mm.; wing 10.3—11 mm.

Thorax chiefly black; the pronotum, praescutal humeri, scutellum, mediotergite and pteropleurite orange yellow, the katapleurotergite sulphur yellow; head orange; halteres and legs black, femoral bases narrowly yellowed; wings strongly blackened; abdomen with segments one and five to nine black, segments two to four yellow or orange, styli and genital segment of female yellowed.

EDWARDS (*in litt.*) indicates that Walker's type, a female in the British Museum, is in good condition. The median black praescutal stripe extends to the front margin of the segment.

Cape Province: Caffraria (BERGROTH): Mount Frère, March 6, 1951, flying in garden after rain (BRINCK—RUDEBECK), Loc. no. 208. — **Natal:** Port Natal (WALKER's type); Durban, Botanical Gardens, September 11, 1902 (F. MUIR), January 18, 1913 (in British Museum), October 5, 1914 (BEVIS), in Durban Museum; Hilton Road, Pietermaritzburg, November 4, 1950 (GRAHAM), in Natal Museum. — **Transvaal:** Barberton April, November 1911 (H. EDWARDS). — **Southern Rhodesia:** Salisbury, April 1905 (G. A. K. MARSHALL), Chirinda Forest, January 25, 1955 (STUCKENBERG).

Nephrotoma tricincta ALEXANDER

Nephrotoma tricincta ALEXANDER; Ann. Mag. Nat. Hist., (9) 7: 114—115; 1921.

Male. — Length about 15 mm.; wing 14.5 mm.

General coloration yellow, praescutum with three broad black stripes, lateral pair outcurved; mediotergite glabrous, patterned with dark brown behind; occipital brand incon-

spicuous; knobs of halteres yellowed; wings grayish yellow, cell *Sc* clearer yellow, tip and anterior cord infuscated; abdomen orange, tergites two and three with brownish black terminal bands, a broad black subterminal ring, hypopygium orange.

Moçambique: Machinjiri Mt., 5400 feet, July 1957, April 29, 1958 (STUCKENBERG). Type from Mount Mlanje, Nyasaland.

Nephrotoma tzitzikamae sp. n.

(Fig. 28)

General coloration yellow, patterned with black; praescutum with three polished stripes, lateral pair outcurved; occipital brand small and inconspicuous; scutellum yellow, parascutella black; pleura pale yellow, patterned with darker yellow; knobs of halteres yellow; legs black, fore femora with basal third yellow, more extensive on other legs; claws toothed; wings brownish yellow, stigma darker, stigma and outer end of cell R_5 with numerous macrotrichia; abdomen yellow, with a conspicuous darkened subterminal ring; outer dististyle strongly narrowed at tip; inner dististyle with beak relatively long, outer basal lobe a low flange; eighth sternite large, posterior border with abundant yellow setae.

Male. — Length about 11–11.5 mm.; wing 12–12.2 mm.; antenna about 4.8–5 mm.

Female. — Length about 15–16 mm.; wing 13.5–14; antenna about 3 mm.

Described from alcoholic specimens.

Frontal prolongation of head yellow, nasus concolorous, with long black setae; palpi brownish yellow, terminal segment yellow. Antennae moderately long; scape and pedicel obscure yellow, remainder brownish black, first flagellar segment a little paler at base; flagellar segments moderately incised, longest verticils a trifle shorter than the segments, unilaterally arranged. Head yellow; vertical tubercle entire; occipital brand small, medium brown, inconspicuous.

Prothorax yellow. Mesonotal praescutum yellow with three polished black stripes, lateral pair broader and paler on the outcurved anterior end; scutal lobes extensively blackened; scutellum yellow, parascutella darker; mediotergite yellow, extreme posterior border slightly darker, pleurotergite yellow, the anapleurotergite darker, especially at posterior end. Notum unusually glabrous, with relatively sparse short setae on the scutellum and praescutal interspaces. Pleura whitish yellow with deeper yellow areas on the anepisternum, ventral sternopleurite, and meron. Halteres with stem brownish yellow, knob broadly clear yellow at tip. Legs with coxae yellow, trochanters somewhat darker; fore femora black with about the proximal third yellow, remaining femora yellow with almost the outer fifth blackened; tibiae brownish black, tarsi passing into black; claws of male toothed and conspicuously hairy. Wings brownish yellow, stigma dark brown; cell *Sc* pale brown; an inconspicuous brown seam on anterior cord; veins darkbrown. Stigma and outer end of cell R_5 with at least thirty trichia. Venation: Cell M_1 narrowly sessile; *m–cu* before fork of *M*.

Abdomen yellow, basal tergite with a conspicuous dark brown area, succeeding four tergites yellow, not or scarcely patterned, segments six and seven, with the narrow base of tergite eight and anterior three-fourths of sternite eight, brownish black; remainder of abdomen yellow. Male hypopygium (fig. 28) with the tergite, *t*, transverse, posterior border

with two truncated lobes, separated by a narrow notch, outer angles of lobes slightly produced, their apices with numerous well-distributed spicules. Outer dististyle, *d*, relatively long, tapering gradually to the narrowly obtuse tip, about five times as long as broad; inner style with beak relatively long, tip obtusely rounded, lower beak extensively rounded; dorsal crest glabrous, rising rapidly behind the beak, posterior end precipitous; surface of outer half of crest with microscopic parallel striolae; outer basal lobe a low flange, margin irregularly toothed, outermost projection longer and more blackened. Aedeagus small, much shorter than the elongate pale gonapophyses. Eighth sternite, *8 s*, extensive, dark brown on about the basal three-fourths, outer end yellow, with two low obtuse lobes separated by a membranous notch, lobes with abundant yellow setae of moderate length, directed inwardly; median and basal parts of sternite without setae.

Cape Province: Stormsrivier, January 14, 1951, in dense indigenous forest, with scattered cultivated fields. Holotype, alcoholic ♂, (BRINCK—RUDEBECK), Loc. no. 138. Allotopotype, alcoholic ♀, January 11, 1951 (BRINCK—RUDEBECK), Loc. no. 134. Paratopotypes, alcoholic ♂ ♀, January 13, 1951, January 11, 1951 (BRINCK—RUDEBECK).

The nearest relative of the present fly appears to be *Nephrotoma marshalli* ALEXANDER, which differs chiefly in the structure of the hypopygium, especially the inner dististyle and eighth sternite.

Nephrotoma umbripennis ALEXANDER

Nephrotoma umbripennis ALEXANDER; Ann. So. Afr. Mus., 17: 172—173, pl. 12, fig. 34 (wing), pl. 14, fig. 62 (♂ hyp.); 1917.
Nephrotoma umbripennis WOOD; Ann. So. Afr. Mus., 39: 78—80, fig. 24 (ad.); 1952.

Male. — Length 14—15 mm.; wing 15—15.6 mm.

General coloration yellow, praescutum with three stripes, the central one chestnut brown, margined laterally with black, lateral stripes shiny black; scutellum and mediotergite dull yellow; pleura yellow, blotched with reddish; head orange, occipital brand very large; halteres brown; femora yellow, tips brownish black; wings strongly suffused with brown, stigma undifferentiated, vein *Cu* seamed with brown; abdomen orange yellow, with a restricted dark pattern on outer segments only; hypopygium with tergite shallowly emarginate, lateral angles slightly produced, margin with about twenty spicules.

Cape Province: Kaaimans Gat, April 1933 (WOOD).

Type from "South Africa" without further data.

Nephrotoma unicingulata ALEXANDER

Nephrotoma unicingulata ALEXANDER; Ann. So. Afr. Mus., 17: 175—177, pl. 12, fig. 37 (wing), pl. 14, fig. 65 (♂ hyp.); 1917.

Male. — Length about 13.7 mm.; wing 15 mm.

General coloration yellow, praescutum with three polished black stripes, lateral pair outcurved; mediotergite yellow, slightly darkened laterally and behind, propleura darkened;

occipital brand dark brown, elongate-triangular; wings yellowish, stigma dark brown, weak darkenings at wing tip and anterior cord; abdomen light yellow with a broad blackened subterminal ring, hypopygium yellow.

Cape Province: Overbeck, Mossel Bay, 1897. — **Natal:** Malvern, 1901 (C. N. BARKER), type; Estcourt, March 4, 1913 (R. C. WROUGHTON), (Imp. Bur. Ent. 1915: 58). — **Transvaal:** Barberton, April 1911 (H. EDWARDS).

Nephrotoma vicaria (WALKER)

Tipula vicaria WALKER; List Dipt. Brit. Mus., 1: 72; 1848.

Adapted from original description.

Female. — Length about 16 mm.; wing about 12 mm.

Head orange; palpi brown. Antennae orange at base, flagellum black. Thorax luteous, praescutum with three black stripes. Halteres tawny, knobs brown. Legs fulvous, tips of femora black, tarsi brown. Wings slightly infuscated, stigma pale brown; veins brown. Abdomen black, segments variegated with tawny, including the posterior borders.

South Africa: without more exact data.

Specific status uncertain; type a female.

Dolichopeza CURTIS

Dolichopeza CURTIS; Brit. Entomol., p. 62; 1825.
Leptina MEIGEN; Syst. Beschr., 6: pl. 65, fig. 10; 1830.
Apeilesis MACQUART; Dipt. exot., suppl. 1: 8; 1846.

Dolichopeza is a very extensive genus comprising ten subgeneric groups of which four occur in the Ethiopian region, two within the present faunal limits. The dominant subgenus in South Africa is *Trichodolichopeza* ALEXANDER (Ann. So. Afr. Mus., 17: 157; 1917, type, *hirtipennis* ALEXANDER) which elsewhere has a very few representatives in tropical Africa and Madagascar.

At the present time the females of the various species are poorly known and many have not been associated with the males. The most important characters for species separation are to be found in the male hypopygium but other important structures occur in the antennae, wing venation, and legs. The character of simple or toothed claws in the male evidently is an important one but cannot be used in the key since it remains unknown for several species. The male claws are simple in most of the known forms but in *D.* (*T.*) *chaka* and *D.* (*T.*) *vumbicola* have about three strong basal teeth or spines.

The male hypopygium in *Trichodolichopeza* has a somewhat peculiar structure that is much used in the following discussion and may be briefly described. The tergite consists of a sclerotized dorsal plate and a usually more feebly hardened ventral ledge with expanded lateral arms that are variously shaped and provided with blackened spicules. The dististyles, particularly the inner styles, provide unusually strong characters for separation of the species. In 1921, while describing a few species of this subgenus, I made outline drawings

from the dried and unmounted types of four of the local species, *flavifrons*, *peringueyi*, *picticeps*, and *thoracica*. These figures have not been published hitherto and are included herewith.

The immature stages of a number of species of *Dolichopeza* are known at present, including the subgenotype, *hirtipennis*, which has been described in detail by Dr. WOOD. In North America an outstanding study of the local species of the subgenus *Oropeza* NEEDHAM has been made by Dr. GEORGE W. BYERS and will be published almost coincidentally with the present report. From all these life histories it is known that throughout their range the immature stages of the species as known occur chiefly in or beneath mats or cushions of mosses and liverworts growing in wet to saturated locations, as on cliff faces, stream banks, or similar situations. A relatively small number occur in similar places but under much drier conditions.

Key to South African *Dolichopeza*

Males

1. Outer cells of wing without macrotrichia. (Subgenus *Dolichopeza* Curtis) (Southern Rhodesia) . . . . *cuthbertsoniana* ALEXANDER
— Outer cells of wing with macrotrichia. (Subgenus *Trichodolichopeza* ALEXANDER) 2
2. Size very large (wing of male 14 mm.); (thoracic pleura yellow, unpatterned; claws simple; hypopygium with both dististyles acute at tips). (Natal) . . . . . *senzangakona* ALEXANDER
— Size smaller (wing to 13 mm., usually smaller). 3
3. Thoracic pleura yellow or orange yellow, unpatterned. 4
— Thoracic pleura yellow or gray, striped or lined with brown. 8
4. Head and thorax orange, unpatterned; (claws simple). (Cape Province, Natal) *aurantiaca* ALEXANDER
— Head and thorax with evident darkened pattern. 5
5. Thorax light yellow, only the praescutum and scutum brownish black or black; (size small, wing 8 mm.; claws simple; obliterative areas of wing small and inconspicuous) (figs. 29, 30). (Southern Rhodesia) . . . . . *byersiana* sp. n.
— Thorax not patterned as above; size larger, wing at least 10 mm. 6
6. Hypopygium with both dististyles acutely pointed at tips; (claws at base with three spines). (Natal) . . . . . *chaka* ALEXANDER
— Hypopygium with both dististyles with obtuse tips. 7
7. Praescutum yellow with four brown stripes; hypopygium with central area of tergal plate with a shield-shaped blackened mass; ventral arms very large, with abundant spicules; (claws simple). (Cape Province, Natal) . . . . . *centrosoma* ALEXANDER
— Praescutum buffy with three narrow brown stripes; hypopygium with tergal plate not as above; ventral arms produced dorsad into a slender rod; (claws simple). (Natal). . . . . *dorsoprojecta* ALEXANDER
8. Antennae unusually long, about three-fourths the body, basal flagellar segments bicolored, black, tips narrowly yellow; (claws simple; hypopygium with tergal plate deeply divided by a median notch). (Natal) . . . . . *panda* ALEXANDER
— Antennae shorter, at most about one-half the body, if elongate flagellar segments not bicolored . . . 9
9. Pleura yellow, the anterior margins of the sclerites narrowly brown 10
— Pleura orange or yellow, striped longitudinally with brown 11
10. Praescutum yellowed, almost covered by four brown stripes, intermediate pair contiguous behind; hypopygium with outer dististyle cylindrical, apex obtuse with nearly 100 microscopic spines; inner style triangularly dilated, outer angles subacute. (Cape Province: Peninsula) . . . . . *barnardi* WOOD
— Praescutum yellow with three brown stripes, the central one expanded behind; hypopygium with outer dististyle dilated outwardly, angles obtuse, without spines. (Cape Province) . . . . . *fluminis* WOOD

11. Tips of femora and bases of tibiae narrowly whitened; (claws with basal spines; hypopygium with outer dististyle strongly narrowed to the apex). (Southern Rhodesia) . . . . . *vumbicola* ALEXANDER
— Femora and tibiae darkened, at most with the genua insensibly paler 12
12. Macrotrichia of wing cells greatly reduced in number, with about 6 or 7 in outer end of cell R_5. (Natal) . . . . . *parvistyla* ALEXANDER
— Macrotrichia of wing cells more abundant, in cells R_3 to M_1 or more. 13
13. Medial forks very shallow, cell M_1 subequal to or about twice its petiole; (claws simple) (figs. 36—39). (Cape Province: Peninsula) . . . . . *peringueyi* ALEXANDER
— Medial forks deeper, cell M_1 at least two and one-half times its petiole, usually longer (compare *altiarca*) 14
14. Macrotrichia of wing cells relatively restricted, lacking in cells R_2 and M_3. (Natal) *cathedralis* ALEXANDER
— Macrotrichia in wing cells R_2 to M_4 inclusive 15
15. Mesonotum uniformly darkened, praescutum without distinct stripes; pleura yellow with a conspicuous dorsal brown stripe; (vertex dark brown with a central yellow line from the tubercle to occiput; R_{1+2} atrophied) (figs. 33—35). (Cape Province) . . . . . *flavifrons* ALEXANDER
— Mesonotal praescutum yellowed, with three or four brown stripes; pleura not so distinctly striped 16
16. Wings with vein R_{1+2} preserved, with macrotrichia on basal half 17
— Wings with vein R_{1+2} lacking, if weakly indicated, without basal macrotrichia 18
17. Hypopygium (figs. 43, 44) with tergal plate highly arched, lateral ends with a few spicules; ventral arms continued across the midline; inner dististyle irregularly toothed at apex. (Cape Province) . . . . . *thoracica* ALEXANDER
— Hypopygium (figs. 40—42) with tergite not arched, median lobe microscopically denticulate; ventral arms narrowly interrupted at midline, with numerous spicules; apex of inner dististyle feebly notched; head yellow, posterior vertex with a dark brown area on either side, anterior vertex with a smaller spot, midline and orbits yellow; basal flagellar segments vaguely bicolored. (Natal) . . . *picticeps* ALEXANDER
18. Head yellow with brown marks on anterior orbits and on sides of posterior vertex; wing disk infuscated, medial forks relatively shallow, cell M_1 about three times its petiole; (hypopygium with outer dististyle short and stout, darkened; inner style short and compact, blackened, apex with three blunt lobes or teeth, with a further major more basal lobe). (Natal) . . . . . *altiarca* ALEXANDER
— Head above chiefly darkened, especially behind, in cases with the vertical tubercle yellowed; medial forks deeper 19
19. Hypopygium with outer dististyle very small, about one-half as long as the inner style, its outer half subglabrous, with about six or seven setae; (inner style with a subterminal tooth at near two-thirds the length). (Natal) . . . . . *dingaan* ALEXANDER
— Hypopygium with the outer dististyle as long as or longer than the inner style, with numerous long setae to the obtuse apex 20
20. Size small (wing of male less than 9 mm.); (wings darkened, the three obliterative areas conspicuous; ventral plate of tergite of hypopygium continuous across midline or virtually so; inner style with three slender blackened teeth, two apical, the subterminal tooth at near three-fourths the length). (Southern Rhodesia) . . . . . *insincera* ALEXANDER
— Size larger (wing of male over 10 mm.); (hypopygium with ventral tergal plate unsclerotized medially, the subquadrate lateral lobes with about 20—24 spicules; inner style a simple arcuated blade, narrowed to the simple darkened tip, with a blunt subapical tubercle, outer margin with long pale setae) (figs. 17, 31, 32). (Cape Province: Peninsula) . . . . . *hirtipennis* ALEXANDER

Dolichopeza (Dolichopeza) cuthbertsoniana ALEXANDER

Dolichopeza (Dolichopeza) cuthbertsoniana ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 14: 95—96; 1945.

Male. — Length 10—11 mm.; wing 11 mm.; antenna about 2.5 mm.

Thorax brown, without clearly defined pattern; femora and tibiae brown, tips very narrowly darker brown, tarsi snowy white, basitarsi with central third infuscated; wings grayish, stigma and cord dark brown; basal abdominal tergites bicolored, outer segments, with the hypopygium, more uniformly blackened.

Living in dark crevices and beneath overhanging rocks at stream margins on edge of forest, associated with *Dolichopeza* (*Trichodolichopeza*) *vumbicola* ALEXANDER (CUTHBERTSON).

Southern Rhodesia: Chirinda Forest, 3600 feet, November 1930 (CUTHBERTSON), type material; Vumba Mountains, November 1932, March 1935 (CUTHBERTSON), type material.

Dolichopeza (Trichodolichopeza) altiarca ALEXANDER

Dolichopeza (*Trichodolichopeza*) *altiarca* ALEXANDER; Ann. Natal Mus., 13: 408–409, fig. 15 (♂ hyp.); 1956.

Male. — Length about 9 mm.; wing 9.5 mm.; antenna about 3 mm.

General coloration yellow, head and mesonotum patterned with brown, pleura yellow, conspicuously striped with brown; macrotrichia of outer wing cells abundant; hypopygium with dorsal tergal plate highly arched, ventral ledge complete; outer dististyle small, inner style massive, blackened, more or less trilobed.

Natal: Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG); Town Bush, Pietermaritzburg, November 2, 1954 (STUCKENBERG); Kranskop, November 11, 1954 (STUCKENBERG).

Dolichopeza (Trichodolichopeza) aurantiaca ALEXANDER

Dolichopeza (*Trichodolichopeza*) *aurantiaca* ALEXANDER; Ann. So. Afr. Mus., 18: 212–213, pl. 4, fig. 15 (wing); 1921.

Dolichopeza aurantiaca WOOD; Ann. So. Afr. Mus., 39: 98–100, fig. 31 (ad.); 1952.

Male. — Length 8.8–9.5 mm.; wing 9.5–10.5 mm.

Head and thorax almost uniformly orange, praescutum with three indistinct more brownish stripes, pleura orange yellow; wings grayish yellow, apex a little darker, vein R_{1+2} preserved; hypopygium with tergite arched, median part with a tridentate plate; lateral arms of ventral plate oval, each with numerous spicules; both dististyles obtuse at tips, inner style large and flattened.

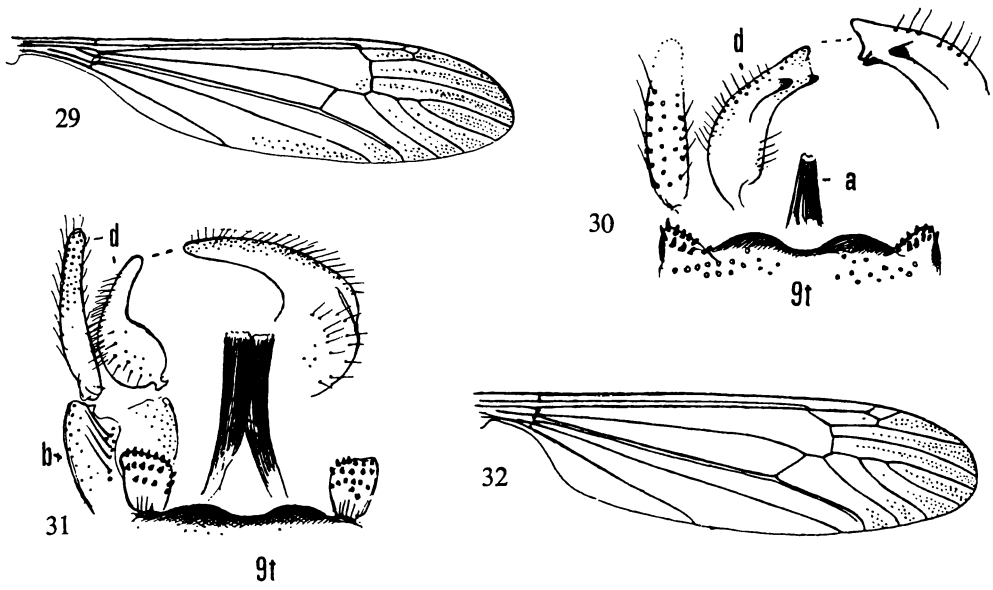
Cape: Province: Harkerville, January 1938; Avontuur Road, Knysna, November 1936 (WOOD). — **Natal:** Kranskop, November 1917 (BARNARD), type; Pietermaritzburg, 1917 (BARNARD); Indumeni Forest, Drakensberg, February 3, 1954 (STUCKENBERG).

Dolichopeza (Trichodolichopeza) barnardi WOOD

Dolichopeza barnardi WOOD; Ann. So. Afr. Mus., 39: 93–95, fig. 29 (ad); 1952.

Male. — Length about 7.5 mm.; wing 9 mm.

Mesonotal praescutum with disk almost covered by four brown stripes, the intermediate pair contiguous behind; pleura yellow, anterior margins of sclerites bordered with brown; hypopygium with dorsal tergal plate sclerotized, produced into two low rounded lobes;



Figs. 29-32. — 29. *Dolichopeza* (*Trichodolichopeza*) *byersiana* ALEXANDER, sp. n.; venation. — 30. *Dolichopeza* (*Trichodolichopeza*) *byersiana* ALEXANDER, sp. n.; male hypopygium. — 31. *Dolichopeza* (*Trichodolichopeza*) *hirtipennis* ALEXANDER; male hypopygium. — 32. *Dolichopeza* (*Trichodolichopeza*) *hirtipennis* ALEXANDER; venation, showing distribution of macrotrichia.
(Symbols: *a*, aedeagus; *b*, basistyle; *d*, dististyle; *t*, tergite).

outer dististyle cylindrical, the obtuse apex with nearly 100 acute spinules, inner style a flattened sclerotized blade, dilated outwardly to appear triangular in outline, the outer angles subacute.

Cape Province: Echo Valley, Cape Peninsula, March 1932 (WOOD).

Dolichopeza (Trichodolichopeza) byersiana sp. n.

(Figs. 29, 30)

Size small (wing of male 8 mm.); thorax light yellow, posterior half of praescutum with four darkened stripes, scutal lobes blackened; frontal prolongation of head and nasus clear light yellow; legs black, femoral bases yellowed; wings weakly darkened, restrictedly patterned; macrotrichia of cells abundant, medial forks deep; male hypopygium with the blackened posterior border of dorsal tergal plate smooth, gently emarginate with low lobes; lateral ventral arms with large spicules; inner dististyle with two small blackened points.

Male. — Length about 8 mm.; wing 8 mm.

Frontal prolongation of head light yellow, including the long nasus; palpi black. Antennae broken. Head brownish gray, the front and low entire vertical tubercle light yellow; narrow orbits and a vague central line clearer gray.

Pronotum light yellow. Mesonotum clear light yellow, including the scutellum and postnotum; praescutum broadly yellow anteriorly and on sides, the posterior half with four

stripes, lateral pair darker; scutal lobes extensively and solidly black. Pleura entirely light yellow. Halteres with stem brownish yellow, clear yellow at base, knob brownish black. Legs with all coxae and trochanters light yellow; remainder of legs black, femoral bases yellow, broadly so on posterior pair; claws simple. Wings (fig. 29) weakly darkened, prearcular and costal fields more brownish yellow; stigma dark brown, conspicuous; a vague darkened seam on anterior cord; wing tip from cell R_2 to termination of vein Cu_1 narrowly darkened; veins brown, paler at base and before the stigma. Macrotrichia of cells abundant, including the cells beyond cord, more concentrated at the outer ends, including an extensive series in cell *1st A*. Venation: R_{1+2} faintly preserved; medial cells deep, cell M_1 about five to six times its petiole; *m–cu* about its own length before the fork of *M*.

Abdominal tergites brownish yellow, sternites clearer yellow; posterior borders of outer tergites narrowly darkened; seventh and eighth segments extensively infuscated to form a ring; hypopygium yellow. Male hypopygium (fig. 30) with the tergite, *t*, narrow, posterior border blackened, smooth, gently emarginate to form two low rounded lobes; ventral lateral arms each with about 15 large black spicules. Outer dististyle subcylindrical, with relatively small setae, tip broken. Inner style small and simple, outer end obliquely truncate, lower apical angle vaguely bidentate, one tooth blacker and more conspicuous; a small blackened lateral lobe; outer margin at near midlength with a few strong erect setae that are more conspicuous than the other more normal setae. Aedeagus, *a*, relatively small, blackened.

Southern Rhodesia: Inyanga, 6000–7000 feet, December 30, 1958, holotype, ♂ (COURTENAY SMITHERS), in Alexander Collection.

I am pleased to dedicate this fly to Dr. GEORGE W. BYERS, of the University of Kansas, critical student of the North American species of *Dolichopeza*. The nearest ally is *Dolichopeza* (*Trichodolichopeza*) *insincera* ALEXANDER, likewise from the Vumba Mountains, which differs conspicuously in the coloration and in the details of structure of the male hypopygium.

Dolichopeza (Trichodolichopeza) cathedralis ALEXANDER

Dolichopeza (*Trichodolichopeza*) *cathedralis* ALEXANDER; Ann. Natal Mus., 13: 409–410, figs. 16, 17 (♂ hyp.); 1956.

Male. — Length about 8 mm.; wing 8.5 mm.; antenna about 2.5 mm.

Size relatively small; mesonotum gray, praescutum with a broad dark brown central stripe, lateral pair poorly indicated; sparse macrotrichia in outer ends of cells R_3, R_5 and M_1; vein R_{1+2} entirely atrophied; hypopygium with tergal border smooth, indistinctly trilobed; inner dististyle irregular in outline, beak obtuse, margin with two obtuse darkened lobes.

Natal: Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG), type.

Dolichopeza (Trichodolichopeza) centrosoma ALEXANDER

Dolichopeza (*Trichodolichopeza*) *centrosoma* ALEXANDER; Ann. Natal Mus., 13: 410–411, fig. 18 (♂ hyp.); 1956.

Male. — Length about 9.5 mm.; wing 10 mm.; antenna about 3 mm.

General coloration yellow, praescutum with four dark brown stripes, pleura and pleurotergite uniformly yellow; hypopygium with the tergal armature heavily blackened, including lateral arms and a shield-shaped central mass.

Cape Province: Grahamstown, October 24, 1953 (STUCKENBERG), type. — **Natal:** Town Bush, Pietermaritzburg, November 2, 1954 (STUCKENBERG).

Dolichopeza (Trichodolichopeza) chaka ALEXANDER

Dolichopeza (Trichodolichopeza) chaka ALEXANDER; Ann. Natal Mus., 13: 412–413, fig. 13 (wing), fig. 19 (♂ hyp.); 1956.

Male. — Length about 9.5–10 mm.; wing 11–11.5 mm.

Mesonotal praescutum yellowed, disk with three ill-defined brown stripes, pleura and pleurotergite obscure yellow; claws toothed; macrotrichia of outer cells moderately abundant; medial forks deep; hypopygium with both dististyles acute at tips.

Natal: Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG), type.

Dolichopeza (Trichodolichopeza) dingaan ALEXANDER

Dolichopeza (Trichodolichopeza) dingaan ALEXANDER; Ann. Natal Mus., 14: 372–373, fig. 2 (♂ hyp.), fig. 7 (ven.); 1960.

Male. — Length about 9–9.5 mm.; wing 10–10.5 mm.; antenna about 4–4.2 mm.

Mesonotal praescutum light brown with three darker brown stripes, pleura yellow, variegated with brown; antennae short; wings strongly blackened, stigma darker; outer medial cells deep; male hypopygium with the inner dististyle a long simple curved rod, apex microscopically bidentate.

Natal: Kranskop, October 12, 1956 (STUCKENBERG), type.

Dolichopeza (Trichodolichopeza) dorsoprojecta ALEXANDER

Dolichopeza (Trichodolichopeza) dorsoprojecta ALEXANDER; Ann. Natal Mus., 13: 413–414, fig. 20 (♂ hyp.); 1956.

Male. — Length about 8.5 mm.; wing 9.5 mm.

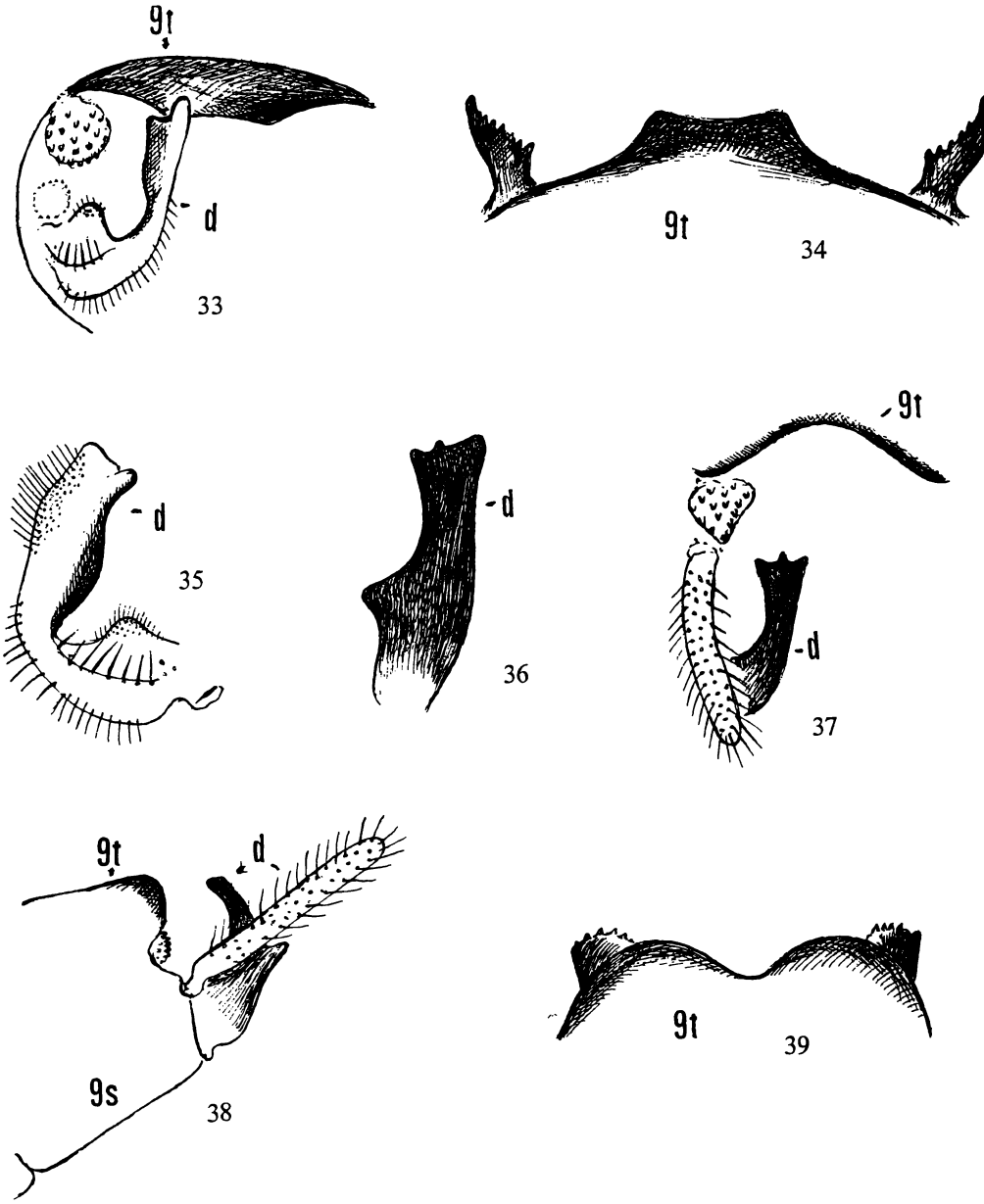
Mesonotal praescutum buffy, with three narrow brown stripes, pleura obscure yellow, unpatterned; head light gray, sides of posterior vertex more darkened; basal flagellar segments narrowly pale at tips; macrotrichia of wing cells numerous; vein R_{1+2} preserved; medial forks shallow; hypopygium with ventral tergal arms produced dorsad into a long slender rod; outer dististyle very small, inner style suboval, compact.

Natal: Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG), type.

Dolichopeza (Trichodolichopeza) flavifrons ALEXANDER

(Figs. 33–35)

Dolichopeza (Trichodolichopeza) flavifrons ALEXANDER; So. Afr. Journ. Nat. Hist., 5: 43–44; 1925.
Dolichopeza flavifrons WOOD; Ann. So. Afr. Mus., 39: 100–103, fig. 26 (larva), fig. 32 (ad.); 1952.



Figs. 33-39. — 33. *Dolichopeza* (*Trichodolichopeza*) *flavifrons* ALEXANDER; male hypopygium, caudal aspect — 34. *Dolichopeza* (*Trichodolichopeza*) *flavifrons* ALEXANDER; male hypopygium, tergite, dorsal aspect. — 35. *Dolichopeza* (*Trichodolichopeza*) *flavifrons* ALEXANDER; male hypopygium, dististyle. — 36. *Dolichopeza* (*Trichodolichopeza*) *peringueyi* ALEXANDER; male hypopygium, dististyle. — 37. *Dolichopeza* (*Trichodolichopeza*) *peringueyi* ALEXANDER; male hypopygium, caudal aspect. — 38. *Dolichopeza* (*Trichodolichopeza*) *peringueyi* ALEXANDER; male hypopygium, lateral aspect. — 39. *Dolichopeza* (*Trichodolichopeza*) *peringueyi* ALEXANDER; male hypopygium, tergite, dorsal aspect.

(Symbols: *d*, dististyle; *s*, sternite; *t*, tergite).

Male. — Length about 9–11 mm.; wing 10.3–12.5 mm.

Mesonotum uniformly dark brown, pleura obscure yellow, conspicuously striped longitudinally with brown; vertex dark brown, tubercle yellow, extended backward to the occiput; medial cells of wing deep; hypopygium (figs. 33–35) with dorsal tergal plate, *t*, flattened, surface weakly granulose; outer dististyle with numerous elongate setae, inner style, *d*, a flattened blade, outer end narrowed, separated from base by a circular notch, the margin of which bears about eight stiff setae.

WOOD found the immature stages living in moss cushions on rocks projecting from streams.

Cape Province: Oudebosch, December 1920 (LIGHTFOOT), types; September 1934 (WOOD).

Dolichopeza (Trichodolichopeza) fluminis WOOD

Dolichopeza fluminis WOOD; Ann. So. Afr. Mus., 39: 95–98, fig. 30 (ad); 1952.

Male. — Length 9–9.5 mm.; wing 11–12 mm.

Praescutum obscure yellow, color greatly restricted by three brown stripes, central stripe expanded behind; pleura obscure yellow, anterior margins of sclerites bordered with brown; hypopygium with tergite produced into two rounded lobes; outer dististyle dilated outwardly, outer angles obtuse; inner style narrow basally, expanded outwardly, cephalic angle produced into a slender arm, its apex rounded.

Cape Province: Groot River, February 1936 (WOOD), type.

Dolichopeza (Trichodolichopeza) hirtipennis ALEXANDER

(Figs. 17, 31, 32)

Dolichopeza (Trichodolichopeza) hirtipennis ALEXANDER; Ann. So. Afr. Mus., 17: 157–158, pl. 11, fig. 21 (wing); 1917.

Dolichopeza hirtipennis WOOD; Ann. So. Afr. Mus., 39: 84–91, fig. 25 (ad.), fig. 26 (larva), fig. 27 (pupa); 1952.

Male. — Length 9.5–11 mm.; wing 11.5–13 mm.

Praescutum buffy with three dark brown stripes, pleura whitened, patterned with brown; wings (figs. 17, 32) with R_{1+2} lacking or weakly preserved; hypopygium with ventral lobes of tergite subquadrate, with from 20 to 24 spicules, central area of ledge unsclerotized; outer dististyle cylindrical, tip obtuse; inner style a flattened arcuated blade (fig. 31), apex obtuse; before tip with a small blunt projection, outer margin with long pale setae.

Immature stages in or beneath wet or saturated mats or cushions of mosses and liverworts along the sides of waterfalls or on roots in the flowing streams. The larvae feed on leaves of the bryophytes among which they live. The pupae occupy the drier parts of the moss cushions (WOOD).

Cape Province: Peninsula, Echo Valley, March 1932; Lekkerwater, March 1933; Kirstenbosch, November 1932 (WOOD); Landdrost Kloof, Hottentot-Hollands Mts., Caledon, 4000 feet, 1915, type; Winterhoek Mts., Tulbagh, 3600 feet, April 1916 (LIGHTFOOT); Sneeuwgat, November 1933; Du Toits Kloof, April 1934 (WOOD); Hout Bay, Skoorsteenkop, 600 feet, January 1951 (BRINCK—Rudebeck). Loc. no. 157.

Dolichopeza (Trichodolichopeza) insincera ALEXANDER

Dolichopeza (*Trichodolichopeza*) *insincera* ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 15: 132–133; 1946.

Male. — Length 7.5–8 mm.; wing 8–8.5 mm.; antenna about 2.8–3 mm.

Mesonotum reddish brown, disk of praescutum with four slightly darker brown stripes, median dividing line darker; pleura brownish yellow, variegated by slightly darker brown areas; antennae with pedicel yellow, flagellum black; legs brown, genua scarcely brightened, tarsi paler; wings brown, cell *Sc* and stigma darker; three whitened obliterative areas, before and beyond stigma and across the fork of *M*; macrotrichia of cells abundant; hypopygium with dorsal tergal plate blackened, smooth; lateral arms oval, with relatively few spicules, continued as a ventral ledge; outer dististyle cylindrical, tip obtuse; inner style with two subapical blackened teeth and a more basal lobe on lower face.

Occurs on rock faces overhanging streams, living in darkness (CUTHBERTSON).

Southern Rhodesia: Vumba Mts., March 1935 (CUTHBERTSON), type; Leopard Rock, Vumba Mts., January 16, 1955 (GRAHAM & STUCKENBERG); near Inyanga, January 14, 1955 (GRAHAM & STUCKENBERG); Inyanga, 6000–7000 feet, December 30, 1958 (SMITHERS); Mountain Lodge, Vumba Mts., 5000 feet, December 20, 1958 (SMITHERS).

Dolichopeza (Trichodolichopeza) panda ALEXANDER

Dolichopeza (*Trichodolichopeza*) *panda* ALEXANDER; Ann. Natal Mus., 14: 256–257, fig. 1 (ven.), fig. 5 (♂ hyp.); 1958.

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

General coloration of thoracic notum yellow, patterned with dark brown, pleura heavily patterned; antennae of male elongate, basal flagellar segments bicolored; hypopygium with tergite deeply split medially, forming two narrow pale lobes.

Natal: Saint Helier Estate, December 20, 1954 (STUCKENBERG), type.

Dolichopeza (Trichodolichopeza) parvistyla ALEXANDER

Dolichopeza (*Trichodolichopeza*) *parvistyla* ALEXANDER; Ann. Natal Mus., 13: 414–415, fig. 14 (wing), fig. 21 (♂ hyp.); 1956.

Male. — Length about 7.5 mm.; wing 8.1 mm.

Mesonotum light brown, praescutum with four darker brown stripes, pleura yellow, patterned with medium brown; knob of halteres dark brown; wings pale brownish gray, stigma darker; macrotrichia of cells very reduced in number; hypopygium with outer dististyle short, inner style produced into a long beak bearing two acute apical spines, near base of prolongation with a low darkened lobe.

Natal: Indumeni Forest, Cathedral Peak Area, Drakensberg, February 1954 (STUCKENBERG), type.

Dolichopeza (Trichodolichopeza) peringueyi ALEXANDER

(Figs. 36–39)

Dolichopeza (*Trichodolichopeza*) *peringueyi* ALEXANDER; So. Afr. Journ. Nat. Hist., 5: 46–47; 1925.
Dolichopeza peringueyi WOOD; Ann. So. Afr. Mus., 39: 91–93, fig. 28 (ad); 1952.

Male. — Length about 7 mm.; wing 8.2 mm.

Praescutum obscure yellow with four conspicuous brown stripes, intermediate pair only narrowly separated, contiguous posteriorly; head uniformly yellow; antennae relatively long, extending to beyond base of abdomen; tips of femora dark brown; wings tinged with brown, stigma darker, obliterative areas conspicuous; macrotrichia of cells very abundant; vein R_{1+2} preserved, medial forks very shallow; hypopygium (figs. 36–39) with tergal plate, *t*, small, margin smooth, shallowly emarginate; lateral ventral arms each with about 15 to 19 spicules, ledge interrupted at midline; outer dististyle, *d*, elongate, cylindrical; inner style short and stout, apex subtruncate, with two small teeth, base of style with a blunt lateral lobe.

Cape Province: Peninsula, Cape Town, May 1920 (L. A. PÉRINGUEY), type; Oranjezicht, January 1934 (WOOD).

Dolichopeza (Trichodolichopeza) picticeps ALEXANDER

(Figs. 40–42)

Dolichopeza (Trichodolichopeza) picticeps ALEXANDER; So. Afr. Journ. Nat. Hist., 5: 44–46; 1925.

Male. — Length about 8.5 mm.; wing 9.3 mm.

Praescutum pale yellow with three conspicuous dark brown stripes, median one split by a reddish brown central vitta; pleura yellow, variegated by narrow longitudinal stripes; head yellow, with a dark brown area on either side of posterior vertex, vaguely interconnected at midline, with a smaller brown orbital spot at narrowest point of vertex, orbits broadly yellow; hypopygium (figs. 40–42) with tergite, *t*, slightly produced medially, margin denticulate, ventral lobes with conspicuous spicules; outer dististyle elongate, inner style with apex short and stout, feebly notched.

Natal: Inchanga, November 1917 (BARNARD), type; Kranskop, November 1917 (BARNARD).

Dolichopeza (Trichodolichopeza) senzangakona ALEXANDER

Dolichopeza (Trichodolichopeza) senzangakona ALEXANDER; Ann. Natal Mus., 14: 373–376, fig. 3 (♂ hyp.), fig. 8 (ven.); 1960.

Male. — Length about 14 mm.; wing 14 mm.; antenna about 3.5 mm.

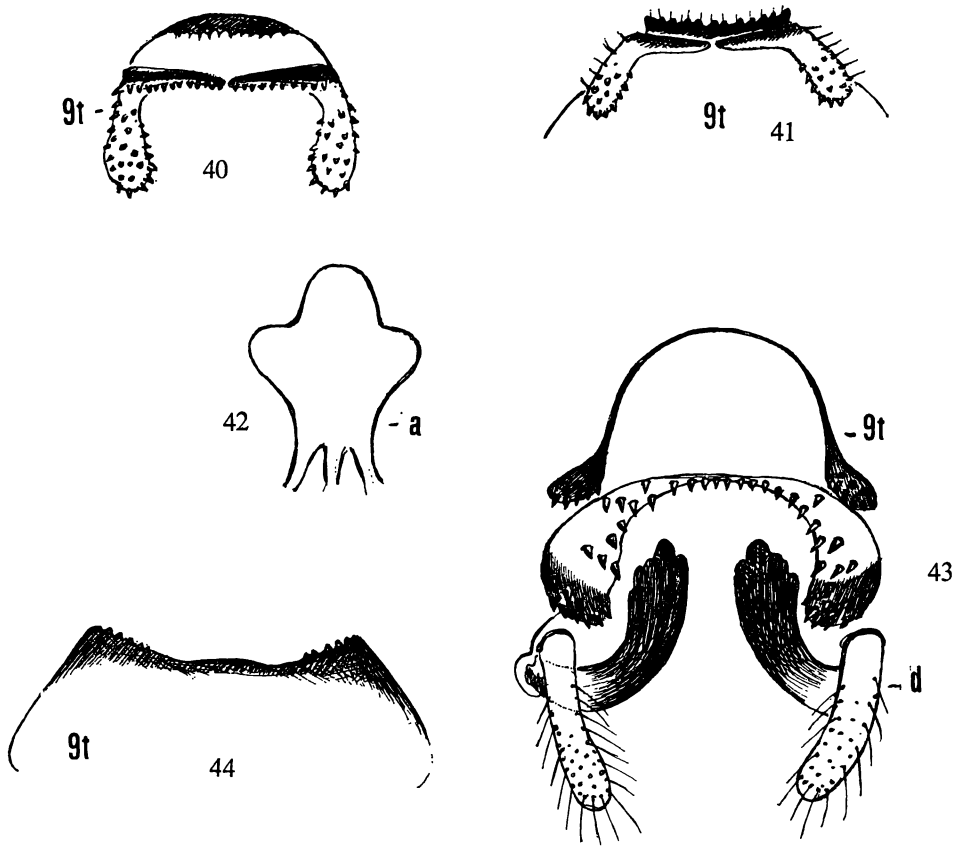
Size very large; general coloration of mesonotum orange, disk with four light brown stripes, pleura obscure yellow, unpatterned; hypopygium with both dististyles pointed at tips; ninth sternite with a pencil of setae beneath on either side of the midline.

Natal: Geekie's Farm, Karkloof, January 9, 1957 (STUCKENBERG), type.

Dolichopeza (Trichodolichopeza) thoracica ALEXANDER

(Figs. 43, 44)

Dolichopeza (Trichodolichopeza) thoracica ALEXANDER; So. Afr. Journ. Nat. Hist., 5: 47–48; 1925.
Dolichopeza thoracica WOOD; Ann. So. Afr. Mus., 39: 103–104, figs. 25, 31 (ad.); 1952.



Figs. 40-44. — 40. *Dolichopeza* (*Trichodolichopeza*) *picticeps* ALEXANDER; male hypopygium, caudal aspect. — 41. *Dolichopeza* (*Trichodolichopeza*) *picticeps* ALEXANDER; male hypopygium, tergite, dorsal aspect. — 42. *Dolichopeza* (*Trichodolichopeza*) *picticeps* ALEXANDER; male hypopygium, aedeagal sheath. — 43. *Dolichopeza* (*Trichodolichopeza*) *thoracica* ALEXANDER; male hypopygium, caudal aspect. — 44. *Dolichopeza* (*Trichodolichopeza*) *thoracica* ALEXANDER; male hypopygium, tergite, dorsal aspect. (Symbols: *a*, aedeagus; *d*, dististyle; *t*, tergite).

Male. — Length about 7.5 mm.; wing 8.3 mm.

Praescutum obscure yellow, conspicuously patterned with three dark brown stripes, median stripe bifid, pleura yellow, patterned with dark brown; head yellow, patterned with brown; wings with macrotrichia relatively sparse, medial forks deep; hypopygium with margin of upper plate of tergite highly arched, appearing ∩-shaped; ventral lobes densely spiculose, these continued mesad over the ventral ledge; inner dististyle, *d*, blackened, apex irregularly toothed (figs. 43, 44).

Cape Province: Humansdorp, Coldstream, January 1921 (TUCKER), type. — **Natal:** Cathkin Peak, Drakensberg, January 1938 (R. F. LAWRENCE).

Dolichopeza (Trichodolichopeza) vumbicola ALEXANDER

Dolichopeza (Trichodolichopeza) vumbicola ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 15: 133–134; 1946.

Male. — Length 9–9.5 mm.; wing 10.5–11 mm.; antenna about 2.6–2.9 mm.

Mesonotum brown, unpatterned, humeri obscure yellow; pleura testaceous yellow, restrictedly patterned with brown; antennae relatively short, scape and pedicel yellow, flagellum dark brown; legs brown, femoral tips narrowly whitened, preceded by a more darkened ring, tibial bases narrowly white, tarsi yellow, claws toothed; wings brown, variegated by darker brown, including stigma and apex; whitish obliterative areas very conspicuous, before cord reaching the costa; macrotrichia abundant; hypopygium with upper tergal plate almost smooth, with scattered long setae, ventral lobes with sparse spicules; outer dististyle a simple elongate horn, tip very narrowly obtuse, inner style arcuated, apex more dilated, with two or three blackened denticles.

CUTHBERTSON found the types living in crevices and underhanging parts of rocks bordering stream at edge of forest, commonly associated with *Dolichopeza (Dolichopeza) cuthbertsoniana* ALEXANDER.

Moçambique: Spungabera, near Mt. Selinda, January 21, 1955 (GRAHAM & STUCKENBERG). — **Southern Rhodesia:** Vumba Mts., March 1935 (CUTHBERTSON), type; Umtali, Vumba Mts., 5000 feet, January 19, 1955 (STUCKENBERG); Nyachowa Falls, near Umtali, January 16, 1955 (STUCKENBERG).

Tipula LINNAEUS

Tipula LINNAEUS; Syst. Nat., Ed. 10: 585; 1758.

Tipula is the second largest genus in the family and, with its approximately 1500 known species, is one of the largest genera of living organisms. In the regions of its greatest development, such as the Holarctic, Oriental, and Neotropical, the genus commonly comprises from about 12 to 15 percent of the total crane-fly fauna but in South Africa the number of species is markedly reduced, the 17 species recorded at this time comprising only about 5 percent of the regional fauna. It is certain that more species will be discovered but presumably not in sufficient numbers to greatly modify the relative proportions now known. Similarly, of the 21 subgenera into which the genus is currently subdivided, only four occur within our limits, two being represented by a single species each. The two major subgenera, *Tipula* and *Acutipula*, are very closely related and are becoming increasingly difficult to maintain as more species are discovered. All of the local species of the typical subgenus fall in the *oleracea* group, with several additional species occurring in the mountains of tropical East Africa. *Acutipula* is the dominant subgenus in our region and throughout Africa, including Madagascar, being similarly greatly developed in the Oriental region.

The immature stages of *Tipula* commonly live in soil, as in saturated earth in marshes and at the margins of water bodies, to others occurring in relatively dry soil, beneath a protecting cover of decaying leaves. Fewer species live in wet moss cushions and in decaying wood while a relatively few are very nearly aquatic in their larval state. In the local fauna, Dr. WOOD was able to rear *Tipula soror*, *T. jocosa*, and *T. pomposa*, three of the largest and most characteristic crane-flies in the area.

Key to South African *Tipula*
Males

1. *m–cu* before the fork of *M*; base of cell M_4 about twice as wide as at margin; (antennae long, flagellum bicolored) (figs. 19, 45). (Subgenus *Schummelia* EDWARDS) (Southern Rhodesia) . . . . . *scylla* sp. n.
— *m–cu* at or beyond the fork of M_{3+4}; base of cell M_4 not conspicuously widened, at most one-half broader than at outer end 2
2. Hypopygium with the tergite and sternite separated by a suture; (wings light brown, variegated with paler areas; squama without trichia; claws of male simple) (figs. 20, 46). (Subgenus *Oreomyza* POKORNY) (Natal) . . . . . *draconis* sp. n.
— Hypopygium with the tergite and sternite fused into a virtually continuous ring 3
3. *Rs* long, exceeding *m–cu*; (claws of male toothed or simple). (Subgenus *Tipula* Linnaeus) 4
— *Rs* shorter, not exceeding *m–cu*, usually markedly shorter; (claws of male toothed or simple). (Subgenus *Acutipula* ALEXANDER) 8
4. Outer cells of wing with macrotrichia; claws simple; (antennae of male long, yellow, flagellar segments with short verticils; hypopygium with all lobes of inner dististyle obtuse). (Natal, Transvaal, Basutoland) . . . . . *setosipennis* ALEXANDER
— Cells of wing glabrous; claws of male toothed; (flagellar verticils long and conspicuous). 5
5. Antennae short, yellow, about one-fifth the body 6
— Antennae longer, nearly one-third the length of body 7
6. Hypopygium with the beak of inner dististyle very short and blunt, lower beak commonly extended into a short point; dorsal crest short and high, especially behind (fig. 1). (Widespread in South Africa) . . . . . *soror* WIEDEMANN
— Hypopygium with the beak extended into a narrow cleaverlike blade, lower beak obtuse, unspined; dorsal crest long and low. (Natal, Southern Rhodesia, Mocambique) . . . . . *frater* ALEXANDER
7. Flagellum dark brown, segments strongly incised; hypopygium with the beak of inner dististyle cleaver-like, its disk almost glabrous, outer spine very stout. (Cape Province, Natal, Basutoland) . . . . . *bevisiana* ALEXANDER
— Flagellum yellow, outer segments weakly bicolored, the small basal enlargements darkened; hypopygium with the beak of inner dististyle short, its disk with abundant short spinules, dorsal crest produced behind, outer spine slender. (Basutoland) . . . . . *chubbi* ALEXANDER
8. Tip of vein R_{1+2} atrophied; (*Rs* very short, a little more than one-half *m–cu*; R_{4+5}, M_{1+2}, M_1, and M_2 with macrotrichia). (Moçambique) . . . . . *amissa* ALEXANDER
— Vein R_{1+2} entire 9
9. *m–cu* before fork of M_{3+4}; knob of halteres yellowed; hypopygium with posterior border of tergite concave, the central area produced. (*jocosa* and allies) 10
— *m–cu* at or close to fork of M_{3+4}, in cases on the base of M_4; knob of halteres darkened; hypopygium with posterior border of tergite narrowed into a lobe that is more or less split or divided at apex . . 11
10. Wings with cell 1*st* M_2 short and broad, the length about one and one-half times the width; hypopygium with posterior border of tergite concave, medially produced into a pale fleshy densely pubescent lobe. (Cape Province, Natal) . . . . . *jocosa* ALEXANDER
— Wings with cell 1*st* M_2 longer, the length about one and three-fourth times the width; hypopygium with posterior border of tergite concave, with two elongate intermediate spines separated by a narrow notch. (Moçambique, Southern Rhodesia, northwards) . . . . . *silinda* ALEXANDER
11. Apex of tergal lobe more or less bifid, with blackened spicules; wings strongly tinted, slightly patterned with darker brown and whitened areas. (*pomposa* and allies) 12
— Apex of tergite divided into two flattened glabrous blades; wing subhyaline, unpatterned except for the slightly darkened stigma. (*zambeziensis* and allies) 15
12. Claws toothed; cell M_1 with long petiole, subequal to *m*; size large, wing over 20 mm., commonly about 25 mm. 13
— Claws simple; cell M_1 deep, petiole very short; wings over 20 mm., commonly about 22 mm. . . . 14

13. Mediotergite yellow, with a single large brown central area; wings tinged with brown, with darker seams on *m–cu* and anterior cord, center of disk more whitened; veins unusually glabrous, virtually lacking even on R_4+5; outer basal lobe of inner dististyle of hypopygium without spinoid setae (fig. 18). (Cape Province, Natal, Transvaal, Basutoland) . . . . . *pomposa* BERGROTH
— Mediotergite yellow with two separate intermediate brown areas; wings less evidently darkened, seams less evident, whitened discal area distinct; veins with trichia on R_4+5, M_1+2, and base of M_1; outer basal lobe of inner dististyle of hypopygium with a group of strong spinoid setae. (Southern Rhodesia, northwards) . . . . . *nyasæ* ALEXANDER
14. Antennae with flagellar segments bicolored; abdominal tergites with segments three to eight blackened, restrictedly patterned with more reddened areas. (Natal) . . . . . *natalia* ALEXANDER
— Antennal flagellum black; abdominal tergites yellow, with three brownish black stripes, the central one wider. (Natal) . . . . . *phæocera* ALEXANDER
15. Outer wing veins with strong macrotrichia, including extensive series on R_3, R_4+5, M_1, and M_1+2; hypopygium with tergal lobes divergent, tips acute. (Southern Rhodesia) . . . *zambeziensis* ALEXANDER
— Outer wing veins nearly glabrous, with a scattered series on distal section of R_4+5, lacking on R_3 and all medial veins; hypopygium with tergal lobes short, tips obtuse 16
16. Abdomen yellow, tergites with conspicuous longitudinal stripes, lateral pair nearly continuous, subterminal segments uniformly blackened, hypopygium brownish yellow. (Natal). *grahamiana* ALEXANDER
— Abdomen with basal two segments yellow, remainder, including the hypopygium, black. (Natal) . . . . . *zuluensis* ALEXANDER

Tipula (Schummelia) scylla sp. n.

(Figs. 19, 45)

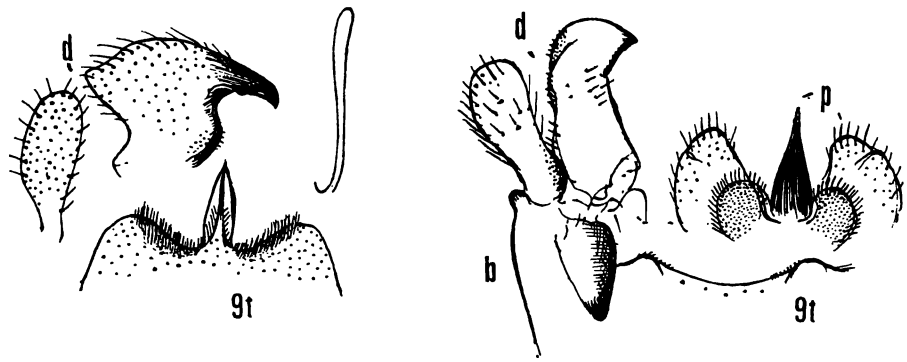
Size medium (wing of male about 12 mm.); mesonotal praescutum brown, with four paler buffy stripes, pleura obscure yellow, patterned with brown; antennae long, flagellar segments bicolored; wings brownish yellow, patterned with brown; cell *1st* M_2 small, irregularly pentagonal, *m–cu* about one-fifth its length before fork of *M*; male hypopygium with median region of tergite produced, compressed-flattened; inner dististyle with beak long, blackened; gonapophyses appearing as long slender pale blades.

Male. — Length about 12 mm.; wing 12 mm.; antenna about 5 mm.

Female. — Length about 15 mm.; wing 12.5 mm.

Frontal prolongation of head brownish yellow, nasus very short and broad to scarcely evident, with two or three long black setae at summit; palpi brownish black. Antennae with scape and pedicel yellow; flagellum with first segment yellowed, succeeding ones bicolored, the small basal enlargement brownish black, the stem yellow; segments slightly exceeding the longest verticils. Head with front and anterior vertex buffy yellow, posterior part brown.

Pronotum infuscated above, paling to testaceous yellow on sides. Mesonotal praescutum with the ground brown, with four paler buffy stripes, the intermediate pair especially distinct; scutum yellowish brown, lobes chiefly dark brown; scutellum light brown, mediotergite obscure yellow, its posterior border with two more darkened spots; pleurotergite yellowed, darker dorsally. Pleura obscure yellow, the mesepisternum and ventral meron infuscated. Halteres with stem yellow, knob dark brown. Legs with coxae brownish yellow, trochanters clearer yellow; femora yellow, tips narrowly brownish black; tibiae brown basally, blackened outwardly, tarsi black; claws of male small, simple. Wings (fig. 19) brownish yellow, patterned with brown, the large stigma and cell *Sc* darker brown, cell *C* still paler brown;



45 46

Figs. 45-46. — 45. *Tipula* (*Schummelia*) *scylla* ALEXANDER, sp. n.; male hypopygium, dorsal aspect. — 46. *Tipula* (*Oreomyza*) *draconis* ALEXANDER, sp. n.; male hypopygium, dorsal aspect. (Symbols: *b*, basistyle; *d*, dististyle; *p*, phallosome; *t*, tergite).

brown clouds over *m–cu*, outer medial forks, outer radial field, along vein *Cu* and tip of vein *2nd A*; small but clearly defined whitened spots before and beyond stigma and across cell *1st* M_2; veins brown, whitened in the obliterative areas. Macrotrichia on most longitudinal veins beyond arculus, lacking on cord, outer half of R_{1+2} and most of basal section of Cu_1; prearcular anal vein with trichia. Venation: *Rs* about two-thirds *m–cu*; cell *1st* M_2 small, irregularly pentagonal, *m* being the shortest element; *m–cu* about one-fifth its length before the fork of *M*; M_{3+4} shorter than outer section of vein *M*; *m–cu* long, cell M_4 at base very broad, about twice the apex.

Abdominal tergites bicolored, yellow to orange, the apices broadly brownish black, subequal to or exceeding the pale bases; outer segments, sternites, and hypopygium more uniformly yellow. Male hypopygium (fig. 45) with the tergite, *t*, transverse, posterior border broadly emarginate, the median region produced into a long compressed-flattened blade, inner margins of lobes and base of median prolongation with abundant long pale setae. Outer dististyle, *d*, broadly flattened, tip obtuse, length slightly exceeding twice the greatest width, setae small; inner style with the beak long-produced, cleaverlike; lower beak only slightly developed, obtuse; region of outer basal lobe slightly prolonged backward. Phallosome with the gonapophysis, *g*, appearing as a very long slender pale blade, distal end only slightly expanded, tip obtuse.

Southern Rhodesia: White Horse Inn, Vumba Mts., 3000—4000 feet, December 24, 1958. Holotype, ♂, (SMITHERS), in Alexander Collection. Allotopotype, ♀, pinned with the type.

Tipula (*Schummelia*) *scylla* is the most southerly representative of the subgenus so far discovered in the Ethiopian region. It is well distinguished from the two more northern species hitherto made known, *T.* (*S.*) *dolichopezoides* ALEXANDER and *T.* (*S.*) *jacksoniana* ALEXANDER, of tropical Africa, by the coloration, venation, and especially the structure of the antennae and male hypopygium.

Tipula (Oreomyza) draconis sp. n.

(Figs. 20, 46)

Belongs to the *marmorata* (*fragilis*) group; general coloration yellow, mesonotal praescutum with three brown stripes; legs dark brown, tarsi brownish black, claws simple; wings light brown, variegated by pale areas; abdomen light yellow; male hypopygium with the posterior border of tergite very shallowly emarginate; inner dististyle relatively narrow, the beak stout.

Male. — Length about 11.5 mm.; wing 14.3 mm.; antenna about 4.5 mm.

Described from an alcoholic specimen.

Frontal prolongation of head yellow above, slightly darker on the sides; nasus short and very stout; palpi dark brown, terminal segment subequal in length to the remainder combined. Antennae relatively long, as shown by the measurements; scape and pedicel light yellow, flagellum brownish black; flagellar segments with small basal enlargements, verticils very small. Head brown, the front and low vertical tubercle yellowed.

Prothorax yellow. Mesonotal praescutum with three brown stripes, the central one vaguely divided, humeral and lateral borders broadly yellow; scutal lobes brown, central area yellow; scutellum and postnotum yellow. Pleura yellow, apparently slightly patterned with darker, as on the ventral sternopleurite. Halteres whitened. Legs with coxae and trochanters yellow; remainder of legs dark brown, tarsi brownish black; claws small, simple. Wings (fig. 20) light brown, variegated with pale areas, including major marks at base, beyond midlength and at tips of cells *R* and *M*, with others in bases of cells *Cu* and *1st A*; beyond cord, pale marks in bases of cells R_2, R_3, M_1, *2nd* M_2, M_3, and M_4, with less evident brightenings in outer ends of cells R_3 and R_5; veins brown. Most longitudinal veins with macrotrichia, lacking on base of Cu_1; sparse trichia on prearcular anal vein. Venation: Basal section of R_{4+5} very short, r–m correspondingly long, gently arcuated.

Abdomen light yellow, outer segments not or scarcely darker. Male hypopygium (fig. 46) with posterior border of tergite very shallowly emarginate, the lateral lobes low, with a slight oblique ridge or carina; tergal vestiture very sparse except for microscopic setulae. Mesal lobe of basistyle, *b*, large, blackened, with exceedingly minute spiculose points. Outer dististyle, *d*, broad, its inner margin at base blackened and slightly dilated. Inner dististyle relatively narrow, beak stout, dorsal crest with abundant microscopic setulae but without setae; a few bristles on disk. Phallosome, *p*, including a large yellow cushionlike apophysis on either side, with a smaller subglobular lobe at base, densely covered with pale setae. Eighth sternite unmodified.

Natal: Doomey Mt., National Park, Drakensberg, 6000 feet, swept from vegetation along small stony stream, April 1, 1951. Holotype, alcoholic ♂. (BRINCK—RUDEBECK). Loc. no. 257.

The discovery of a species of *Oreomyza* of the *marmorata* group in South Africa was most noteworthy. All other Ethiopian members of the subgenus, about eight in number, are from tropical East Africa (Kenya, Uganda, Tanganyika), mostly at high altitudes in the various mountain ranges. These have been discussed by me in the Ruwenzori Expedition 1934–35 report (1, no. 7, Tipulidae, pp. 181–188; 1956). By my key to these species the present fly

runs to *Tipula* (*Oreomyza*) *aberdareica* ALEXANDER, of Kenya, which is its nearest relative. The two flies differ especially in the details of structure of the male hypopygia, particularly the tergite and dististyles.

Tipula (Tipula) bevisiana ALEXANDER

Tipula (*Tipula*) *bevisiana* ALEXANDER; Durban Mus. Novit., 4: 306–308, fig. 13 (♂ hyp.); 1956.

Male. — Length 15–16 mm.; wing 17–18 mm.; antenna 5–5.3 mm.

General coloration gray, praescutum with four stripes that are delimited by narrow light brown borders; antennae of male relatively long, nearly one-third the wing, flagellum dark brown, segments strongly incised; tarsal claws of male bispinous; wings weakly tinged with brown with an indistinct pattern; inner dististyle of hypopygium with beak cleaverlike, almost glabrous, outer basal lobe with the outer spine very stout, inner arm a large glabrous yellow plate provided with an unusually large sensory area.

It should be noted that this species was included by WOOD under his discussion of *Tipula soror* (Ann. So. Afr. Mus., 39: 30–38, fig. 4; 1952) where unquestionably the male hypopygium refers to the present fly and not to true *soror*.

Cape Province: Records by WOOD confused under *Tipula soror*. — **Natal:** Cathedral Peak Area, Drakensberg, 6400 feet, March 19–23, 1955 (STUCKENBERG). — **Basutoland:** Mokhotlong, 7800 feet, February 10, 1939 (BEVIS), type; Jordan Valley, near Likhahleng Pass, January 6, 1954 (BEVIS); Semonkong, January 13, 1954 (BEVIS).

Tipula (Tipula) chubbi ALEXANDER

Tipula (*Tipula*) *chubbi* ALEXANDER; Durban Mus. Novit., 4: 308–309, fig. 14 (♂ hyp.); 1956.

Male. — Length about 18 mm.; wing 18 mm.; antenna about 6 mm.

General coloration of head and thorax light gray, praescutum with four darker gray stripes that are bordered by brown; antennae of male elongate, about one-third the wing, yellow, outer segments bicolored; claws of male bispinous; wings infuscated, conspicuously striped with whitish; abdomen light brown, tergites with narrow darker brown sublateral stripes; inner dististyle of hypopygium with relatively few setae on beak, surface covered with small spinulose points; outer arm of outer basal lobe a long spine with a broad setiferous base.

Basutoland: Mokhotlong, 7800 feet, January 24, 1955 (BEVIS), type.

Tipula (Tipula) frater ALEXANDER

Tipula frater ALEXANDER; Ann. So. Afr. Mus., 18: 224–226, pl. 4, fig. 20 (wing), pl. 4, fig. 26 (♂ hyp.); 1921.

Male. — Length 18–20 mm.; wing 18–19.5 mm.; antenna about 2.3–2.5 mm.

General coloration yellow, praescutum with four grayish brown stripes that are margined with darker brown; antennae short, yellow, less than one-fifth the wing; wings brown, striped longitudinally with whitish, the pattern more contrasted than in *soror*; abdomen

yellowed, tergites with three brown longitudinal stripes, lateral pair usually more distinct, especially on proximal segments; hypopygium with tergite as viewed from above, produced into a narrow lobe that is indistinctly bifid at apex; beak long, cleaverlike, subglabrous dorsally, below with long setae, lower margin with erect spines.

Natal: Nels Rust, April 24, 1916 (S. G. RICH); Kranskop (Kranzkop), November 1917 (BARNARD). — **Transvaal:** Pretoria, January 17, 1913 (H. K. MUNRO), type. — **Moçambique:** Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Penhalonga, January 17, 1955 (STUCKENBERG). — **Orange Free State:** Harrismith, April 1918 (W. ROSS).

Tipula (Tipula) setosipennis ALEXANDER

Tipula setosipennis ALEXANDER; Ann. Mag. Nat. Hist. (9) 5: 61–62; 1920.
Tipula setosipennis ALEXANDER; Ann. So. Afr. Mus., 18: 227; 1921.

Male. — Length 15–17 mm.; wing 14–15.5 mm.; antenna about 5–6 mm.

General coloration of mesonotum brownish yellow, praescutum with four brownish gray stripes that are margined with darker, scutellum and pleura yellow; antennae long, more than one-third the wing, yellow, more brownish yellow outwardly, flagellar segments with short verticils; femora and tibiae yellow, tips narrowly brownish black, claws of male simple; wings gray, diffusely striped longitudinally with darker brown and subhyaline; outer cells of wing with abundant strong macrotrichia; hypopygium with beak and all lobes of inner dististyle obtuse, including the outer arm of outer basal lobe.

Cape Province: Rhodes, at light in meadows near river, 5900 feet, March 10, 1951 (BRINCK–RUDEBECK), Loc. no. 225. — **Natal:** Cedara, March 12, 1920 (S. H. SKAIFE); Lidgetton, October 6, 1952 (BEVIS); the Hostel, National Park, 5000 feet, April 3, 1951 (BRINCK–RUDEBECK), Loc. no. 259. — **Transvaal:** Pretoria, December 1918 — February 1919 (A. J. T. JANSE), type; Wyllie's Poort, Zoutpansberg Range, January 30, 1955 (GRAHAM & STUCKENBERG). — **Basutoland:** Mokhotlong, 7800 feet, January 24, 1955 (BEVIS); Nazareth M. S., 20 miles ESE of Maseru, at light, March 24–25, 1951 (BRINCK–RUDEBECK), Loc. nos. 245, 248; Quthing, 5400 feet, at light, March 17, 1951 (BRINCK–RUDEBECK), Loc. no. 234; Mount Hodimonate, Quthing, 7000 feet, at spring on grassy mountain slope, March 12, 1951 (BRINCK–RUDEBECK), Loc. no. 231. — **Orange Free State:** Zastron, at light, March 20, 1951 (BRINCK–RUDEBECK), Loc. no. 242.

Tipula (Tipula) soror WIEDEMANN

(Fig. 1)

Tipula soror WIEDEMANN; Dipt. exot., 1: 24; 1821.
Tipula soror WIEDEMANN; Aussereur. zweifl. Ins., 1: 46; 1828.
Tipula soror ALEXANDER; Ann. So. Afr. Mus., 17: 166, pl. 12, fig. 28 (wing), pl. 13, fig. 49, pl. 14, fig. 58 (♂ hyp.); 1917.
Tipula soror WOOD; Ann. So. Afr. Mus., 39: 30–38, fig. 5 (larva), figs. 6, 10 (pupa); fig. 4 (ad., pertains to *Tipula bevisiana*); 1952.
Tipula mashona ALEXANDER; Ann. Mag. Nat. Hist. (9) 5: 349–350; 1920.

I do not consider the synonymy of *mashona* as being certainly established. The statement was made by EDWARDS at a time when the taxonomy of the genus in South Africa was insufficiently known and the matter should be studied further.

Male. — Length about 14–16 mm.; wing 16–20 mm.; antenna about 3 mm.

General coloration gray, praescutum with four indistinct grayish stripes that are margined with dark brown, pleura pruinose; antennae very short, about one-fifth the wing, verticils long and conspicuous, subequal to the segments; wings pale gray, striped longitudinally with white, costal region darker; inner dististyle of male hypopygium with the outer spine of outer basal lobe broad-based, with long setae; inner arm bilobed, the inner spine very small; beak shorter than in *frater*, with long yellow setae and no spines (fig. 1).

WOOD found the immature stages in wet saturated moss, mud, and ooze along shale outcroppings. The adult flies were found flying over open marshy ground.

Cape Province: Peninsula, Camps Bay, September 1932; Chapmans Peak, November 1934; Glencairn Valley, August 1932 (WOOD); Cape Town, Sea Point, at light, February 10, 1951 (BRINCK—RUDEBECK). French Hoek Pass, October 1933; Hermanus, March 1939; Landdrost, 1917; Sneeuwgat Valley, November 1933; Tradouw Pass, January 1938; Witte River Valley, October 1933 (WOOD); Matroosberg, November 1917 (LIGHTFOOT); Olifants River, Clanwilliam, September 1932 (LAWRENCE); Hout Bay, Skoorsteenkop, December 26, 1950 (BRINCK), Loc. no. 95; 5 miles ENE of Rhodes, Drakensberg, 6400 feet, in meadow near stony stream, March 10, 1951 (BRINCK—RUDEBECK), Loc. no. 222. Kokstad, Griqualand, November 1935 (BEVIS). — **Natal:** The Hostel, Natal Royal National Park, along Tugela River, 5000 feet, at light, April 3, 1951 (BRINCK—RUDEBECK), Locs. nos. 258, 259; Howick, October 7, 1952 (BEVIS). — **Basutoland:** Nazareth M. S., 20 miles ESE of Maseru, 6250 feet, March 24—25, 1951, at light (BRINCK—RUDEBECK), Locs. nos. 245, 248; Makhehe Mts., 10 miles ENE of Mokhotlong, 8500 feet, in exposed high mountain valley, April 8, 1951 (BRINCK—RUDEBECK), Loc. no. 269; Lehaha la Sekhonyana, December 29, 1946 (BEVIS); Rafanyane Valley, January 2, 1947 (BEVIS). — **Southern Rhodesia:** Salisbury, March 1905 (G. A. K. MARSHALL), type of *mashona*.

Tipula (Acutipula) amissa ALEXANDER

Tipula (Acutipula) amissa ALEXANDER; Ann. Natal Mus., 15: 8—10, fig. 1 (wing), fig. 4 (♂ hyp.); 1960.

Male. — Length about 16 mm.; wing 15 mm.; antenna about 6.5 mm.

General coloration yellow, praescutum and scutum patterned with brown; antennae elongate, scape and pedicel yellow, flagellum black; wings whitish subhyaline, cell *Sc* and stigma dark brown, vein R_{1+2} chiefly atrophied; abdomen orange, tergites weakly darkened subterminal segments blackened to form a broad ring; hypopygium with tergite trilobed; beak of inner dististyle broad, with dense rows of short curved setae.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG), type.

Tipula (Acutipula) grahamiana nom. nov.

New name for *Tipula (Acutipula) grahami* ALEXANDER; Ann. Natal Mus., 13: 415–416, fig. 23 (♂ hyp.); 1956, nec *Tipula (Vestiplex) grahami* ALEXANDER; Philippine Journ. Sci., 51: 516–518; 1933.

Male. — Length about 16 mm.; wing 15 mm.

General coloration of thorax yellow, praescutum with four more orange yellow stripes; femora yellow, tips narrowly blackened, claws toothed; wings pale brown, cell *Sc* clearer yellow, stigma a little darker, veins beyond cord unusually glabrous; abdomen yellow,

tergites with three black stripes, subterminal segments with blackened ring; hypopygium with tergal lobes relatively small, not spiculose, only slightly divergent.

Natal: Hilton Road, near Pietermaritzburg, January 1950 (P. GRAHAM), type.

Tipula (Acutipula) jocosa ALEXANDER

Tipula jocosa ALEXANDER; Ann. So. Afr. Mus., 17: 168–169, pl. 12, fig. 31 (wing); 1917.
Tipula jocosa ALEXANDER; Ann. So. Afr. Mus., 18: 226–227, pl. 4, figs. 27, 28 (♂ hyp.); 1921.
Tipula jocosa WOOD; Ann. So. Afr. Mus., 39: 38–45, figs. 7, 8 (ad.), fig. 9 (larva), fig. 10 (pupa); 1952.

Male. — Length 17.5–18.5 mm.; wing 18–18.5 mm.

Mesonotum dull yellow, more greenish in life; praescutum with four slightly differentiated yellow stripes that are narrowly margined with dark brown, postnotum more blackened, pleura pale, striped longitudinally with dark brown; antennal flagellum black; femora brownish yellow, tips broadly blackened; wings grayish subhyaline, patterned with darker; abdomen yellowish brown, basal rings more yellowed; hypopygium with posterior border of tergite concave, margin microscopically spiculose, median area produced ventrad and caudad into a pale fleshy densely pubescent lobe.

Dr. WOOD found the adult flies along mountain streams where these were well shaded by trees. When disturbed they fly to a nearby rock surface near the stream where they lie quite flat against the surface, legs widespread, wings held at an angle of some 60° to the body. In life the adults show vivid green tints on the thorax and wings. The larvae live in wet soggy ooze in *Juncus* mats growing in small pools of crystal clear water, the pupae occurring in drier portions of the mat.

Cape Province: Peninsula, Cape Town (P. C. KEYTEL), type; Lekkerwater, February 1931, May 1933; Kirstenbosch, November 1932; Fernwood, February 1933 (WOOD); Oudebosch, January 1934 (WOOD). — **Natal:** Eshowe, Zululand, November–December 1943 (BEVIS); this record requires confirmation.

Tipula (Acutipula) natalia ALEXANDER

Tipula (Acutipula) natalia ALEXANDER; Durban Mus. Novit., 4: 310–311, fig. 17 (♂ hyp.); 1956.

Male. — Length about 23 mm.; wing 22 mm.; antenna about 4 mm.

General coloration of head and thorax orange, praescutum with four dark gray stripes that are narrowly bordered by darker, mediotergite without brown pattern; antennae with flagellar segments bicolored; wings light brown, vaguely patterned with whitish, *m–cu* at extreme base of M_4; abdomen chiefly blackened; hypopygium with tergite produced into two spiculose lobes separated by a broad U-shaped notch; outer dististyle subtriangular, virtually as broad as long.

Natal: Umkomazana, November 26, 1941 (BEVIS), type.

Tipula (Acutipula) nyasæ ALEXANDER

Tipula alphaspis nyasæ ALEXANDER; Canad. Ent. 52: 155; 1920.
Tipula (Acutipula) nyasæ ALEXANDER; Ann. Natal Mus., 14: 137–138, fig. 2 (♂ hyp.); 1957.

Female. — Length about 30 mm.; wing 25.5–26 mm.

Mesonotal praescutum light yellow with three grayish brown stripes that are heavily margined with brown, central stripe divided anteriorly; mediotergite light yellow with two indistinct widely separated sublateral brown stripes, pleura yellow; hypopygium with median tergal lobe relatively broad, tip emarginate, lobules spiculose; outer dististyle broad, tip subtruncate; inner style with outer basal lobe provided with numerous spinoid setae.

Southern Rhodesia: near Inyanga, January 14, 1955 (STUCKENBERG).

Type from Mount Mlanje, Nyasaland.

Tipula (Acutipula) phæocera ALEXANDER

Tipula (Acutipula) phæocera ALEXANDER; Ann. Natal Mus., 14: 255–256, fig. 4 (♂ hyp.); 1958.

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

General coloration of head and thorax orange, praescutum with four dull brownish black stripes; antennal flagellum black; abdominal tergites obscure yellow with three brownish black stripes; hypopygium with tergite produced medially, the spiculose apex shallowly notched.

Natal: Cathedral Peak Area, Drakensberg, 6400 feet, March 19—23, 1955 (STUCKENBERG).

Tipula (Acutipula) pomposa BERGROTH

(Fig. 18)

Tipula pomposa BERGROTH; Ent. Tidskr. 9: 139, fig. 4 (♂ hyp.); 1888.
Tipula pomposa ALEXANDER; Ann. So. Afr. Mus., 17: 168, pl. 12, fig. 30 (wing), pl. 13, fig. 52, pl. 14, fig. 60 (♂ hyp.); 1917.
Tipula pomposa WOOD; Ann. So. Afr. Mus., 39: 45–49, fig. 11 (ad.), fig. 12 (larva), fig. 10 (pupa); 1952.

Male. — Length 19–30 mm.; wing 21–32 mm.; antenna 4–5 mm.

Thorax fulvous yellow, praescutum with four brownish yellow stripes that are bordered by brownish black, mediotergite yellow with a broad central brown stripe; legs yellow, tips of femora black; wings suffused with brown, center of disk clearer, cell *Sc*, stigma, and seams over anterior cord and *m–cu* darker brown; *m–cu* at base of M_4; abdomen brownish yellow, tergites trivittate with black; hypopygium with tergite produced into a very slender rod, its apex almost entire, with microscopic spicules (fig. 18).

Dr. WOOD found the enormous larvae in wet sandy gravel and reddish silt at the margins of small trickles of water, occurring at some two or three inches in depth, and associated with the early stages of *Conosia angustissima* (as *irrorata*). The area is shaded and protected by reeds and shrubs that form a low canopy over the surface. Pupation takes place in drier parts of the muddy banks of this habitat.

Cape Province: Caffraria, BERGROTH's type; Grahamstown, October 6—12, 1953 (STUCKENBERG); Rhodes, 5900 feet, at light in meadows near river, March 9, 1951 (BRINCK—RUDEBECK), Loc. no. 225; Cango, February 1932; Groendal Valley, Zwartkops River, November 1938; Oudebosch, September 1933; Seven Weeks Poort, February 1932; Schoemans Poort, January 1937 (WOOD); Van Stadenspas, 25 miles W of Port Elizabeth, herb vegetation in wooded ravine near loamy river, March 1, 1951 (BRINCK—RUDEBECK), Loc. no.

195. — **Natal:** M'fongosi, Zululand, March 1911 (W. E. JONES); Eshowe, Zululand, October 19, 1941, November—December 1943 (BEVIS); St. Lucia Bay, December 1942 (F. H. POWER); Howick, October 7, 1952 (BEVIS); Kloof, October 7, 1952 (BEVIS); Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG); National Park, Tugela Valley, 5000 feet, among stones and watersoaked moss on wet rock walls, April 3, 1951 (BRINCK—RUDEBECK), Loc. no. 258; Hostel, National Park, 5000 feet, April 2—4, 1951, among vegetation in garden (BRINCK—RUDEBECK), Loc. no. 259; Albert Falls, Umgeni River, 13 miles east of Pietermaritzburg, in luxuriant vegetation along loamy river, April 13, 1951 (BRINCK—RUDEBECK), Loc. no. 272; Nhluzane Mt. Area, Mpendle Dist., February 3, 1957 (STUCKENBERG). — **Transvaal:** Barberton, March—December 1911 (H. EDWARDS). — **Basutoland:** Mamathes, 5 miles ENE of Teyateyaneng, flying in small ravine near stream, March 29, 1951 (BRINCK—RUDEBECK), Loc. no. 252.

Tipula (Acutipula) silinda ALEXANDER

Tipula silinda ALEXANDER; Canad. Ent., 52: 148—149; 1920.

Male. — Length about 18—19 mm.; wing 19—20 mm.; antenna 3.2—3.6 mm.

Mesonotum obscure yellow, praescutum with four concolorous stripes that are delimited by brown margins; mediotergite light gray with paired brown areas, pleura yellow, patterned with pale brown; femora yellow, tips broadly blackened; wings whitish, restrictedly patterned with brown, including the narrow stigma and seams over cord and veins comprising cell *1st* M_2; abdominal tergites reddish brown with three dark brown stripes, lateral pair heavier, margins and basal rings more yellowed, sternites uniformly yellow; hypopygium with lateral tergal arms shorter than the intermediate spines, outer tergal border with scattered spinoid setae; inner dististyle blackened, narrow, angularly bent; at base of phallosome on either side with a small oval lobe bearing about 14 or 15 powerful setae.

Moçambique: Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Mt. Chirinda, 3800 feet, June 11, 1911 (C. F. M. SWYNNERTON), type; Chirinda Forest, January 25, 1955 (GRAHAM & STUCKENBERG); Vumba Mts., March 1935 (CUTHBERTSON).

Tipula (Acutipula) zambeziensis ALEXANDER

Tipula zambeziensis ALEXANDER; Ann. So. Afr. Mus., 17: 166—167, pl. 12, fig. 29 (wing), pl. 13, fig. 53, pl. 14, fig. 59 (♂ hyp.); 1917.

Male. — Length about 14 mm.; wing 14.5 mm.

General coloration orange yellow, praescutum with four chiefly orange stripes, mediotergite and pleura yellow, unpatterned; antennal flagellum weakly bicolored, brown, the basal enlargement darker; tips of femora narrowly blackened; wings weakly tinted, stigma and costal border slightly more darkened; *m—cu* a little longer than *Rs*; abdomen yellow, intermediate segments indistinctly trivittate with brown, outer segments uniformly infuscated.

Southern Rhodesia: Victoria Falls, Zambezi River, July 1911 (L. A. PÉRINGUEY), type; Salisbury (G. A. K. MARSHALL); Victoria Falls, in vegetation in rain forest, May 17, 1951 (BRINCK—RUDEBECK), Loc. no. 307. — **Northern Rhodesia:** Kafue River, 1906 (J. DRURY).

The published record from Kranz Kloof, Natal, January 1915, taken by BELL-MARLEY, probably refers to *Tipula (Acutipula) grahamiana* ALEXANDER.

Tipula (Acutipula) zuluensis ALEXANDER

Tipula (*Acutipula*) *zuluensis* ALEXANDER; Durban Mus. Novit., 4: 312–313, fig. 9 (ven.), fig. 18 (♂ hyp.); 1956.

Male. — Length about 16–17 mm.; wing 15.5–16.5 mm.; antenna about 2.9–3 mm. Head and mesonotum light orange, praescutum without clearly defined stripes; femora yellow, tips narrowly brownish black, claws toothed; wings weakly infuscated, costal field and stigma more brownish yellow, R_{1+2} entire; abdomen with basal two segments yellow, the remainder, including the hypopygium, black; hypopygium with tergal lobes lying subparallel to one another, the median region slightly produced.

Natal: Eshowe, Zululand, November—December 1943 (BEVIS), type. — **Southern Rhodesia:** near Inyanga, January 14, 1955 (STUCKENBERG).

SUBFAMILY Limoniinae

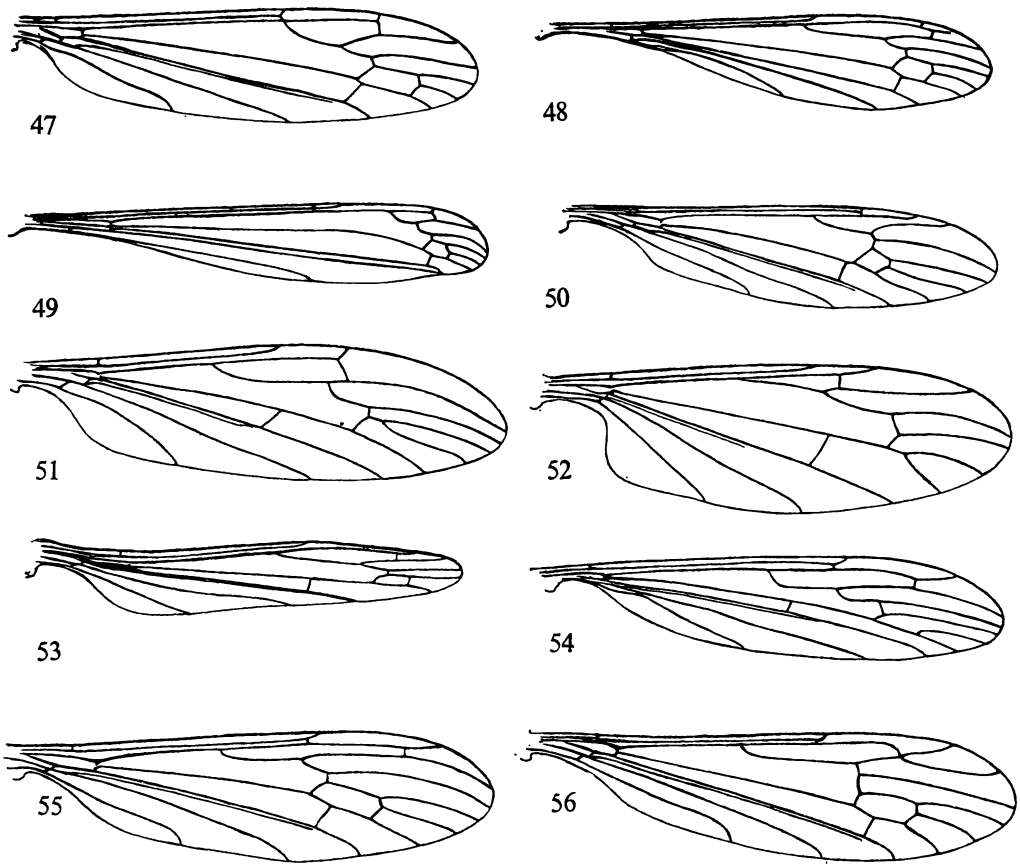
The Limoniinae is the largest subfamily of crane-flies, comprising approximately three-quarters of the known species. It includes the great majority of the small and medium sized forms, with only a few species attaining the size of even the smaller Tipulinae, the larger species occurring in genera such as *Limonia*, *Hexatoma*, and *Conosia*. Of the four tribes known at present from South Africa, the Lechriini includes a single species, the others, Limoniini, Hexatomini, and Eriopterini, being represented by an abundance of forms in many genera. The non-occurrence of members of the tribe Pediciini in the Ethiopian region is somewhat surprising since while the great majority of the known species is Holarctic in distribution, a small number of species is found in the southern hemisphere, including New Zealand, Australia, and southern South America. It is not impossible that representatives of the tribe still may be discovered in South Africa or Madagascar.

TRIBE LIMONIINI

The most characteristic genera of the tribe Limoniini in the South African fauna are *Limonia*, *Helius*, and *Antocha*, the remainder being known from relatively few and often uncommon species.

Key to Genera of the Limoniini

1. Wings with vein R_2 lacking (fig. 50); rostrum more or less produced, at least as long as remainder of head, usually much longer . . . . . *Helius*
— Wings with vein R_2 present; rostrum not or scarcely produced; compare *Limonia* (*Geranomyia*) where the mouth parts, especially the labial palpi, are elongated 2
2. Wings with *m–cu* close to or beyond the fork of *M*; if before, the distance not or scarcely as long as the crossvein itself 3
— Wings with *m–cu* some distance before the fork of *M*, the distance greater than the length of the crossvein 4
3. Wings (fig. 55) with R_1+_2 and R_2 lying far distad, some distance beyond the level of outer end of cell 1*st* M_2; *m–cu* beyond the fork of *M*; a conspicuous pale fold in distal end of cell *Cu*, vein 1*st A* thus appearing forked; legs with abundant flattened scales, additional to the normal setae; claws simple *Dicranoptycha*



Figs. 47-56. — 47. *Limonia* (*Dicranomyia*) *kraaiensis* ALEXANDER, sp. n. — 48. *Limonia* (*Thrypticomyia*) *niveitibia* ALEXANDER. — 49. *Limonia* (*Euglochina*) *connectans* (ALEXANDER). — 50. *Helius* (*Helius*) *paramorosus* ALEXANDER. — 51. *Thaumastoptera natalensis* ALEXANDER. — 52. *Antocha* (*Orimargula*) *transvaalia* (ALEXANDER). — 53. *Platylimnobia brinckiana* ALEXANDER, sp. n. — 54. *Orimarga* (*Orimarga*) *mashonensis* ALEXANDER. — 55. *Dicranoptycha natalia* ALEXANDER. — 56. *Ceratolimnobia* (*Ceratolimnobia*) *munroi* ALEXANDER.

— Wings (figs. 2, 47—49) with R_2 more basal in position, usually at or before the level of outer end of cell 1*st* M_2; *m—cu* usually at or close to fork of M, rarely before (some *Dicranomyia*) or beyond (*Libnotes*); no fold in cell *Cu*; legs without scales; claws commonly toothed . . . . . *Limonia*

4. Wings (fig. 53) semiatrophied; cell 1*st* M_2, when apparent, closed; outer medial branches two. . . . . *Platylimnobia*

— Fully winged; three outer medial branches 5

5. Vein R_2+_3 elongate (fig. 54), exceeding the basal section of R_4+_5 and several times as long as R_2 *Orimarga*

— Vein R_2+_3 short (figs. 51, 52), subequal to or shorter than R_2 6

6. Upper branch of *Rs* gently upcurved (fig. 52); cell M_2 open by atrophy of *m*.. . *Antocha* (*Orimargula*)

— Upper branch of *Rs* slightly decurved (fig. 51); cell M_2 open by atrophy of basal section of M_3 . . . . *Thaumastoptera*

Limonia MEIGEN

Amphinome MEIGEN; Nouv. Class. Mouch., p. 15 (nom. nud.); 1800.
Limonia MEIGEN; ILLIGER'S Mag., 2: 262; 1803.
Limnobia MEIGEN; Syst. Beschr. zweifl. Ins., 1: 116; 1818.

Limonia is the largest genus of crane-flies, with more than 1500 described species arranged in about a score of subgenera, representatives of ten of which occur within our faunal limits. The majority of the local species belong to the subgenera *Limonia*, *Rhipidia*, *Dicranomyia*, and *Geranomyia*, the others as known at present being represented only by few or single species. Four essentially Oriental subgenera have representatives in southeastern Africa, these being *Libnotes*, *Pseudoglochina*, *Thrypticomyia*, and *Euglochina*.

The immature stages of *Limonia* frequent a range of habitats that is virtually as extensive as in the entire family, including species living in saturated earth, in wet masses of mosses and liverworts, decaying wood, rotting vegetation, fungi, and various other restricted habitats. A few species are aquatic or essentially so while a very few are marine, including the single local species of *Idioglochina*.

Key to South African *Limonia*
Males

1. Mouthparts, including the labial palpi, not notably lengthened, shorter than the head 2
— Mouthparts, especially the labial palpi, lengthened, longer than the head and usually much longer. (Subgenus *Geranomyia* HALIDAY) 11
2. Antennae with flagellar segments more or less dilated or produced, weakly unipectinate, subpectinate, or moniliform, in rare cases bipectinate 3
— Antennae with flagellar segments simple in both sexes, oval to elongate 4
3. Wings broad (about 4: 1); cell M_2 open by atrophy of *m*; wings unpatterned in the local species. (Subgenus *Idioglochina* ALEXANDER) (Cape Province: coastal) . . . . . *lightfooti* (ALEXANDER)
— Wings narrower (more than 4: 1); cell 1*st* M_2 closed; wings with an abundant spotted and dotted brown pattern clear in *endecamera*. (Subgenus *Rhipidia* MEIGEN) 21
4. Cord of wing lying far distad, at or beyond four-fifths the wing length; veins Cu_1 and 1*st A* fused apically, closing cell *Cu* (in the regional species only); Sc_1 ending far before origin of *Rs* (fig. 49). (Subgenus *Euglochina* ALEXANDER) (Southern Rhodesia, northwards). . . . . *connectans* (ALEXANDER)
— Cord of wing normal in position, lying more proximad, at near two-thirds and not exceeding three-fourths the wing length; veins Cu_1 and 1*st A* separate at margin, cell *Cu* open; Sc_1 ending opposite or beyond origin of *Rs* 5
5. Vein Cu_2 lacking; tarsi snowy white. (Fig. 48) (Subgenus *Thrypticomyia* SKUSE) 6
— Vein Cu_2 preserved (as a delicate vein lying immediately behind and parallel with Cu_1 best indicated on basal half, scarcely passing level of *m–cu*). 7
6. Tibiae black, tarsi white; wings with cell 1*st* M_2 long, subequal to distal section of vein M_3. (Moçambique, northwards) . . . . . *nigeriensis* (ALEXANDER)
— Tips of tibiae and tarsi white; wings with cell 1*st* M_2 shorter than distal section of vein M_3. (Southern Rhodesia) . . . . . *niveitibia* ALEXANDER
7. *Sc* long, Sc_1 ending some distance beyond origin of *Rs* 8
— *Sc* short, Sc_1 ending opposite or just before origin of *Rs* (fig. 47) (Subgenus *Dicranomyia* STEPHENS) 26
8. Wings strongly cuneiformly narrowed at base, *Rs* and R_{4+5} in oblique alignment; cell M_2 open by atrophy of basal section of M_3; tibiae white, ringed with black. (Subgenus *Pseudoglochina* ALEXANDER) (Extralimital: Nyasaland) . . . . . *pamela* ALEXANDER

— Wings not as above; tibiae not white and ringed 9

9. *Rs* short and oblique, *Sc* extending to beyond its fork; *m—cu* at near midlength of M_{3+4} beneath cell 1*st* M_2. (Subgenus *Libnotes* WESTWOOD) (Cape Province, Natal, Southern Rhodesia) . . . . . *libnotina* (ALEXANDER)

— *Rs* longer and usually more arcuated, *Sc* not extending to opposite its fork; *m—cu* at, slightly before, or only a little beyond the fork of *M* 10

10. Cells of wing beyond cord with abundant macrotrichia; (dark markings before origin of *Rs*). (Subgenus *Metalimnobia* MATSUMURA) (Southern Rhodesia, northwards) . . . . . *trichoptera* (ALEXANDER)

— Cells of wing without macrotrichia (except in *cuthbertsoniana*, where they occur before and beyond the cord and there are no darkened areas basad of origin of *Rs*) (Subgenus *Limonia* MEIGEN) (fig. 2) 40

11. Wings with a conspicuous darkened pattern 12

— Wings without markings other than the stigma (compare *gracilipalpis*, couplet 17). 17

12. Costal border with a series of six solidly darkened areas 13

— Costal border with comparable darkened areas whose centers are paler than the margins 15

13. Costal darkenings with paler interpolated clouds that are narrowly bordered by whitish. (Moçambique, northwards) . . . . . *errana* ALEXANDER

— No interpolated clouds between the costal darkenings 14

14. Dark costal markings narrower than the interspaces; *m—cu* before fork of *M*; cell 1*st* M_2 subequal to distal section of M_{1+2} (fig. 62). (Natal) . . . . . *tugela* sp. n.

— Dark costal markings subequal to or wider than the interspaces; *m—cu* at fork of *M*; cell 1*st* M_2 longer than distal section of M_{1+2} (fig. 63). (Natal) . . . . . *rudebecki* sp. n.

15. Darkened costal areas small, less than the interspaces, not conspicuously narrowed behind, area at origin of *Rs* solid. (Natal) . . . . . *dischidia* ALEXANDER

— Darkened costal areas much larger than the interspaces, narrowed behind, their centers in cells *C* and *Sc* extensively pale. 16

16. Size relatively small (wing of male 7 mm. or less); pale costal interspaces beyond cord narrow, smaller than the darkenings; hypopygium with mesal-apical lobe of gonapophysis expanded, bladelike (fig. 61). (Cape Province, Natal) . . . . . *sex-ocellata* (ALEXANDER)

— Size larger (wing of male 8 mm. or more); costal interspaces beyond cord broader, subequal in width to the darkenings; hypopygium with mesal-apical lobe of gonapophysis slender. (Moçambique, northwards) . . . . . *alberticola* ALEXANDER

17. General coloration gray, praescutum with a single brown stripe; wings weakly patterned with darker, including stigma and weak seams over cord, but no costal areas; (maxillary palpus apparently 3-segmented; size large, wing of male about 9 mm.) (Cape Province) . . . . . *gracilipalpis* ALEXANDER

— General coloration reddish or yellow; wings without pattern other than the poorly indicated stigma; (maxillary palpus 1- or 2-segmented; size small, wing about 7 mm. or less) 18

18. Vein *Sc* long, Sc_1 ending beyond midlength of *Rs*. 19

— Vein *Sc* short, Sc_1 ending about opposite origin of *Rs*. 20

19. Dark femoral ring narrow, subterminal; wings with stigma pale brown. (Moçambique, Southern Rhodesia) . . . . . *mashona* (ALEXANDER)

— Dark femoral ring broader, virtually terminal; wings with stigma darker brown. (Moçambique). . . . . *euryphallus* ALEXANDER

20. Mesonotal praescutum yellowish with three more reddened stripes; maxillary palpus 1-segmented; Sc_1 very long, exceeding *Rs*; stigma lacking. (Natal) . . . . . *subimmaculata* (ALEXANDER)

— Mesonotum reddish orange, unpatterned; maxillary palpus 2-segmented; Sc_1 short, about one-third to one-fourth *Rs*; stigma small but evident. (Cape Province). . . . . *rubrithorax* (ALEXANDER)

21. Wings subhyaline, unpatterned except for the stigma; antennae of male 11-segmented, bipectinate; tarsi snowy white (*morionella* group). (Moçambique) . . . . . *endecamera* ALEXANDER

— Wings patterned with abundant spots and dots; antennae 14-segmented, serrate to subserrate; tarsi not whitened 22

22. Flagellar segments alternately brown and whitish; mesonotal praescutum uniformly reddish brown to dark brown, the border and pleura cream colored, the latter with brownish black longitudinal stripes (*pulchra* group) 23
— Flagellar segments not alternately dark colored and pale; mesonotal praescutum striped with darker; pleura striped with dark, the areas subequal (*domestica* group) 24
23. *Sc* long, Sc_1 ending beyond midlength of *Rs*; hypopygium with four long rostral spines; gonapophysis with apex of mesal apical lobe stout, bidentate. (Mocambique, northwards) . . . *seydeli* ALEXANDER
— *Sc* short, Sc_1 ending shortly beyond origin of *Rs*; hypopygium with three short rostral spines; gonapophysis with mesal apical lobe slender, simple. (Southern Rhodesia) *femorasetosa tæniola* ALEXANDER
24. *Sc* short, Sc_1 ending opposite or immediately beyond origin of *Rs*; (legs yellow, tips of femora and tibiae abruptly darkened). (Cape Province, Natal, Basutoland, Southern Rhodesia, South West Africa) . . . . . *atomaria* (LOEW)
— *Sc* longer, Sc_1 extending to some distance beyond origin of *Rs*; (femora yellow or brownish yellow, tips sometimes weakly darkened) 25
25. Femora brownish yellow, tips gradually darkened; wings with costal darkened areas larger, in cases subequal to the interspaces; hypopygium with four long gently curved rostral spines, placed far out on the prolongation. (Natal, Southern Rhodesia, Moçambique, northwards) . . . . *miosema* SPEISER
— Femora uniformly yellowish brown or pale brown; wings with costal darkened areas small, much less than the interspaces; hypopygium with three shorter and straighter rostral spines placed at near midlength of the prolongation. (Natal, northwards) . . . . . *pallidipes* (ALEXANDER)
26. Wings with a strong dusky tinge, the costal border uniformly darker; size large (wing 8 mm. or more) 27
— Wings subhyaline or weakly tinged, the costal border not uniformly darkened; size smaller (wing commonly under 7 mm.) 28
27. Antennae of male short, if bent backward extending about to the pronotum; cord and outer end of cell 1*st* M_2 narrowly seamed with darker; hypopygium with the rostral prolongation short, stout, the spines about their own length from the tip. (Natal) . . . . . *satura* ALEXANDER
— Antennae of male elongate, if bent backward extending about to the wing root; cord and outer end of cell 1*st* M_2 conspicuously seamed with darker; hypopygium with the rostral prolongation slender, the spines nearly twice their length from the tip. (Natal) . . . . . *viator* ALEXANDER
28. Wings with a darkened pattern other than the stigma 29
— Wings unmarked or virtually so except for the stigma when this is evident (compare *gardineri*, couplet 32); (hypopygium with basistyle bearing an accessory lobule additional to the ventromesal lobe) (*tristis* group) 32
29. Wings with a series of darkened spots along the veins, including two on vein *2nd A* (*punctulata* group) 30
— Wings without spots along the veins other than a subcostal series when present 31
30. Hypopygium with rostral prolongation of dististyle stout, darkened, with a short dark spine on lower margin just before tip. (Moçambique; Madagascar) . . . . . *guttula* (ALEXANDER)
— Hypopygium with rostral prolongation of dististyle slender, with a single elongate gently curved spine at near midlength of outer face. (Southern Rhodesia). . . . . *neoguttula* ALEXANDER
31. Wings commonly with a series of three or four major darkened areas in subcostal field, these more extensive than the interspaces; darkened seams and clouds elsewhere on surface, especially at cord and in centers of cells beyond cord, base of *Rs* darkened; hypopygium with basistyle not produced at apex, dististyles terminal; (*r*—*m* very short to obliterated by approximation or fusion of veins R_4+_5 and M_1+_2). (Cape Province, Natal, Transvaal, South West Africa, Basutoland, Southern Rhodesia, Moçambique, northwards) . . . . . *tipulipes* (KARSCH)
— Wings with darkened subcostal pattern very reduced, evident chiefly as a narrow seam over Sc_2; darkened pattern elsewhere on surface inconspicuous or lacking; hypopygium with outer end of basistyle narrowed and produced, with unusually strong setae, dististyles subterminal; (veins R_4+_5 and M_1+_2 approximated but *r*—*m* preserved). (Cape Province, Natal, Basutoland, Southern Rhodesia, northwards) . . . . . *nairobii* (ALEXANDER)

32. Wings with a restricted dark clouded pattern, especially in cells beyond cord, including darkenings in cell *Sc* and before and beyond stigma. (Natal, Transvaal, Moçambique, Southern Rhodesia, northwards) . . . . . *gardineri* (EDWARDS)
— Wings with stigma but without darkenings in the cells 33
33. Hypopygium with the two rostral spines arising at and near summit of a common blackened basal tubercle; (wings normal, with *m—cu* shortly before fork of *M*). (Natal, Southern Rhodesia) . . . . . *lawrencei* ALEXANDER
— Hypopygium with the rostral spines separate at bases (not known in *marshalli*, where the wings are unusually long and narrow, with *m—cu* before the fork of *M*) 34
34. Wings long and narrow, more than six times as long as broad, tinged with yellow; *m—cu* in cases nearly its own length before the fork of *M*. (Southern Rhodesia) . . . . . *marshalli* (ALEXANDER)
— Wings more normal, about five times or less as long as broad (narrowest in *contraria* where the wings are more tinged with dusky); *m—cu* at or only shortly before fork of *M*, in cases about to one-half its length 35
35. Antennae 13-segmented (figs. 47, 58). (Cape Province) . . . . . *kraaiensis* sp. n.
— Antennae 14-segmented 36
36. Wings with *m—cu* some distance before the fork of *M* 37
— Wings with *m—cu* at or close to the fork of *M* 39
37. Hypopygium with three rostral spines; tergite narrowed outwardly, not or but slightly emarginate at apex, setae relatively few and weak (fig. 57). (Southern Rhodesia) . . . . . *contraria* ALEXANDER
— Hypopygium with two rostral spines 38
38. Hypopygium with tergite shallowly and inconspicuously emarginate medially; rostral prolongation narrowly obtuse at tip; dorsal dististyle with apical point elongate. (Natal) *umkomazanae* ALEXANDER
— Hypopygium with posterior border of tergite very gently and broadly emarginate; rostral prolongation broadly obtuse at apex; dorsal dististyle with short apical point. (Moçambique) *luaboensis* ALEXANDER
39. Hypopygium with tergite slightly emarginate at apex, with numerous setae; basistyle with ventromesal lobe rounded at tip. (Basutoland, Southern Rhodesia) . . . . . *basuto* ALEXANDER
— Hypopygium with apex of tergite strongly convex, not emarginate, tergal setae few but strong; basistyle with ventromesal lobe small, more or less pointed at apex, with distinctive setal arrangement (figs. 59, 60). (Cape Province) . . . . . *mosselica* ALEXANDER
40. Cells of more than the outer two-thirds of wing with abundant macrotrichia. (Moçambique) . . . . . *cuthbertsoni* ALEXANDER
— No macrotrichia in wing cells. 41
41. Wings pale, distinctly patterned with darker spots or clouds 42
— Wings without pattern, excepting for the stigmal area when this is present 57
42. Wing pattern irrorate, including spots, dots, or clouds in the cells, as well as darkened seams over the cord and elsewhere. 43
— Wing pattern more restricted, including chiefly darkened seams and clouds along the veins, without isolated spots in the cells. 48
43. Size large (wing over 16 mm.); (femur with a narrow dark subterminal ring) (fig. 2). (Cape Province, Natal, northwards). . . . . *subapicalis* ALEXANDER
— Size smaller (wing under 14 mm.) 44
44. Darkened ring at end of femur terminal or virtually so 45
— Darkened ring of femur distinctly subterminal in position 46
45. Thorax uniformly fulvous; spotted wing pattern reduced to a few scattered dots; (knobs of halteres infuscated). (Southern Rhodesia) . . . . . *omnifulva* ALEXANDER
— Thorax fulvous, praescutum patterned with black; spots in wing cells very numerous. (Southern Rhodesia, northwards) . . . . . *nyasaensis* ALEXANDER
46. Outer radial branches not strongly decurved at outer end, R_3 gently arcuated, ending shortly before wing tip; knobs of halteres darkened; femur yellow, with a narrow subterminal black ring. (Natal, Transvaal, Moçambique, Southern Rhodesia) . . . . . *irrorata* ENDERLEIN

— Outer radial branches strongly decurved, R_3 attaining the wing tip or virtually so; knobs of halteres yellow; femur darkened, outer end broadly yellow, enclosing a subterminal black ring 47

47. Antennae with outer flagellar segments greenish yellow, terminal segment dark; scutellum blackened; cell *1st* M_2 irregular in outline, longer than vein M_3 beyond it; basal section of vein M_3 arcuated, more than twice *m.* (Moçambique, Southern Rhodesia, northwards) . . . . . *ditior ditior* ALEXANDER

— Antennae with flagellar segments black, the glabrous apical necks of the individual segments yellowed; scutellum yellow, bordered by darker; cell *1st* M_2 subrectangular, shorter than any of the veins beyond it; basal section of vein M_3 less than twice *m.* (Southern Rhodesia) . . . . *ditior subditior* ALEXANDER

48. Dark wing pattern very heavy, more extensive than the whitened ground, especially beyond the cord 49

— Dark wing pattern much less extensive than the ground 50

49. Wings with the heavy brown pattern chiefly in the outer radial field, basad of cord washed with paler brown. (Natal) . . . . . *lebombo* ALEXANDER

— Wings patterned with major darkened areas over the entire surface, including the basal half. (Southern Rhodesia) . . . . . *potnia* ALEXANDER

50. Size large (wing of male 21 mm., female 15 mm., or more). (Southern Rhodesia) *praetor* ALEXANDER

— Size smaller (wing less than 10 mm., usually less than 8 mm.) 51

51. Dark wing pattern heavy but less extensive than the paler brown ground, including a major area in cells *R* and *M* before origin of *Rs* and with large marginal spots in the Anal cells. (Southern Rhodesia) . . . . . *saucroptera* ALEXANDER

— Dark wing pattern not extensive, appearing as seams to the veins, in cases so restricted that the species might run to couplet 57 52

52. Femur yellow, with a narrow black subterminal ring. (Southern Rhodesia, northwards) *uniflava* (RIEDEL)

— Femur without a blackened subterminal ring 53

53. Femur darkened outwardly, the tip narrowly and abruptly pale yellow 54

— Femur without pale tip 55

54. Claw with a very long and slender subbasal spine; hypopygium with the rostral prolongation a long curved black spine; mesal-apical lobe of gonapophysis a powerful curved blackened rod, its tip acute. (Southern Rhodesia) . . . . . *hovamendica makalaka* ALEXANDER

— Claw with a shorter spikelike basal spine; hypopygium with the rostral prolongation a compressed blade with four long spines; mesal-apical lobe of gonapophysis a long straight blade that tapers gradually to the tip. (Natal, Transvaal, Moçambique, Southern Rhodesia) . . . . . *shawi* (ALEXANDER)

55. Front and anterior vertex silvery; legs yellow; wing tip darkened. (Cape Province). *pondoensis* ALEXANDER

— Front and anterior vertex not silvery; legs with tip of femur darkened; wing tip undarkened . . . 56

56. *Rs* strongly arcuated, with Sc_1 ending before the middle of its length. (Natal) . . . *marleyi* (ALEXANDER)

— *Rs* less arcuated, with Sc_1 ending beyond midlength; (hypopygium large and complex in structure). (Natal; Palaeotropical) . . . . . *umbrata* (DE MEIJERE)

57. Posterior tarsi snowy white; (size small, wing of female about 4 mm.; wings with a strong brownish tinge). (Natal) . . . . . *argopoda* ALEXANDER

— All tarsi darkened 58

58. Hypopygium very complex in structure, the dististyle produced caudad into a long straight rod with a series of about 9 or 10 blackened teeth along inner margin; aedeagus very broad, apex trifid. (Cape Province, Natal, Southern Rhodesia, northwards) . . . . . *flavopyga* (ALEXANDER)

— Hypopygium less complex, not constructed as above; aedeagus narrow, simple or bilobed at apex 59

59. *Sc* unusually short, Sc_1 ending about opposite one-fourth to one-fifth *Rs*; (praescutal stripes confluent, forming a brownish black discal area). (Cape Province) . . . . . *capicola* (ALEXANDER)

— *Sc* longer, Sc_1 ending about opposite or beyond one-third the length of *Rs* 60

60. *Sc* long, Sc_1 ending about opposite two-thirds *Rs* 61

— *Sc* shorter, Sc_1 ending between one-third and one-half *Rs* 62

61. Praescutum orange, posterior sclerites of notum darkened, pleura brownish black with silvery pruinosity; hypopygium with two short pale spines from a single strong basal tubercle; apical lobes of aedeagus large. (Southern Rhodesia) . . . . . *bethæ* ALEXANDER

— Praescutum and pleura reddish brown, the latter with a conspicuous brownish black dorsal stripe; hypopygium with rostral spines long, black; apical lobes of aedeagus small. (Natal) *dingaan* ALEXANDER

62. Sc_1 ending about opposite one-third *Rs*; (*Rs* more than twice R_2+_3; cell *1st* M_2 rectangular). (Natal) . . . . . *subconfusa* ALEXANDER

— Sc_1 ending at near midlength of *Rs* or slightly beyond; (*Rs* usually less than twice R_2+_3) 63

63. General coloration yellowish testaceous; head dark gray; wings with cell *1st* M_2 subquadrate, shorter than any of the veins beyond it. (Natal) . . . . . *confusa* (ALEXANDER)

— General coloration sulphur yellow; head blackened; wings with cell *1st* M_2 subrectangular, longer than vein M_4. (Cape Province) . . . . . *peringueyi* (ALEXANDER)

Limonia (Limonia) argopoda ALEXANDER

Limonia (*Limonia*) *argopoda* ALEXANDER; Ann. Natal Mus., 14: 376–377, fig. 9 (ven.); 1960.

Female. — Length about 3.5 mm.; wing 4.1 mm.

General coloration of mesonotum uniformly polished liver brown, pleura more yellowed; legs light brown, posterior tarsi chiefly snowy white; wings with a strong brownish tinge, unpatterned; Sc_1 ending opposite or slightly before midlength of *Rs*.

Natal: Ngoye Forest, Zululand, February 17—19, 1959 (STUCKENBERG), type.

Limonia (Limonia) bethae ALEXANDER

Limonia (*Limonia*) *bethæ* ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 14: 99–100; 1945.

Male. — Length about 5.3–5.5 mm.; wing 6.5–6.8 mm.

General coloration of praescutum deep orange, posterior sclerites and most of pleura brownish black, with a clear silvery gray bloom; halteres whitened; legs pale brown, tarsi yellow; wings tinged with brown, stigma darker, short-oval; cell *1st* M_2 about as long as distal section of vein M_3.

Moçambique: Gorongoza Mt., 1200 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Umtali, Vumba Mts., November 1940 (CUTHBERTSON), types.

Also known from Madagascar and Réunion.

Limonia (Limonia) capicola (ALEXANDER)

Dicranomyia capicola ALEXANDER; Ann. So. Afr. Mus., 18: 183; 1921.
Limonia capicola WOOD; Ann. So. Afr. Mus., 39: 185–188, fig. 57 (ven., larva), fig. 58 (pupa); 1952.

Male. — Length 5.5–6.5 mm.; wing 7–8.5 mm.

Praescutum brown with a broad black discal area, pleura paler brown; legs brown; wings grayish subhyaline, stigma brown, long-oval, *Sc* short; hypopygium with rostral spines short, straight.

Dr. WOOD found the immature stages living in moss along the margins of rapidly flowing streamlets. The habitat is quite different from that of the apparently closely related *Limonia* (*Limonia*) *peringueyi*.

Cape Province: Peninsula, Table Mt., August 1921 (MUNRO); Echo Valley, February, April, October 1932; Kasteels Poort, August 1932; Kirstenbosch, November 1932; Lekkerwater, January 1932; Orange Kloof,

January 1933; Platteklip, January 1932, March 1930, April 1932 (WOOD). Province, Landdrost Kloof, Hottentots Holland Mts., 3000 feet, March 1919 (BARNARD), type; French Hoek Pass, December 4, 1916 (BARNARD), type; January 1935, October 1933 (WOOD); Bains Kloof, April 1933; George, January 1931; Krom River, September 1935; Lemoenshoek, November 1927; Meirings Poort, October 1937; Oudebosch, December 1928; Palmiet River, March 1932; Riversdale, October 1922; Sneeuwgat, September 1932; Steenbras, November 1932; Witte River, November 1933; Wolvenhoek Kloof, April 1931; Zwartberg Pass, February 1932 (WOOD). Franschhoek Bosreserve, Upper Berg River, 2500 feet, in low bush near clear high mountain torrent, November 1, 1950 (BRINCK—RUDEBECK), Loc. no. 21; Maanschijnkop, 7 miles E. of Hermanus, in densely wooded wet ravine near waterfall, December 21, 1950 (BRINCK—RUDEBECK), Loc. no. 93; Hottentots Holland Mts., Steenbras Dam area, 10 miles WSW of Grabouw, at trickle on heath covered mountain slope, February 4, 1951 (BRINCK—RUDEBECK), Loc. no. 169; Montagu Pass, Outeniqua Mts., about 6 miles NW of George, under boulders in shady ravine, February 28, 1951 (BRINCK—RUDEBECK), Loc. no. 187.

Limonia (Limonia) confusa (ALEXANDER)

Dicranomyia confusa ALEXANDER; Ann. So. Afr. Mus., 18: 182–183; 1921.

Male. — Length about 4–4.1 mm.; wing 5.3–5.5 mm.

General coloration pale testaceous yellow, praescutum with an indistinct paler median stripe; legs yellowish testaceous, tarsi darker; wings subhyaline, stigma oval, pale brown, *Sc* long, cell *1st* M_2 small, quadrate.

Natal: Kranskop (Krantzkop), November 1917 (BARNARD), type.

Limonia (Limonia) cuthbertsoni ALEXANDER

Limonia (*Limonia*) *cuthbertsoni* ALEXANDER; Encycl. Entomol., Diptera, 7: 49–50; 1934.

Male. — Length about 7 mm.; wing 8.4 mm.

General coloration black, praescutum with three reddish ochreous stripes, scutal lobes extensively of this same color, pleura black; femora and tibiae brownish yellow; wings strongly infuscated, patterned with dark brown along veins, cells with abundant macrotrichia; abdomen black, basal sternites ringed with yellow; hypopygium dark, rostral prolongation long, gently curved, with a single spine at near midlength.

Moçambique: Border Farm, Rio Jardin, April 1929 (CUTHBERTSON), type.

Limonia (Limonia) dingaan ALEXANDER

Limonia (*Limonia*) *dingaan* ALEXANDER; Ann. Natal Mus., 14: 377–378; 1960.

Male. — Length about 5–5.3 mm.; wing 5.8–6 mm.; antenna about 0.7–0.8 mm.

General coloration of mesonotum dark reddish brown, pleura with a broad brownish black dorsal stripe; wing strongly tinged with brown, restrictedly patterned with darker, *Sc* long; hypopygium with cephalic border of tergite strongly convex; two long black rostral spines.

Natal: Gwalaweni Forest, Zululand, February 14—16, 1957; Ngoye Forest, February 17—19, 1957 (STUCKENBERG).

Limonia (Limonia) ditior ditior ALEXANDER

Limonia (Limonia) ditior ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 15: 134–135; 1946.

Male. — Length about 9 mm.; wing 12 mm.

General coloration of thorax greenish yellow, praescutum with a central black stripe divided by a pale vitta, pleura restrictedly patterned with brown; legs black, tip of femur narrowly obscure yellow, enclosing a dark subterminal ring, in cases this terminal in position; wings light yellow, patterned with brown, including paler spots in the cells; cell *1st* M_2 irregular in outline; ventral dististyle of hypopygium with four rostral spines.

Moçambique: Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG); Machinjiri Mt., April 29, 1958 (STUCKENBERG). — **Southern Rhodesia:** Vumba Mts., March 1935 (CUTHBERTSON), type.

Limonia (Limonia) ditior subditior ALEXANDER

Limonia (Limonia) ditior subditior ALEXANDER; Ann. Natal Mus., 14: 138–139; 1957.

Male. — Length about 8.5 mm.; wing 10 mm.

Close to typical *ditior*, differing especially in the regular outline of cell *1st* M_2, as described in the key; pleural markings very faintly indicated; knobs of halteres clear light yellow.

Southern Rhodesia: Chirinda Forest, January 25, 1955 (STUCKENBERG); Leopard Rock, Vumba Mts., January 16, 1955 (STUCKENBERG), type; near Inyanga, January 14, 1955 (STUCKENBERG).

Limonia (Limonia) flavopyga (ALEXANDER)

Dicranomyia flavopyga ALEXANDER; Ann. Mag. Nat. Hist. (9) 7: 307–308; 1921.
Limonia (Limonia) flavopyga ALEXANDER; Ann. Natal Mus., 14: 378–379, fig. 4 (♂ hyp.); 1960.
Teucholabis nova WOOD; Ann. So. Afr. Mus., 39: 261–265, fig. 86 (ad.); 1952.

Male. — Length about 5–5.5 mm.; wing 5.5–6.8 mm.

General coloration obscure yellow, praescutum with three brown stripes, pleura conspicuously striped longitudinally with brown; wings gray, restrictedly patterned; hypopygium very complex, as described in the key.

Cape Province: Oudebosch, Caledon Division, December 1920 (LIGHTFOOT); Robinson Pass, in shady wooded area along margin of small mountain streams, November 1937 (WOOD), type of *nova*. — **Natal:** Shafton Grange, April 28, 1919 (A. G. SHAW), type; Ngoye Forest, Zululand, February 17–19, 1957 (STUCKENBERG). — **Southern Rhodesia:** Umtali, Vumba Mts., 5000 feet, April 1929 (CUTHBERTSON); Salisbury, April 6, 1957 (SMITHERS).

Limonia (Limonia) hovamendica makalaka ALEXANDER

Limonia (Limonia) hovamendica makalaka ALEXANDER; Journ. Ent. Soc. So. Afr., 22: 53–54, fig. 2 (ven.), fig. 12 (♂ hyp.); 1959.

Male. — Length 6.5–6.6 mm.; wing 7–7.2 mm.; antenna 1.6–1.7 mm.

General coloration of praescutum yellow with a brown central stripe, pleura yellow striped with brown; femora dark brown, tip narrowly white; wings weakly infuscated, prear-

cular and costal fields more yellowed, outer radial field a little darkened; hypopygium with rostral prolongation of ventral dististyle a corrugated blackened spine; aedeagus bifid at apex.

Southern Rhodesia: Salisbury, January 20 — March 7, 1957 (SMITHERS), type.

Limonia (Limonia) irrorata ENDERLEIN

Limonia irrorata ENDERLEIN; Zool. Jahrb., Syst., 32, pt. 1: 74–75, fig. 1 (wing); 1912.

Male. — Length 5.5–9.5 mm.; wing 8–12 mm.

General coloration bright ochre yellow, pronotum and anterior part of praescutum blackened; antennae brownish yellow, basal flagellar segments darker; legs ochre yellow, femur with a subterminal dark brown ring; wings yellowed, cells with abundant small rounded spots and dots.

Natal: Cedara, April 16, 1920 (S. H. SKAIFE); Cathedral Peak Hotel, Drakensberg, February 19, 1954 (STUCKENBERG); The Hostel, National Park, 5000 feet, at light, March 31—April 4, 1951 (BRINCK—RUDEBECK) Loc. nos. 256, 259, 261. — **Transvaal:** Zoutpansberg (in Stettin Museum), type; Barotta, Zoutpansberg, 27 miles E of Louis Trichardt, on densely wooded mountain slope, May 4, 1951 (BRINCK—RUDEBECK), Loc. no. 296. — **Moçambique:** Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Penhalonga, January 17, 1955 (STUCKENBERG); Umtali, January 19, 1955 (STUCKENBERG); Salisbury, April 11—16, 1956 (SMITHERS); Victoria Falls, flying among wet vegetation in rain forest close to Zambezi River, May 16—17, 1951 (BRINCK—RUDEBECK), Loc. no. 307.

Limonia (Limonia) lebombo ALEXANDER

Limonia (Limonia) lebombo ALEXANDER; Ann. Natal Mus., 14: 379–380, fig. 11 (ven.), fig. 14 (♂ hyp.); 1960.

Male. — Length about 4.8 mm.; wing 5 mm.

Mesonotal praescutum buffy yellow, with three confluent darker stripes; legs light yellow, claws untoothed; wings conspicuously patterned with brown, *Sc* long; hypopygium with rostral prolongation of ventral dististyle long and slender, with two spines.

Natal: Gwalaweni Forest, Zululand, February 14—16, 1957 (STUCKENBERG), type; Pietermaritzburg, January 27, 1957, at light (STUCKENBERG).

Limonia (Limonia) marleyi (ALEXANDER)

Dicranomyia marleyi ALEXANDER; Ann. So. Afr. Mus., 17: 142, pl. 10, fig. 4 (wing); 1917.

Male. — Length about 5.8–6 mm.; wing 5.7–6.5 mm.

Praescutum rich cinnamon brown, darker medially behind; pleura yellow ventrally with a broad dark brown dorsal stripe; femora yellow, tips dark brown; wings subhyaline, stigma dark brown, short-oval, origin of *Rs* and cord seamed with brown; abdominal tergites brownish yellow, lateral and posterior borders broadly blackened, sternites yellow with brown posterior margins.

Natal: Stella Bush, near Durban, April 1915 (BELL-MARLEY), type; Durban, September 12, 1945 (BEVIS).

Limonia (Limonia) nyasaensis ALEXANDER

Limonia nyasaensis ALEXANDER; Ann. Mag. Nat. Hist. (9) 6: 10–11; 1920.

Male. — Length about 6 mm.; wing 9.3 mm.

Mesonotum reddish yellow, praescutum with a dark brown median stripe; antennae black, intermediate flagellar segments vaguely bicolored; femora brownish yellow, tips broadly dark brown; wings pale yellow, costal border more saturated, surface with abundant brown dots in the cells, in cases stigma and cord narrowly brown; abdomen reddish yellow, restrictedly patterned with dark brown.

The males from Salisbury have vein R_3 strongly decurved, reaching the margin at wing tip or virtually so. I regard them as being conspecific with the type from Nyasaland.

Southern Rhodesia: Mazoe, January 7, 1920 (A. J. T. JANSE); Salisbury, at light, April 4–11, 1956 (SMITHERS).

Limonia (Limonia) omnifulva ALEXANDER

Limonia (Limonia) omnifulva ALEXANDER; Ann. Natal Mus., 14: 139–140; 1957.

Female. — Length about 11 mm.; wing 11 mm.

General coloration of entire thorax fulvous, without dark pattern; rostrum shiny black; antennae with scape black, pedicel and basal flagellar segments brownish yellow, outer segments dark brown; knobs of halteres infuscated; femora yellow with a broad black nearly terminal ring; wings yellow with a very restricted and inconspicuous dotted brown pattern; abdomen fulvous with a narrow dark brown lateral stripe.

Southern Rhodesia: Near Inyanga, January 14, 1955 (STUCKENBERG), type.

Limonia (Limonia) peringueyi (ALEXANDER)

Dicranomyia peringueyi ALEXANDER; Ann. So. Afr. Mus., 17: 142–143; 1917.
Limonia peringueyi WOOD; Ann. So. Afr. Mus., 39: 182–184, fig. 55 (wing), fig. 56 (pupa); 1952.

Male. — Length about 5 mm.; wing 6.4 mm.

Thorax pure sulphur yellow, without distinct markings; head blackened; halteres dark brown; femora yellow; wings grayish subhyaline, stigma pale brown; abdominal tergites slightly darkened.

The immature stages occur in decaying logs, where the larvae tunnel throughout the wood, feeding on the materials therein (WOOD).

Cape Province: Peninsula, Fernwood, November 1934; Orange Kloof, March 1932; Wynberg Caves, near entrance, March 1931 (WOOD); Oudebosch, January 1919 (BARNARD), September 1933, January 1934. Jonkershoek, July 1931; River Zonder End Peak, December 1931 (WOOD); Groot River, Nature Valley; 12 miles NE of Plettenbergbaai, along river in rain, January 11, 1951 (BRINCK–RUDEBECK), Loc. no. 132,

Limonia (Limonia) pondoensis ALEXANDER

Limonia (Limonia) pondoensis ALEXANDER; Rev. Zool. Bot. Africaine, 19: 341–342, fig. 15 (wing); 1930.

Female. — Length about 7 mm.; wing 6.5 mm.

General coloration light yellow, praescutum with a median brown stripe, dorsal pleurites broadly darkened, venter light yellow; knobs of halteres dark brown; wings yellowish gray, conspicuously patterned with brown, chiefly concentrated beyond the cord; abdominal segments brownish yellow, tergites bordered laterally and behind with dark brown, basal sternites more uniformly yellow.

Cape Province: Port St. Johns, Pondoland, November 1923 (R. E. TURNER), type.

Limonia (Limonia) potnia ALEXANDER

Limonia (*Limonia*) *potnia* ALEXANDER; Ann. Natal Mus., 14: 140–141, fig. 5 (♂ hyp.), fig. 9 (ven.); 1957.

Male. — Length about 5.5 mm.; wing 6.5 mm.

General coloration dull brown, praescutum with three more reddish brown stripes; antennae black, first flagellar segment pale yellow; front silvery; femora brown, tips darker, preceded by a narrow paler ring, tarsi whitish yellow; wings whitish subhyaline with a very heavy brown pattern; abdomen brownish black, incisures of outer segments paler; rostral prolongation of ventral dististyle of hypopygium with a single axillary spine from a very long basal tubercle.

Southern Rhodesia: Chirinda Forest, January 25, 1955 (GRAHAM & STUCKENBERG), type.

Limonia (Limonia) praetor ALEXANDER

Limonia (*Limonia*) *praetor* ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 14: 98–99; 1945.

Male. — Length about 18–20 mm.; wing 21–24.5 mm.

Female. — Length about 14–19 mm.; wing 15–21 mm.

Thoracic dorsum black, praescutum abruptly brick red, with a more or less distinct dark median line, pleura black; legs black; wings of male (holotype) with apex obtuse, stigma yellowed, small, in female and some males wing apex normal, stigma large and darkened; abdominal tergites orange, sternites orange with blackened lateral areas, subterminal segments of male blackened, hypopygium yellow.

Southern Rhodesia: Chirinda Forest, 3600 feet, November 1930 (CUTHBERTSON), December 1935 (G. ARNOLD), types; January 25, 1955 (STUCKENBERG).

Limonia (Limonia) saucroptera ALEXANDER

Limonia (*Limonia*) *saucroptera* ALEXANDER; Ann. Natal Mus., 14: 141–142, fig. 6 (♂ hyp.), fig. 10 (ven.); 1957.

Male. — Length about 6.5–7 mm.; wing 8.5–9 mm.

General coloration of thorax dark brown, praescutum with three paler brown stripes; antennae black, pedicel obscure yellow; femora brown, tips abruptly whitened, tarsi and tips of tibiae light yellow; wings dusky, heavily patterned with dark brown; rostral prolongation of ventral dististyle of hypopygium long and slender, with a single spine placed at near two-thirds the length.

Southern Rhodesia: Chirinda Forest, January 25, 1955 (STUCKENBERG), type.

Limonia (Limonia) shawi (ALEXANDER)

Dicranomyia shawi ALEXANDER; Ann. Mag. Nat. Hist. (9) 7: 306–307; 1921.

Male. — Length about 5.5–6.5 mm.; wing 6–7.5 mm.

General coloration obscure yellow, praescutum with a broad dark brown median stripe, lateral stripes less distinct, pleura yellow with a broad darker dorsal stripe; femora brown, tips abruptly pale yellow; wings brownish subhyaline, stigma dark brown, cord, outer veins and wing tip indistinctly darkened; abdomen dark brown, eighth segment yellowed.

Natal: Shafton Grange, April 28, 1919 (A. G. SHAW), type; Ngoye Forest, Zululand, February 17–19, 1957 (STUCKENBERG). — **Transvaal:** Mariepskop, 4400 feet, October 4–8, 1956 (STUCKENBERG). — **Moçambique:** Gorongoza Mt., 1200 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Chirinda Forest, 3600 feet, November 1930 (CUTHBERTSON); Umtali, Vumba Mts., 5000 feet, October 1940 (CUTHBERTSON).

Limonia (Limonia) subapicalis ALEXANDER

(Fig. 2)

Libnotes capensis ALEXANDER; Ann. So. Afr. Mus., 17: 143–145, pl. 10, fig. 6 (wing); 1917 (preoccupied by *Limonia capensis* MACQUART, Dipt. exot., 1, 1: 71; 1838, whose identity remains in question).
Limonia subapicalis ALEXANDER; Rept. Harvard Afr. Exped., 2: 1007; 1930.
Limonia subapicalis WOOD; Ann. So. Afr. Mus., 39: 177–181, fig. 53 (larva), fig. 54 (pupa); 1952.

Male. — Length about 12–13 mm.; wing 19–21 mm.

Thorax greenish yellow, praescutum with intermediate blackened stripes, mediotergite brownish black, yellowed laterally, pleura greenish yellow with two longitudinal brown stripes; legs yellow, femora with a narrow subterminal black ring; wings pale yellow, costal area more saturated yellow, disk with abundant dark brown spots and seams, with further brown clouds and dots in the cells; abdomen greenish yellow, posterior borders of segments more yellowed (fig. 2).

Dr. WOOD found the immature stages in damp rotting debris in tree holes, in saturated scum beneath the bark of a prostrate poplar, and in a fallen log of *Halleria* (Scrophulariaceae).

Cape Province: Peninsula, Fernwood, July, December 1937; Cecilia Waterfall, December 1936 (WOOD); Oudebosch, January 1934, September 1937 (WOOD); Grahamstown, October 29, 1952 (STUCKENBERG). — **Natal:** Umvoti (H. FRY), type; Stella Bush, near Durban, October 17, 1915 (BELL-MARLEY), allotype; Hilton Road, Pietermaritzburg, January 1950 (P. GRAHAM).

Limonia (Limonia) subconfusa ALEXANDER

Limonia (Limonia) subconfusa ALEXANDER; Ann. Natal Mus., 14: 258–260, fig. 2 (ven.), fig. 6 (♂ hyp.); 1958.

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

General coloration of thoracic dorsum fulvous yellow; rostrum testaceous; wings brownish yellow, stigma pale brown; Sc_1 ending opposite one-third *Rs*, cell *1st* M_2 rectangular,

nearly twice as long as broad; hypopygium with two approximated rostral spines, mesal-apical lobe of gonapophysis long and slender.

Natal: Kranskop, November 11, 1954 (STUCKENBERG), type.

Limonia (Limonia) umbrata (DE MEIJERE)

Dicranomyia umbrata DE MEIJERE; Tijd. v. Ent., 54: 25, pl. 1, fig. 7 (wing); 1911.
Dicranomyia umbrata DE MEIJERE; Tijd. v. Ent., 56: 343, pl. 16, figs. 9, 10 (♂ hyp.); 1913.

Male. — Length about 4.5–5.5 mm.; wing 6–6.5 mm.

Praescutum brownish yellow with three restricted brown stripes, pleura yellowed below, dark brown above; legs dark brown, femoral bases paler; wings weakly suffused, restrictedly patterned with darker, including the conspicuous stigma; abdomen dark brown, basal rings of segments paler; hypopygium large and complex, especially the ventromesal lobe of the basistyle.

Natal: Pietermaritzburg, Town Bush, November 11, 1955 (STUCKENBERG). A wide-spread Oriental-Australasian species, occurring also in Madagascar and the Neotropics, apparently having been introduced by commerce.

Limonia (Limonia) uniflava (RIEDEL)

Limnobia uniflava RIEDEL; Voy. Alluaud et Jeannel Afrique Orientale (1911–1912), Ins. Dipt., part 3, Nematocera polyneura, p. 75; 1914.

Male. — Length about 7–8 mm.; wing 9–10 mm.

Head and thorax polished yellow, praescutum with poorly indicated brown longitudinal stripes; legs yellow, femora with a narrow black subterminal ring; wings yellow, restrictedly patterned with brown, appearing as narrow seams to the veins with no spots in the cells.

Southern Rhodesia: Near Inyanga, January 14, 1955 (STUCKENBERG); Victoria Falls, flying among wet vegetation in rain forest close to Zambezi River, May 16–17, 1951 (BRINCK–RUDEBECK), Loc. no. 307.

Limonia (Metalimnobia) trichoptera (ALEXANDER)

Limnobia trichoptera ALEXANDER; Ann. Mag. Nat. Hist. (9) 6: 4–6; 1920.

Male. — Length about 7.5–8 mm.; wing 9.5–10 mm.

Mesonotum light yellow, praescutum with a broad black median stripe, lateral stripes dark brown; antennae black; femora yellow with two narrow dark brown rings, tibiae and tarsi brownish black; wings pale brown with darker costal markings and numerous small yellow areas in all cells; macrotrichia in stigma and outer wing cells; abdominal tergites pale brown, sternites yellowed, with blackened spots at posterior lateral angles.

Southern Rhodesia: Mount Chirinda, 3500 feet, June 11, 1911 (C. F. M. SWYNNERTON), type; Vumba Mts., March 1935 (CUTHBERTSON); Umtali, Vumba Mts., 5000 feet, January 19, 1955 (GRAHAM & STUCKENBERG).

Limonia (Libnotes) libnotina ALEXANDER

Limonia (*Libnotes*) *libnotina* ALEXANDER; Encycl. Ent., Diptera, 7: 50–52; 1934.
Limonia libnotina WOOD; Ann. So. Afr. Mus., 39: 181–182, fig. 55 (wing); 1952.

Male. — Length about 12.5 mm.; wing 16–21 mm.

General coloration yellow, praescutum with four brown stripes, center of mediotergite pale, pleura yellowish white with two narrow brown longitudinal stripes; antennae with scape and pedicel black, flagellum paler; wings pale yellow, patterned with brown, the darker areas restricted to the vicinity of the veins, centers of cells streaked with paler brown; abdomen yellow, lateral tergal borders narrowly darkened.

Cape Province: Peninsula, Nursery Ravine, March 1932; Fernwood Ravine, July 1937 (WOOD); Oudebosch, December 1920 (LIGHTFOOT), allotype; January 1934 (THORNE & WOOD); Port St. Johns, Pondoland, August 15–31, 1923 (R. E. TURNER). — **Natal:** Pietermaritzburg, Town Bush, November 11, 1955 (STUCKENBERG). — **Southern Rhodesia:** Chirinda Forest, November 1930 (CUTHBERTSON); Umtali, September 1927, among long grass beside stream in public park (CUTHBERTSON); Leopard Rock, Vumba Mts., March 1957 (N. L. H. KRAUSS).

The holotype male, collected by H. K. MUNRO, was without exact geographical data.

Limonia (Rhipidia) atomaria (LOEW)

Limnobia atomaria LOEW; Berlin. Entomol. Zeitschr., 10: 58; 1866.
Rhipidia afra BERGROTH; Entomol. Tidskr., 9: 128–129; 1888.
Rhipidia afra ALEXANDER; Ann. So. Afr. Mus., 17: 143, pl. 10, fig. 5 (wing); 1917.
Limonia afra WOOD; Ann. So. Afr. Mus., 39: 176–177; 1952.

Male. — Length about 6–6.5 mm.; wing 7–8 mm.

Belongs to the *domestica* group; thorax ochreous to brownish, praescutum with three dark brown stripes, median stripe weakly divided, pleura with two narrow brown longitudinal stripes; legs yellow, tips of femora and tibiae narrowly darkened; wings subhyaline with very small brown spots at origin of *Rs* and elsewhere, all cells with very abundant pale gray dots; *Sc* short; hypopygium with three very long rostral spines.

Cape Province: Peninsula, Fernwood, November 1933; Kirstenbosch, November 1933; Nursery Ravine, November 1932 (WOOD); types of both *afra* and *atomaria* from "Caffraria"; Landdrost Kloof, Hottentots-Holland Mts., 1917 (BARNARD); Zonder End Peak, Caledon, 3600 feet, January 1919 (BARNARD); East London, July 1914 (LIGHTFOOT); Table Mt., Blinkwater Ravine, Peninsula, 1500 feet, dense bush along stony stream, November 4, 1950 (BRINCK—RUDEBECK), Loc. no. 23; Hout Bay, Skoorsteenkop, Peninsula, 600 feet, in insect trap on mountain slope, December 27, 1950, January 22, 1951 (BRINCK—RUDEBECK), Loc. nos. 95,157; Assegaaibos, 30 miles WNW of Humansdorp, in wet ravine with luxuriant vegetation near stony stream, February 28, 1951 (BRINCK—RUDEBECK), Loc. no. 192; Bainskloof, 5 miles E of Wellington, amongst wet vegetation along stony stream, July 1, 1951 (BRINCK—RUDEBECK), Loc. no. 346; Bredasdorp, at light, January 1, 1951 (BRINCK—RUDEBECK), Loc. no. 106; Ladismith, at light, January 4, 1951 (BRINCK—RUDEBECK), Loc. no. 115; Mount Fletcher, at light, March 8, 1951 (BRINCK—RUDEBECK), no number; Mount Frère, at light, March 5, 1951 (BRINCK—RUDEBECK), Loc. no. 207; Tzitzikama Forest, Stormsrivier, in dense indigenous forest with scattered cultivated meadows, January 11–14, 1951 (BRINCK—RUDEBECK), Loc. nos. 134, 135, 137; Kokstad, Griqualand, November 1935 (BEVIS); — **Natal:** Durban (F. MUIR); Camperdown, September 29, 1918 (BAKER); Krantz Kloof, June 1915 (BELL-MARLEY); Krantzkop, November 1917 (BARNARD); Nhluzane Mt., above 5000 feet, May 10, 1957 (STUCKENBERG); Hostel, National Park, 5000 feet, at

light, March 31 — April 4, 1951 (BRINCK—RUDEBECK), Loc. no. 256; Tugela Valley, National Park, 5000 feet, in insect trap near stony river, April 3—11, 1951 (BRINCK—RUDEBECK), Loc. nos. 258, 261, 271. — **Basutoland:** Quthing, 5600 feet, at light near meadow, March 16, 1951 (BRINCK—RUDEBECK), no number; Leribe, at light, March 29, 1951 (BRINCK—RUDEBECK), Loc. no. 253. — **Southern Rhodesia:** Vumba Mts., March 1935 (CUTHBERTSON). — **South West Africa:** Kaokoveld, Anabib (Orupembe), 100 miles W of Ohopoho, at light, in dry mopane bush about 200 yards from waterhole, June 13, 1951 (BRINCK—RUDEBECK), Loc. no. 339.

Limonia (Rhipidia) endecamera ALEXANDER

Limonia (Rhipidia) endecamera ALEXANDER; Ann. Natal Mus., 15: 14—15, fig. 9 (wing), fig. 13 (♂ hyp.); 1960.

Male. — Length about 4 mm.; wing 4.3 mm.; antenna about 1.2 mm.

Belongs to the *morionella* group; general coloration of head and mesonotum dark brown, thoracic pleura brownish yellow, patterned with darker; antennae of male 11-segmented, segments three to eight each with two short branches; legs pale brown, outer tarsal segments snowy white; wings subhyaline, stigma short-oval, brown; Sc_1 very long; rostral spines of hypopygium two, from a low common tubercle.

Moçambique: Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG), type.

Limonia (Rhipidia) femorasetosa taeniola ALEXANDER

Limonia (Rhipidia) femorasetosa taeniola ALEXANDER; Journ. Ent. Soc. So. Afr., 22: 54; 1959.

Male. — Length about 5.5 mm.; wing 6 mm.

Belongs to the *pulchra* group; characters as in *femorasetosa* ALEXANDER (Sierra Leone, Uganda); legs broken and setal arrangement on femora unknown; *Sc* short, Sc_1 ending at near one-fifth *Rs*; hypopygium with three short rostral spines. In typical *femorasetosa* the ventral face of proximal half of posterior femur with a row of strong setae.

Southern Rhodesia: Salisbury, January 20, 1957 (SMITHERS), type.

Limonia (Rhipidia) miosema SPEISER

Limonia miosema SPEISER; Kilimandjaro-Meru Exped., 10, Dipt., pt. 4: 50—51; 1909.
Rhipidia miosema ALEXANDER; Ann. So. Afr. Mus., 18: 184, pl. 3, fig. 2 (wing); 1921.

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

Belongs to the *domestica* group; general coloration of thorax yellowish brown, pleura with a longitudinal brown stripe; femora brownish yellow, tips dark brown; wings whitish subhyaline, with abundant gray dots in all cells, along costal border with four major dark brown areas that are subequal to the interspaces; *Sc* long; hypopygium with four elongate gently curved rostral spines.

Natal: Cedara, April 18, 1920 (S. H. SKAIFE); Umbilo, Durban, November 29, 1953 (BEVIS). — **Moçambique:** Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG). — **Southern Rhodesia:** Mt. Chirinda, 3800 feet, June 11, 1911 (C. F. M. SWYNNERTON).

Limonia (Rhipidia) pallidipes (ALEXANDER)

Rhipidia pallidipes ALEXANDER; Ann. Mag. Nat. Hist. (9) 7: 311–312; 1921.

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

Belongs to the *domestica* group; brownish yellow, praescutum with three darker stripes that are confluent on anterior half, pleura light brown with two narrow subequal darker brown longitudinal stripes; femora and tibiae light yellow; wings yellowish subhyaline, with small brown spots along costa and small gray clouds in all cells; darkened spots at origin of *Rs* and tip of *Sc* separate, *Sc* long, Sc_1 ending about opposite midlength of *Rs*; hypopygium with three short straight rostral spines.

Natal: Scottburgh, January.

Limonia (Rhipidia) seydeli ALEXANDER

Limonia (Rhipidia) seydeli ALEXANDER; Ruwenzori Exped. 1934–35, 1, no. 7, Tipulidae: 218–220, fig. 70 (♂ hyp.); 1956.

Male. — Length about 6–6.2 mm.; wing 6–6.5 mm.

Belongs to the *pulchra* group; thoracic pleura with a single major darkened stripe; femur yellow, tips of fore pair broadly black; wings with darkened spot on vein *2nd A* subapical in position; *Sc* long, Sc_1 ending beyond midlength of *Rs*; hypopygium with four long gently curved rostral spines; mesal apical lobe of gonapophysis bidentate at apex.

Moçambique: Luabo, April 1958 (USHER).

Limonia (Dicranomyia) basuto ALEXANDER

Limonia (Dicranomyia) basuto ALEXANDER; Durban Mus. Novit., 4: 314–316, fig. 19 (♂ hyp.); 1956.

Male. — Length about 6–6.8 mm.; wing 6–7.5 mm.

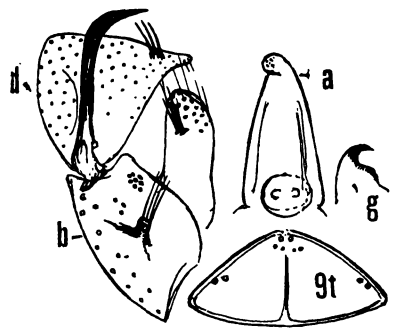
Belongs to the *tristis* (*liberta*) group; general coloration gray, praescutal stripe brown, broad; anterior vertex slightly wider than the diameter of the scape; wings faintly tinged with dusky, stigma very small; hypopygium with the dorsal dististyle suddenly narrowed at tip into a long straight spine; rostral prolongation obtuse, with two relatively short weak spines.

Basutoland: Mamathes, January 1–9, 1953 (BEVIS), type. — **Southern Rhodesia:** Salisbury, November–January (SMITHERS).

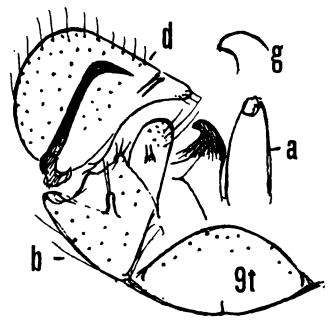
Limonia (Dicranomyia) contraria ALEXANDER

(Fig. 57)

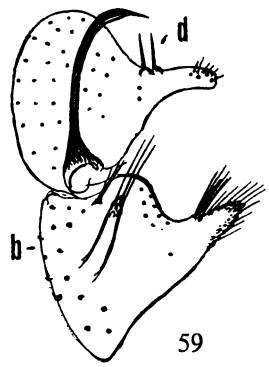
Limonia (Dicranomyia) sordidipennis ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 17: 19–20; 1948, nec *Limonia (Dicranomyia) sordidipennis* ALEXANDER; Lingnan Sci. Journ., 19: 111–113; 1940.
Limonia (Dicranomyia) contraria ALEXANDER; Rec. Indian Mus., 50: 326; 1953 (renaming of *sordidipennis*, 1948).



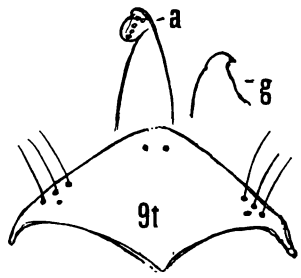
57



58



59



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Figs. 57-60. — 57. *Limonia* (*Dicranomyia*) *contraria* ALEXANDER; male hypopygium. — 58. *Limonia* (*Dicranomyia*) *kraaiensis* ALEXANDER, sp. n.; male hypopygium. — 59. *Limonia* (*Dicranomyia*) *mosselica* ALEXANDER; male hypopygium. — 60. *Limonia* (*Dicranomyia*) *mosselica* ALEXANDER; male hypopygium. (Symbols: *a*, aedeagus; *b*, basistyle; *d*, dististyle; *g*, gonapophysis; *t*, tergite).

Male. — Length about 7–7.2 mm.; wing 8–8.5 mm.

Belongs to the *tristis* (*liberta*) group; general coloration gray, median region of praescutum darker; legs light brown; wings narrow, tinged with brown, inner end of cell R_3 lying basad of other elements of the cord; hypopygium with posterior border of tergite strongly convex; rostral prolongation with three spines; mesal apical lobe of gonapophysis a short curved blackened hook, its tip acute (fig. 57).

Southern Rhodesia: River Makabusi, Salisbury, March 1932 (CUTHBERTSON), type; Salisbury, December 5—31, 1956 (SMITHERS).

Limonia (Dicranomyia) gardineri (EDWARDS)

Dicranomyia gardineri EDWARDS; Trans. Linn. Soc. London, 15, pt. 2: 197—198, pl. 10, fig. 2 (wing), pl. 11, fig. 2 (♂ hyp.); 1912.

Dicranomyia gardineri ALEXANDER; Ann. So. Afr. Mus., 18: 182, pl. 3, fig. 1; 1921.

Male. — Length about 5–6 mm.; wing 6–7 mm.

Belongs to the *tristis* (*liberta*) group; general coloration gray, praescutum with a broad median and shorter lateral brown stripes; legs testaceous, tips of femora and tibiae indistinctly darker; *m–cu* before fork of *M*; hypopygium with apex of tergite slightly truncate to feebly emarginate, with few setae; rostral prolongation very obtuse, with two short spines.

Natal: Krantzkop, November 1917 (BARNARD); Pietermaritzburg, 1917 (BARNARD); Hilton Road, Pietermaritzburg, December 2, 1956 (P. GRAHAM); Albert Falls, Umgeni River, 13 miles E of Pietermaritzburg, in luxuriant vegetation along loamy river, April 13, 1951 (BRINCK–RUDEBECK), Loc. no. 272: Tugela Valley, 5000 feet, in meadow near stony river, April 3–4, 1951 (BRINCK–RUDEBECK), Loc. nos. 258, 261. — **Transvaal:** Barberton, May 6, 1913 (H. K. MUNRO); Johannesburg, February 1919 (LIGHTFOOT). — **Moçambique:** Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Arcturus, Salisbury, 1916 (Dr. MELLE).

Described from the Seychelles Islands, widespread in eastern and southeastern Africa.

Limonia (Dicranomyia) guttula (ALEXANDER)

Dicranomyia guttula ALEXANDER; Canad. Ent., 47; 80, fig. (wing); 1915.

Male. — Length about 4.8–5.2 mm.; wing 5.5–6 mm.

Belongs to the *punctulata* group; praescutum yellowish brown, faintly patterned with darker; femora yellow, tibiae and tarsi darker; wings subhyaline, with abundant gray spots along the veins; *m* transverse, much shorter than the arcuated basal section of M_3; hypopygium with a single short upcurved spine placed on lower margin of prolongation; dorsal style relatively stout, only moderately curved.

Moçambique: Lourenço Marques (C. W. HOWARD), types; Luabo, July–August 1957 (USHER).

Limonia (Dicranomyia) kraaiensis sp. n.

(Figs. 47, 58)

Belongs to the *tristis* (*liberta*) group; general coloration cinnamon brown; antennae 13-segmented, dark brown; wings subhyaline, stigma small, pale; *m–cu* a short distance beyond fork of *M*; male hypopygium with posterior border of tergite convexly rounded, with few long setae; ventromesal lobe of basistyle normal, with very long setae on outer half; tubercles on face of basistyle small, their apical setae long; ventral dististyle with rostral prolongation stout, tip obtuse, spines two, weak, slightly separated at bases.

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

Described from alcoholic material.

Rostrum light brown; palpi dark brown, terminal segment slender. Antennae 13-segmented, dark brown, first flagellar segment nearly as long as the succeeding two combined; proximal flagellar segments oval, subequal to the verticils; outer segments progressively lengthened, terminal segment about one-fifth longer than the penultimate. Head dark brown; anterior vertex about equal in width to diameter of scape, weakly elevated on median part.

Pronotum and mesonotum almost uniformly cinnamon brown, without distinct pattern in alcoholic material; dorsopleural membrane posteriorly a little yellowed. Halteres whiten-

ed. Legs with coxae and trochanters yellow; femora brown, slightly yellowed basally; tibiae and tarsi brown; claws hairy, with two blunt knobs or teeth at base, smaller and more obtuse than in *basuto*. Wings (fig. 47) subhyaline, stigma small and pale; veins light brown. Macrotrichia on longitudinal veins beyond level of origin of *Rs*, none on *Sc* or *1st A*; on *M*, basal section of Cu_1 and *2nd A* at outer ends only. Venation: Both Sc_1 and Sc_2 opposite origin of *Rs*; cell *1st* M_2 long, exceeding cell *2nd* M_2; *m–cu* a short distance beyond fork of *M*. In the type one wing has cell M_2 open by the atrophy of basal section of M_3, evidently the abnormal condition.

Abdomen yellowed, pleural integument darkened, posterior borders of segments much paler brown. Male hypopygium (fig. 58) with posterior border of tergite, *t*, strongly convexly rounded, with a more sclerotized border; setae long but sparse, there being a central group of four behind the margin. Basistyle, *b*, with ventromesal lobe large, obtuse at tip, on face at near midlength with a small tubercle bearing two strong setae; outer half of lobe with several setae of unusual length; on face of basistyle near midlength a small darkened tubercle tipped with two or three very long setae that exceed the tubercle in length; mesal apical angle of style produced into a small tubercle that bears about four strong setae. Dorsal dististyle, *d*, straight, slightly dilated before the straight acute tip; ventral style relatively large, its area subequal to the full extent of the basistyle; rostral prolongation obtuse at tip, spines small, placed close together, bent backward across the face of the style. Gonapophysis broad-based, narrowed to a stout acute darkened point. Aedeagus, *a*, relatively broad, terminating in a single lobe, as in the group.

Cape Province: Rhodes, in meadows along the Kraai River, 5900 feet, March 10, 1951. Holotype, alcoholic ♂, (BRINCK—RUDEBECK), Loc. no. 224.

The closest relatives are *Limonia* (*Dicranomyia*) *basuto* ALEXANDER and *L.* (*D.*) *mosselica* ALEXANDER, which have normal antennae and different hypopygia. The 13-segmented antennae are noteworthy in the entire genus *Limonia*.

Limonia (Dicranomyia) lawrencei ALEXANDER

Limonia (*Dicranomyia*) *lawrencei* ALEXANDER; Ann. Natal Mus., 14: 261–262, fig. 3 (ven.), fig. 7 (♂ hyp.); 1958.

Male. — Length about 5–5.6 mm.; wing 6.5–7 mm.

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

Natal: Cathedral Peak Area, Drakensberg, 6400 feet, March 19–23, 1955 (STUCKENBERG), types. — **Southern Rhodesia:** Chapungu Falls, March 1957 (N. L. H. KRAUSS).

Limonia (Dicranomyia) luaboensis ALEXANDER

Limonia (*Dicranomyia*) *luaboensis* ALEXANDER; Ann. Natal Mus., 15: 12–14, fig. 8 (wing), fig. 12 (♂ hyp.); 1960.

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

Belongs to the *tristis* (*liberta*) group; general coloration brownish gray, scutellum whitened, pleura brownish gray, more or less patterned with brown; legs brownish yellow; wings weakly darkened, restrictedly patterned with brown, including a small arcular spot; hypopygium with posterior border of tergite very gently and evenly emarginate; rostral prolongation broad, obtuse at tip, with two spines; gonapophysis with mesal apical lobe a slender darkened spine.

Moçambique: Luabo, June—August 1957 (USHER), type.

Limonia (Dicranomyia) marshalli (ALEXANDER)

Dicranomyia marshalli ALEXANDER; Ann. Mag. Nat. Hist. (9) 5: 337–338; 1920.

Male. — Length about 7.5–8 mm.; wing 9.5–10 mm.

Belongs to the *tristis* (*liberta*) group; praescutum dark gray, without clearly defined stripes; fore femora dark brown, remaining femora yellowed; wings very long and narrow, the length more than six times the greatest width; *m–cu* far before fork of *M*, cell *2nd* A long, very narrow on outer half.

Southern Rhodesia: Salisbury (G. A. K. MARSHALL), types; December 1956 (SMITHERS).

Limonia (Dicranomyia) mosselica ALEXANDER

(Figs. 59, 60)

Limonia (*Dicranomyia*) *mosselica* ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 18: 153–154; 1949.

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

Belongs to the *tristis* (*liberta*) group; general coloration brownish gray, praescutum with a broad median darker brown stripe; legs brown; wings gray, restrictedly patterned with brown, *m–cu* at fork of *M*; hypopygium with tergite (fig. 60) produced medially, posterior border strongly convex with three long setae on either side near base; basistyle with a concentration of long setae near apex, on face of lobe with a pencil of long black setae; rostral spines two, long and conspicuous, near base of prolongation (figs. 59, 60).

Cape Province: Mossel Bay, February 1922 (R. E. TURNER), type.

Limonia (Dicranomyia) nairobii (ALEXANDER)

Dicranomyia nairobii ALEXANDER; Bull. Mus. Hist. Nat. (Paris), 1919, no. 7: 610—611; 1919.

Male. — Length about 6–6.5 mm.; wing 6.8–7.2 mm.

Allied to *tipulipes*; thorax buffy, praescutum with three brown stripes; antennae dark brown throughout; legs with fore femora dark brown, remaining femora paler; wings grayish subhyaline, darkened subcostal patterns very reduced, including a mark over the retracted Sc_2, *m–cu* at or beyond fork of *M*; hypopygium with tergal lobes conspicuous, with a few strong setae; basistyle produced beyond point of insertion of dististyles into a

narrow lobe provided with long powerful setae; rostrum slender, spines two, long, closely approximated at bases.

Cape Province: Assegaaibos, 30 miles WNW of Humansdorp, in wet ravine with luxuriant vegetation near stony stream, February 28, 1951 (BRINCK—RUDEBECK), Loc. no. 191. — **Natal:** Shafton Grange, April 6. 1919 (A. G. SHAW); Cathedral Peak Area, Drakensberg, 6400 feet, March 19—23, 1955 (STUCKENBERG); Umkomazana, December 21, 1938 (BEVIS); Tugela Ferry, May 1935 (BEVIS); Tugela Valley, National Park, 5000 feet, insect trap in meadows near stony river, April 4, 1951 (BRINCK—RUDEBECK), Loc. no. 261. — **Basutoland:** Qachas Nek, January 1939 (BEVIS); Quthing, 5600 feet, at light in meadows, March 12, 1951 (BRINCK—RUDEBECK), Loc. no. 232; Nazareth M. S., 20 miles ESE of Maseru, 6250 feet, on vegetation near small stream, March 24, 1951 (BRINCK—RUDEBECK), Loc. no. 245. — **Southern Rhodesia:** Salisbury, December 7, 1935 (CUTHBERTSON); January 20, 1957 (SMITHERS).

Limonia (Dicranomyia) neoguttula ALEXANDER

Limonia (Dicranomyia) neoguttula ALEXANDER; Bull. de IFAN 20, ser. A, no. 1: 125—126, fig. 3 (ven.), fig. 10 (♂ hyp.); 1958.

Male. — Length about 6 mm.; wing 6.5 mm.

Belongs to the *punctulata* group; mesonotum gray, praescutum with a broad darkened median stripe; antennae black throughout; wings faintly darkened, with a sparse dotted and spotted pattern, including dots in cell *C* and spots on veins before cord; cell *1st* M_2 long-rectangular, *m* and basal section of M_3 subequal; hypopygium with a single long rostral spine, placed on outer margin of prolongation; gonapophysis with mesal apical lobe a simple blackened spine.

Southern Rhodesia: Mount Hampden Hostel, April 23, 1956 (H. C. BRAYNE), type.

Limonia (Dicranomyia) satura ALEXANDER

Limonia (Dicranomyia) satura ALEXANDER; Ann. Natal Mus., 13: 397—398, fig. 7 (♂ hyp.); 1956.

Male. — Length about 8.5 mm.; wing 9.5 mm.

General coloration dark brown, praescutum with three still darker brown stripes; wing strongly infuscated, *Sc* short; hypopygium with ninth tergite shallowly emarginate; rostral prolongation of ventral dististyle cleaverlike; aedeagus unusually broad, apical lobe small simple.

Natal: Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG), type

Limonia (Dicranomyia) tipulipes (KARSCH)

Dicranomyia tipulipes KARSCH; Entomol. Nachricht., 12: 51; 1886.
Dicranomyia tipulipes BERGROTH; Entomol. Tidskr., 9: 127; 1888.
Dicranomyia consimilis BERGROTH; Entomol. Tidskr., 9: 127; 1888.
Dicranomyia confinis BERGROTH; Entomol. Zeitung, 8: 116; 1889.
Dicranomyia tipulipes EDWARDS; Trans. Linn. Soc. London (Zool. 2) 15: 197, pl. 10, fig. 1 (wing), pl. 1 fig. 1 (♂ hyp.); 1912.

Dicranomyia tipulipes ALEXANDER; Ann. So. Afr. Mus., 17: 141—142, pl. 10, fig. 3 (wing); 1917.
Dicranomyia tipulipes ALEXANDER; Ann. So. Afr. Mus., 18: 181; 1921.
Limonia tipulipes WOOD; Ann. So. Afr. Mus., 39: 170—176, fig. 50 (ven.), fig. 51 (larva), fig. 52 (pupa); 1952.
Limonia (Dicranomyia) tipulipes ALEXANDER; Mauritius Inst. Bull., 3: 221—222, fig. 2 (ven.); 1954.

Male. — Length about 6.5—8 mm.; wing 7.5—9.5 mm.

General coloration of thorax buffy, praescutum with three brown stripes, pleura patterned with darker; wings whitish subhyaline, patterned with darker, including three or four major brown areas in cell *Sc*, with paler markings on the cord and elsewhere; centers of cells beyond cord with paler brown washes; Sc_1 variable in length, in cases very long; *r—m* shortened or obliterated by approximation of veins R_{4+5} and M_{1+2}; hypopygium with tergal lobes distinct but small, separated by a broad emargination; dististyles terminal in position, outer style ending in a long straight spine; rostral spines long, from a small common tubercle.

Dr. WOOD, with a large series of specimens available, indicated the range in venation and established part of the above synonymy. He found the immature stages inhabiting slime tubes on the surface of rocks in streams where this was covered by a thin film of flowing water (hygropetric). The pupae occupy the higher places on the rock among the denser moss growth.

Cape Province: Peninsula, Cape Town, February 1919 (R. TUCKER); Echo Valley, February, April, October 1932; Kasteels Poort, August 1932; Kirstenbosch, November 1932; Lekkerwater, January 1932; Orange Kloof, January 1933; Platteklip, January, March, April 1932 (WOOD); Table Mt., Blinkwater stream, 1500 feet, November 4, 1950, on rocky wall in shady ravine (BRINCK—RUDEBECK), Loc. no. 23; Hout Bay, Skoorsteenkop, 600 feet, insect trap on mountain slope in dense indigenous forest, December 27, 1950, January 22—February 2, 1951 (BRINCK—RUDEBECK) Loc. nos. 95, 157, 166, same at 300 feet, December 13, 1950, Loc. no. 82. — Stellenbosch, 1887 (PÉRINGUEY), BERGROTH no. 5; Bains Kloof, April 1933; French Hoek Pass, October 1933, January 1935; George, January 1931; Krom River, September 1935; Landdrost, November 1933; Lemoenshoek, November 1927 (WOOD); Ceres, April 1913 (LIGHTFOOT); Meirings Poort, October 1937; Oudebosch, December 1928; Palmiet River, March 1932; Riversdale, October 1922; Sneeuwgat, September 1932; Steenbras, November 1932; Waaihoek Kloof, April 1928; Witte River, November 1933; Wolvenhoek Kloof, April 1931; Zwartberg Pass, February 1932 (WOOD); Assegaaibos 30 miles WNW of Humansdorp, at light in wet ravine with luxuriant vegetation near stony stream, February 28, 1951 (BRINCK—RUDEBECK), Loc. no. 192; Franschhoek Bosreserve, Upper Berg River, 2500 feet, in low bush near clear high mountain torrent, November 1, 1950 (BRINCK—RUDEBECK), Loc. no. 21; Swartbergpas, Platberg, 5000 feet, among bushes on burnt mountain heath near small stream, January 6, 1951 (BRINCK—RUDEBECK), Loc. no. 120; Montagu Pass, about 6 miles NW of George, at roadside pond, February 28, 1951 (BRINCK—RUDEBECK), Loc. no. 188; Rhodes, 5900 feet, at light, March 10, 1951 (BRINCK—RUDEBECK), Loc. nos. 224, 225; Drakensbergen, 5 miles ENE of Rhodes, 6400 feet, in rich meadow close to stony stream, March 10, 1951 (BRINCK—RUDEBECK), Loc. no. 222; Tzitzikama Mts., 3 miles W of mouth of Stormsrivier, in wet ravine near stony stream, January 12—14, 1951 (BRINCK—RUDEBECK), Loc. nos. 134, 135, 138. — **Natal:** Howick, October 7, 1952; Kloof, May 26, 1927; Lidgetton, October 6, 1952; Umbilo, Durban, May 1, 1952; Umkomazana, December 21, 1938 (BEVIS); Kranskop, November 1917 (BARNARD); Ladysmith, May 1918 (M. R. M. MATTHEWS); Nhluzane Mt., above 5000 feet, May 10, 1957 (STUCKENBERG); The Hostel, National Park, 5000 feet, at light, March 31—April 1, 1951 (BRINCK—RUDEBECK), Loc. no. 256; Tugela Valley, National Park, 5000 feet, among stones and watersoaked moss on wet rock walls, April 3, 1951 (BRINCK—RUDEBECK), Loc. no. 258; in insect trap in meadow near stony river, April 4, 1951 (BRINCK—RUDEBECK), Loc. no. 271; The Doomey Mt., National Park, 6000 feet, on vegetation along stony stream, April 1, 1951 (BRINCK—RUDEBECK), Loc. no. 257. — **Transvaal:** Barberton, April 1911 (H. EDWARDS);

Pretoria, January 29, 1915 (H. K. MUNRO); Wyllies Poort, Zoutpansberg Range, January 30, 1955 (GRAHAM & STUCKENBERG). — **Basutoland:** Jordan Valley, near Likhahleng, January 6, 1954 (BEVIS); Mamathes, January 1—9, 1953 (BEVIS), January 8—9, 1957 (Mrs. A. JACOT-GUILLARMOD); Mamathes, 5 miles ENE of Teyateyaneng, at waterfall of small stream in open hilly country, March 29, 1951 (BRINCK—RUDEBECK), Loc. no. 252; Quthing, 5600 feet, at light near meadows, March 12—16, 1951 (BRINCK—RUDEBECK), Loc. no. 232; Nazareth M. S., 20 miles ESE of Maseru, 6250 feet, at light in marshy meadows near well, March 23, 1951 (BRINCK—RUDEBECK), Loc. no. 245; Makheke Mts., 10 miles E N E of Mokhotlong, 8500 feet, at light in exposed high mountain valley, April 8, 1951 (BRINCK—RUDEBECK), Loc. no. 269. — **Moçambique:** Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG); Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG). — **Southern Rhodesia:** Near Inyanga, January 14, 1955 (STUCKENBERG). — **Orange Free State:** Bloemfontein, February 18, 1915 (W. ROSS); Smithfield, September 1910 (KANNEMEYER). — **South West Africa:** Angra Pequena, September 1917 (Dr. KNOBEL).

The type of *tipulipes* was taken at Pungo Ndongo (Pungo Andongo), Angola, by ALEXANDER VON HOMEYER. The fly has a vast range over southern and eastern Africa, including the outlying islands of the Indian ocean, and what may prove to be the same species is likewise found in India and Ceylon.

Limonia (Dicranomyia) umkomazanae ALEXANDER

Limonia (Dicranomyia) umkomazanæ ALEXANDER; Durban Mus. Novit., 4: 316—317, fig. 20 (♂ hyp.); 1956.

Male. — Length about 6.5 mm.; wing 7.5 mm.

Belongs to the *tristis* (*liberta*) group; general coloration gray, praescutum with a brown central stripe and poorly defined laterals, pleura gray, striped longitudinally with brown; legs brown, tarsi darker; wings subhyaline, without pattern except for the small slightly darkened stigma; Sc_2 near tip of Sc_1, $m-cu$ about its own length before fork of M; hypopygium with tergite transverse, posterior border shallowly emarginate, forming low rounded lobes; rostral spines relatively small, separated at base; gonapophysis with mesal apical lobe curved to the acute tip, the margin with three or four small points.

Natal: Umkomazana, December 21, 1938 (BEVIS), type.

Limonia (Dicranomyia) viator ALEXANDER

Limonia (Dicranomyia) viator ALEXANDER; Ann. Natal Mus., 14: 380—381, fig. 12 (ven.), fig. 15 (♂ hyp.); 1960.

Male. — Length about 7.5—8 mm.; wing 9.5—10 mm.; antenna about 2.6—2.7 mm.

Size large (wing over 9 mm); general coloration of mesonotum obscure brownish yellow, praescutal disk with three dark brown stripes, pleura narrowly striped with brown; antennae of male elongate, as shown by measurements; wings tinged with brown, costal border darker, slightly patterned; hypopygium with ventral dististyle large and fleshy, prolongation pendant.

Natal: Geekie's Farm, Karkloof, January 1—9, 1957 (STUCKENBERG), type.

Limonia (Idioglochina) lightfooti (ALEXANDER)

Dicranomyia lightfooti ALEXANDER; Ann. So. Afr. Mus., 17: 140–141, pl. 10, fig. 2 (wing); 1917.

Male. — Length about 4.7 mm.; wing 6.8 mm.

Mesonotal praescutum light brown with a broad darker brown median stripe, pleura yellow with two brown longitudinal stripes; femora dull yellow, tips broadly infuscated; wings grayish subhyaline, entirely unpatterned; veins of outer half with macrotrichia.

The various species of the subgenus *Idioglochina* ALEXANDER, widespread in the Pacific and Indian oceans, are marine, living in the intertidal zone. Although the present fly has not been reared, there is no reason to believe that it does not agree in habits with its close allies, including *Limonia* (*Idioglochina*) *corallicola* ALEXANDER, of Mauritius.

Cape Province: East London, November 1915 (LIGHTFOOT), type.

Limonia (Geranomyia) alberticola ALEXANDER

Limonia (*Geranomyia*) *alberticola* ALEXANDER; Ruwenzori Exped., 1934–35, 1, no. 7: 208–209; 1956.

Male. — Length, excluding rostrum, about 7–10 mm.; wing 8–10 mm.; rostrum about 3.5–4.2 mm.

Very similar to *sex-ocellata*, differing especially in the generally larger size and details of wing pattern, with the darkened costal areas strongly narrowed behind and with their centers in cell *C* very pale.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG).

Limonia (Geranomyia) dischidia ALEXANDER

Limonia (*Geranomyia*) *dischidia* ALEXANDER; Ann. Natal Mus., 14: 262–263, fig. 8 (♂ hyp.); 1958.

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

Allied to *sex-ocellata*; wings with darkened costal areas solid or virtually so, much narrower than the interspaces; basal three subcostal interspaces with weak darkenings; *m–cu* about three-fourths its length before fork of *M*; hypopygium with the tergal setae relatively weak; rostral prolongation of ventral dististyle beyond the spines short, tip subacute.

Natal: Saint Helier Estate, near Hillcrest, May 31, 1955 (STUCKENBERG), type.

Limonia (Geranomyia) errana ALEXANDER

Limonia (*Geranomyia*) *errana* ALEXANDER; Rev. Zool. Bot. Africaine, 19: 343–344, fig. 3 (♂ hyp.); 1930.

Male. — Length, excluding rostrum, about 5 mm.; wing 6.5 mm.; rostrum about 2.5 mm

General coloration of mesonotal praescutum fulvous yellow, representing the usual stripes, interspaces dark, pleura variegated obscure yellow and brown; wings with a heavy brown pattern, the major costal areas solidly darkened, parallel-sided, alternating with

small gray spots, costal interspaces whitish hyaline, cell *1st* M_2 longer than veins beyond it; hypopygium with rostral spines very long and slender, arising from a single tubercle.

Moçambique: Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG); Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG).

Limonia (Geranomyia) euryphallus ALEXANDER

Limonia (*Geranomyia*) *euryphallus* ALEXANDER; Ann. Natal Mus., 15; 16—17, fig. 10 (wing), fig. 14 (♂ hyp.); 1960.

Male. — Length, excluding rostrum, about 6.5 mm.; wing 6.4 mm.; rostrum about 2.5 mm.

General coloration of thorax yellow, unpatterned; rostrum darkened; head light gray; fore femora with a narrow darkened terminal ring; wings subhyaline, prearcular and costal fields light yellow, stigma medium brown, *Sc* and cell *1st* M_2 long; hypopygium with ventral dististyle very large, prolongation short and stout, with two short spines; gonapophysis with mesal apical lobe long and slender, narrowed to the acute tip; aedeagus broad, with abundant erect setulae, apex obtuse.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG), type.

Limonia (Geranomyia) gracilipalpis ALEXANDER

Limonia (*Geranomyia*) *gracilipalpis* ALEXANDER; Ann. Natal Mus., 13: 398—399, fig. 8 (♂ hyp.); 1956.

Male. — Length, excluding rostrum, about 8 mm.; wing 9 mm.; rostrum about 1.9 mm.

General coloration gray, praescutum with a single dark brown stripe; rostrum relatively short, maxillary palpus very long; femora brownish yellow with a vague darkened subterminal ring; wings weakly infuscated, very restrictedly patterned with pale brown, *Sc* short; hypopygium with rostral spines very slender.

Cape Province: Grahamstown, November 8, 1952; October 15, 1953 (STUCKENBERG), type.

Limonia (Geranomyia) mashonica (ALEXANDER)

Geranomyia (*Geranomyia*) *mashonica* ALEXANDER; Ann. Mag. Nat. Hist. (9) 5: 341; 1920.

Male. — Length, excluding rostrum, about 4.8—5 mm.; wing 6—6.5 mm.; rostrum about 2.2—2.3 mm.

General coloration brown, pleura plumbeous; rostrum brownish yellow throughout; head light gray, more yellowed on genae; legs yellow, femora with a narrow brown subterminal ring; wings pale yellow subhyaline, stigma small, rounded-oval, pale brown, *Sc* long; tergites reddish yellow, posterior borders of segments more broadly so; hypopygium with short rostral spines, placed close together, longer than the apex of the prolongation.

Moçambique: Luabo, July 1957 (USHER). — **Southern Rhodesia:** Salisbury (G. A. K. MARSHALL), type; April 1956, May 1957 (SMITHERS).

Limonia (Geranomyia) rubrithorax (ALEXANDER)

Geranomyia (Geranomyia) rubrithorax ALEXANDER; Ann. So. Afr. Mus., 18: 186–187; 1921.
Limonia rubrithorax WOOD; Ann. So. Afr. Mus., 39: 191–192, fig. 60 (wing); 1952.

Male. — Length, excluding rostrum, about 6.7 mm.; wing 7 mm.; rostrum about 2.8 mm.

General coloration reddish orange; head brownish gray, rostrum brown; femora brownish yellow, tips darker; wings yellowed, stigma very pale brown, *Sc* short, Sc_1 ending just beyond origin of *Rs*; abdomen brownish yellow.

The immature stages occurred in a feeble trickle of water, living in pendulous moss filaments in this habitat (WOOD).

Cape Province: French Hoek Pass, 2500–3600 feet, December 4, 1916 (BARNARD), type; Barrydale, north side of Tradouw Pass, January 1935; Krom River, September 1932; Olifants River Mts., September 1932; Sneeuwgat, November 1932; Witte River, October 1931 (WOOD); Paarl, October 1919 (Rev. G. HAWKE); Peninsula, Hout Bay, Skoorsteenkop, 600 feet, insect trap on mountain slope in indigenous forest, February 2, 1951 (BRINCK–RUDEBECK), Loc. no. 166; Tzitzikama Forest, Stormsrivier, in dense indigenous forest with scattered meadows, January 13, 1951 (BRINCK–RUDEBECK), Loc. no. 137.

Limonia (Geranomyia) rudebecki sp. n.

(Fig. 63)

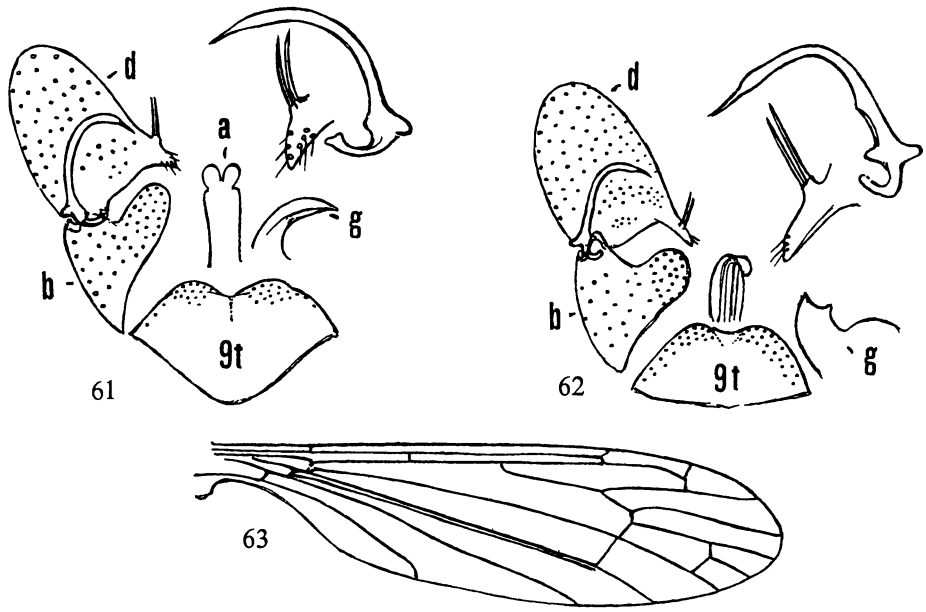
Size relatively large (wing of female 8.5 mm.); mesonotum chestnut brown, lateral praescutal borders and scutellum yellowed; pleura yellow; legs brown; wings whitened, conspicuously patterned with pale brown, most evident being six major solidly darkened costal areas that are more extensive than the interspaces; *Sc* and cell *1st* M_2 long, *m–cu* at fork of *M*.

Female. — Length, excluding rostrum, about 7 mm.; wing 8.6 mm.; rostrum about 2.3 mm.

Described from alcoholic material.

Rostrum relatively short, about one-third the wing or less than twice the antennae, dark brown, outer palpal lobes straight; terminal segment of maxillary palpus dark brown, oval, tip slightly pointed. Antennae dark brown, pedicel relatively long, more than one-third the scape; flagellar segments short-subcylindrical, the outer ones progressively lengthened, terminal segment exceeding the penultimate. Head brownish black (in alcohol); anterior vertex about equal in width to diameter of scape.

Pronotum brownish yellow. Mesonotal praescutum with disk chestnut brown, the broad lateral margins yellow; scutal lobes and postnotum chestnut brown, scutellum more yellowed. Pleura light yellow. Halteres pale, knobs weakly darkened. Legs with coxae and trochanters yellow; femora brown, bases narrowly paler; tibiae and tarsi brown; claws with a single long and slender basal spine. Wings (fig. 63) with the ground whitish subhyaline, with a brown pattern consisting of six major costal areas, solidly darkened, larger than the interspaces; first area beyond arculus, reaching *M* behind, second at supernumerary crossvein in cell *Sc*; third area at origin of *Rs*, extending from *C* almost to *M*; fourth area at fork of *Sc*, extending back over the fork of *Rs* to beyond midwidth of cell *R*; fifth area at R_2, reaching R_{4+5} behind, sixth marking at tip of R_3; elsewhere on wing cord broadly darkened,



Figs. 61-63. — 61. *Limonia* (*Geranomyia*) *sex-ocellata* (ALEXANDER); male hypopygium. — 62. *Limonia* (*Geranomyia*) *tugela* ALEXANDER, sp. n; male hypopygium. — 63. *Limonia* (*Geranomyia*) *rudebecki* ALEXANDER, sp. n.; venation.
(Symbols: *a*, aedeagus; b, basistyle; *d*, dististyle; *g*, gonapophysis; *t*, tergite).

the wing tip less heavily so; pale interspaces without interpolated darkenings; veins light brown, interspaces of vein *Sc* more yellowed. Veins beyond general level of origin of *Rs* with macrotrichia, lacking on *Sc*, Anal veins and all but outer ends of *M* and *Cu*. Venation: *Sc* long, Sc_1 ending just beyond fork of *Rs*, Sc_2 near its tip; cell *1st* M_2 very long, about one-half longer than *2nd* M_2; *m–cu* at fork of *M*.

Abdominal tergites brown, sides of bases of proximal segments more yellowed; sternites yellow, posterior borders weakly darkened. Ovipositor with cerci slender, outer half straight.

Natal: Gudu Falls, National Park, 6000 feet, among blocks in wet ravine near waterfall, April 4, 1951. Holotype, alcoholic ♀, (BRINCK–RUDEBECK), Loc. no. 260.

Respectfully dedicated to Dr. GUSTAF RUDEBECK, co-leader of the Swedish South African Expedition of 1950–1951.

The only other regional species of the subgenus having solidly darkened costal wing markings is *Limonia* (*Geranomyia*) *tugela* sp. n., readily distinguished by the characters listed in the key.

Limonia (Geranomyia) sex-ocellata (ALEXANDER)

(Fig. 61)

Geranomyia (*Geranomyia*) *sex-ocellata* ALEXANDER; Ann. So. Afr. Mus., 18: 185–186; 1921.
Limonia sexocellata WOOD; Ann. So. Afr. Mus., 39: 188–191, fig. 59 (wing, larva, pupa); 1952.

Male. — Length, excluding rostrum, about 4.5–5 mm.; wing 6.5–7 mm.; rostrum about 3.8–4 mm.

General coloration of thorax reddish brown, striped with darker, mediotergite brownish black, pleura reddish yellow with a narrow dark brown dorsal stripe; femora dark brown, tibiae and tarsi black; wings subhyaline, posterior cells more grayish, costal border with seven major darkened areas, all except the outermost with brownish yellow centers; *m–cu* before fork of *M*; hypopygium with rostral spines short (fig. 61).

Dr. WOOD found the immature stages living in gelatinous tubes covered with minute sand grains, attached to pendulous moss filaments lying in a trickle of water.

Cape Province: Oudebosch, 1500 feet, January 1919 (BARNARD), type; in all localities frequented by *Limonia* (*Limonia*) *capicola* (ALEXANDER), detailed earlier; Peninsula, Hout Bay, Skoorsteenkop, 600 meters, insect trap on mountain slope, January, February 3—14, 1951 (BRINCK—RUDEBECK), Loc. nos. 157, 166, 171, 183; 300 feet, on dry sandy mountain slope near stream, December 13—26, 1950 (BRINCK—RUDEBECK), Loc. nos. 82, 95. — **Natal:** Gudu Falls, National Park, 6000 feet, among blocks in wet ravine near waterfall, April 4, 1951 (BRINCK—RUDEBECK), Loc. no. 260.

Limonia (Geranomyia) subimmaculata (ALEXANDER)

Geranomyia (*Monophana*) *subimmaculata* ALEXANDER; Ann. So. Afr. Mus., 18: 184–185, pl. 3, fig. 4 (wing); 1921.

Female. — Length, excluding rostrum 6.5–7 mm.; wing 7–8 mm.; rostrum about 1.2–1.4 mm.

General coloration polished yellow, praescutum with more reddened stripes, pleura brownish testaceous; legs uniformly brownish yellow; wings tinged with brown, stigma indistinct; Sc_1 very long.

Natal: Krantz Kloof, June 1916 (BELL-MARLEY), type; Durban (F. MUIR).

Limonia (Geranomyia) tugela sp. n.

(Fig. 62)

General coloration of mesonotal praescutum grayish brown, the lateral borders yellow, posterior sclerites of notum patterned with brown, pleura and pleurotergite yellow; halteres with knobs infuscated; wings whitish subhyaline, heavily patterned with brown, including seven costal areas that are solidly darkened, narrower than the interspaces; *m–cu* before fork of *M*; male hypopygium with the dorsal dististyle unusually long and slender; gonapophysis with mesal apical lobe very short and broad, its apex with two short points to appear bidentate.

Male. — Length, excluding rostrum, about 6 mm.; wing 7–7.3 mm.; rostrum about 4.5 mm.

Female. — Length, excluding rostrum, about 7 mm.; wing 7.5 mm.; rostrum about 3 mm.

Rostrum elongate, especially in male where it exceeds one-half the wing, black, including the palpi. Antennae black, scape more pruinose; basal flagellar segments subglobular to

short-oval, the outer ones more elongate, verticils short. Head with anterior vertex silvery, relatively narrow; posterior part of head dark brownish gray.

Cervical region dark brown; pronotum brown, paler behind. Mesonotal praescutum with disk virtually covered by four confluent grayish brown stripes, the interspaces darkened so the stripes appear confluent, lateral praescutal borders yellow; scutal lobes darkened, central area yellowish brown; scutellum darkened, posterior border yellow; mediotergite dark brown. Pleurotergite and pleura light yellow. Halteres with stem yellow, knob infuscated. Legs with coxae yellow; trochanters yellow with greenish reflections; femora obscure yellow, tips narrowly dark brown; tibiae and tarsi brownish yellow, outer tarsal segments dark brown. Wings whitish subhyaline, with a heavy brown pattern including seven solidly darkened costal areas that are narrower than the interspaces, the third at origin of *Rs*, fourth at fork of *Sc*, extended backward over the fork of *Rs*; stigmal area continued backward across cell R_3; outer darkenings at veins R_3 and R_{4+5}; narrower but conspicuous seams over cord and outer end of cell *1st* M_2; posterior wing margin insensibly darker, including a tiny area at end of vein *2nd A*; veins brownish yellow to yellow, darker in the patterned areas; costal fringe short. Venation: *Sc* long, Sc_1 ending shortly before fork of *Rs*; *m–cu* before fork of *M*, in cases to nearly its own length.

Abdominal tergites of male vaguely bicolored, brownish yellow basally, posterior borders darker, sternites more yellowed, hypopygium brown; in female, tergites more uniformly darker brown, sternites yellowed. Male hypopygium (fig. 62) with the tergite, *t*, transverse, narrowed outwardly, posterior border emarginate, forming two well-developed lobes with strong setae. Basistyle, *b*, of moderate size, ventromesal lobe large. Dorsal dististyle, *d*, unusually long and slender, strongly curved, suddenly narrowed into a long straight apical spine; ventral style large and fleshy, the total area somewhat less than three times the basistyle; prolongation slender, with two slightly unequal straight spines from a common basal tubercle. Gonapophysis, *g*, with mesal apical lobe very short and broad, the apex with two short points to appear bidentate.

Natal: Royal Natal National Park, Tugela Valley, 5000 feet, on vegetation along the Tugela River, April 3, 1951. Holotype, ♂, (BRINCK—RUDEBECK), Loc. no. 258. Allotopotype, ♀, April 4, 1951 (BRINCK—RUDEBECK), Loc. no. 261. Paratopotype, ♂, with type.

The most similar regional species include *Limonia* (*Geranomyia*) *sex-ocellata* (ALEXANDER), *L.* (*G.*) *dischidia* ALEXANDER, and *L.* (*G.*) *rudebecki* sp. n., separable by the characters given in the key.

Limonia (Pseudoglochina) pamela ALEXANDER

Limonia (*Pseudoglochina*) *pamela* ALEXANDER; Ann. Natal Mus., 15: 17—18; 1960.

Male. — Length about 5.8–6 mm.; wing 6–6.5 mm.

Mesonotum dark brown, pleura yellow, ventral sternopleurite dark brown; antennae black; all tibiae white with a broad black ring beyond midlength, fore and middle pairs with an additional very narrow subbasal ring, tarsi white; wings subhyaline, stigma oval,

dark brown; abdominal tergites bicolored, dark brown, posterior borders broadly obscure yellow.

Although the species is extralimital as at present known there would seem to be no question of its occurrence in Moçambique. The only record for the subgenus in the Ethiopian region is Blantyre, Nyasaland, January 1958 (USHER).

Limonia (Thrypticomyia) nigeriensis (ALEXANDER)

Dicranomyia (Thrypticomyia) nigeriensis ALEXANDER; Ann. Mag. Nat. Hist. (9) 8: 161; 1921.

Male. — Length about 6–6.3 mm.; wing 7–7.8 mm.

General coloration brown, mesonotum more reddish brown, pleura testaceous; femora and tibiae dark brown, tarsi pure white; wings pale brownish subhyaline, stigma elongate, dark brown; Sc_1 ending opposite or just beyond origin of *Rs*; R_{1+2} represented by a long spur; *m–cu* at midlength of M_{3+4}.

Moçambique: Luabo, June 1957 (USHER).

The types were from Nigeria.

Limonia (Thrypticomyia) niveitibia ALEXANDER

(Fig. 48)

Limonia (Thrypticomyia) niveitibia ALEXANDER; Ann. Natal Mus., 14: 143–145, fig. 12 (♂ hyp.), fig. 17 (ven.); 1957.

Male. — Length about 5.5 mm.; wing 6.7 mm.

General coloration of mesonotum light chestnut yellow, pleura obscure yellow; legs brownish black, tarsi and tips of tibiae snowy white; wings evenly infuscated, stigma conspicuously darker brown; *Sc* extending slightly beyond origin of *Rs*, spur of R_{1+2} very long, *m–cu* at near one-third M_{3+4}; inner end of cell *1st* M_2 somewhat arcuated; hypopygium with each tergal lobe having about five long marginal setae; rostral spines two, one arising from a low tubercle (fig. 48).

Moçambique: Spungabera, January 21, 1955 (STUCKENBERG), type.

Limonia (Euglochina) connectans (ALEXANDER)

(Fig. 49)

Dicranomyia connectans ALEXANDER; Ann. Mag. Nat. Hist., (9) 5: 54; 1920.

Male. — Length about 6.6–8.8 mm.; wing 7.3–8.2 mm.

General coloration of mesonotum reddish brown, pleura paler; legs dark brown, tarsi chiefly white, basitarsi with proximal ends narrowly darkened, narrowest on fore pairs; wings with veins Cu_1 and *1st A* fused at margin, closing the cell (fig. 49).

CUTHBERTSON found the specimens recorded below on moss-grown boulders in shade at stream margins at edge of kloof forest. The present species has been found associated with

spider webs, hanging at intervals along the line which usually is very difficult to see. The habit has been recorded for several species in the subgenera *Euglochina* and *Thrypticomyia* in regions as far apart as eastern Australia and western Africa.

Moçambique: Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Vumba Mts., 5500 feet, March 1935 (CUTHBERTSON).

Helius ST. FARGEAU

Heiius ST. FARGEAU; Encycl. Meth., Index, p. 831; 1825.
Rhamphidia MEIGEN; Syst. Beschr. zweifl. Ins., 6: 281; 1830.

Helius is a relatively large genus with representatives in all regions of the world, including Madagascar and New Zealand. In continental Africa there now are about a score of species, with five known from South Africa. The immature stages live in saturated earth, as in marshes and similar situations.

Key to South African *Helius*

1. Wings with a brown pattern other than the costal or stigmal darkenings 2
— Wings clear, except for costal or stigmal darkenings when present 3
2. Size large (wing usually over 8 mm.); femora darkened, especially outwardly; wings without dark spots or bands in outer radial field or in cell *2nd A*; *m—cu* shortly beyond fork of *M*, before one-third the length of cell *1st* M_2; hypopygium with two dististyles. (Natal, Transvaal, Moçambique, Southern Rhodesia, northwards) . . . . . *capensis* (ALEXANDER)
— Size small (wing under 6 mm.); femora with tips narrowly white, preceded by a blackened ring; wings with a darkened cloud across outer radial cells; *m—cu* at or beyond one-third the length of cell *1st* M_2; hypopygium with a single dististyle that forks near tip. (Natal, Moçambique, Southern Rhodesia) . . . . . *dugaldi* ALEXANDER
3. *Rs* short, subequal to or only a little longer than the basal section of R_{4+5}, the latter longer than *r—m*; wings with stigma only vaguely indicated. (Southern Rhodesia, northwards) *brevisector* ALEXANDER
— *Rs* long, several times longer than the basal section of R_{4+5}, the latter subequal to or shorter than *r—m*; wings with costal region and stigma brown, darker than the ground 4
4. Size large (wing about 8—8.5 mm.); wings with cell *1st* M_2 rectangular, subequal in length to vein M_4; branches of *Rs* weakly divergent, cell R_2 at margin about one-half as extensive as cell R_3. (Moçambique, northwards) . . . . . *flavitarsis* (ALEXANDER)
— Size smaller (wing about 6—7.5 mm.); wings with cell *1st* M_2 small, subquadrate, about one-half vein M_4; branches of *Rs* more strongly divergent, cell R_2 at margin less than one-third R_3 (fig. 50). (Moçambique, Southern Rhodesia, northwards) . . . . . *paramorosus* ALEXANDER

Helius (Helius) brevisector ALEXANDER

Helius (*Helius*) *brevisector* ALEXANDER; Ruwenzori Exped., 1934—35, 1, no. 7: 250—252, fig. 105 (ven.), fig. 109 (♂ hyp.); 1956.

Male. — Length, including rostrum, about 7 mm.; wing 7 mm.; rostrum about 0.9 mm.

General coloration obscure yellow, pronotum and praescutum with a conspicuous brown central stripe; antennae black; wings with R_{4+5} deflected strongly caudad, cell *1st* M_2 large.

Southern Rhodesia: Salisbury, April 3—20, 1956, at light (SMITHERS).

Helius (Helius) capensis (ALEXANDER)

Rhamphidia capensis ALEXANDER; Ann. So. Afr. Mus., 17: 145–146, pl. 10, fig. 7 (wing); 1917.

Male. — Length about 8.5–9.5 mm.; wing 8–9.2 mm.

Mesonotal praescutum black, patterned with paler medially, lateral stripes yellowed, pleura blackened; rostrum longer than remainder of head; abdominal tergites bicolored, blackened basally, with about the posterior half dull yellow.

Natal: Krantz Kloof, November 1915 (BELL-MARLEY), type; Gwalaweni Forest, Zululand, February 14–16, 1957 (STUCKENBERG). — **Transvaal:** Fountains, Pretoria, January 16, 1921 (MUNRO). — **Moçambique:** Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG). — **Southern Rhodesia:** Umtali, Vumba Mts., 5000 feet, November 1932 (CUTHBERTSON); Lomagundi, Gurungwe, July 1932 (CUTHBERTSON); near Inyanga, January 14, 1955 (STUCKENBERG).

Helius (Helius) dugaldi ALEXANDER

Helius (Helius) dugaldi ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 14: 100–101; 1945.

Male. — Length about 5–6 mm.; wing 4.5–5.5 mm.

Mesonotal praescutum buffy yellow with three brown stripes, posterior sclerites of notum dark brown, pleura brown with a yellow longitudinal stripe; wings whitish, patterned with brown, base and costal border light yellow; abdomen of male dark brown, tergites with a yellow spot on disk, sternites yellow, posterior margins brown, terminal segments darkened.

Natal: Hilton Road, Pietermaritzburg, November 7, 1956 (GRAHAM). — **Moçambique:** Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Umtali, Vumba Mts., 5400 feet, November 1940 (CUTHBERTSON), type: Chirinda Forest, 3600 feet, in grass near stream, November 1930 (CUTHBERTSON), type material; Leopard Rock, Vumba Mts., January 16 (STUCKENBERG).

Helius (Helius) flavitarsis (ALEXANDER)

Rhamphidia flavitarsis ALEXANDER; Ann. Mag. Nat. Hist. (9) 5: 55–56; 1920.

Male. — Length, excluding rostrum, about 8–8.5 mm.; wing 8–9 mm.; rostrum about 0.9–1 mm.

Mesonotum dark brown, still darker medially, pleura dull yellow; legs dark brown, outer tarsal segments dull yellow; abdominal tergites dark brown, basal sternites yellow, hypopygium brownish yellow.

Moçambique: Villa Paiva D'Andrada, 430 meters, September 1957 (STUCKENBERG).

Helius (Helius) paramorosus ALEXANDER

(Fig. 50)

Helius (Helius) paramorosus ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 18: 154–155; 1949.

Male. — Length, including rostrum, 6.5–7.5 mm.; wing 6–7.5 mm.; rostrum about 0.8–1 mm.

Dark brown or brownish black, humeral region of praescutum obscure yellow; rostrum longer than remainder of head; legs brown, tarsi paling to yellowish white (fig. 50).

On mossy rocks in stream and in darkened places along stream; performs a curious bobbing motion while at rest; associated in nature with *Dolichopeza* (*Dolichopeza*) *cuthbertsoniana* ALEXANDER (CUTHBERTSON).

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG). — **Southern Rhodesia:** Chirinda Forest, 3600 feet, November 1930 (CUTHBERTSON), types; Victoria Falls, in dense wet vegetation near the Zambezi River, May 16, 1951 (BRINCK—RUDEBECK), Loc. no. 307; the latter specimen has the venation of the medial field abnormal in both wings.

Antocha OSTEN SACKEN

Antocha OSTEN SACKEN; Proc. Acad. Nat. Sci. Philadelphia 1859: 219; 1859.
Taphrophila RONDANI; Prodr. Dipt. Italicae 1: 185; 1856; (a *Limonia*).

Subgenus *Orimargula* MIK

Orimargula MIK; Wien. Entomol. Zeitg., 2: 198; 1883.

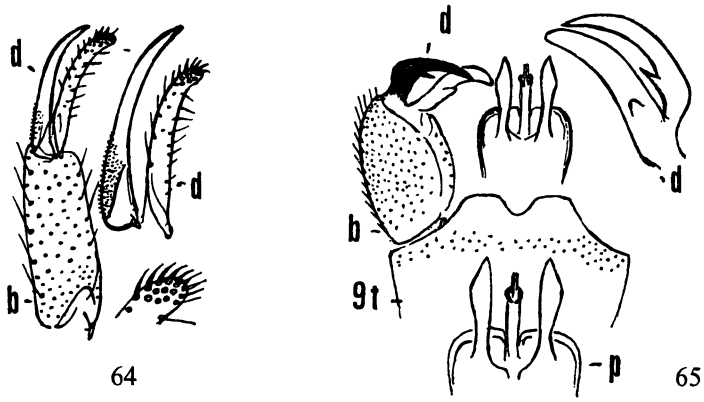
Antocha as a genus is essentially Holarctic in distribution, with a great concentration of species in eastern Asia and the Himalayas. The relatively few species in the Ethiopian region belong to the subgenus *Orimargula*, restricted to the Palaearctic, Oriental, Australasian, and Ethiopian regions.

I regard it as being unfortunate that the name *Taphrophila* was revived for this genus by EDWARDS in 1938 and has been adopted by various later workers on the European fauna. *Antocha*, as a genus, has been in general use for a century and in my opinion certainly should be conserved. The designated genotype of *Taphrophila* is *Limnobia inusta* MEIGEN, an unquestioned species of the genus *Limonia* as now known. It should be noted that RONDANI'S supposed genus indicated a group with the radial crossvein (R_2) lacking whereas it is present in both *Antocha* and *Limonia*. In the light of uncertainty regarding the identity of *Taphrophila* it would appear logical to drop it from further consideration.

The immature stages of all species of *Antocha* so far made known are strictly aquatic in both their larval and pupal states.

Key to South African *Antocha*

1. Epicondyle (a setiferous enlargement at base of last tarsal segment) present 2
— Epicondyle lacking 4
2. Size large (wing about 7 mm.); wing veins unusually glabrous, without macrotrichia on R_3 and M_3. (Natal) . . . . . *indumeni* ALEXANDER
— Size smaller (wing about 5 mm.); wings with sparse macrotrichia on outer ends of veins R_3 and M_3 . . 3
3. Wings with basal section of R_4+_5 long, subequal to or longer than *Rs*; antennae short, flagellar segments short-oval. (Moçambique) . . . . . *brevicornis* ALEXANDER
— Wings with basal section of R_4+_5 slightly shorter than *Rs*; antennae longer, flagellar segments oval (fig. 52). (Cape Province, Natal, Transvaal, Southern Rhodesia). . . . . *transvaalia* (ALEXANDER)



Figs. 64-65. — 64. *Antocha* (*Orimargula*) *venosa* ALEXANDER, sp. n.; male hypopygium. — 65. *Platylimnobia brinckiana* ALEXANDER, sp. n.; male hypopygium.
(Symbols: *b*, basistyle; *d*, dististyle; *p*, phallosome; *t*, tergite).

4. General coloration of body light fulvous to yellow; antennae of male relatively long, flagellar segments long-oval; (macrotrichia on vein *M* before *m*—*cu*). (Natal, Transvaal, Southern Rhodesia) . . . . . *melina* ALEXANDER
— General coloration brown or gray 5
5. Macrotrichia present on distal section of vein *M*. (Moçambique) . . . . . *setosa* ALEXANDER
— No macrotrichia on distal section of vein *M* (fig. 64). (Natal) . . . . . *venosa* sp. n.

Antocha (Orimargula) brevicornis ALEXANDER

Antocha (*Orimargula*) *brevicornis* ALEXANDER; Ann. Natal Mus., 15: 19—20, fig. 15 (♂ hyp.); 1960.

Male. — Length 4.5 mm.; wing 4.8 mm.; antenna about 0.8 mm.

General coloration of head and thorax gray, praescutum with three faintly differentiated darker brown stripes; antennae black throughout; claws long, with three very slender spines; wings with base yellowed; hypopygium with posterior border of tergite very shallowly emarginate, lobes without thickened margins; dististyles separate.

Moçambique: Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG), type.

Antocha (Orimargula) indumeni ALEXANDER

Antocha (*Orimargula*) *indumeni* ALEXANDER; Ann. Natal Mus., 13: 399—400, fig. 1 (ven.), fig. 9 (♂ hyp.); 1956.

Male. — Length about 5—5.2 mm.; wing 7—7.2 mm.; antenna about 1 mm.

General coloration of body dark brown; antennae, legs, and knobs of halteres dark brown, antennae short; claws long, with three spines; wings strongly tinged with blackish, veins beyond cord unusually glabrous.

Natal: Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG), type.

Antocha (Orimargula) melina ALEXANDER

Antocha (Orimargula) melina ALEXANDER; Ann. Natal Mus., 14: 145, fig. 12 (♂ hyp.), fig. 17 (ven.); 1957.

Male. — Length about 4 mm.; wing 4.7 mm.; antenna about 1 mm.

General coloration fulvous to yellow; antennae of male relatively long, flagellar segments long-oval; knobs of halteres infuscated; wings subhyaline, prearcular and costal fields more yellowed; hypopygium apparently with a single dististyle.

Natal: Natal National Park, Hostel, at light, April 3, 1951 (BRINCK—RUDEBECK), Loc. no. 259. — **Transvaal:** Kruger National Park, Skukuza Camp, at light, April 29—30, 1951 (BRINCK—RUDEBECK), Loc. nos. 283, 286. — **Southern Rhodesia:** Nyachowa Falls, near Umtali, Vumba Mts., January 16, 1955 (STUCKENBERG), type.

Antocha (Orimargula) setosa ALEXANDER

Antocha (Orimargula) setosa ALEXANDER; Ann. Natal Mus., 15: 20—21, fig. 11 (wing), fig. 16 (♂ hyp.); 1960.

Male. — Length about 3.5–3.8 mm.; wing 5–6 mm.; antenna about 1.2–1.4 mm.

Thorax almost uniformly brownish yellow, without distinct pattern, pleura clearer yellow; legs brownish yellow, claws with a major spine before midlength, the more basal ones reduced; hypopygium with posterior border of tergite emarginate, lateral lobes with thickened margins, dististyles separate.

Moçambique: Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG), type.

Antocha (Orimargula) transvaalia (ALEXANDER)

(Fig. 52)

Orimargula transvaalia ALEXANDER; Ann. So. Afr. Mus., 18: 187–188; 1921.
Antocha transvaalia WOOD; Ann. So. Afr. Mus., 39: 193, fig. 60 (wing); 1952.

Male. — Length about 3.5 mm.; wing 4.6 mm.

General coloration of thorax pale grayish yellow, slightly whitened, pleura more yellowed; claws with three major spines, the outermost largest; wings whitened, veins brown, more yellowed in costal field (fig. 52).

Cape Province: Schoemans Poort, November 1937 (C. W. THORNE); Michell's Pass, 3 miles SSW of Ceres, among wet moss on stony mountain stream, February 12, 1951 (BRINCK—RUDEBECK), Loc. no. 179. — **Natal:** Hostel, Natal National Park, at light, April 4, 1951 (BRINCK—RUDEBECK), Loc. no. 259; Tugela Valley, 5000 feet, meadow near stony river, April 3, 1951 (BRINCK—RUDEBECK), Loc. no. 258. — **Transvaal:** Komati Poort, November 1918 (R. W. TUCKER), types; Kruger National Park, Letaba Camp, at light, May 1, 1951 (BRINCK—RUDEBECK), Loc. no. 289. — **Southern Rhodesia:** Cozani River, January 15, 1955 (GRAHAM & STUCKENBERG).

Antocha (Orimargula) venosa sp. n.

(Fig. 64)

Size medium (wing about 5.5 mm.); general coloration brown, praescutum with three darker stripes; antennae relatively short, flagellar segments oval; tarsi without epicondyle;

wings whitish subhyaline, base more whitened, veins brown, conspicuous; macrotrichia on outer veins, including vein M_4; male hypopygium with dististyles separate except at bases.

Male. — Length about 5–5.2 mm.; wing 5.3–5.5 mm.; antenna about 0.9–0.95 mm.

Female. — Length about 5.5 mm.; wing 5.5 mm.

Described from alcoholic material.

Rostrum brown, more yellowed below; palpi brownish black. Antennae relatively short; scape brown, remainder brownish black; flagellar segments short-oval to oval, terminal segment about one-half longer than the penultimate. Head dark brown.

Cervical region pale brown. Mesonotum chiefly brown, praescutum with three virtually confluent darker brown stripes. Halteres with stem whitened, the large knob infuscated. Legs with coxae and trochanters brownish yellow, remainder of legs brown; terminal tarsal segment without epicondyle; claws long, with an elongate spine at near midlength, a smaller more basal spine and two small elongate pegs. Wings whitish subhyaline, the base and costal region more whitened; veins brown, unusually conspicuous, pale in the whitened parts. Macrotrichia of veins relatively abundant, including outer third of vein R_3, distal section of R_{4+5} and all outer branches of M; a single trichium on M_{3+4}, none on veins basad of cord excepting R; costal fringe relatively long. Venation: R_{1+2} subequal to R_2; Rs about one-third longer than basal section of R_{4+5}.

Abdomen brown. Ovipositor with cerci long and slender, gently upcurved to the subacute tips, margins smooth. Male hypopygium (fig. 64) with the dististyles, *d*, separate, except at bases, outer style a slender blade that narrows to the subacute tip, glabrous except for abundant delicate setulae on basal half; inner style a trifle longer and stouter, apex obtuse, with scattered setae, near tip more numerous and concentrated, outer ones shorter and more spinoid. Gonapophyses appearing as narrow paddlelike blades.

Natal: Natal National Park, Hostel, 5000 feet, at light, April 1, 1951. Holotype, alcoholic ♂ (BRINCK–RUDEBECK), Loc. no. 256. Allotopotype, alcoholic ♀. Paratopotypes, 5 ♂ ♀, April 4, 1951 (BRINCK–RUDEBECK), Loc. no. 259.

The species is closely related to *Antocha* (*Orimargula*) *setosa* ALEXANDER being most readily told by the trichiation of the veins.

Thaumastoptera MIK

Thaumastoptera MIK; Verh. zool.-bot. Ges. Wien, 16: 302; 1866.

An Old World genus including relatively few species in the Palaearctic, Oriental, and Ethiopian regions, including Madagascar. On the continent it includes only the species herewith discussed. The larva of the genotype, *Thaumastoptera calceata* MIK, lives in cold springs among decaying leaves, constructing a silken case in which it lives.

Thaumastoptera natalensis ALEXANDER

(Fig. 51)

Thaumastoptera natalensis ALEXANDER; Ann. Natal Mus., 13: 423–424, fig. 26 (ven.), fig. 31 (♂ hyp.); 1956.

Male. — Length about 4.5 mm.; wing 5 mm.; antenna about 0.9 mm.

General coloration of thorax almost uniformly obscure yellow; legs yellow; wings weakly brownish yellow, veins pale; hypopygium with the dististyle a stout curved hook, narrowed to an acute point, the inner or concave edge with strong setae (fig. 51).

Natal: Town Bush, Pietermaritzburg, November 2, 1954 (STUCKENBERG), type.

Platylimnobia ALEXANDER

Platylimnobia ALEXANDER; Ann. So. Afr. Mus., 17: 149–150; 1917.
Platylimnobia WOOD; Ann. So. Afr. Mus., 39: 309–315; 1952.

This interesting genus until now has been known from four nearly apterous species, all restricted to mountainous areas in the Southwest Cape. Dr. BRINCK's discovery of a new species having the wings only partly atrophied and retaining the essentials of venation necessitates the removal of the group from the tribe Eriopterini where it formerly was placed, to the tribe Limoniini. The male hypopygium has a single dististyle which is more or less deeply divided into two substyles. The details of structure of the style and of the phallosome offer unusually strong characters for the separation of the species. Dr. WOOD states that the nearly wingless adults are very agile, the males scurrying about in search of their mates. The various nearly apterous species seem to be restricted to mountainous areas overgrown with reeds and species of *Restio*. The immature stages are unknown.

Key to species of *Platylimnobia*

1. Size large (body 4.5 mm. or more); antennae with 15 or 16 segments 2
— Size small (body 3 mm. or less); antennae with 11 or 12 segments; (wings virtually lacking) 4
2. Wings semiatrophied, about one-half the body in both sexes, clearly showing the venation which is generally as in *Limonia* but with *m–cu* far before the fork of *M* (figs. 53, 65) (Cape Province) . . . . . *brinckiana* sp. n.
— Wings exceedingly reduced, without interpretable venation 3
3. Wings present as narrow flaps that extend caudad about to base of abdomen; hypopygium with basistyle short and stout; aedeagus short and simple. (Cape Province) . . . . . *barnardi* ALEXANDER
— Wings so reduced as to appear lacking; hypopygium with basistyle about twice as long as thick; aedeagus long and complex. (Cape Peninsula) . . . . . *montana* WOOD
4. Abdomen brownish black, hypopygium black; thorax dark gray; antennae 11-segmented, the last segment about equal in length to the preceding two combined, evidently a fusion of two segments. (Cape Province) . . . . . *pumila* ALEXANDER
— Abdomen light orange, unicolorous; thorax light brownish yellow; antennae 12-segmented, the last segment scarcely longer than the penultimate. (Cape Province) . . . . . *pseudopumila* WOOD

Platylimnobia barnardi ALEXANDER

Platylimnobia barnardi ALEXANDER; Ann. So. Afr. Mus., 17: 150–151, textfig. 1 (ad. head and thorax) pl. 13, fig. 45 (♂ hyp.); 1917.
Platylimnobia barnardi WOOD; Ann. So. Afr. Mus., 39: 310–311, fig. 102 (ad.); 1952.

Male. — Length 4.6–5.3 mm.

Female. — Length 4.5 mm.

General coloration brownish yellow, praescutum with a broad dark brown median stripe; legs dark brown; wings reduced to narrow flaps without apparent venation; hypopygium with tergite very shallowly emarginate, lateral angles rounded; dististyle divided almost to base, both substyles shallowly and unequally forked, upper style narrower, its lower spur a small pale subterminal blade; lower substyle broader, its upper branch elongate, the lower a broad blade tipped with several setae.

Dr. WOOD's description of the hypopygium is excellent but his figure does not show the bifid nature of the two substyles of the dististyle.

Cape Province: Landdrost Kloof, Hottentots Holland Mts., 4000 feet, January 1915, March 1919 (BARNARD), types; Same locality, January 1933 (THORNE).

Platylimnobia brinckiana sp. n.

(Figs. 53, 65)

Size large (length of male 8 mm., wing about 4 mm.); antennae 16-segmented; general coloration brown; stenopterous, wings about one-half the body, venation distinct, *m–cu* far before fork of *M*; hypopygium with the dististyle terminal; outer substyle a blackened curved hook that narrows to the acute tip, on lower face before midlength with an acute spine; inner substyle pale, slightly curved outwardly, before midlength with a conspicuous tubercle; phallosome a flattened scooplike structure, produced into two flattened apophyses.

Male. — Length about 8 mm.; wing about 4.2 mm.; fore leg, femur 6.5 mm.; tibia 6.5 mm.; tarsus 6 mm.; total 19 mm.

Female. — Length about 10–11 mm.; wing 4 mm.

Described from alcoholic material.

Rostrum and palpi dark brown. Antennae dark brown, normally 16-segmented, the small terminal segment less than one-half the penultimate and partly fused with it; in the paratype with only 15 segments; flagellar segments short-oval, with inconspicuous verticils. Head brown.

Pronotum light brown. Mesonotum light brown, darker brown medially throughout, pleura paler brown. Thorax moderately flattened; meron much reduced, the middle and posterior coxae approximated. Halteres brownish yellow. Legs elongate, as shown by the measurements, dark brown, femoral bases narrowly more yellowed; tibiae without spurs; claws simple. Wings (fig. 53) approximately one-half the body in the male, stenopterous, but showing a definite venation; obscure yellow, patterned with pale brown, including the costal border, seams and washes at cord, in base of cell *Cu* and on outer half of *2nd A*; veins yellowed in the ground, darker in the patterned areas. Venation distorted but showing the essential features; most as in *Limonia* and *Orimarga*, with *m–cu* far before the fork of *M*, this character constant in all specimens; the type male has cell M_2 open with only two outer branches (as shown); the allotype female has cell *1st* M_2 closed with three branches issuing from it, M_3 not reaching the margin, M_{1+2} and M_4 entire.

Abdomen, including hypopygium, dark brown. Ovipositor with cerci long and slender, nearly straight; hypovalvae shorter and a little stouter. Male hypopygium (fig. 65) with the

tergite, *t*, narrowed posteriorly, produced into two truncated lobes that are separated by a small U-shaped notch. Basistyle, *b*, relatively short and stout. Dististyle, *d*, terminal, divided almost to base; outer substyle a blackened curved hook that narrows to the acute tip, on the lower or concave side before midlength with a small acute black spine; inner substyle a little longer, pale, narrowed and slightly curved outwardly, before midlength with a conspicuous tubercle. Phallosome, *p*, including a flattened ventral scooplike structure, near its base on either side a flattened gonapophysis that is slightly expanded outwardly, the tip acute; aedeagus relatively slender, especially at apex, before tip with two small blackened incurved hooks or spines, their tips nearly meeting.

Cape Province: Maanschijnkop, 7 miles E of Hermanus, in shady wet ravine on stream below a waterfall, December 21, 1950. Holotype, alcoholic ♂, (BRINCK—RUDEBECK), Loc. no. 93. Allotopotype, ♀, with type. Paratopotype, a broken ♀.

This very interesting and significant crane-fly is named in honor of Dr. PER BRINCK, one of the worlds outstanding workers in entomology. The most similar of the presently known species is the genotype, *Platylimnobia barnardi*, which is much smaller, with the wings much more degenerate, and with the structure of the hypopygium quite distinct. It should be noted that the leg segments of the present fly are of almost the same lengths as in *barnardi* despite its much greater body size.

Platylimnobia montana WOOD

Platylimnobia montana WOOD; Ann. So. Afr. Mus., 39: 313–315, fig. 102 (ad); 1952.

Male. — Length 5–5.2 mm.; wings virtually lacking.

Thorax dark sepia brown; legs long and slender; abdomen light orange, outer two segments chestnut brown; hypopygium with the dististyle unequally biramous, the shorter ventral substyle with about a dozen spinoid setae.

Cape Province: Peninsula, Isolation Valley, January 1933 (BARNARD & WOOD), type.

Platylimnobia pseudopumila WOOD

Platylimnobia pseudopumila WOOD; Ann. So. Afr. Mus., 39: 311–313, fig. 102 (ad.); 1952.

Male. — Length 2.6–3 mm.; wings virtually lacking; hind femur 2.8 mm.; tibia 3.2 mm.

Thorax light brownish yellow; legs relatively long and slender, dull yellow; abdomen light orange; hypopygium with dististyle unequally biramous, the ventral substyle larger, inner apical surface with a row of from 10 to 15 microscopic spinoid setae.

Cape Province: French Hoek Pass, October 1936 (THORNE), type.

Platylimnobia pumila ALEXANDER

Platylimnobia pumila ALEXANDER; Ann. So. Afr. Mus., 18: 196–197, pl. 4, fig. 22 (ant.); 1921.
Platylimnobia pumila WOOD; Ann. So. Afr. Mus., 39: 311; 1952.

Male. — Length 2.6 mm.; wings virtually lacking; hind femur 2.8 mm.; tibia 3.2 mm.

Thorax dark, gray pruinose, pleura paler; coxae and trochanters yellowish brown, remainder of legs black; abdomen brownish black, hypopygium large, black.

Cape Province: Landdrost Kloof, Hottentots Holland Mts., Caledon Division, 1917 (BARNARD), type.

Dicranoptycha OSTEN SACKEN

Dicranoptycha OSTEN SACKEN; Proc. Acad. Nat. Sci. Philadelphia 1859: 217; 1859.

Species of *Dicranoptycha* occur throughout the Holarctic and Ethiopian regions, with very few further species in the Oriental and Neotropical. On the African mainland the genus includes about six species with many more quite different forms occurring in Madagascar. The immature stages of the species as known occur in open dry woods, living in the rich humous soil overlain by a cover of leaf mold.

Dicranoptycha natalia ALEXANDER

(Fig. 55)

Dicranoptycha natalia ALEXANDER; Ann. Mag. Nat. Hist., (9) 5: 54–55; 1920.
Dicranoptycha natalia ALEXANDER; Ann. Natal Mus., 14: 382, fig. 16 (♂ hyp.); 1960.

Male. — Length 8–8.7 mm.; wing 8.3–9 mm.

Mesonotum dark brown; legs dark brown, femoral bases more yellowed; wings dark brown, more saturated in costal field, with pale streaks in cells *R*, *Cu*, and *1st A*; abdomen dark brown, subterminal segments more blackened, hypopygium slightly brightened (fig. 55).

Natal: Pietermaritzburg, 1916 (Dr. CONRAD AKERMAN), type; Gwalaweni Forest, Zululand, February 14–16, 1957 (STUCKENBERG).

Orimarga OSTEN SACKEN

Orimarga OSTEN SACKEN; Mon. Dipt. No. Amer., 4: 120; 1869.

Orimarga is a relatively small genus with representatives in all major regions of the world, including Madagascar but excluding New Zealand. Only six species have been discovered in continental Africa, with two occurring in the southeast. Nothing is known of the immature stages with the exception of a second subgenus, *Diotrepha* OSTEN SACKEN, whose subgenotype, *Orimarga* (*Diotrepha*) *mirabilis* (OSTEN SACKEN) has been reared by the late Dr. JAMES SPEED ROGERS. The larvae live in rotten wet wood in an advanced stage of decay, feeding on the blue-green algae and fungi in this habitat.

Key to South African *Orimarga*

1. Size small (wing under 5 mm.); wings slightly darkened, veins dark brown; R_2+_3 shorter than basal section of R_4+_5 and less than one-third *Rs*; R_1+_2 very short, about one-half R_2; *m–cu* about opposite base of *Rs*. (Moçambique, northwards) . . . . . *brevicula* ALEXANDER
- Size larger (wing 6 mm. or more); wings subhyaline, veins pale brown; R_2+_3 very long, exceeding the basal section of R_4+_5 and almost as long as *Rs*; R_1+_2 long, about twice R_2; *m–cu* about opposite midlength of *Rs*. (fig. 54) (Southern Rhodesia) . . . . . *mashonensis* ALEXANDER

Orimarga (Orimarga) brevicula ALEXANDER

Orimarga (Orimarga) brevicula ALEXANDER; Ruwenzori Exped., 1934–35, 1, no. 7: 256–257; 1956.

Male. — Length about 3.6 mm.; wing 4.6 mm.

General coloration of thorax dark chestnut brown, pleura and pleurotergite yellow; legs light brown; wings subhyaline, veins dark brown, conspicuous; vein R_{1+2} unusually short, about one-half R_2, cell M_3 longer than its petiole; *Rs* without macrotrichia.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG).

The types were from Uganda.

Orimarga (Orimarga) mashonensis ALEXANDER

(Fig. 54)

Orimarga (Orimarga) mashonensis ALEXANDER; Jour. Ent. Soc. So. Afr., 22: 54–55, fig. 3 (ven.); 1959.

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

Mesonotum almost uniformly dark plumbeous, pleura reddish yellow; head gray; legs brown, tips of femora and tibiae darker; wings subhyaline, unpatterned; vein R_{1+2} unusually long, approximately three times R_2; *Rs* with several macrotrichia (fig. 54).

Southern Rhodesia: Salisbury, February 19–March 28, 1957 (SMITHERS), type.

TRIBE LECHRIINI

A very small tribe with only three existing genera known at present. Of these, a single genus, *Ceratolimnobia*, is known from our region. It formerly was believed that this genus was a subgenus of the fossil *Trichoneura* LOEW (Baltic Amber: Upper Eocene) but it is now appreciated that the two groups are quite distinct.

Ceratolimnobia (Ceratolimnobia) munroi ALEXANDER

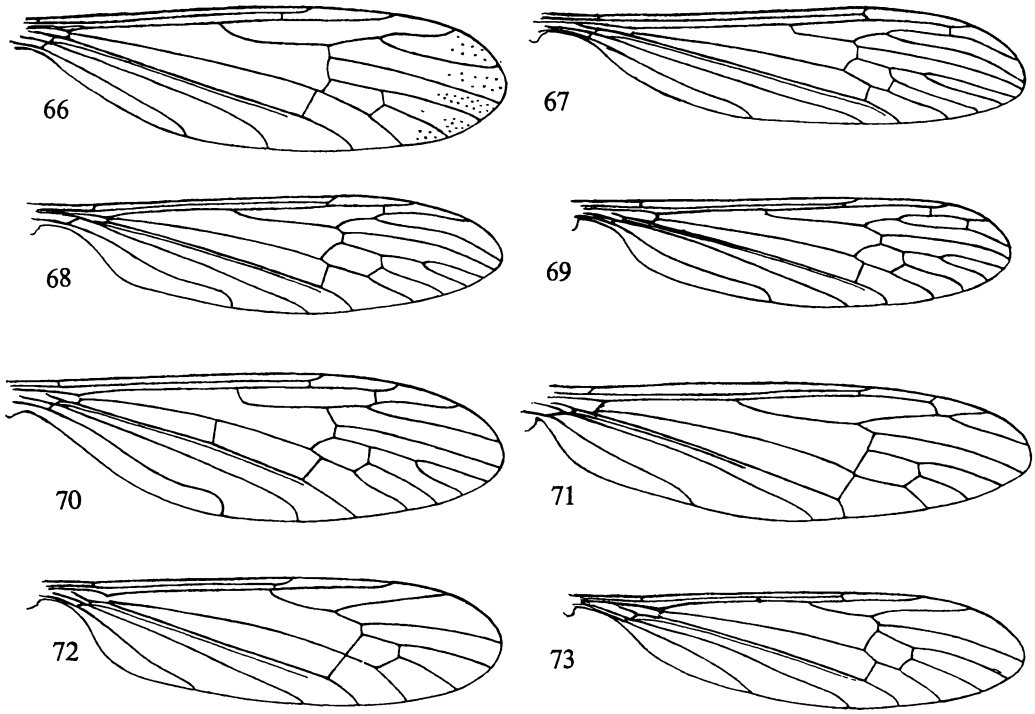
(Fig. 56)

Ceratolimnobia munroi ALEXANDER; Ann. Mag. Nat. Hist. (9) 5: 469–471; 1920.

Male. — Length about 2.5–2.7 mm.; wing 3.3–3.8 mm.

Head light gray with a snowy white horn or corniculus on vertex; general coloration dark brown, praescutum narrowly margined laterally with silvery white; legs brown, tips of femora and tibiae narrowly white, the former with a darker subterminal ring, fore tarsi chiefly white; wings (fig. 56) dusky, costal region more whitened, with six large dark brown areas, veins beyond cord seamed with brown.

Transvaal: Kaapmuiden, Lot 30, De Kaap Block B, October 8, 1919 (H. K. MUNRO), type; Pretoria, January 16–30, 1921 (MUNRO). — **Southern Rhodesia:** Umtali, in public park, November 1930 (CUTHBERTSON). — **South West Africa:** Kaokoveld, Omutati, 70 miles WSW of Ohopoho, at light, June 5, 1951, in dry mopane bush near limy waterhole (BRINCK–RUDEBECK), Loc. no. 329.



Figs. 66-73. — 66. *Paradelphomyia* (*Oxyrhiza*) *faurei* (ALEXANDER). — 67. *Austrolimnophila* (*Austrolimnophila*) *luteipleura* ALEXANDER. — 68. *Pseudolimnophila* (*Pseudolimnophila*) *frugi* (BERGROTH). — 69. *Pseudolimnophila* (*Calolimnophila*) *xanthomelania* ALEXANDER. — 70. *Limnophila* (*Elæophila*) *subannulata* ALEXANDER. — 71. *Hexatoma* (*Eriocera*) *capensis* (ALEXANDER). — 72. *Atarba capensis* ALEXANDER. — 73. *Elephantomyia* (*Elephantomyia*) *aurantiaca* ALEXANDER.

TRIBE HEXATOMINI

A major tribe within the family, including eight genera in continental Africa of which seven occur in the local fauna. All of these, with the exception of *Paradelphomyia*, likewise are found in Madagascar, in virtually all cases with quite distinct species.

Key to Genera of the Hexatomini

1. Wings with three radial branches (figs. 72, 73) 2
— Wings with four radial branches. (figs. 66—71) 3
2. Frontal prolongation of head produced into an elongate rostrum that is one-half the length of remainder of body or more (fig. 73) . . . . . *Elephantomyia*
— Frontal prolongation of head not produced (fig. 72) . . . . . *Atarba*
3. Antennal segments reduced in number, commonly six or seven in the male, nine or ten in the female; antenna of male in cases excessively lengthened, exceeding the body (fig. 71) . . . . . *Hexatoma*
— Antennal segments commonly 16 in number, if fewer the reduction produced by the fusion of the proximal flagellar segments, the total apparent number not as low as ten 4

4. Outer wing cells with macrotrichia (fig. 66). . . . . *Paradelphomyia*
— Cells of wing without macrotrichia 5
5. Anterior arculus of wing lacking; legs often with flattened elongate scales additional to the normal setae. (fig. 67) . . . . . *Austrolimnophila*
— Arculus complete 6
6. Pronotum large and massive (figs. 70, 74) . . . . . *Limnophila*
— Pronotum not as massive, the sides produced cephalad into small lateral lobes (figs. 68, 69) . . . . . *Pseudolimnophila*

It should be noted that the anterior arculus, mentioned above in couplet 5, is the reduced basal section of vein *M* and is not a crossvein as interpreted by EDWARDS who designated it the "arcular crossvein".

Paradelphomyia ALEXANDER

Adelphomyia of authors, *nec* BERGROTH; Mittheil. Naturf. Bern für 1890: 134; 1891.
Oxydiscus DE MEIJERE; Tijd, voor Ent., 56: 350; 1913; preoccupied.
Gonomyiella KUNTZE; Deutsch. Ent. Zeitsch. 1919: 141; preoccupied.
Paradelphomyia ALEXANDER; Philippine Jour. Sci., 60: 184; 1936.
Oxyrhiza DE MEIJERE; Entomologische Berichten, 12; nos. 271–272: 68; 1946.

The genus *Paradelphomyia* is essentially Holarctic in distribution but with numerous species in the Oriental region and much fewer in the Neotropical and Ethiopian. The immature stages live in organic mud.

Key to South African *Paradelphomyia*

1. Wings without pattern except for the stigma and very narrow darkened seams at origin of *Rs* and over the cord; no marginal darkenings at ends of veins. (Moçambique, Southern Rhodesia) *bilobata* ALEXANDER
— Wings with an evident spotted or clouded brown pattern, including marginal areas at ends of the veins 2
2. Legs uniformly brown; (size small, wing under 5 mm.; wings with base and costal border yellowed, paler than the ground; marginal darkenings, especially of the medial and anal fields small and inconspicuous; macrotrichia of cells restricted to outer ends, in cell R_5 including the outer fourth; vein *2nd A* curved gently to the margin) (fig. 66). (Natal, Southern Rhodesia) . . . . . *faurei* (ALEXANDER)
— Legs with femora light brown with a darker brown subterminal ring 3
3. Size small (wing of female less than 5.5 mm.); wings with Sc_1 shorter than R_{2+3+4}; costal border yellowed, dark markings, including stigma and anal clouds, relatively small. (Moçambique) *annulipes* ALEXANDER
— Size large (wing of female 7 mm. or over); wings with Sc_1 longer than R_{2+3+4}; costal border darker than the ground, dark markings, especially stigma and anal clouds larger. (Southern Rhodesia) . . . . . *vumbensis* (ALEXANDER)

Paradelphomyia (Oxyrhiza) annulipes ALEXANDER

Paradelphomyia (Oxyrhiza) annulipes ALEXANDER; Ann. Natal Mus., 15: 22—24, fig. 17 (wing); 1960.

Female. — Length about 5 mm.; wing 5.3 mm.

General coloration of thorax brownish black, with brown pollen, pleura light brown with two darker brown longitudinal stripes; legs with coxae uniformly yellow; femora light

brown with a narrow brownish black subterminal ring, slightly more extensive than the obscure yellow tip; wings brownish yellow, conspicuously patterned with brown.

Moçambique: Luabo, July 1957 (USHER), type.

Paradelphomyia (Oxyrhiza) bilobata ALEXANDER

Paradelphomyia (Oxyrhiza) bilobata ALEXANDER; Ann. Natal Mus., 14: 146–147, fig. 13 (♂ hyp.), fig. 18 (ven.); 1957.

Male. — Length 6.3–6.5 mm.; wing 6–6.5 mm.

Head and thorax brownish black, pleura paler behind; middle and hind coxae pale; *Rs* relatively short; abdomen brownish black, posterior borders of tergites obscure yellow, more extensive on sternites; hypopygium with a slender lobule at base of inner dististyle.

Southern Rhodesia: Umtali, Vumba Mts., 5000 feet, January 19, 1955 (STUCKENBERG), types. — **Moçambique:** Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG).

Paradelphomyia (Oxyrhiza) faurei (ALEXANDER)

(Fig. 66)

Adelphomyia faurei ALEXANDER; Rev. Zool. Africaine, 11: 381–382; 1923.

Male. — Length about 4–5.3 mm.; wing 4.5–6 mm.

General coloration shiny brownish black, abdomen dark brown; halteres pale yellow; hypopygium with subterminal spine of outer dististyle very slender, acute; inner style broadly dilated on basal half (fig. 66).

Natal: Nongoma, Zululand, September 15, 1922 (J. C. FAURE), type; Hostel, National Park, 5000 feet, at light, April 1, 1951 (BRINCK–RUDEBECK), Loc. no. 256. — **Southern Rhodesia:** Salisbury, June, December 1956, January 1957 (SMITHERS).

Paradelphomyia (Oxyrhiza) vumbensis (ALEXANDER)

Oxydiscus (Oxydiscus) vumbensis ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 15: 135–136; 1946.

Female. — Length about 7 mm.; wing 7.2 mm.

General coloration of body black, including pleura; halteres darkened, base of stem yellowed; wings heavily patterned with brown.

Southern Rhodesia: Umtali, Vumba Mts., January 27, 1935 (CUTHBERTSON & J. E. DRYSDALE), type.

Austrolimnophila ALEXANDER

Austrolimnophila ALEXANDER; Arkiv för Zoologi, 13, no. 6: 4–5; 1920. Subgenus *Phragmocrypta* ALEXANDER; Ruwenzori Exped. 1934–35, 1, no. 7: 265; 1956.

Austrolimnophila is the largest and most important of the Hexatomine genera in the Ethiopian region, including Madagascar, with relatively numerous species in South Africa.

The group evidently is of southern or antarctic origin since the great majority of the now very numerous known species occur in Australia, New Zealand and southern South America, as well as South Africa, becoming less numerous northward, with only a few scattered species in the Holarctic region.

The immature stages of the species that have been reared occur in decaying wood. Three of the local species were found by Dr. WOOD, *Austrolimnophila* (*Austrolimnophila*) *griseiceps*, *A.* (*A.*) *medialis*, and *A.* (*A.*) *thornei*.

Key to South African *Austrolimnophila*

1. A supernumerary crossvein in cell *Sc* at near mid-distance between arculus and origin of *Rs*. (Subgenus *Phragmocrypta* ALEXANDER) (Southern Rhodesia) . . . . . *albocoxalis* (ALEXANDER)
— No supernumerary crossvein in cell *Sc*. (Subgenus *Austrolimnophila* ALEXANDER) 2
2. Wings patterned with darker, with at least some darkened areas other than the stigma 3
— Wings unpatterned except for the stigmal area when this is evident 7
3. Wings with dark pattern consisting of numerous brown spots in all cells, including marks in costal field and at near midlength of other cells as well as at the forks; cell M_1 very deep, nearly four times its petiole. (Moçambique) . . . . . *multiscripta* ALEXANDER
— Wing pattern consisting of fewer but larger darkened areas, lacking at midlength of the cells; cell M_1 more shallow, about two to three times its petiole 4
4. Wing pattern unusually extensive, with dark clouds at base and at near midlength of vein *M*; (*Sc* relatively short, Sc_2 before fork of *Rs*; no darkening in Anal cells). (Cape Province) . . . . *thornei* (WOOD)
— Wing pattern lighter and less distinct, with no darkening at near midlength of vein *M*; (*Sc* usually longer; in cases with darkenings in Anal cells). 5
5. Wings with large pale grayish brown clouds at origin of *Rs*, cord, outer end of cell *1st* M_2, arculus and tip of vein *1st A*. (Natal) . . . . . *spectabilis* (ALEXANDER)
— Wing pattern more restricted, darkened areas smaller, lacking at arculus and tip of vein *1st A* . . . 6
6. Mesonotum brown, praescutum with two intermediate darker brown stripes, pleura yellow, with a dark brown longitudinal stripe; both Sc_1 and Sc_2 ending opposite fork of *Rs*; cell *1st* M_2 narrow, more than twice as long as width at base; no darkening in cell *Cu*. (Cape Province). . . . *medialis* (ALEXANDER)
— Thorax yellow, the mesonotum with a blackened saddle on praescutum, scutum and scutellum, pleura unpatterned; Sc_1 and Sc_2 ending about opposite midlength of vein R_{2+3+4}; cell *1st* M_2 relatively short and broad, less than twice as long as the width at base; (in cases with a pale brown cloud in cell *Cu* at near midlength). (Southern Rhodesia) . . . . . *ephippigera* ALEXANDER
7. Thoracic pleura with a brown longitudinal stripe 8
— Thoracic pleura unpatterned 9
8. Mesonotal praescutum very pale brown, with three more yellowed stripes; wings with both Sc_1 and Sc_2 ending shortly beyond fork of *Rs*; hypopygium with outer dististyle bispinous at apex. (Natal) . . . . . *pleurostria* ALEXANDER
— Mesonotal praescutum ochreous with a brown median stripe; wings with *Sc* short, both Sc_1 and Sc_2 ending just before fork of *Rs*; hypopygium with outer dististyle narrowed at apex into a long black spine. (Southern Rhodesia) . . . . . *pleurolineata* ALEXANDER
9. Thoracic pleura infuscated and sparsely pruinose to appear leaden; wings brownish yellow, stigma oval, pale brown, distinct. (Moçambique) . . . . . *plumbeipleura* ALEXANDER
— Thoracic pleura pale brown or yellowed 10
10. Mesonotum chiefly dark brown, contrasting with the clear yellow pleura and pleurotergite; wings medium brown, stigma only slightly darker (fig. 67). (Natal, Southern Rhodesia) . . *luteipleura* ALEXANDER
— Thorax not patterned as above 11
11. Head reddish brown; (thoracic dorsum yellowish brown, without distinct pattern; hypopygium conspicuously trifid on outer third). (Natal) . . . . . *natalensis* (ALEXANDER)

— Head gray 12
12. Thorax orange yellow, without distinct darker pattern; abdomen yellowed, terminal two segments black; (wings strongly brownish yellow, stigma slightly darkened). (Transvaal). . . *transvaalica* (ALEXANDER)
— Thorax darker, more or less patterned 13
13. Mesonotal praescutum with four brown stripes, more grayish laterally, pleura pruinose; wings with a strong dusky tinge, cell *C* not darker. (Natal) . . . . . *canuta* ALEXANDER
— Thoracic dorsum dark brown, the median praescutal stripe faintly divided by a capillary line, pleura paler, not pruinose; wings light brown, cell *C* slightly darker. (Cape Province) *griseiceps* (ALEXANDER)

Austrolimnophila (Phragmocrypta) albocoxalis (ALEXANDER)

Pseudolimnophila albocoxalis ALEXANDER; Encycl. Entomol., Diptera, 7: 52–53; 1934.

Male. — Length about 7.5 mm.; wing 8.5 mm.

Praescutum brownish black, with three reddish orange stripes, pleura patterned longitudinally with black and yellowish gray; all coxae whitened with bases narrowly dark; wings brownish yellow, heavily patterned with brown, especially beyond the cord; abdomen brownish black, posterior borders of segments narrowly yellowed; hypopygium with posterior border of tergite with a U-shaped emargination, lobes obtuse; outer dististyle narrowed into a simple spine; gonapophysis appearing as a slender curved spine, tip acute.

Southern Rhodesia: Chirinda Forest, 3600 feet, November 1930 (CUTHBERTSON), types; January 25, 1955 (STUCKENBERG).

Austrolimnophila (Austrolimnophila) canuta ALEXANDER

Austrolimnophila (Austrolimnophila) canuta ALEXANDER; Ann. Natal Mus., 14: 263–264, fig. 9 (ven.), fig. 14 (♂ hyp.); 1958.

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

General coloration of mesonotum blackened, pruinose, praescutum with four poorly differentiated brown stripes; wings tinged with brown, stigma darker; hypopygium with tergal lobes obtuse, glabrous; outer dististyle terminating in a blackened spine, with further spinules on outer margin; gonapophysis slender, straight, the base dilated.

Natal: Town Bush, Pietermaritzburg, November 2, 1954, November 11, 1955 (STUCKENBERG), types.

Austrolimnophila (Austrolimnophila) ephippigera ALEXANDER

Austrolimnophila ephippigera ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 15: 136–137; 1946.

Female. — Length about 10 mm.; wing 10.5 mm.

General coloration of thorax yellow, praescutum with a blackened discal area that includes the posterior three-fourths of the praescutum, scutum and scutellum; rostrum and antennal scape yellow, outer flagellar segments black; femora black with about the basal fifth yellowed; wings yellow, restrictedly patterned with pale brown clouds; abdomen yellow, sternites two to seven with dorsal edges narrowly blackened, subterminal segments blackened to form a ring.

Southern Rhodesia: Umtali, Vumba Mts., 5400 feet, October 1940 (CUTHBERTSON), types; Salisbury, February 22, 1957 (SMITHERS).

Austrolimnophila (Austrolimnophila) griseiceps (ALEXANDER)

Limnophila griseiceps ALEXANDER; Ann. So. Afr. Mus., 18: 206; 1921.
Pseudolimnophila griseiceps WOOD; Ann. So. Afr. Mus., 39: 203–204, fig. 61 (wing, ♂ hyp.); 1952.

Male. — Length about 8.5 mm.; wing 10.5 mm.

Female. — Length about 9.4 mm.; wing 10 mm.

Mesonotum dark brown, humeral region more reddened, central praescutal stripe divided, pleura yellow; head gray; antennae black, relatively long, in male about six times the head; wings light yellowish brown, costal border distinctly darker; cell M_1 deep, from three to four times its petiole; abdominal tergites pale brown, sternites yellowed; hypopygium with tergal lobes narrow, separated by a broad U-shaped notch; outer dististyle narrowed to an acute curved point, outer margin near tip with several acute spines; apex of aedeagus narrowly trilobed.

Dr. WOOD found the immature stages in a barkless decaying log of *Halleria* (Scrophulariaceae) at Oudebosch. The log was resting on leaf-covered ground some sixty yards from the nearest stream. The larvae had penetrated the wood to a maximum depth of one and one-quarter inches.

Cape Province: Oudebosch, 1500 feet, January 1919 (BARNARD), type; January 1935, September 1937 (WOOD); Harkerville, January 1938 (WOOD).

Austrolimnophila (Austrolimnophila) luteipleura ALEXANDER

(Fig. 67)

Austrolimnophila luteipleura ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 18: 156–157; 1949.

Male. — Length about 8–8.5 mm.; wing 9–10 mm.; antenna about 2–2.2 mm.

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

Mesonotum chiefly dark brown, pleura and pleurotergite abruptly light yellow; head light gray; antennae relatively short, brown, segments subcylindrical; legs light brown; abdominal tergites dark brown, basal sternites clear light yellow; hypopygium with tergal lobes slender, widely separated; outer dististyle broad, narrowed to a curved blackened hook, outer margin scabrous (fig. 67).

The species appears to be close to *Austrolimnophila* (*Austrolimnophila*) *griseiceps* (ALEXANDER) which still is insufficiently known to me.

Natal: Town Bush, Pietermaritzburg, November 2, 1954, November 11, 1955 (STUCKENBERG); Kranskop, November 11, 1954 (STUCKENBERG); Indumeni Forest, Cathedral Peak Area, Drakensberg, 4700 feet, February 3, 1954; February 19, November 5, 1955 (STUCKENBERG); Eshowe, Zululand, 1650 feet, January 1957 (N. L. H. KRAUSS). **Southern Rhodesia:** Chirinda Forest, 3600 feet, November 1930 (CUTHBERTSON), types.

Austrolimnophila (Austrolimnophila) medialis (ALEXANDER)

Limnophila medialis ALEXANDER; Ann. So. Afr. Mus., 18: 204–205; 1921.
Pseudolimnophila medialis WOOD; Ann. So. Afr. Mus., 39: 195–202, fig. 61 (wing, ♂ hyp.), fig. 62 (larva), figs. 63, 64 (pupa); 1952.

Male. — Length 7.5–7.8 mm.; wing 7.8–8 mm.

Mesonotal praescutum brown with two narrow darker intermediate stripes, pleura yellow, with a broad dark brown dorsal stripe; legs yellow; hypopygium with tergal lobes broadly truncate, separated by a V-shaped notch; apex of aedeagus simple, the lateral shoulders microscopically setulose.

Dr. WOOD found the immature stages in decaying logs close to a small stream. The larvae frequented soft saturated portions of the wood to a depth of about three inches; pupae and resting teneral adults were found on the under side of a log just above the splashing stream.

Cape Province: Oudebosch, 1500 feet, 1919 (BARNARD), type; January 1935 (WOOD).

Austrolimnophila (Austrolimnophila) multiscripta ALEXANDER

Austrolimnophila (Austrolimnophila) multiscripta ALEXANDER; Ann. Natal Mus., 15: 24—25, figs. 19 (wing), 23 (♂ hyp.); 1960.

Male. — Length about 8 mm.; wing 8 mm.; antenna about 1.6 mm.

General coloration brownish black, pleura striped longitudinally with gray; antennae yellow; legs yellow; wings brownish yellow, heavily patterned with darker brown, the areas involving all cells; cell M_1 deep, nearly four times its petiole; hypopygium with outer dististyle terminating in a simple acute spine.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG), type.

Austrolimnophila (Austrolimnophila) natalensis (ALEXANDER)

Limnophila natalensis ALEXANDER; Ann. So. Afr. Mus., 18: 205–206, pl. 3, fig. 6 (wing); 1921.

Male. — Length 6.3–6.5 mm.; wing 7.8–8 mm.

Thorax yellowish brown, praescutal stripes scarcely apparent; wings pale brown, stigma slightly darker; cell M_1 nearly three times its petiole; abdomen brownish yellow, lateral margins brown, a black subterminal ring, hypopygium yellow; tergite with narrowly truncated lobes separated by a U-shaped notch; outer dististyle relatively broad, apex a short blackened cleaverlike blade; aedeagus elongate, nearly the apical third deeply trifid, the enclosing sheath with numerous strongly recurved pale spines.

Natal: Pietermaritzburg, 1917 (BARNARD), types; Eshowe, Zululand, November—December 1943 (BEVIS).

Austrolimnophila (Austrolimnophila) pleurolineata ALEXANDER

Austrolimnophila (Austrolimnophila) pleurolineata ALEXANDER; Ann. Natal Mus., 14: 147–148, fig. 14 (♂ hyp.), fig. 19 (ven.); 1957.

Male. — Length about 6 mm.; wing 6.5 mm.; antenna about 1.1 mm.

Thorax ochreous, praescutum with a brown median stripe, dorsal thoracic pleura with a brown longitudinal stripe; antennae short; hypopygium with tergal lobes slender, microscopically setulose, separated by a deep U-shaped notch.

Southern Rhodesia: Near Inyanga, January 14, 1955 (STUCKENBERG), type.

Austrolimnophila (Austrolimnophila) pleurostria ALEXANDER

Austrolimnophila (Austrolimnophila) pleurostria ALEXANDER; Ann. Natal Mus., 14: 264–265, fig. 10 (ven.), fig. 15 (♂ hyp.); 1958.

Male. — Length about 6–6.2 mm.; wing 6.6–7 mm.

General coloration of mesonotal praescutum very pale brown with three more yellowed stripes, pleura yellow with a broken longitudinal brown stripe; wings strongly suffused; hypopygium with tergal lobes low, rounded; outer dististyle narrowly blackened and bispinous at apex, the lateral spine shorter; aedeagus slender; gonapophysis narrow, curved, hornlike.

Natal: Saint Helier Estate, near Hillcrest, December 20, 1954 (STUCKENBERG), type; Ngoye Forest, Zululand, February 17–19, 1957 (STUCKENBERG).

Austrolimnophila (Austrolimnophila) plumbeipleura ALEXANDER

Austrolimnophila plumbeipleura ALEXANDER; Proc. Roy. Ent. Soc. London, 18: 157–158; 1949.

Female. — Length about 9.5 mm.; wing 8.5 mm.

Head and thorax chiefly gray pruinose; wings grayish yellow, stigma medium brown, distinct; cell M_1 deep, about four times its petiole; abdominal tergites dark brown, posterior borders restrictedly yellowed, sternites more uniformly yellow.

Moçambique: Border Farm, Rio Jardin, April 1929 (CUTHBERTSON), type.

Austrolimnophila (Austrolimnophila) spectabilis (ALEXANDER)

Limnophila spectabilis ALEXANDER; Ann. So. Afr. Mus., 18: 204, pl. 3, fig. 5 (wing); 1921.

Male. — Length about 7.2 mm.; wing 8.8 mm.

Mesonotum dull brown, scutellum more yellowed, pleura brownish yellow with a broad dark brown dorsal stripe; antennae black, first flagellar segment yellow; legs dull brown; wings subhyaline, with extensive pale grayish brown clouds.

Natal: Pietermaritzburg, 1917 (K. H. BARNARD), type.

Austrolimnophila (Austrolimnophila) thornei (WOOD)

Pseudolimnophila thornei WOOD; Ann. So. Afr. Mus., 39: 204–205, fig. 65 (ad.); 1952.

Male. — Length 7.5 mm.; wing 9 mm.

Thorax yellowish brown, praescutum with three slightly darker brown stripes, mediotergite blackish brown, pleura yellowish brown, striped longitudinally with dark brown; antennae yellowish brown, relatively long; legs dark brown; wings darkened, patterned with still darker spots and clouds that are restricted to the veins; abdominal tergites dark brown, sternites testaceous yellow, hypopygium darkened, tergite deeply notched, lobes subacute; basistyle ventrally produced into a slender point; outer dististyle broad, especially

at midlength, apex narrowed into a hook; lateral gonapophyses microscopically toothed at tips.

The immature stages were found by Mr. THORNE in saturated rotting logs of *Cunonia capensis* (Cunoniaceae) lying across shallow streams.

Cape Province: Fernwood, Peninsula, April 1936 (C. W. THORNE), type.

Austrolimnophila (Austrolimnophila) transvaalica (ALEXANDER)

Limnophila transvaalica ALEXANDER; Ann. So. Afr. Mus., 17: 155, pl. 11, fig. 19 (wing); 1917.

Female. — Length about 10.6 mm.; wing 11.3 mm.

Thorax brownish yellow to orange, without distinct pattern; antennal flagellum black, segments elongate; legs brown, femoral bases yellowed; outer two segments of abdomen black.

Transvaal: Barberton, November 1911 (H. EDWARDS), type.

Pseudolimnophila ALEXANDER

Pseudolimnophila ALEXANDER; Cornell Univ. Agr. Expt. Sta. Mem. 25: 917; 1919. Mem. 38: 848–850; 1920. Subgenus *Calolimnophila* ALEXANDER; Ann. Mag. Nat. Hist. (9) 8: 315–316; 1921.

A relatively small group of crane-flies, best represented in the Holarctic and Ethiopian regions, including Madagascar. For many years the local species of *Austrolimnophila* and *Pseudolimnophila* had been confused under the latter name but now appear to be separated satisfactorily. The immature stages as known live in saturated earth, commonly in marshy and boggy areas.

Key to South African *Pseudolimnophila*

1. Wings with a supernumerary crossvein in cell R_3; (wings heavily patterned; femora black, tips and remainder of legs yellow) (fig. 69). (Subgenus *Calolimnophila* ALEXANDER) (Natal) . . . . . *xanthomelania* ALEXANDER
— Wings without supernumerary crossveins (fig. 68). (Subgenus *Pseudolimnophila* ALEXANDER) 2
2. Wings with abundant brown spots and dots along all the veins. (Southern Rhodesia) *rhodesiæ* (ALEXANDER)
— Wings not or but slightly patterned with darker, never with a series of spots along the veins 3
3. Wings quite unpatterned, except for the small and poorly indicated stigma 4
— Wings with more or less distinct clouds over the cord and, in cases, at origin of *Rs* and outer end of cell *1st* M_2 6
4. Mesonotum intensely black, pleura yellow. (Natal) . . . . . *eremnonota* ALEXANDER
— Mesonotum yellow to orange brown. 5
5. Mesonotum light orange brown, pleura pale yellow, abdomen light brown; femora pale brown, tips darkened; antennae with basal third of first flagellar segment yellow; wings with basal section of R_5 short, less than *r–m.* (Southern Rhodesia) . . . . . *aurantiaca* ALEXANDER
— Thorax fulvous orange to yellow, abdomen brownish black; legs black, only the femoral bases narrowly yellowed; antennae black throughout; wings with basal section of R_5 longer than *r–m.* (Transvaal) . . . . . *auranticollis* ALEXANDER

6. Wing pattern more distinct, especially at cord and origin of *Rs*; legs yellow. (Southern Rhodesia) . . . . . *chrysopoda* ALEXANDER

— Wing pattern very vague and ill-defined; legs yellowish brown, tarsi paler (fig. 68). (Cape Province, Natal, Transvaal, Southern Rhodesia, northwards) . . . . . *frugi* (BERGROTH)

Pseudolimnophila (Calolimnophila) xanthomelania ALEXANDER

(Fig. 69)

Pseudolimnophila (Calolimnophila) xanthomelania ALEXANDER; Ann. Natal Mus., 14: 382–384, fig. 20 (ven.); 1960.

Male. — Length about 8–8.5 mm.; wing 9–9.5 mm.; antenna about 2.6–2.7 mm.

Mesonotum light brown, patterned with darker; basal flagellar segments bicolored; legs with femora black, tips narrowly whitened, tibiae and tarsi clear light yellow; wings light brown, outer cells clearer yellow, conspicuously patterned with brown (fig. 69).

Natal: Ngoye Forest, Zululand, February 17–19, 1951 (STUCKENBERG), type.

Pseudolimnophila (Pseudolimnophila) aurantiaca ALEXANDER

Pseudolimnophila aurantiaca ALEXANDER; Ann. Mag. Nat. Hist., (9) 6: 348–349; 1920.

Male. Length 6.2–7.5 mm.; wing 6.5–8 mm.

General coloration light orange brown, pleura pale yellow; head light gray; wings pale gray, stigma light brown.

Southern Rhodesia: Mt. Chirinda, 3800 feet, March 4, 1910 (C. F. M. SWYNNERTON), type.

Pseudolimnophila (Pseudolimnophila) auranticollis ALEXANDER

Pseudolimnophila (Pseudolimnophila) auranticollis ALEXANDER; Ann. Natal Mus., 14: 265–267, fig. 11 (ven.), fig. 16 (♂ hyp.); 1958.

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

Thorax uniformly fulvous orange to yellow; abdomen black, paler basally, hypopygium fulvous; antennae and legs black; wings with a strong brownish tinge, stigma narrow, poorly defined.

Transvaal: Mariepskop, 4400 feet, October 4–8, 1956 (STUCKENBERG), type.

Pseudolimnophila (Pseudolimnophila) chrysopoda ALEXANDER

Pseudolimnophila chrysopoda ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 18: 155; 1949.

Male. — Length about 10 mm.; wing 9 mm.

Mesonotum almost uniformly light brown, praescutum faintly darkened; wings brownish yellow, restrictedly patterned with brown; abdominal tergites yellowish brown, sternites and hypopygium light yellow.

Southern Rhodesia: Umtali, Vumba Mts., 4500 feet, April 1929 (CUTHBERTSON), type.

Pseudolimnophila (Pseudolimnophila) eremnonota ALEXANDER

Pseudolimnophila (Pseudolimnophila) eremnonota ALEXANDER; Ann. Natal Mus., 14: 385, fig. 21 (ven.); 1960.

Male. — Length about 7.5 mm.; wing 8.5 mm.; antenna about 2.4 mm.

General coloration of thoracic dorsum intense black, pleura light yellow; antennae black throughout; wings strongly tinged with brown, stigma darker; abdomen, including hypopygium, brownish black.

Natal: Byrne District, Enon Estate, January 25, 1957 (STUCKENBERG), type.

Pseudolimnophila (Pseudolimnophila) frugi (BERGROTH)

(Fig. 68)

Limnophila frugi BERGROTH; Ent. Tidskr., 9: 137–138; 1888.
Limnophila frugi ALEXANDER; Ann. So. Afr. Mus., 17: 155–156, pl. 11, fig. 20 (wing); 1917.

Male. — Length about 6–7.5 mm.; wing 6–8.5 mm.

General coloration pale brown, without distinct pattern, scutellum yellowed, pleura more pruinose; legs yellowish brown, tarsi paler; wings lightly tinged with brown, stigma darker, veins of cord and outer end of cell *1st* M_2 darkened (fig. 68).

Natal: Gillets, September 1915 (BELL-MARLEY); Krantz Kloof, February 1915 (BELL-MARLEY); Pietermaritzburg, 1916 (C. AKERMAN); M'fongosi, Zululand, April–May 1916, February 1917 (W. E. JONES). — **Transvaal:** Irene, near Pretoria, April 5, 1913 (H. K. MUNRO). — **Moçambique:** Luabo, June 1957 (USHER). — **South West Africa:** Kaokoveld, Kowares, 90 miles S W of Ohopoho, swept from bush at limy stream, June 3, 1951 (BRINCK–RUDEBECK), Loc. no. 323.

The type was collected by J. A. WAHLBERG in "Caffraria".

Pseudolimnophila (Pseudolimnophila) rhodesiae (ALEXANDER)

Limnophila rhodesiae ALEXANDER; Ann. So. Afr. Mus., 18: 206–207; 1921.

Male. — Length about 6.5 mm.; wing 7 mm.

Mesonotum grayish yellow, praescutum with three dark brown stripes, pleura dark brown with a silvery gray stripe; legs yellow, femora with a narrow dark brown subterminal ring; wings grayish, with abundant brown spots along the veins; cell *1st* M_2 small, rectangular.

Natal: Hostel, Natal National Park, 5000 feet, at light, March 31, 1951 (BRINCK–RUDEBECK), Loc. no. 256. — **Southern Rhodesia:** Salisbury, May 1917 (R. W. TUCKER), type; May 1935 (CUTHBERTSON).

Limnophila MACQUART

Limnophila MACQUART; Suit. à Buffon, 1, Hist. Nat. Ins., Dipt.; 95; 1834.
Subgenus *Elæophila* (*Eloephila*) RONDANI; Prodr. Dipterol. Ital., 1: 182; 1856. Syn. *Ephelia* SCHINER; Wien. Ent. Monatsschr. 7: 222; 1864.
Elporiomyia subgen. n.

Limnophila is a major genus, particularly in the Holarctic region, with fewer species elsewhere in the world, including the Ethiopian region where representatives of five sub-

genera occur. In the South African fauna three distinct groups are found, including the subgenera *Elaeophila* and *Elporiomyia*, together with a small group of forms that are allied to the European *Limnophila filata* (WALKER), still not assigned satisfactorily to any subgenus. If a name is required for this group of species, *Neolimnomyia* SÉGUY (type *L. sylvestris* SÉGUY, France) is available [Bull. mensuel Ass. Nat. Vallée du Loing, 13: 6–7, figs. (ven., ♂ hyp.); 1937].

The immature stages of *Limnophila* as known live in wet to saturated earth or sand, commonly in marshes and bogs or at stream margins. Of the local species, Dr. WOOD reared *Limnophila* (*Elaeophila*) *dubiosa*, *L.* (*Elporiomyia*) *crepuscula* and *L.* (*Elporiomyia*) *nox*.

Key to South African *Limnophila*

1. Wings with a supernumerary crossvein in cell *M*. (Subgenus *Elaeophila* RONDANI) 2
— Wings without supernumerary crossveins 5
2. Wing markings small and abundant, restricted to the vicinity of the veins; anterior two branches of *Rs* long, extending generally parallel to one another for virtually their whole length, cell R_2 at margin more extensive than cell R_3; cell *1st* M_2 irregularly pentagonal, *m* long, arcuated, approximately twice the basal section of M_3. (Cape Province) . . . . . *venaguttula* ALEXANDER
— Wing markings abundant, some of the costal areas larger, with dots and spots in the cells away from the veins; anterior two branches of *Rs* shorter, diverging gently, so cells R_2 and R_3 at margin are subequal or the latter slightly more extensive; cell *1st* M_2 rectangular, *m* and basal section of M_3 subequal or approximately so 3
3. Femora uniformly darkened beyond bases; wings with five major darkened costal areas that exceed the interspaces, including one at origin of *Rs*; smaller spots on disk tending to become confluent into irregular larger areas. (Cape Province) . . . . . *dubiosa* ALEXANDER
— Femora yellow with a narrow dark brown subterminal ring; wings with darkened costal areas, excepting the stigma, smaller, particularly the one at origin of *Rs*, all smaller than the interspaces; spots on disk small and chiefly separate 4
4. Legs with femoral ring black, conspicuous; wing of male widest opposite termination of vein *1st A*; darkened dots in cells very abundant; supernumerary crossvein in cell *M* lying distad of origin of the long *Rs*; (antennae of male very long, approximately two-thirds the body). (Southern Rhodesia) . . . . . *smithersi* ALEXANDER
— Legs with femoral ring pale brown, inconspicuous; wing of male widest opposite vein *2nd A*; darkened dots in cells less numerous; supernumerary crossvein in cell *M* lying basad of the shorter *Rs*. (Southern Rhodesia) . . . . . *subannulata* ALEXANDER
5. Antennae with proximal three or four flagellar segments enlarged, subglobular; wings with vein R_{2+3+4} very short, less than the basal section of R_5; male hypopygium with setae on inner margin of outer dististyle very long and conspicuous; valves of ovipositor short and fleshy (figs. 74–76). (Subgenus *Elporiomyia* subgen. n.) 6
— Antennae with all flagellar segments normal, oval or elongate; wings with R_{2+3+4} long, twice or more the basal section of R_5; male hypopygium with setae of inner margin of outer dististyle short or lacking; valves of ovipositor elongate. (Subgenus unassigned; cf. *Neolimnomyia* SÉGUY) 8
6. Wings with cell *1st* M_2 open by atrophy of *m* (fig. 74); hypopygium (fig. 76) with outer dististyle terminating in an acute spine (figs. 74–76). (Cape Province) . . . . . *woodiana* sp. n.
— Wings with cell *1st* M_2 closed; hypopygium with outer dististyle pale, tips obtuse 7
7. Antennae with basal three flagellar segments enlarged, subglobular; ovipositor with hypovalvae obtuse at tips, with more than ten setae; male hypopygium with a strong lobe on ventral aspect of basistyle near proximal end, this densely covered with short setae. (Cape Province) . . . . . *crepuscula* WOOD
— Antennae with basal four flagellar segments enlarged; ovipositor with hypovalvae more pointed at tips,

with from six to ten apical setae; male hypopygium without a developed lobe on ventral aspect of basistyle; (setae on mesal edge of outer dististyle very long, much exceeding the diameter of the style). (Cape Province) . . . . . *nox* ALEXANDER

8. Wings slightly infuscated, still darker at costal border and along cord; (cell M_1 small, a little less than one-half its petiole). (Natal) . . . . . *hetaira* ALEXANDER

— Wings without darkened pattern other than the stigma 9

9. Wings with R_{2+3+4} shorter, from two to three times the basal section of R_5; hypopygium with setae of outer dististyle long and delicate, scattered over the entire surface, the style not extended into an apical spine. (Natal) . . . . . *natalica* ALEXANDER

— Wings with R_{2+3+4} long, nearly four times the basal section of R_5; hypopygium with setae of outer dististyle very long but sparse, lacking along the lower edge, the style with outer apical angle abruptly narrowed and extended into a strong spine. (Moçambique) . . . . . *suffilata* ALEXANDER

Limnophila (Elaeophila) dubiosa ALEXANDER

Limnophila dubiosa ALEXANDER; Ann. So. Afr. Mus., 17: 156—157; 1917.
Limnophila dubiosa WOOD; Ann. So. Afr. Mus., 39: 217—226, fig. 69 (ad.), fig. 70 (larva), fig. 71 (pupa); 1952.

Male. — Length about 6.5 mm.; wing about 7.5 mm.

Thorax dark brown; antennae elongate, flagellar segments bicolored, brownish black, tips yellow; wings yellowish white, heavily patterned with brown, including spots and dots in the cells, costal markings large.

Dr. WOOD, with an abundant series of specimens available, found considerable variation in antennal length, venation and intensity of wing pattern. He divided his material into so-called *major* and *minor* groups, the latter having the wing pattern darker, cell M_1 smaller, and the male antennae about two-thirds as long as in the *major* group. I cannot feel but that two distinct species are involved in this listing of characters and that still further investigations should be made, particularly of the male hypopygium.

The immature stages occurred in gravelly sand spits and in organic saturated mud at the margins of shallow rills and streamlets. Pupation occurred in the drier parts of the spits (WOOD).

Cape Province: Peninsula, Fernwood Ravine, Nursery Ravine, Platteklip, Chapmans Peak, January 1934 (WOOD); Kirstenbosch, in dense vegetation near small stream, October 29, 1950 (BRINCK—RUDEBECK), Loc. no. 18; Table Mountain, Blinkwater stream about 1500 feet, on rocky wall of shaded ravine, November 11, 1950 (BRINCK—RUDEBECK), Loc. no. 23; Palmiet River, January 1937; Du Toits Kloof, April, September, October 1934; Seven Weeks Poort, January 1935; Stellenbosch, April 1931 (WOOD).

Limnophila (Elaeophila) smithersi ALEXANDER

Limnophila (Elæophila) smithersi ALEXANDER; Bull. IFAN, 20, 1958, ser. A, no. 1: 128—129, fig. 4 (ven.); 1958.

Male. — Length about 6.5 mm.; wing 7 mm.; antenna about 4.3 mm.

General coloration of thorax and abdomen black, praescutum with four dark gray stripes; antennae of male very long, basal flagellar segments bicolored, their bases brownish black, tips yellow.

Southern Rhodesia: Salisbury, April 5, 1956, at light (SMITHERS), type.

Limnophila (Elaeophila) subannulata ALEXANDER

Limnophila (Elæophila) subannulata ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 15: 137–138; 1946.

Wing 7 mm. Mesonotum gray, praescutum restrictedly patterned with brown, pleura striped longitudinally with brownish black; wings pale yellow, heavily spotted and dotted with pale brown, including a series of five larger costal areas.

Southern Rhodesia: Vumba Mts., March 1935 (CUTHBERTSON), type. Among long grass at stream margin on edge of forest (CUTHBERTSON).

Limnophila (Elaeophila) venaguttula ALEXANDER

Limnophila (Elæophila) venaguttula ALEXANDER; Encycl. Entomol., Diptera, 7: 53–55; 1934.
Limnophila venaguttula WOOD; Ann. So. Afr. Mus., 39: 239–240, fig. 77 (ad.); 1952.

Male. — Length about 6.2–6.8 mm.; wing 7.2–8.4 mm.

General coloration brownish yellow, praescutum with four narrow dark brown stripes, pleura dark brown, narrowly striped longitudinally with yellow; antennae short; halteres yellow; wings light yellow, with abundant brown spots and dots along the veins.

Cape Province: Coldstream, Humansdorp, January 1921 (C. W. TUCKER), type; Harkerville Forest, January 1937, 1938 (WOOD).

Dr. WOOD states that the ovipositor is similar in structure to that of *Limnophila (Elporiomyia) nox*, indicating short fleshy valves and thus very different from other members of the subgenus *Elaeophila*.

Elporiomyia subgen. n.

Antennae (fig. 75) 16-segmented, proximal two to four flagellar segments strongly produced on ventral face, here provided with short dense setulae but without verticils; outer segments elongate, with very long verticils. Wings (fig. 74) with R_{2+3+4} short, less than the basal section of R_5. Ovipositor with both cerci and hypovalvae fleshy, their apices obtuse, provided with setae to the very tips; hypovalvae fused basally, at apex separated by a shallow emargination. Male hypopygium (fig. 76) with outer dististyle setiferous. Phallosome with gonapophyses appearing as flattened blades that are extended into acute spines. Aedeagus short and stout, tip blunt or membranous.

Type of subgenus: *Limnophila nox* ALEXANDER (Ethiopian region: Southwest Cape).

Other included species: *Limnophila crepuscula* WOOD, *Limnophila (Elporiomyia) woodiana* sp. n.

In the structure of the antennae and in the venation, this new group much resembles the subgenus *Afrolimnophila* ALEXANDER, of tropical Africa, differing evidently in the genital structures in both sexes. In *Afrolimnophila*, the valves of the ovipositor are elongate and heavily sclerotized to their tips. Male hypopygium with the outer dististyle a slender glabrous rod, narrowed to the acute tip. Phallosome with gonapophyses appearing as narrow paddle-like blades; aedeagus elongate, the tip narrowed and strongly recurved.

Limnophila (Elporiomyia) crepuscula WOOD

Limnophila crepusculum WOOD; Ann. So. Afr. Mus., 39: 226–235, fig. 72 (ad. antenna), fig. 73 (ad), fig. 74 (larva), figs. 75, 76 (pupa); 1952.

Male. — Length about 6 mm.; wing 5—5.5 mm.

Mesonotum umber brown, posterior border of mediotergite black; legs dark brown; wings brownish black, with darkened veins; abdomen brown, outer three segments more darkened.

Dr. WOOD found the males along the banks of a small stream, engaged in a dance suggesting that of certain Trichoptera, or else resting on small pebbles near the edge of the water. The immatures occurred in the sand spits of this habitat.

Cape Province: Peninsula, Kasteels Poort, January 1934, 1935; Orange Kloof, January, March 1934; Platteklip, December 1933, November 1934; Red Gods, January 1933 (WOOD); Franschhoek Bosreserve, Upper Berg River, 2500 feet, on low bushes along clear high mountain torrent, November 1, 1950 (BRINCK—RUDEBECK), Loc. no. 21.

Limnophila (Elporiomyia) nox ALEXANDER

Limnophila nox ALEXANDER; Ann. So. Afr. Mus., 18: 207–208, pl. 3, fig. 7 (ven.); 1921.
Limnophila nox WOOD; Ann. So. Afr. Mus., 39: 235–239, fig. 72 (ant.), fig. 73 (ad.), fig. 76 (pupa); 1952.

Male. — Length 7–8 mm.; wing 6–7.5 mm.

Thorax dark brown, pleura lighter colored; halteres and legs black; wings brownish black, veins darker.

Dr. WOOD found the adult flies about the margins of a marsh of saturated red ooze, the larvae occurring in the mud beneath the water.

Cape Province: Matroosberg, 3500 feet, November 1917 (LIGHTFOOT), type; French Hoek Pass, December 4, 1916 (BARNARD), September, October 1933 (WOOD); Landdrost, January 1933; Oudebosch, 3000 feet, January 1934 (WOOD); Paarl, October 1919 (REV. G. HAWKE); Skurfteberg, Alfreds Berg Pass, 10 miles NNW of Ceres, in mountain heath near small stream, February 12, 1951 (BRINCK—RUDEBECK), Loc. no. 181; Slopes of Formosa Peak, Tzitzikama Mountains, in vegetation near small stream, January 13, 1951 (BRINCK—RUDEBECK), Loc. no. 137.

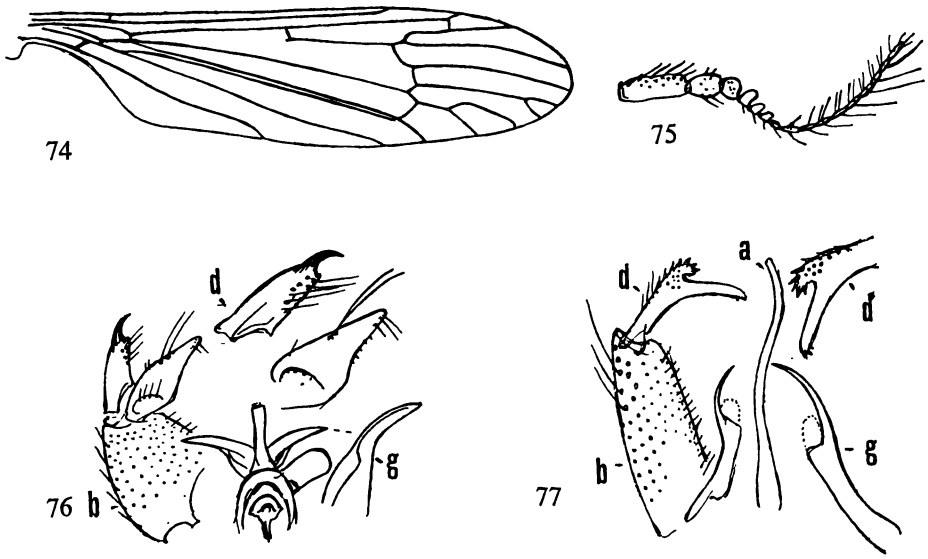
Limnophila (Elporiomyia) woodiana sp. n.

(Figs. 74–76)

Size small (wing of male 6 mm.); general coloration brown, praescutum darker medially; antennae with proximal four flagellar segments produced and without verticils beneath, outer segments long, with very long verticils; legs brown; wings with a dusky tinge, unpatterned; macrotrichia on veins beyond cord; vein Sc_2 atrophied or barely indicated; cell M_2 open by atrophy of m; male hypopygium with outer dististyle terminating in an acute blackened spine; inner style pale, narrowed to a subacute point, with sparse setae, two on outer margin at near midlength of unusual length.

Male. — Length about 6.5 mm.; wing 6 mm.; antenna about 1 mm.

Described from alcoholic material.



Figs. 74-77. — 74. *Limnophila* (*Elporiomyia*) *woodiana* ALEXANDER, sp. n. venation. — 75. Antenna. — 76. Male hypopygium. — 77. *Atarba* (*Atarbodes*) *leptophallus* ALEXANDER, sp. n.; male hypopygium. (Symbols: *a*, aedeagus; *b*, basistyle; *d*, dististyle; *g*, gonapophysis).

Rostrum light brown, palpi 3-segmented, relatively short. Antennae (fig. 75) 16-segmented, brown, outer flagellar segments slightly paler; scape elongate, pedicel large, short-oval; four proximal flagellar segments enlarged on ventral face which lack verticils, fifth segment scarcely produced but similarly without verticils, dorsal aspect with a small weak seta; remaining flagellar segments subcylindrical, relatively long, with very long conspicuous verticils, on dorsal face with a single bristle of unusual length, on ventral aspect with three shorter setae, all much longer than the segments. Head dark brown, pale beneath; anterior vertex broad.

Pronotum brown, with very short setae. Mesonotum brown, praescutum darker medially; pseudosutural foveae very large; mesonotum virtually glabrous, scutellum with sparse pale setae. Pleura more yellowed, especially ventrally. Halteres yellow, knobs large, oval. Legs with coxae and trochanters yellow; femora brown, more yellowed basally, tibiae and tarsi dark brown. Wings (fig. 74) with a dusky tinge, unpatterned; veins stout, pale brown. Macrotrichia on veins beyond cord, lacking on veins basad of cord, including *Rs*. Venation: Sc_1 ending just before fork of *Rs*, Sc_2 lacking or indicated by a vague shadow at extreme tip of Sc_1; *Rs* long, weakly angulated at origin; R_{2+3+4} shorter than basal section of R_5, the latter angulated to spurred; *m* lacking, opening cell M_2; cell M_1 small; *m–cu* about one-third its length beyond fork of *M*; cell *2nd A* broad.

Abdominal tergites dark cinnamon brown, sternites yellow, hypopygium light brown. Male hypopygium (fig. 76) with the basistyle, *b*, stout, without lobes. Dististyles, *d*, two, terminal, outer style darkened, at tip produced into an acute gently curved black spine; lower surface of outer half with approximately ten or eleven long setae; inner style longer, pale, narrowed to a subacute point, outer margin at near midlength with two very long setae,

apex beneath with shorter setae. Phallosome with gonapophyses appearing as flattened pale blades that narrow into acute spines; aedeagus relatively short, tip truncate.

Cape Province: Swartbergpas, Platberg, about 5000 feet, in wet ravine near waterfall, January 6, 1951. Holotype, alcoholic ♂, (BRINCK—RUDEBECK), Loc. no. 120.

I take great pleasure in dedicating this fly to Dr. H. G. WOOD, author of one of the outstanding works on the biology of Diptera. The fly is readily told from the other known species of the subgenus by the open cell M_2 of the wings and by the structure of the male hypopygium, particularly the dististyles, including the acute terminal spine of the outer style.

Limnophila hetaira ALEXANDER

Limnophila hetaira ALEXANDER; Ann. Natal Mus., 13: 424—426, fig. 27 (ven.); 1956.

Female. — Length about 6.5 mm.; wing 6×1.75 mm.

Belongs to the *filata* group; thorax dark brown, scarcely patterned; antennae black; legs dark brown, femoral bases paler; wings relatively broad, tinged with brown, vaguely patterned with still darker brown, including the stigma.

Natal: Cathedral Peak Area, Drakensberg, 6400 feet, March 19—23, 1955 (STUCKENBERG), type.

Limnophila natalica ALEXANDER

Limnophila natalica ALEXANDER; Ann. Natal Mus., 13: 426—427, fig. 32 (ven.), fig. 36 (♂ hyp.); 1956.

Male. — Length about 4.4—4.5 mm.; wing 5.2—5.3 mm.; antenna about 0.8 mm.

Belongs to the *filata* group; thorax medium brown, without pattern; antennae black throughout, outer segments with conspicuous verticils; halteres pale, knobs slightly darkened; legs brown; wings weakly tinged with gray, unpatterned.

Natal: Town Bush, Pietermaritzburg, November 2, 1954, November 11, 1955 (STUCKENBERG), type.

Limnophila suffilata ALEXANDER

Limnophila suffilata ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 15: 138—139; 1946.

Male. — Length about 5.5 mm.; wing 6×1.4 mm.

Belongs to the *filata* group; general coloration dark brown, praescutum with three darker brown stripes, the median one narrowly divided anteriorly; halteres yellow; wings relatively narrow, weakly tinged with brown, stigma slightly darker.

Moçambique: Border Farm, Rio Jardin, April 1929 (CUTHBERTSON), type; Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG).

Hexatoma LATREILLE

Hexatoma LATREILLE; Gen. Crust. et Ins., 4: 260; 1809.
Anisomera MEIGEN; Syst. Beschr. Zweifl. Ins., 1: 210; 1818.
Subgenus *Eriocera* MACQUART; Dipt. Exot., 1: 75; 1838.

Hexatoma is one of the largest genera in the family, including some hundreds of species, virtually all in the subgenus *Eriocera*. The genus attains its greatest development in the Neotropical and Oriental regions, being poorest in Australia, lacking in New Zealand. In Africa the genus is well represented both on the mainland and in Madagascar. The immature stages as known live in wet sand or gravel in or on margins of streams, with other species occurring in saturated organic silt in swampy or marshy areas. The larvae are probably the most carnivorous and voracious within the family.

Key to South African *Hexatoma*

1. General coloration opaque black, abdomen with a conspicuous yellow basal ring; wings blackened, with three white spots at apex. (Moçambique; Ceylon) . . . . . *albonotata* (LOEW)
— Coloration not as above 2
2. Vein R_2 at or beyond the fork, in the latter case preserving a short element R_{2+3}; (antennae of male very long; legs dark brown, femora and tibae vaguely more yellowed at tips). (Moçambique, Southern Rhodesia) . . . . . *shawanoensis* ALEXANDER
— Vein R_2 before the fork, preserving a short to longer element R_{3+4} 3
3. Antennae short in both sexes; wings conspicuously patterned, the ground yellowed, all veins seamed with brown; vein R_{3+4} long, subequal to or longer than R_4. (Transvaal, Basutoland) *bevisi* ALEXANDER
— Antennae of male greatly lengthened, much longer than the wing, short in female; wings without distinct pattern, most evident in *prepositа* where the radial veins are narrowly darkened; vein R_{3+4} short, less than one-half R_4 4
4. Large species (wing of male about 14 mm.); vein R_{1+2} longer than R_2; vein R_4 deflected strongly to wing tip, cell R_3 wide; (legs yellow, tips of femora and tibiae narrowly brownish black) (fig. 3). (Natal, Southern Rhodesia) . . . . . *prepositа* ALEXANDER
— Smaller species (wing less than 10 mm.); vein R_{1+2} shorter than R_2; vein R_4 straight, ending far before wing tip 5
5. Size larger (wing of male 8.5 mm.); general coloration black, legs black; *Rs* longer, nearly three times cell *1st* M_2 (fig. 71). (Transvaal, Southern Rhodesia) . . . . . *capensis* (ALEXANDER)
— Size smaller (wing of male less than 7.5 mm.); general coloration brown, legs yellowish brown, tips of femora and tibiae darker; *Rs* shorter, about twice cell *1st* M_2. (Transvaal) . . . . *humilis* (ALEXANDER)

Hexatoma (Eriocera) albonotata (LOEW)

Limnobia albonotata LOEW; Ber. preuss. Akad. Wissensch. Berlin, 1852: 658, pl. 1, fig. 1; 1852.
Eriocera albonotata OSTEN SACKEN; Berlin. Entomol. Zeitschr. 31: 223; 1887.
Eriocera albonotata EDWARDS; Ann. Mag. Nat. Hist., (8) 8: 65; 1911.

Female. — Length about 19–20 mm.; wing 14–15 mm.

Opaque black, abdomen black, segments two and three yellow; halteres black; legs yellow, tips of femora and tibiae narrowly infuscated, tarsi blackened at tips; wings blackened, with three white spots at apex, the posterior one largest; cell M_1 lacking.

Moçambique: type female, collected by WILHELM CARL HARTWIG PETERS, between 1844 and 1848.

The species has not been re-discovered in the Ethiopian region and some question may be raised concerning the record. The species is locally common in Ceylon.

Hexatoma (Eriocera) bevisi ALEXANDER

Hexatoma (Eriocera) bevisi ALEXANDER; Durban Mus. Novit., 4: 318–319, fig. 15 (ven.); 1956.

Male. — Length about 11 mm.; wing 10 mm.; antenna about 2.5 mm.

General coloration of thorax black, sparsely pruinose, praescutum with three black stripes; head chestnut brown, vertical tubercle large, tumid, entire; antennae short, 7-segmented; femora yellow, tips conspicuously black; setae of posterior legs short; wing with cell R_3 small, triangular, veins glabrous; abdomen obscure orange.

Transvaal: Mariepskop, 4400 feet, October 4–8, 1956 (STUCKENBERG). — **Basutoland:** Pulane, near Mateka, January 5, 1954 (BEVIS), type.

Hexatoma (Eriocera) capensis (ALEXANDER)

(Fig. 71)

Eriocera capensis ALEXANDER; Ann. So. Afr. Mus., 18: 210–211, pl. 3, fig. 8 (wing); 1921.

Male. — Length about 7 mm.; wing 8.5 mm.

Thorax black, sparsely dusted with gray; antennae of male long; vertical tubercle very large, globular; legs black; wings suffused with brown, stigma and veins darker brown; abdomen black (fig. 71).

Transvaal: Junction of the Crocodile and Marico rivers, February 1918 (R. W. TUCKER), types.

Hexatoma (Eriocera) humilis (ALEXANDER)

Eriocera humilis ALEXANDER; Ann. So. Afr. Mus., 18: 211, pl. 3, fig. 9 (wing); 1921.

Male. — Length about 5.6 mm.; wing 7.3 mm.; antenna about 15 mm.

Brown; legs yellowish brown, tips of femora and tibiae darker; wings pale brown, stigma very faintly darkened.

Transvaal: Junction of the Crocodile and Marico rivers, February 1918 (R. W. TUCKER), types.

Hexatoma (Eriocera) preposita ALEXANDER

(Fig. 3)

Hexatoma (Eriocera) preposita ALEXANDER; Ann. Natal Mus., 13: 416–417; 1956.

Male. — Length about 10–10.5 mm.; wing 14–15 mm.; antenna about 25 mm.

Mesonotal praescutum light gray with four conspicuous dark brown stripes, interspaces with long erect pale setae; femora and tibiae yellow, tips narrowly blackened; wings weakly tinged with yellow, stigma and narrow seams to the veins dark brown; veins unusually glabrous, beyond cord a sparse series on vein R_5 (fig. 3).

Natal: Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG), type. — **Southern Rhodesia:** Salisbury, March 3, 1957 (SMITHERS).

Hexatoma (Eriocera) shawanoensis ALEXANDER

Hexatoma (Eriocera) shawanoensis ALEXANDER; Journ. Ent. Soc. So. Afr., 22: 55–56, fig. 4 (ven.); 1959.

Male. — Length about 11–13 mm.; wing 14–17 mm.; antennae 42–50 mm.

General coloration of mesonotal praescutum gray with four poorly indicated light brown stripes; femora obscure yellow or brown, outer half paling to brownish yellow, tibiae and tarsi brown; posterior tibiae and tarsi with long setae; wings whitish subhyaline, restrictedly patterned with darker; cells *C* and *Sc* pale brown, stigmal area very small; veins unusually glabrous.

Moçambique: Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG) — **Southern Rhodesia:** Shawanoe River, January 27, 1957 (SMITHERS), type; Chirinda Forest, November 1930, among long grass in wet patch in clearing (CUTHBERTSON), earlier reported as *tumidiscapa* (ALEXANDER) in Ruwenzori Report 1934–35, Tipulidae, p. 297; 1956.

Elephantomyia OSTEN SACKEN

Elephantomyia OSTEN SACKEN; Proc. Acad. Nat. Sci. Philadelphia 1859: 220; 1859.

Elephantomyia is a relatively extensive genus with representatives in all regions of the world, including New Zealand and Madagascar. It is well represented in Africa including the local fauna.

The immature stages of the genotype, *westwoodi* OSTEN SACKEN, of eastern North America, and various other species occur in the decaying wood of prostrate hardwood trees. In South Africa some species have this habitat, including *montana*, but others that seem certainly to be congeneric have been found living in wet moss cushions near margins of streams, these including *aurantiaca* and *pseudosimilis* in the local fauna. Moreover there are striking differences in larval structure as is discussed further under *aurantiaca*.

Key to South African *Elephantomyia*

1. Wings conspicuously patterned with brown 2
— Wings unpatterned or virtually so, except for the stigma when this is present; in *montana* with very faint seams over anterior cord and near outer end of vein Cu_1 4
2. Wing pattern very heavy, involving the Anal field; cells R_2 and R_4 at margin subequal in extent. (Natal) . . . . . *pringlei* ALEXANDER
— Wing pattern more restricted, not involving the Anal field or scarcely so; cell R_2 at margin fully three times as extensive as cell R_4 3
3. Praescutum dark, with three still darker stripes; pleura darkened, light gray pruinose; abdomen light brown; wings with outer radial cells long and narrow; cell *1st* M_2 large, longer than vein M_3 beyond it. (Cape Province) . . . . . *pseudosimilis* ALEXANDER
— Praescutum brownish yellow, with four darker brown stripes, pleura brownish yellow, virtually unpatterned; abdominal tergites bicolored, bases broadly brownish yellow, apices dark brown; wings with outer radial cells broader; cell *1st* M_2 relatively small, about two-thirds vein M_3 beyond it. (Moçambique) . . . . . *mossambica* ALEXANDER
4. Wings with *Rs* in approximate longitudinal alignment with distal section of vein R_5; *m–cu* before fork of *M*. (Southern Rhodesia) . . . . . *grahami* ALEXANDER

— Wings with *Rs* not in longitudinal alignment with distal section of R_5, there being a short transverse to sublongitudinal (*laetifica*) basal section of the latter; *m–cu* beyond fork of *M* 5

5. Branches of *Rs* divergent, cell R_2 at margin narrower than cell R_4 (fig. 73). (Cape Province) . . . . . *aurantiaca* ALEXANDER

— Branches of *Rs* generally parallel to one another so cell R_2 at margin is much more extensive than cell R_4, least so in *ovalistigma* where it is only slightly wider 6

6. Stigma pale brown, broadly oval; anterior branch of *Rs* beyond its base extending straight to margin. (Natal) . . . . . *ovalistigma* ALEXANDER

— Stigma usually very pale and inconspicuous, where more evident (*lætifica, montana, wahlbergi*) long-oval; anterior branch of *Rs* parallelling the posterior branch, more or less sinuous, especially beneath the stigma 7

7. Wings very weakly patterned with pale brown, including very narrow seams over anterior cord and near end of vein *Cu*. (Cape Province) . . . . . *montana* ALEXANDER

— Wings unicolorous, except for the stigma 8

8. Thoracic pleura with a conspicuous darkened longitudinal stripe. (Cape Province, Natal, Transvaal) . . . . . *pleurolineata* ALEXANDER

— Thoracic pleura uniformly pale 9

9. Mesonotal praescutum light orange yellow with three pale brown stripes, posterior sclerites of notum yellow; wings strongly suffused with yellow; abdomen yellow. (Cape Province) *luteipennis* ALEXANDER

— Mesonotum pale, with a single median brown to black stripe that extends the entire length; wings subhyaline or weakly suffused; abdomen not uniformly yellow 10

10. Knobs of halteres weakly darkened; legs pale testaceous; abdominal segments bicolored, brown, with about the apical half of each yellowed. (Cape Province) . . . . . *wahlbergi* BERGROTH

— Halteres brownish black, base of stem yellow; legs chiefly blackened; abdominal tergites black, sternites abruptly yellow. (Natal) . . . . . *lætifica* ALEXANDER

Elephantomyia (Elephantomyia) aurantiaca ALEXANDER

(Fig. 73)

Elephantomyia aurantiaca ALEXANDER; Ann. So. Afr. Mus., 17: 146, pl. 10, fig. 8 (wing); 1917.
Elephantomyia aurantiaca WOOD; Ann. So. Afr. Mus., 39: 242–247, fig. 78 (ad., larva), fig. 79 (pupa); 1952.

Male. — Length, excluding rostrum, 5–6 mm.; wing 5.8–6 mm.; rostrum about 3.5 mm.

Thorax orange, without pattern, mediotergite blackened; head gray pruinose; legs brown, femoral bases broadly pale; wings brownish yellow, outer radial field and anal angle slightly darkened; Sc_1 ending about opposite one-half to two-thirds *Rs*; abdomen orange (fig. 73).

Dr. WOOD found the immature stages living in moss on a small cascade and in wet sandy moss-covered soil along the margins of forest rills.

The massive head-capsule of the larva of this species presents an anomaly, since it is at variance with that of other species whose immature stages are known. The head structure is more as in the genus *Helius* and it may be that the two genera are closer than had been believed. It should be noted, however, that *Elephantomyia montana*, as reared by Dr. WOOD, has a larval habitat and head structure quite normal for the genus.

A careful comparison of the adults of *aurantiaca* and *montana* reveals no essential generic differences and the problem of how the two species can have such very different larval heads remains unanswered. If the work of rearing the materials had been done by a person less careful and critical than Dr. WOOD it might be suspected that an error in associa-

tion of the larva and adult had been made. Future work on the immature stages of various species of *Elephantomyia* will help solve this problem.

Cape Province: Peninsula, Table Mt., February 1919 (R. W. TUCKER); Fernwood Ravine, February 1934, 1935; Kasteels Poort, February 1933, January 1934; Orange Kloof, January, March 1933, January 1934; Platteklip, March 1933 (WOOD); Hout Bay, Skoorsteenkop, in insect trap in dense indigenous forest on mountain slope, December 23—27, 1950, January 22, 28, 1951 (BRINCK—RUDEBECK), Loc. nos. 95, 157, 161; Ceres, April 1913 (LIGHTFOOT), type; Hottentot Hollands Mts., 4000 feet, March 1919 (BARNARD); Witte River, Wellington, 1500 feet, November 1922 (BARNARD); Montagu, October 1919 (R. W. TUCKER); French Hoek Pass, December 1933; Landdrost, March 1919; Meirings Poort, Spitzkop, September 1935 (WOOD); Maanschijnkop, 7 miles E of Hermanus, damp and shady environment along stream near waterfall, December 21, 1950 (BRINCK—RUDEBECK), Loc. no. 93.

Elephantomyia (Elephantomyia) grahami ALEXANDER

Elephantomyia (*Elephantomyia*) *grahami* ALEXANDER; Ann. Natal Mus., 14: 148—150, fig. 15 (♂ hyp.), fig. 20 (ven.); 1957.

Male. — Length, excluding rostrum, about 6.5 mm.; wing 7.3 mm.; rostrum about 4 mm.

Mesonotum reddish brown, praescutum and scutal lobes patterned with brownish black; rostrum relatively short; halteres yellow; wings subhyaline, stigma short-oval, very pale; costal fringe short; vein *Sc* relatively short, Sc_1 ending about opposite two-thirds *Rs*; abdomen dark brown, hypopygium yellowed.

Southern Rhodesia: Odzani River, on main road between Inyanga and Umtali, January 15, 1955 (GRAHAM), type.

Elephantomyia (Elephantomyia) laetifica ALEXANDER

Elephantomyia (*Elephantomyia*) *laetifica* ALEXANDER; Ann. Natal Mus., 385—386, fig. 22 (ven.); 1960.

Female. — Length, excluding rostrum, about 7 mm.; wing 6 mm.; rostrum about 3.2 mm.

General coloration light yellow, with a conspicuous black central stripe extending from the posterior part of head to base of abdomen; rostrum short; halteres and legs brownish black to black; wings weakly suffused, stigma darker, veins very distinct; cell *1st* M_2 quadrate, with *m—cu* at near midlength; abdominal tergites uniformly blackened, sternites abruptly yellow.

Natal: Hilton Road, Pietermaritzburg, December 1956 (GRAHAM), type.

Elephantomyia (Elephantomyia) luteipennis ALEXANDER

Elephantomyia (*Elephantomyia*) *luteipennis* ALEXANDER; Encycl. Entomol., Diptera: 7: 55—56; 1934.

Female. — Length, excluding rostrum, about 10—11 mm.; wing 9.4—9.8 mm.

General coloration yellow, praescutum with three narrow darker stripes; head light gray; legs black, femoral bases narrowly yellowed; wings strongly yellowed, stigma scarcely evident; basal section of vein R_5 long, oblique, more than twice *r—m*.

Cape Province: Coldstream, Humansdorp Division, January 1921 (R. W. TUCKER), types.

Elephantomyia (Elephantomyia) montana ALEXANDER

Elephantomyia (Elephantomyia) wahlbergi montana ALEXANDER; Encycl. Entomol., Diptera: 7: 56–57; 1934.
Elephantomyia montana WOOD; Ann. So. Afr. Mus., 39: 247–251, fig. 80 (ven.), fig. 81 (larva, pupa, ad.); 1952.

Male. — Length, excluding rostrum, about 5 mm.; wing 6.4 mm.; rostrum about 4.5–5 mm.

Mesonotal praescutum obscure brownish yellow with a broad dark brown median stripe, pleura uniformly obscure yellow; wings subhyaline, very narrowly and vaguely clouded with pale brown over cord and outer end of cell *1st* M_2; *Rs* unusually short and arcuated, scarcely longer than cell *1st* M_2; abdominal tergites bicolored, dark brown, lateral and posterior margins obscure yellow, subterminal segment black, hypopygium yellow.

Dr. WOOD and colleagues found the immature stages living in a fallen log of *Halleria* lying over a forest stream. They occurred in saturated rust-colored scum beneath the crumbly bark, pupation taking place immediately beneath the epidermal layer.

Cape Province: Peninsula, Fernwood, December 1934, January 1935; Window Gorge, October 1934 (WOOD). Oudebosch, December 1920 (LIGHTFOOT), type; September 1933, 1937 (WOOD).

Elephantomyia (Elephantomyia) mossambica ALEXANDER

Elephantomyia (Elephantomyia) mossambica ALEXANDER; Ann. Natal Mus., 15: 26—27, fig. 21 (wing); 1960.

Male. — Length, excluding rostrum, about 8.5 mm.; wing 8 mm.; rostrum about 8.5 mm.

Mesonotal praescutum brownish yellow, with four darker brown stripes, mediotergite dark brown; rostrum very long; legs brownish black; wings subhyaline, with a sparse brown pattern.

Moçambique: West side of Gorongoza Mt., 840—1200 meters, September 1957 (STUCKENBERG), type.

Elephantomyia (Elephantomyia) ovalistigma ALEXANDER

Elephantomyia (Elephantomyia) ovalistigma ALEXANDER; Ann. Natal Mus., 13: 417–419; 1956.

Female. — Length, excluding rostrum, about 6.5 mm.; wing 6.5 mm.; rostrum about 4 mm.

General coloration of notum dark brown, pleura dark brown in front, posterior sclerites paler; knobs of halteres infuscated; legs brown; wings weakly tinged with brown, stigma oval, darker brown; abdominal tergites dark brown, sternites a little paler.

Natal: Saint Helier Estate, near Hillcrest, December 20, 1954 (STUCKENBERG), type.

Elephantomyia (Elephantomyia) pleurolineata ALEXANDER

Elephantomyia (Elephantomyia) pleurolineata ALEXANDER; Ann. Natal Mus., 13: 402–403, fig. 3 (ven.), fig. 11 (♂ hyp.); 1956.

Male. — Length, excluding rostrum, about 8.5 mm.; wing 9 mm.; rostrum about 8.5 mm.

Mesonotum light brown, patterned with darker, pleura buffy, with a brownish black dorsal stripe; rostrum very long; legs dark brown; wings weakly darkened, restrictedly

patterned with darker brown; abdominal tergites obscure yellow, broadly margined with brown, sternites more uniformly pale, hypopygium obscure yellow.

Cape Province: Grahamstown, October 24, 1953 (STUCKENBERG), type. — **Natal:** Cathedral Peak Area, Drakensberg, November 5, 1955 (STUCKENBERG).

Elephantomyia (Elephantomyia) pringlei ALEXANDER

Elephantomyia (Elephantomyia) pringlei ALEXANDER; Ann. Natal Mus., 14: 267–268, fig. 12 (ven.); 1958.

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

General coloration of thorax gray, conspicuously patterned with black; antennae black throughout; halteres yellow; legs dark brown to black; wings whitish subhyaline, very heavily patterned with brown; branches of *Rs* diverging outwardly; cell *1st* M_2 very large, the inner end arcuated.

Natal: Kranskop, October 12, 1956 (STUCKENBERG), type.

Elephantomyia (Elephantomyia) pseudosimilis ALEXANDER

Elephantomyia insularis pseudosimilis ALEXANDER; Ann. So. Afr. Mus., 18: 188–189; 1921.
Elephantomyia pseudosimilis WOOD; Ann. So. Afr. Mus., 39: 251, fig. 80 (ven.); 1952.

Male. — Length, excluding rostrum, about 5.5–6 mm.; wing 5.8–6.2 mm.; rostrum 4–4.2 mm.

General coloration dark, praescutum with three darker stripes; rostrum brownish black; legs dark brown, femoral bases narrowly yellowed; branches of *Rs* strongly decurved outwardly, parallel to one another so cell R_2 at margin is somewhat more than three times cell R_4.

Dr. WOOD's figure of the venation does not agree with the holotype in that the anterior branch of *Rs* is not sinuous and arched beyond midlength and the disproportion at margin between cells R_2 and R_4 is not typical of the species.

Larvae were found by WOOD living in moss cushions along the margins of streams, a habitat much like that of *Elephantomyia (Elephantomyia) aurantiaca.*

Cape Province: Cape Peninsula, Kasteels Poort, October 1932; Echo Valley, March 1932 (WOOD); Oudebosch, 1500 feet, January 1919 (BARNARD), type; Michell's Pass, October 1934; Zwartberg Pass, February 1932 (WOOD).

Elephantomyia (Elephantomyia) wahlbergi BERGROTH

Elephantomyia Wahlbergi BERGROTH; Ent. Tidskr., 9: 129, fig. 1 (ad. head); 1888.

Male. — Length, excluding rostrum, about 5.5 mm.; wing 7 mm.

Thoracic dorsum yellow with a median brown stripe that extends from pronotum to base of abdomen; wings subhyaline, stigma darkened; halteres pale, apex of knob slightly

darkened; abdominal tergites bicolored, basal half of each segment dark brown, apical half yellow, hypopygium yellow.

Caffraria (WAHLBERG), type.

The species was named for JOHAN AUGUST WAHLBERG (1810–1856), renowned Swedish naturalist and collector in South Africa, 1839–1845, 1853–1856, killed by an elephant. A detailed account of WAHLBERG's life, with portrait, and indicating his itinerary in South Africa, has been provided by BRINCK (South African Animal Life, 1: 25–34; 1955).

Atarba OSTEN SACKEN

Atarba OSTEN SACKEN; Mon. Dipt. No. Amer., 4: 127–128; 1869.
Subgenus *Atarbodes* ALEXANDER; Ann. Ent. Soc. America, 13: 255; 1920.

Atarba is a relatively large genus with representatives in all major regions of the world, including New Zealand and Madagascar, with a great concentration of species in the Neotropics. The subgenus *Atarbodes* was proposed for those species lacking tibial spurs and most of the local species fall here. *Atarba stuckenbergi* has evident tibial spurs and belongs to the typical subgenus. The immature stages as known live in sodden decaying hardwood logs, pupation taking place near the surface in a silk-lined cocoon covered with wooden fibres.

Key to South African *Atarba*

1. Legs handsomely patterned, yellow, tips of femora broadly brownish black, tibiae more narrowly so; wings pale yellow with a conspicuous brown pattern, including stigma, cord, outer end of cell *1st* M_2 and marginal seams on all veins; tibial spurs present. (Subgenus *Atarba* OSTEN SACKEN) (Natal) . . . . . *stuckenbergi* ALEXANDER
— Legs yellow with at most the tips of femora and tibiae narrowly darkened; wings unpatterned; tibial spurs lacking (not known for *capensis*). 2
2. Wings with branches of *Rs* divergent, cell R_4 at margin more extensive than cell R_2; abdomen brown with a black subterminal ring; hypopygium with two dististyles (fig. 72). (Cape Province) . . . . . *capensis* ALEXANDER
— Wings with branches of *Rs* more nearly parallel, cell R_2 more extensive at margin than cell R_4; hypopygium with a single dististyle. (Subgenus *Atarbodes* ALEXANDER) 3
3. Legs yellow, tips of femora and tibiae not darkened; abdomen yellow without subterminal ring; hypopygium with aedeagus relatively stout, about as long as the basistyle. (Moçambique, Southern Rhodesia) . . . . . *rhodesiae* ALEXANDER
— Legs yellow, tips of femora and tibiae narrowly blackened; abdomen yellow, subterminal segments darkened to form a narrow ring; hypopygium with aedeagus long and slender, exceeding the basistyle in length 4
4. Hypopygium (fig. 77) with the gonapophysis subequal in length to the dististyle, terminating in a gently curved acute spine that narrows to a long needlelike point. (Cape Province) . . . . . *leptophallus* sp. n.
— Hypopygium with gonapophysis shorter than the dististyle, terminating in a short curved point . . . . (Natal) . . . . . *dolichophallus* ALEXANDER

Atarba (Atarba) stuckenbergi ALEXANDER

Atarba (Atarba) stuckenbergi ALEXANDER; Ann. Natal Mus., 14: 387–389, fig. 19 (♂ hyp.). fig. 24 (ven.); 1960.

Male. — Length about 5.5 mm.; wing 5 mm.; antenna about 0.9 mm.

General coloration of mesonotum light yellowish brown, narrowly bordered by darker brown, pleura yellow, patterned with dark brown; antennae and halteres pale yellow; legs yellow, tips of fore and middle femora broadly brownish black, of posterior femora less distinctly so; wings pale yellow, conspicuously patterned with brown; *Sc* short, cell *1st* M_2 closed; hypopygium with the dististyles united at base only; aedeagus very long and slender.

Natal: Zwartkop, near Pietermaritzburg, May 16, 1957; Ngoye Forest, Zululand, February 17—19, 1957 (STUCKENBERG), types.

Atarba (Atarbodes) dolichophallus ALEXANDER

Atarba (Atarba) dolichophallus ALEXANDER; Ann. Natal Mus., 14: 386—387, fig. 17 (♂ hyp.), fig. 23 (ven.); 1960.

Male. — Length about 4.5—4.6 mm.; wing 4.7—5 mm.; antenna about 1.4—1.5 mm.

General coloration of body fulvous yellow, mouthparts and antennae black; halteres yellow; legs yellow, tips of femora and tibiae black; wings strongly tinged with yellow, unpatterned; cell M_2 closed or open by atrophy of basal section of vein M_3; hypopygium with outer apical angle of gonapophysis produced into a gently curved spine; aedeagus long and slender.

Natal: Zwartkop, near Pietermaritzburg, May 16, 1957 (STUCKENBERG), types.

Atarba (Atarbodes) leptophallus sp. n.

(Fig. 77)

General coloration orange yellow; abdomen with a subterminal darkened ring; antennae short, yellow; legs yellow, tips of femora and tibiae vaguely darkened; wings pale yellow, branches of *Rs* generally parallel to one another; hypopygium with a single dististyle; gonapophysis narrowed into a long gently curved spine, its tip acute, with pale membrane in the axil; aedeagus very long and slender.

Male. — Length about 5.5 mm.; wing 5.5 mm.

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

Described from alcoholic material.

Rostrum and palpi yellow. Antennae yellow throughout, short, about one-half longer than total length of head; flagellar segments oval, subequal to their verticils. Head more orange yellow.

Thorax uniformly orange yellow, without pattern. Halteres pale, knobs whitened. Legs yellow, tips of femora and tibiae, with the outer tarsal segments, slightly darkened. Wings pale yellow, veins darker yellow but difficult to delimit against the ground. Venation: *Sc* short, Sc_1 ending opposite origin of *Rs*; branches of *Rs* generally parallel to one another or only slightly divergent, cell R_2 at margin nearly one-half more extensive than cell R_4, the latter nearly one-half wider than cell R_5.

Abdomen yellow, subterminal segments darkened to form a ring. Male hypopygium (fig. 77) with the dististyle, *d*, less than one-half the length of the basistyle, *b*, single, on outer

margin at near midlength with a stout curved lobe provided with several appressed spines, apex of style a narrow subcultrate blade. Gonapophysis, *g*, approximately as long as the dististyle, the expanded base gently curved, at near two-thirds the length suddenly narrowed into a gently curved acute spine that is extended into a needlelike point; in the axil at base of spine with hyaline membrane. Aedeagus, *a*, very long, almost equal to the combined basistyle-dististyle, appearing as a pale tube, narrowed very gradually to the apex. Tergal lobes with about twenty very long setae.

Cape Province: Tzitzikama Mts., Stormsrivier, swept from vegetation in dense indigenous forest, January 13, 1951. Holotype, alcoholic ♂, (BRINCK—RUDEBECK), Loc. no. 137. Allotopotype, ♀, with the type.

The closest ally is *Atarba* (*Atarbodes*) *dolichophallus* ALEXANDER, separated by the characters given in the key. Both species have pale membrane in the axil of terminal spine of the gonapophysis.

Atarba (Atarbodes) rhodesiae ALEXANDER

Atarba (*Atarbodes*) *rhodesiae* ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 17: 20–21; 1948.

Male. — Length 4.5–4.8 mm.; wing 5.5–6 mm.; antenna about 1.2–1.3 mm.

General coloration chestnut yellow, unpatterned; antennae with basal segments yellow, outer flagellar segments black; legs yellow; wings tinged with yellow, *Sc* short; hypopygium with a single dististyle.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG). — **Southern Rhodesia:** Chirinda Forest, 3600 feet, at light in forest, November 1930 (CUTHBERTSON), types.

Atarba capensis ALEXANDER

(Fig. 72)

Atarba capensis ALEXANDER; Ann. So. Afr. Mus., 17: 147–148, pl. 10, fig. 10 (wing); 1917.
Atarba capensis WOOD; Ann. So. Afr. Mus., 39: 252–253, fig. 82 (ad.); 1952.

The nature of the tibial spurs is unknown and the species cannot definitely be assigned to a subgenus. I believe it will be found to belong to the typical subgenus *Atarba.*

Male. — Length about 4.4–4.7 mm.; wing 5.1–5.6 mm.

Thorax dull yellow, unpatterned; antennal flagellum uniformly dark brown; legs dull yellow, tips of femora and tibiae narrowly darkened; wings yellowed, without pattern; abdomen brown, male with a subterminal black ring; hypopygium with two dististyles (fig. 72).

Cape Province: Landdrost Kloof, Hottentot Hollands Mts., 4000 feet, 1915 (BARNARD), types; Knysna, October 1916 (PÉRINGUEY).

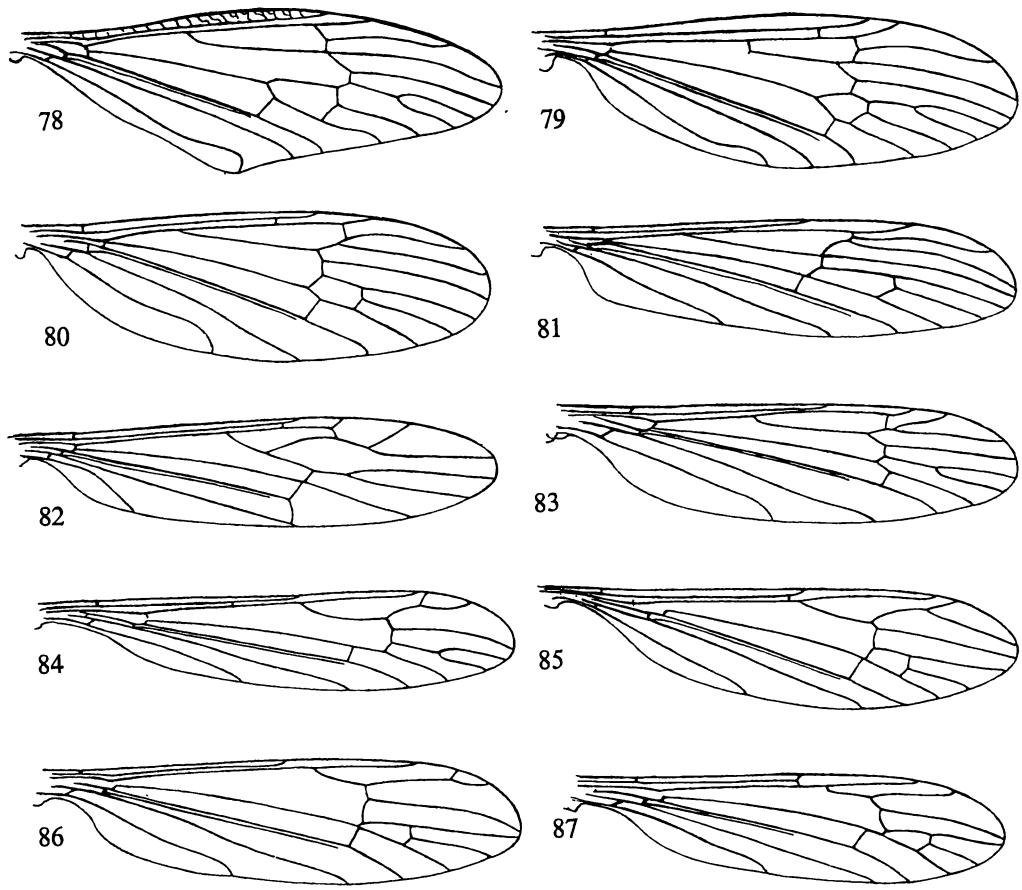
TRIBE ERIOPTERINI

The largest tribe in the Limoniinae, including many of the small and medium-sized crane-flies in the region. The various genera are placed in the tribe on the basis of adult

characters, but from the immature stages, as known, it seems probable that several of these are wrongly assigned and actually belong to the Hexatomini or other tribes. The more questionable of these groups appear to be *Conosia* and *Limnophilomyia* but various others in the subtribe Gonomyaria may be found to be in the same category.

Key to Genera of the *Eriopterini*

1. Wings with cell M_1 present; *Sc* long, Sc_1 ending not far from tip of vein R_1+_2 or beyond level of *r—m*; maxillary palpi reduced to a single elongate segment 2
— Wings with cell M_1 lacking; *Sc* generally shorter (compare *Gnophomyia*, *Trentepohlia*); maxillary palpi not 1-segmented 3
2. Crossvein *r—m* lying far distad, at or beyond level of outer end of cell *1st* M_2; costal cell with numerous narrow transverse or oblique lines or weak crossveins (fig. 78). . . . . *Conosia*
— Crossvein *r—m* more proximal in position, at or before midlength of cell *1st* M_2 (fig. 79) *Clydonodozus*
3. Frontal prolongation of head greatly lengthened, approximately one-half the remainder of body or more; setae of legs profoundly bifid (figs. 116, 117) . . . . . *Toxorhina*
— Front of head not or but slightly produced; setae of legs simple 4
4. Vein R_5 fused with M_1+_2 to form the anterior border of cell M_2 or *1st* M_2; veins Cu_1 and *1st A* usually fused at tips, closing cell *Cu* (cell open in subgenus *Paramongoma*) (fig. 82) . . . . . *Trentepohlia*
— Vein R_5 not fused with M_1+_2, crossvein *r—m* thus preserved; cell *Cu* open at margin 5
5. Vein R_1 ending at or before midlength of wing; anterior branch of *Rs* short, suberect, ending in costa before three-fourths the length of wing (fig. 115) . . . . . *Styringomyia*
— Vein R_1 ending at or beyond two-thirds the wing length; anterior branch of *Rs* commonly long, at its origin extending generally parallel to the posterior branch (R_5), ending at or beyond four-fifths the wing length 6
6. Middle and hind coxae approximated, reducing the size of the meron which is not larger than the mid-coxa. (Gonomyaria: *Gonomyia* and allies) 7
— Middle and hind coxae more separated, the meron large, more extensive than the mid-coxa, producing a "potbellied" appearance. (Eriopteraria: *Erioptera* and allies) 16
7. Two branches of *Rs* reach the wing margin (figs. 87, 99, 101, 103) 8
— Three branches of *Rs* reach the wing margin (figs. 80, 84, 83, 102) 11
8. *Rs* in direct longitudinal alignment with R_5 (fig. 103) . . . . . *Limnophilomyia*, in part
— *Rs* not in longitudinal alignment with R_5 9
9. Vein R_2 lacking. (fig. 87) . . . . . *Gonomyia*, in part
— Vein R_2 present but sometimes faint (figs. 99, 101) 10
10. Legs with normal setae only; wings with *r—m* beyond the fork of *Rs* on R_5 (fig. 101) . . *Teucholabis*
— Legs with abundant flattened scales; crossvein *r—m* before fork of *Rs* (fig. 99) . . . . . *Gymnastes*
11. Cell R_3 deep, longer than its petiole 12
— Cell R_3 shallow, shorter than its petiole 14
12. Wings handsomely patterned; *Rs* in longitudinal alignment with vein $R_2+_3+_4$ (fig. 80) *Gnophomyia*
— Wings without pattern other than the stigmal darkening; *Rs* in longitudinal alignment with vein R_5 13
13. Legs with abundant scales, additional to the normal setae; claws simple; with *r—m* close to fork of *Rs*; vein *2nd A* straight or gently concave; (ovipositor with valves short and blunt) (fig. 81) *Idiognophomyia*
— Legs with normal setae, claws with microscopic teeth; wings with *r—m* far beyond fork of *Rs*; vein *2nd A* convexly arched (fig. 102) . . . . . *Limnophilomyia*, in part
14. Vein R_2 present (fig. 83) . . . . . *Gonomyia*, in part
— Vein R_2 lacking 15
15. Vein R_1 ending before two-thirds the wing length, about opposite *r—m*; legs with abundant flattened scales, additional to the normal setae (fig. 100). . . . . *Hovamyia*
— Vein R_1 ending beyond three-fourths the wing length, some distance beyond *r—m*; legs with normal setae (figs. 84, 85) . . . . . *Gonomyia*, in part



Figs. 78-87. — 78. *Conosia irrorata* (WIEDEMANN). — 79. *Clydonodozus stuckenbergi* ALEXANDER. — 80. *Gnophomyia* (*Eugnophomyia*) *elegans* (WIEDEMANN). — 81. *Idiognophomyia capicola* (ALEXANDER). — 82. *Trentepohlia* (*Trentepohlia*) *exornata* (BERGROTH). — 83. *Gonomyia* (*Progonomyia*) *natalensis* ALEXANDER. — 84. *Gonomyia* (*Idiocera*) *spuria* BERGROTH. — 85. *Gonomyia* (*Gonomyia*) *mimetica* ALEXANDER. — 86. *Gonomyia* (*Lipophleps*) *sulphurelloides* ALEXANDER. — 87. *Gonomyia* (*Lipophleps*) *houtensis* ALEXANDER, sp. n.

16. *Rs* ending in cell R_3, with veins R_{2+3} and R_{4+5} distinct, or in direct alignment with vein R_4 (figs. 112, 113, 114) 17
— *Rs* in direct alignment with R_{2+3+4} or ending in cell R_4; vein R_4 captured by R_{2+3} to form an element R_{2+3+4} (figs. 106, 109) 18
17. *Rs* ending in cell R_3, R_{2+3} not perpendicular; hypopygium with two dististyles (fig. 114) *Molophilus*
— *Rs* in direct longitudinal alignment with vein R_4, R_{2+3} perpendicular; hypopygium with a single dististyle (figs. 112, 113) . . . . . *Tasiocera*
18. Wing cells with abundant macrotrichia (figs. 110, 120) . . . . . *Ormosia*
— Wing cells without macrotrichia 19
19. Cell R_3 deep, longer than its petiole (figs. 4, 106, 111) 20
— Cell R_3 shallow, shorter than its petiole (figs. 98, 104) 21
20. *Rs* long and straight, usually subequal in length to the outer radial branches; Sc_1 shorter, Sc_2 nearly

opposite outer end of *Rs*; *m—cu* beyond fork of *M*, at or near midlength of M_{3+4}; hypopygium with a single dististyle; ovipositor with blunt fleshy valves (fig. 111) . . . . . *Baeoura*

— *Rs* shorter, commonly less than its outer branches; Sc_1 long, Sc_2 usually just beyond origin of *Rs*, in cases opposite midlength of the vein; *m—cu* at or shortly before fork of *M*; hypopygium with two dististyles; valves of ovipositor long and sclerotized (figs. 4, 106, 107, 108, 109) . . . . . *Erioptera*

21. Vein R_2 lacking (figs. 98, 118) . . . . . *Rhabdomastix*

— Vein R_2 present (figs. 104, 105) . . . . . *Cheilotrichia*

Conosia VAN DER WULP

Conosia VAN DER WULP; Tijdr. voor Entomol., 23: 159; 1880.

A small but very distinct genus, represented by five apparently distinct species in Africa, including Madagascar. All species are Palaeotropical and one, *Conosia irrorata*, has a vast range throughout Africa, Asia, and into eastern Australia. Dr. WOOD has described the immature stages, as mentioned under *Conosia angustissima*. The structure of the larva indicates that the genus would be assigned more properly to the tribe Hexatomini.

Key to South African *Conosia*

1. Wings narrow in both sexes, broadest at near midlength; origin of *Rs* at near two-fifths the length of wing. (Cape Province, Natal, Basutoland, Southern Rhodesia, South West Africa, northwards) . . . . . *angustissima* ALEXANDER

— Wings of male broad, conspicuously dilated opposite termination of vein *2nd A*; origin of *Rs* farther basad, at near one-third the length of wing. (fig. 78) (Natal, Southern Rhodesia, northwards) . . . . . *irrorata* (WIEDEMANN)

Conosia angustissima ALEXANDER

Conosia angustissima ALEXANDER; Philipp. Jour. Sci., 33: 306, pl. 2, fig. 17 (ven.); 1927.

Conosia irrorata WOOD, in error; Ann. So. Afr. Mus., 39: 254—261, fig. 83 (ad.), fig. 84 (larva), fig. 85 (pupa); 1952.

Male. — Length about 11—12 mm.; wing 8—9 mm.

General coloration brown, thorax more pruinose laterally; praescutum with a darker brown central line and lateral darkened punctures; fore and middle femora brownish black, posterior pair paler, darkened at tips, tibiae and tarsi light yellow; wings narrow in both sexes, pale, abundantly patterned with brown spots and dashes.

Dr. WOOD found the larvae living in wet sandy gravel and reddish silt at the edge of a small trickle of water some two or three inches deep. Mature pupae and empty skins were found in drier parts of the low bank. Nearby along the same stream occurred the immature stages of *Tipula* (*Acutipula*) *pomposa* and *Gonomyia* (*Lipophleps*) *sulphurelloides*.

Cape Province: Seven Weeks Poort, January 1935 (WOOD). — **Natal:** Pinetown, Durban, March 6, 1903 (F. MUIR); Pietermaritzburg, January 5, 1911 (CLAUDE FULLER); M'fongosi, Zululand, 1914 (W. E. JONES); The Hostel, National Park, 5000 feet, April 1, 1951 (BRINCK—RUDEBECK), Loc. no. 256; Estcourt, at light, February 11, 1951 (BRINCK—RUDEBECK), Loc. no. 172. — **Transvaal:** Komati Poort, November 1918 (R. W. TUCKER); Pretoria, January 26, 1919 (H. K. MUNRO), type. — **Basutoland:** Mamathes, 5 miles

ENE of Teyateyaneng, near small stony stream, March 29, 1951 (BRINCK—RUDEBECK), Loc. no. 252. — **Moçambique:** Luabo, November 1957 (USHER). — **Southern Rhodesia:** Salisbury, March—April 1956 (SMITHERS). — **South West Africa:** Waterberg, Damaraland, February 1920 (R. W. TUCKER).

Conosia irrorata (WIEDEMANN)

(Fig. 78)

Limnobia irrorata WIEDEMANN; Aussereur. zweifl. Ins., 574; 1828.
Limnophila crux DOLESCHALL; Natuurk. Tijdschr. Nederl. Indie, 14: 388, pl. 4, fig. 3; 1857.
Limnobia substituta WALKER; List Dipt. Brit. Mus., 1: 39; 1848.
Conosia irrorata ALEXANDER; Ruwenzori Exped., 1934—35, 1, no. 7: 309; 1956.

Male. — Length about 12—13 mm.; wing 9—14 mm.

General coloration light yellowish brown, patterned much as in *angustissima*; wing pattern paler but arranged generally in the same way; wing of male conspicuously dilated opposite termination of vein *2nd A* (fig. 78).

Natal: The Hostel, National Park, 5000 feet, at light, April 3, 1951 (BRINCK—RUDEBECK), Loc. no. 259. — **Moçambique:** Luabo, September—October 1957, April 1958 (USHER). — **Southern Rhodesia:** Salisbury, April 1956, 1957 (SMITHERS).

Clydonodozus ENDERLEIN

Clydonodozus ENDERLEIN; Zool. Jahrb., Syst., 32: 57; 1912.

A small genus, best developed in the Ethiopian fauna, with about a dozen species known therefrom. A few additional forms occur in the Oriental region. The group is very close to *Conosia* and perhaps might better be given subgeneric rank in this genus.

Clydonodozus stuckenbergi ALEXANDER

(Fig. 79)

Clydonodozus stuckenbergi ALEXANDER; Ann. Natal Mus., 14: 150—151, fig. 21 (ven.); 1957.

Male. — Length about 13.5—14 mm.; wing 9.5—10 mm.

General coloration yellow to fulvous, praescutum with four brown stripes, pleura yellow, patterned with brown; femora yellow, tips narrowly blackened, tibiae brownish yellow, tips more narrowly darkened; wings yellow, heavily patterned with dark brown; abdomen clear fulvous yellow (fig. 79).

Moçambique: Villa Paiva D'Andrada, 430 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Nyachowa Falls, near Umtali, Vumba Mts., January 16, 1955 (STUCKENBERG), type.

Quathlambia ALEXANDER

Quathlambia ALEXANDER; Ann. Natal Mus., 13: 430—431; 1956.

A genus containing a single species, a curious subapterous fly related to the genus *Idiognophomyia* ALEXANDER, all species of which are full-winged.

Quathlambia stuckenbergi ALEXANDER

Quathlambia stuckenbergi ALEXANDER; Ann. Natal Mus., 13: 430–433, fig. 39 (♂ hyp.), fig. 40 (ovipos., egg); 1956.

Male. — Length 4–5.5 mm.; wing about 0.8–0.9 mm.

General coloration of thorax brownish black, pleura patterned with light yellow; antennae and legs black; halteres reduced to a small oval scale; wings pale yellow, shorter than the thorax, venation scarcely evident; ovipositor with blunt valves; hypopygium with two dististyles, the inner one narrowed into a curved blackened hook, its tip acute.

Natal: The "Organ Pipes", Cathedral Peak Area, Drakensberg, between 8,000 and 10,000 feet, in grass on steep slope, March 20, 1955 (STUCKENBERG), types.

Idiognophomyia ALEXANDER

Idiognophomyia ALEXANDER; Ann. Natal Mus., 13: 403–404; 1956.

Idiognophomyia is a small genus with about seven species widely distributed in four distinct major regions of the world. In the South African fauna three species have been discovered and it seems very possible that still others remain to be discovered. The immature stages are unknown.

Key to South African *Idiognophomyia*

1. Wings with cell M_2 open by atrophy of basal section of M_3. (Natal) . . . . . *patula* ALEXANDER
— Wings with cell *1st* M_2 closed. (fig. 81) 2
2. Wings with Sc_1 long, subequal to R_1+_2; *Rs* long, evidently longer than cell *1st* M_2; mediotergite darkened (fig. 81). (Cape Province, Natal) . . . . . *capicola* (ALEXANDER)
— Wings with Sc_1 short, less than R_1+_2; *Rs* short, subequal to cell *1st* M_2; mediotergite pale with a darkened central line. (Cape Province) . . . . . *ignava* (ALEXANDER)

Idiognophomyia capicola (ALEXANDER)

(Fig. 81)

Gnophomyia capicola ALEXANDER; Encycl. Entomol., Diptera, 7: 57–58; 1934.
Gnophomyia (Idiognophomyia) capicola ALEXANDER; Ann. Natal Mus., 13: 403–404, fig. 4 (ven.); 1956.
Idiognophomyia capicola ALEXANDER; Ann. Natal Mus., 14: 389, fig. 25 (♂ hyp.); 1960.

Male. — Length about 5.5–6 mm.; wing 7.4–8 mm.

General coloration brown, praescutal stripes nearly confluent, pleura dark brown with a ventral pale longitudinal stripe; legs light brown; wings brownish yellow, stigma dark brown, elongase; abdomen dark brown; hypopygium with a strong lobe densely provided with blackened setae on mesal face of basistyle (fig. 81).

Cape Province: Keiskamahoek, Lenye Forest, 3000 feet, June 15, 1921 (H. K. MUNRO), type. — **Natal:** Lion's Bush, Nottingham Road, August 9, 1954 (STUCKENBERG); Zwartkop, near Pietermaritzburg, May 16, 1957 (STUCKENBERG).

Idiognophomyia ignava (ALEXANDER)

Erioptera ignava ALEXANDER; Ann. Mag. Nat. Hist., (9) 6: 30–31; 1920.
Erioptera ignava WOOD; Ann. So. Afr. Mus., 39: 301; 1952.

Male. — Length about 5.8 mm.; wing 5.7 mm.

Mesonotal praescutum yellow with three reddish brown stripes, scutellum dark brown, mediotergite paler with a central brown line; pleura with a broad dark brown dorsal stripe; abdomen brownish yellow.

Cape Province: Peninsula, Cape Town, September–October (BARNARD), types.

Idiognophomyia patula ALEXANDER

Idiognophomyia patula ALEXANDER; Ann. Natal Mus., 14: 389–390, fig. 26 (♂ hyp.) fig. 33 (ven.); 1960.

Male. — Length about 7–7.5 mm.; wing 7.5–8.5 mm.; antenna about 2.7–2.8 mm.

Mesonotal praescutum and scutum black, posterior sclerites of notum dark but more obscure; pleura yellow with a blackened area on anepisternum; wings with cell M_2 open by atrophy of basal section of M_3; hypopygium without a modified lobe on mesal face of basistyle.

Natal: Lion's Bush, Nottingham Road, April 27, 1955 (STUCKENBERG), types; Zwartkop, near Pietermaritzburg May 16, 1957 (STUCKENBERG).

Gnophomyia OSTEN SACKEN

Gnophomyia OSTEN SACKEN; Proc. Acad. Nat. Sci. Philadelphia, 1859: 223; 1859.
Subgenus *Eugnophomyia* ALEXANDER; Rev. de Entomologia, 18: 72–73; 1947.

A major genus with species in most regions of the world. All local forms fall in the subgenus *Eugnophomyia* which has a few further species in tropical Africa and in Madagascar, with several others in the New World, chiefly Neotropical. The immature stages of the subgenotype, *luctuosa* OSTEN SACKEN, of the eastern United States, frequent the rotten bacterial heartwood of living trees.

Key to South African *Gnophomyia*

1. Wings dark brown, with three white fasciae including a narrow more or less arcuated band beyond cell *1st* M_2; prearcular field chiefly darkened; halteres brownish black. (Cape Province, Natal) . . . . . *turneri* ALEXANDER
— Wings dark brown, the prearcular field yellow; a whitish or pale yellow crossband before cord but with no distinct band beyond cell *1st* M_2 (most evident in *chirindensis*); halteres yellow or orange 2
2. Antennal flagellum bicolored, segments black with yellowed bases (fig. 80) (Cape Province, Natal) . . . *elegans* (WIEDEMANN)
— Antennal flagellum black throughout 3
3. Fore and middle tibiae entirely black, the posterior pair with a narrow subbasal yellow ring; wings with pale band before cord broad, wider than the length of cell *1st* M_2; isolated yellowish spots in cell *R* before origin of *Rs* and on vein *2nd A* before tip; vague brightenings in cells beyond cord but not forming a band.

(Southern Rhodesia) . . . . . *chirindensis* ALEXANDER
— All tibae black with a broad yellow basal ring; wings with pale band before cord narrow, less than the length of cell *1st* M_2; no brightened basal spots as above. (Southern Rhodesia) . *silindicola* ALEXANDER

Gnophomyia (Eugnophomyia) chirindensis ALEXANDER

Gnophomyia chirindensis ALEXANDER; Rev. Zool. Bot. Africaine, 19: 359–360, fig. 24 (wing); 1930.

Male. — Length about 8.5 mm.; wing 8.5 mm.

General coloration of thorax black, pleura heavily pruinose; halteres orange; wings dark brown, prearcular region yellow; bands before and beyond cord paler yellow; abdomen orange, outer four segments black.

Southern Rhodesia: Chirinda Forest, October 1926; type.

Gnophomyia (Eugnophomyia) elegans (WIEDEMANN)

(Fig. 80)

Limnobia elegans WIEDEMANN; Aussereur. zweifl. Ins., 2: 617; 1830.
Eriocera elegans SCHINER; Novara Reise, Dipt., p. 42; 1868.
Gnophomyia elegans BERGROTH; Ent. Tidskr., 9: 134; 1888.
Gnophomyia elegans ALEXANDER; Ann. So. Afr. Mus., 17: 151, pl. 11, fig. 15 (wing); 1917.
Gnophomyia (Eugnophomyia) elegans ALEXANDER; Rev. de Entom., 18: 73; 1947.

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

Female. — Length about 9.5 mm.; wing 9.5 mm.

Antennal flagellum bicolored, segments blackened, bases yellow; femora yellow, tips broadly black, remainder of legs black, tibial bases broadly yellow, involving about one-third the length; wings with base broadly deep yellow, discal band almost white, complete or nearly so (fig. 80).

Cape Province: "Cape", type. — **Natal:** Port Natal (BOWKER); Durban, Botanical Gardens, January 28, 1903 (F. MUIR); Jongaat, 1908–1909 (H. C. BURNUP); Durban, April 1915 (BELL-MARLEY); Hilton Road, near Pietermaritzburg, December 13, 1953 (STUCKENBERG); Eshowe, Zululand, November–December 1943 (BEVIS). — Caffraria (WAHLBERG).

Gnophomyia (Eugnophomyia) silindicola ALEXANDER

Gnophomyia silindicola ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 17: 23–24; 1948.

Female. — Length about 10 mm.; wing 8.8 mm.

Head, thorax and abdomen black; antennae blackened throughout; halteres yellow; femora orange, tips broadly black, tibiae black, with a broad yellow basal ring, tarsi black; wings dark brown, base broadly yellow, a narrow more whitened band before cord.

Southern Rhodesia: Chirinda Forest, 3600 feet, December 1935 (CUTHBERTSON), type.

Gnophomyia (Eugnophomyia) turneri ALEXANDER

Gnophomyia turneri ALEXANDER; Rev. Zool. Bot. Africaine, 19: 358–359, fig. 23 (wing); 1930.
Gnophomyia (Eugnophomyia) turneri ALEXANDER; Durban Mus. Novit., 4: 319; 1956.

Female. — Length about 8.5–11 mm.; wing 7.5–10.5 mm.

General coloration black, abdomen and parts of thorax with violaceous reflections; head with vertex light silvery; halteres black; femora yellow, extreme tips blackened, remainder of legs black; wings with white fasciae narrow and conspicuous, cell *2nd A* with two white spots.

Cape Province: Port St. Johns, Pondoland, November 1923 (R. E. TURNER), type. — **Natal:** Eshowe, Zululand, November–December 1943 (BEVIS).

Gonomyia MEIGEN

Gonomyia MEIGEN; Syst. Beschr. Eur. Dipt., 1: 146; 1818.
Goniomyia OSTEN SACKEN; Mon. Dipt. No. Amer., 4: 176; 1869.
Subgenera: *Progonomyia* ALEXANDER; Cornell Univ., Mem. 38: 938; 1921.
Idiocera DALE; Ann. Mag. Nat. Hist., 8: 431, 433; 1842.
Lipophleps BERGROTH; Psyche, 22: 55; 1915.

Gonomyia is one of the largest genera in the Tipulidae, with hundreds of species found in all faunal regions, including Madagascar and New Zealand, and also many remote Pacific islands. The only other crane-fly groups with a comparable wide distribution are *Limonia* (*Dicranomyia*) and *Erioptera* (*Trimicra*). In the local fauna representatives of three subgenera occur, in the Ethiopian region *Progonomyia* being restricted to South Africa.

Although all species have a venation that is generally the same, due primarily to the shallow cell R_3 and greatly retracted interanal crossvein, there are marked differences in other venational characters, especially the arculus. In *Progonomyia* and *Idiocera* the arculus is complete whereas in *Gonomyia* and *Lipophleps* it is broken by the atrophy of the anterior arculus, the short basal section of vein *M*. The name *Lipophleps* is a renaming of *Leiponeura* SKUSE, considered by BERGROTH to be preoccupied by *Liponeura* LOEW. Dr. ALAN STONE believes that *Leiponeura* does not conflict with *Liponeura* and should be used. However since the name *Lipophleps* has been in use for almost half a century I believe that it should be conserved.

The immature stages live in soil, some species in black saturated silty mud, others, including the local species where known, in saturated sand along stream margins. These types of habitats hold for all four subgenera in the local fauna.

Key to South African *Gonomyia*

1. Wings with vein R_2 preserved (fig. 83). (Subgenus *Progonomyia* ALEXANDER) 2
— Wings with vein R_2 lacking (figs. 84—91) 7
2. Cell M_2 open by atrophy of *m*, cell M_3 very shallow; (general coloration of thorax black, patterned with yellow; abdominal segments banded black and yellow). (Cape Province) . . . *brevifurca* ALEXANDER
— Cell M_2 open by atrophy of basal section of M_3, cell *2nd* M_2 deep; in cases also with *m* lacking so the distal section of vein M_3 lies free in the membrane 3
3. General coloration of mesonotum polished black, restrictedly patterned with yellow or rufous 4
— General coloration of mesonotum dull yellow or gray, praescutum patterned with three brown stripes 5
4. Size very small (wing of male less than 2.5 mm.); thoracic pleura yellow with two longitudinal black stripes; legs brown, tips of femora and tibiae darker; abdomen reddish brown, segments bordered by yellow; hypopygium black, notch of tergite deep (fig. 88). (Cape Province) . . *pulchrissima* ALEXANDER

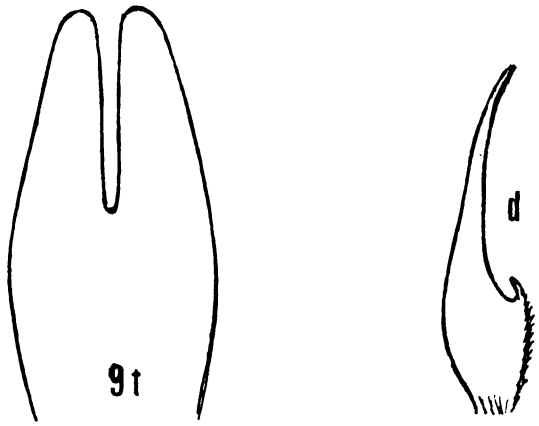


Fig. 88. *Gonomyia* (*Progonomyia*) *pulchrissima* ALEXANDER; male hypopygium. (Symbols: *d*, dististyle; *t*, tergite)

— Size larger (wing of male about 3.5 mm.); thoracic pleura black with a pale rufous longitudinal stripe; legs black; abdomen black, posterior margins of segments very narrowly rufous; hypopygium with notch of tergite shallow. (Cape Province) . . . . . *nigrobimbo* ALEXANDER

5. General coloration of thorax yellow, praescutum with three dark brown stripes; halteres yellow; legs yellow, tips of femora and tibiae darkened; wings tinged with yellow. (Cape Province) *flaveola* ALEXANDER

— General coloration of thorax gray, praescutum with three brown stripes; halteres with at least the knobs darkened; legs dark brown or black, in the former case the segments tipped with black; wings tinged with dusky 6

6. Praescutum gray with three brown stripes; pronotum darkened medially; antennae black throughout; legs black; wings with R_2 before the fork, *m—cu* about one-half its length beyond the fork of *M*. (Natal) . . . . . *natalensis* ALEXANDER

— Praescutum dark gray with three poorly defined brown stripes; pronotum broadly light yellow medially; antennae black, scape light yellow; legs dark brown, tips of femora and tibiae darker; wings with R_2 beyond the fork, *m—cu* at fork of *M*. (Transvaal) . . . . . *transvaalensis* ALEXANDER

7. Wings with *m—cu* at or close to fork of *M* (compare *houtensis*, couplet 29, with cell R_3 lacking). . . 8

— Wings with *m—cu* at least its own length before the fork of *M*. (figs. 84, 89). (Subgenus *Idiocera* DALE) . 9

8. Cell R_3 large, vein R_{2+3+4} subequal to or shorter than vein R_4 (fig. 85). (Subgenus *Gonomyia* MEIGEN) 18

— Cell R_3 small to very small, vein R_{2+3+4} longer than vein R_4; in cases, cell R_3 lacking, with only two branches of *Rs* reaching the margin (figs. 86, 87). (Subgenus *Lipophleps* BERGROTH) 21

9. Wings unpatterned except for the slightly darkened stigma when this is present and, in cases, a weak suffusion in outer radial cells 10

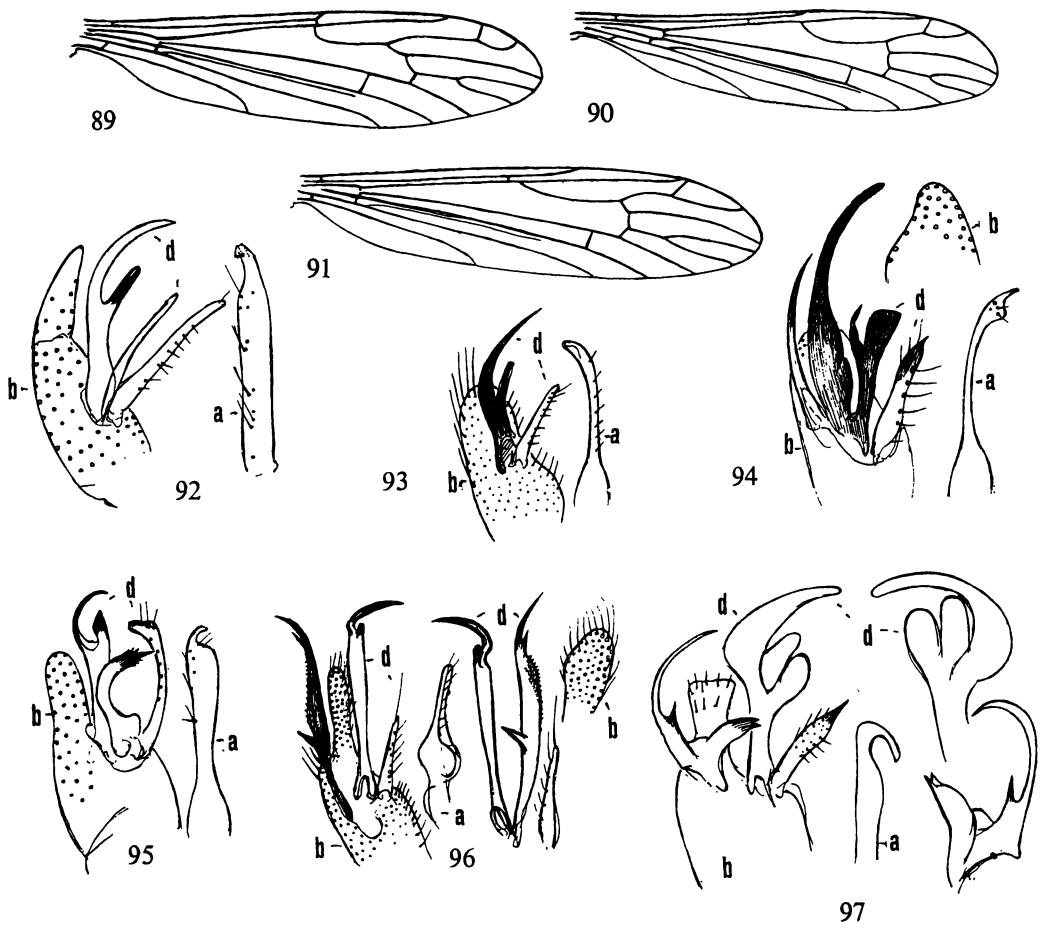
— Wings more evidently patterned with brown 13

10. *Sc* long, Sc_1 ending about opposite two-fifths *Rs* or beyond, cell R_3 large 11

— *Sc* short, Sc_1 ending opposite or just beyond origin of *Rs*; vein R_3 short, suberect, cell R_3 small, (fig. 84) 12

11. Hypopygium (fig. 96) with apical lobe of basistyle, *b*, long, its tip obtuse; outer dististyle, *d*, a long slender blackened blade terminating in a long black spine with a stouter lateral spine at near midlength; intermediate style a long slender virtually simple rod; inner style a slender simple rod, tip unblackened; aedeagus, *a*, dilated beyond base, apex not recurved. (Transvaal, South West Africa) . . . . . *tuckeri* ALEXANDER

— Hypopygium (fig. 97) with apical lobe of basistyle, *b*, relatively short, apex truncate; outer dististyle, *d*,



Figs. 89-97. — 89. *Gonomyia* (*Idiocera*) *gunvorae* ALEXANDER, sp. n.; venation. — 90. *Gonomyia* (*Idiocera*) *spuria* BERGROTH; venation. — 91. *Gonomyia* (*Idiocera*) *xenopyga* ALEXANDER; venation. — 92. *Gonomyia* (*Idiocera*) *glabriapicalis* ALEXANDER; male hypopygium. — 93. *Gonomyia* (*Idiocera*) *gunvorae* ALEXANDER, sp. n.; male hypopygium. — 94. *Gonomyia* (*Idiocera*) *spuria* BERGROTH; male hypopygium. — 95. *Gonomyia* (*Idiocera*) *thomassetiana* ALEXANDER; male hypopygium. — 96. *Gonomyia* (*Idiocera*) *tuckeri* ALEXANDER; male hypopygium. — 97. *Gonomyia* (*Idiocera*) *xenopyga* ALEXANDER, sp. n.; male hypopygium. (Symbols: *a*, aedeagus; *b*, basistyle; *d*, dististyle).

with two lateral branches, one basal; intermediate style very large, branches flattened, unequal; inner style ending in an acute black spine; aedeagus, *a*, recurved at apex to form a crook. (South West Africa) . . . . . *xenopyga* sp. n.

12. No dark pattern on wings; veins R_1+_2 and R_3 at margin separated by a distance exceeding the latter vein. (Southern Rhodesia) . . . . . *subspuria* ALEXANDER

— Wings with stigmal darkening indicated and usually with a weak suffusion in outer ends of cells R_2 and R_3; veins R_1+_2 and R_3 more approximated at margin, the distance slightly less than vein R_3 (figs. 84, 90); hypopygium (fig. 94). (Cape Province, Natal, Transvaal, Moçambique, northwards) . . . . . *spuria* BERGROTH

13. Wings patterned with brown, including a small dark area at end of vein *2nd A* 14
— Wings less heavily patterned, without darkening on Anal veins 15
14. *Sc* longer, Sc_1 ending about opposite one-fifth the length of *Rs*. (Natal) . . . . . *dædalus* ALEXANDER
— *Sc* shorter, Sc_1 ending opposite or immediately beyond origin of *Rs* (fig. 89); (hypopygium with two dististyles, fig. 93). (Natal, Basutoland) . . . . . *gunvoræ* sp. n.
15. Wings with stigma solidly dark brown, reaching vein R_3; *m—cu* about its own length before fork of *M*. (Natal) . . . . . *contracta* ALEXANDER
— Wings with stigma smaller and ill-defined, not reaching vein R_3; *m—cu* about one and one-half times its length before fork of *M* 16
16. Cell R_3 very small, its petiole from five to six times as long as vein R_3; hypopygium (fig. 95) with apical lobe of basistyle obtuse, entirely setiferous; (both intermediate and inner dististyles blackened at tips, the former terminating in an obtuse knob, the latter in a strong spine with scabrous points and setae before apex). (Natal) . . . . . *thomassetiana* ALEXANDER
— Cell R_3 larger, its petiole not exceeding three times vein R_3; hypopygium with apical lobe of basistyle produced into a flattened glabrous blade 17
17. Hypopygium (fig. 92) with outer blade of basistyle broad, pale; outer dististyle with inner arm slender, about one-half as long as outer arm; intermediate and inner styles straight, simple, pale, tips narrowly obtuse. (Southern Rhodesia) . . . . . *glabriapicalis* ALEXANDER
— Hypopygium with outer blade of basistyle narrow, blackened; outer dististyle with inner arm broadly flattened, about two-thirds the outer arm; intermediate and inner styles blackened, tips acutely pointed. (Southern Rhodesia) . . . . . *mashonensis* ALEXANDER
18. Wings strongly darkened; hypopygium with outer dististyle strongly darkened, enlarged outwardly, with very long setae; (inner style with a single very long recurved spine; phallosome with two blackened gonapophyses). (Natal) . . . . . *gnophosoma* ALEXANDER
— Wings weakly tinged with darker; hypopygium with outer dististyle pale throughout, not enlarged outwardly, setae of moderate length 19
19. Hypopygium with outer dististyle elongate, outer third dilated and provided with very few setae; phallosome with two blackened spines or gonapophyses. (Moçambique) . . . . . *sparsisetosa* ALEXANDER
— Hypopygium with outer dististyle shorter, its apex less dilated, with more abundant setae; phallosome with a single blackened spine or gonapophysis 20
20. Size small (wing about 5 mm.); hypopygium with inner dististyle produced into a weak point at base of a larger blackened spine. (Cape Province, Natal, Basutoland) . . . . . *mimetica* ALEXANDER
— Size larger (wing of male about 6 mm.); hypopygium with inner dististyle produced into a single erect blackened spine. (Natal) . . . . . *unispicata* ALEXANDER
21. Wings with *Rs* three-branched, cell R_3 present (fig. 86) 22
— Wings with *Rs* two-branched, cell R_3 lacking (fig. 87) 27
22. Hypopygium with two dististyles; (femur slightly darkened above at tip, in cases forming a weak ring; wings weakly patterned with darker at origin of *Rs* and along cord, most evident as a deepening in color of the veins; hypopygium with both dististyles simple; gonapophysis setiferous before the blackened apical spine). (Cape Province, Transvaal, Moçambique, Southern Rhodesia) *noctabunda* ALEXANDER
— Hypopygium with at least three dististyles or profound branches 23
23. Femora uniformly darkened 24
— Femora pale with a darkened subterminal ring 25
24. Hypopygium with intermediate style or branch a simple blackened rod terminating in a spine; phallosome pale throughout, without blackened spines. (Cape Province, Natal) . . . . *elachistos* ALEXANDER
— Hypopygium with intermediate style deeply branched, the shorter inner arm again divided at tip into two slender black spines; phallosome terminating in two slender recurved spines (fig. 86). (Cape Province, Natal, Transvaal, Basutoland, S. Rhodesia) . . . . . *sulphurelloides* ALEXANDER
25. Hypopygium with outer dististyle a long slender needlelike spine; intermediate and inner styles united basally; gonapophyses appearing as paired blackened hooks, each with a straight spine near base. (Moçambique) . . . . . *milangensis* ALEXANDER

— Hypopygium with outer dististyle not a slender spine, appearing as a flattened blade; phallosome with gonapophyses not as above 26

26. Hypopygium with outer dististyle a flattened black blade, its surface with scattered scabrous points; intermediate style a straight blackened rod or stout spine; phallosome with two long black spinelike apophyses terminating in acute points; a central oval structure is produced into a small straight apical spine. (Moçambique) . . . . . *apiculata* ALEXANDER

— Hypopygium with outer dististyle a slender gently curved rod; intermediate style pale, its outer half very slender; phallosome with two long blackened apophyses terminating in spines but without a median oval structure; (femur with a narrow brownish black subterminal ring; wings strongly darkened, variegated by whitish, especially in costal field, with darker brown clouds at origin of *Rs*, stigma and over vein R_3). (Southern Rhodesia) . . . . . *silinda* ALEXANDER

27. *Sc* long, Sc_1 ending opposite or just beyond origin of *Rs* 28

— *Sc* shorter, Sc_1 ending some distance before origin of *Rs* 29

28. Femora yellow with a very broad black subterminal ring, this about three times the pale tip; wings evenly darkened, costal border and marginal spots white, very conspicuous; hypopygium with the outer dististyle a powerful black rod, expanded before tip, terminating in a long spine; intermediate style simple, ending in an acute spine; inner style normal. (Moçambique) . . . . . *usheræ* ALEXANDER

— Femora yellow, with an ill-defined brown subterminal ring; wings whitened, with pale gray clouds on disk and darker spots at fork of *Sc*, tip of R_3 and along cord, white pattern inconspicuous; hypopygium with outer dististyle a simple pale rod, its tip narrowly blackened; intermediate style with a large pale setiferous cushion at base; inner style far removed from the others, closer to proximal end of basistyle. (Southern Rhodesia, South West Africa) . . . . . *fimbriata* ALEXANDER

29. Wings with *m–cu* close to fork of *M*; cell R_4 at margin about twice as extensive as cell R_2; (legs light brown, unpatterned; wings faintly tinged with brown, stigma slightly darker). (Southern Rhodesia) . . . . . *mashona* ALEXANDER

— Wings with *m–cu* nearly its own length before fork of *M*; upper branch of *Rs* upturned at tip, cell R_4 about three times as extensive as cell R_2 (fig. 87). (Cape Province) . . . . . *houtensis* sp. n.

Gonomyia (Progonomyia) brevifurca ALEXANDER

Gonomyia (*Gonomyella*) *brevifurca* ALEXANDER; Ann. So. Afr. Mus., 17: 153–154, pl. 11, fig. 18 (♂ hyp.); 1917.

Gonomyia brevifurca WOOD; Ann. So. Afr. Mus., 39: 279; 1952.

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

Black, thorax and abdomen striped and banded with bright yellow; legs blackened, femora paler; wings yellowish brown, unpatterned.

Cape Province: Landdrost Kloof, Hottentots Holland Mts., 4000 feet, 1915 (BARNARD), type.

Gonomyia (Progonomyia) flaveola ALEXANDER

Gonomyia (*Gonomyella*) *flaveola* ALEXANDER; Ann. So. Afr. Mus., 18: 199–200, pl. 3, fig. 13 (wing); 1921.
Gonomyia flaveola WOOD; Ann. So. Afr. Mus., 39: 279; 1952.

Female. — Length 5.8–6.3 mm.; wing 6–6.5 mm.

General coloration of thorax yellow, praescutum with three dark brown stripes; vertex dark gray; wings strongly yellowed; R_2 about twice R_{2+3+4}; abdominal tergites pale brown, posterior borders dull yellow.

Cape Province: Knysna, October 1916 (L. A. PÉRINGUEY), types.

Gonomyia (Progonomyia) natalensis ALEXANDER

(Fig. 83)

Gonomyia (*Gonomyella*) *natalensis* ALEXANDER; Ann. So. Afr. Mus., 17: 152–153, pl. 11, fig. 17 (wing); 1917.

Female. — Length about 6.6 mm.; wing 6.2 mm.

Thorax gray, praescutum with three dark brown stripes, pleura striped gray and pale yellow; wings pale gray, vaguely seamed with brown along vein *Cu* (fig. 83).

Natal: Gillets, September 1915 (BELL-MARLEY); Krantz Kloof, September 26, 1915 (BELL-MARLEY), types.

Gonomyia (Progonomyia) nigrobimbo ALEXANDER

Gonomyia (*Progonomyia*) *nigrobimbo* ALEXANDER; Encycl. Entomol., Diptera, 7: 60–61; 1934.
Gonomyia nigrobimbo WOOD; Ann. So. Afr. Mus., 39: 271–276, fig. 89 (ad.), fig. 90 (larva, pupa); 1952.

Male. — Length 4–4.5 mm.; wing 3.6–4 mm.

Coloration black, scutellum and a ventral longitudinal pleural stripe obscure rufous; halteres black; wings tinged with blackish; abdomen black, posterior borders of segments more rufous yellow, broader on the sternites.

Dr. WOOD found the immature stages in saturated organic mud on the margins of a forest rill, associated with the larvae of *Limnophila* (*Elaeophila*) *dubiosa* ALEXANDER. Pupation took place in the dry sand spits in the shelter of a convenient rock. The strikingly patterned adults were noted scurrying about in the manner of a stone-fly over the boulders and small stones protruding from the stream bed and were loath to take flight.

Cape Province: Peninsula, Fernwood, January 1933, November 1934 (WOOD); Oudebosch, December 1920 (LIGHTFOOT), type.

Gonomyia (Progonomyia) pulchrissima ALEXANDER

(Fig. 88)

Gonomyia (*Gonomyella*) *pulchrissima* ALEXANDER; Ann. So. Afr. Mus., 18: 200–201; 1921.
Gonomyia pulchrissima WOOD; Ann. So. Afr. Mus., 39: 276–278, fig. 91 (ad.); 1952.

Male. — Length 3.4–3.6 mm.; wing 2.3–2.5 mm.

Black, variegated by bright yellow areas; pleura clear yellow with conspicuous black stripes; wings subhyaline (fig. 88).

Dr. WOOD found the species to be uncommon and apparently restricted to the immediate vicinity of small mountain rills and streams. As was noted for *Gonomyia* (*Progonomyia*) *nigrobimbo*, the adult flies seemed loath to take flight when disturbed.

Cape Province: French Hoek Pass, 2500–3600 feet, December 4, 1916 (BARNARD), type; 1932 (WOOD).

Gonomyia (Progonomyia) transvaalensis ALEXANDER

Gonomyia (*Progonomyia*) *transvaalensis* ALEXANDER; Ann. Natal Mus., 14: 390–391; 1960.

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

General coloration of mesonotum dark gray, praescutum with three poorly differentiated brown stripes; antennae black, scape yellow; pleura blackened above, reddish brown below, the areas separated by a broad yellow stripe; wings weakly tinged with brown, *m–cu* at fork of *M*.

Transvaal: Mariepskop, 4400 feet, October 4—8, 1956 (STUCKENBERG), type.

Gonomyia (Idiocera) contracta ALEXANDER

Gonomyia (Idiocera) contracta ALEXANDER; Ann. Natal Mus., 14: 391–393, fig. 32 (ven.); 1960.

Female. — Length about 8 mm.; wing 7.8 mm.

General coloration of mesonotum gray, praescutum with two intermediate brown stripes; pleura brownish gray, striped longitudinally with whitish; tips of tibiae narrowly brownish black; wings whitish, restrictedly patterned with dark brown; *Sc* short, Sc_1 long, ending opposite origin of *Rs*.

Natal: Pietermaritzburg, October 23, 1956 (STUCKENBERG), type.

Gonomyia (Idiocera) daedalus ALEXANDER

Gonomyia (Idiocera) daedalus ALEXANDER; Ann. Natal Mus., 13: 427–428, fig. 33 (ven.); 1956.

Female. — Length about 8 mm.; wing 7.5 mm.

Mesonotal praescutum chiefly covered by three brownish gray stripes, pleura reddish brown with a broad pale yellow longitudinal stripe; wings with a conspicuous dark brown pattern; Sc_1 ending about opposite one-fifth *Rs*; vein R_3 erect, far removed from R_{1+2} at margin, vein R_4 turned strongly cephalad at outer end; abdomen dark brown, posterior borders of segments narrowly yellowed.

Natal: Cathedral Peak Area, Drakensberg, 6400 feet, March 19—23, 1955 (STUCKENBERG), type.

Gonomyia (Idiocera) glabriapicalis ALEXANDER

(Fig. 92)

Gonomyia (Idiocera) glabriapicalis ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 17: 21–22; 1948.

Male. — Length about 5.5–6 mm.; wing 6–6.8 mm.

Mesonotum brownish gray, variegated with darker brown and yellow; head dark gray, front and orbits clearer yellow; femora obscure yellow, tips weakly infuscated, tibiae with tips narrowly blackened; wings brownish yellow, with a restricted brown pattern; veins R_{1+2} and R_3 narrowly separated at margin; hypopygium as in fig. 92.

Southern Rhodesia: Stamford Farm, Salisbury, November 30—December 7, 1935 (CUTHBERTSON), types.

Gonomyia (Idiocera) gunvorae sp. n.

(Figs. 89, 93)

Size above medium (wing of male 6 mm.); general coloration of thorax yellow with dark reddish brown stripes; pleura reddish brown with a broad longitudinal yellow stripe; wings whitish, patterned with brown; *Sc* short, Sc_1 ending opposite or close to origin of *Rs*.

Male. — Length about 5.5 mm.; wing 6 mm.

Female. — Length 6.5–7.5 mm.; wing 6–7 mm.

Described from alcoholic material.

Rostrum brownish yellow; palpi dark brown, terminal segment slender, about one-third longer than the penultimate. Antennae with scape and pedicel yellow, flagellum dark brown, tips of the more proximal segments slightly paler; basal segments longer than the verticils. Head dark brown, anterior orbits broadly yellow.

Pronotum yellow, indistinctly lined with darker. Mesonotal praescutum with disk virtually covered by three dark reddish brown stripes, humeral and lateral parts broadly yellow; scutal lobes dark reddish brown, central area and scutellum more yellowed; mediotergite dark brown with yellow lateral spots; pleurotergite brown, patterned beneath with yellow. Pleura reddish brown, with a broad longitudinal yellow stripe. Halteres with stem pale, knob slightly darker. Legs with coxae yellow, fore pair more reddish brown in front; trochanters yellow; femora yellow, tips extensively but inconspicuously darkened; tibiae and basitarsi yellow, tips slightly darker; tarsi brown. Wings (fig. 89) whitish, with a conspicuous brown pattern, including the stigma and spots at arculus, a common area at end of *Sc* and origin of *Rs*, cord, veins R_3 and R_4, outer medial fork, *m–cu* and tip of vein *2nd A*; veins yellowish brown to light brown. Venation: *Sc* short, Sc_1 ending just beyond origin of *Rs*, Sc_2 opposite this origin or less than its own length beyond; *Rs* square at origin; vein R_3 perpendicular, distance on costa between R_{1+2} and R_3 about one and one-half times the latter; vein R_4 strongly upcurved on outer third; cell *2nd* M_2 about one-half longer than its petiole; *m–cu* nearly twice its length before fork of *M*.

Abdominal tergites brown, posterior borders narrowly pale; sternites and pleural membrane more yellowed. In female, abdomen almost filled with large black eggs. Male hypopygium (fig. 93) with the apical lobe of basistyle, *b*, stout, with setae to the obtuse tip, lower face of lobe glabrous. Two dististyles, *d*, the outer style bifid, its outer arm a long blackened spine, tapering very gradually to the acute tip; inner arm about one-half as long, slender, tip truncate, appearing almost as if broken; inner style a straight simple rod, lower margin with about six to eight setae in a single row (six on one side, eight on other, as figured). Aedeagus, *a*, long and slender, very slightly enlarged at the gently curved outer end.

Basutoland: Quthing, 5600 feet, at light, near meadows, March 12, 1951. Holotype, alcoholic ♂, (BRINCK–RUDEBECK), Loc. no. 232. Allotopotype, ♀, with type; Nazareth Mission Station, 20 miles E S E of Maseru, 6250 feet, marshy ground near well, Paratype, ♀, March 23, 1951 (BRINCK–RUDEBECK), Loc. no. 245.— **Natal:** Hostel, Natal National Park, 5000 feet, at light, paratype, ♀, March 31, 1951 (BRINCK–RUDEBECK), Loc. no. 256.

This interesting fly is respectfully dedicated to Mrs. PER BRINCK (GUNVOR BRINCK) who aided most materially in the work of the Swedish South African Expedition. The most

similar species are *Gonomyia* (*Idiocera*) *daedalus* ALEXANDER, of Natal, and *G.* (*I.*) *bistylata* ALEXANDER, of Kenya. The latter likewise has the hypopygium with two dististyles, unlike the great majority of species in the subgenus, which have three or more such styles. The present fly is distinct from *bistylata* in the structure of the hypopygium, particularly the outer dististyle and aedeagus. The male sex of *daedalus* is still unknown but evidently differs from the present fly in the wing pattern and venation, especially the long *Sc*. I would believe that the male sex of *daedalus* will be found to have bistylate structures since in all other regards it is clearly allied to the other species where the male sex is known.

Gonomyia (Idiocera) mashonensis ALEXANDER

Gonomyia (*Idiocera*) *mashonensis* ALEXANDER; Journ. Ent. Soc. So. Afr., 22: 58–60, fig. 7 (ven.), fig. 13 (♂ hyp.); 1959.

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

Mesonotum brown, ventral pleurites pale yellow; legs yellow, tips of femora and tibiae blackened; wings with a restricted dark pattern, in male with long costal fringe; hypopygium with apex of basistyle produced into a flattened blade, three dististyles, inner two pointed at tips.

Southern Rhodesia: Salisbury, September 5, 1956; March 8–April 9, 1957 (SMITHERS), types.

Gonomyia (Idiocera) spuria BERGROTH

(Figs. 84, 90, 94)

Gonomyia spuria BERGROTH; Ent. Tidskrift, 9: 134–135; 1888.
Gonomyia (*Gonomyia*) *spuria* ALEXANDER; Ann. So. Afr. Mus., 17: 151–152, pl. 11, fig. 16 (wing); 1917.

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

Mesonotum brownish gray, patterned with brown, pleura brownish gray; halteres and legs yellow; abdominal tergites brownish yellow, sternites clearer yellow. Venation as in figs. 84, 90.

Hypopygium (fig. 94) with outer apical lobe of basistyle, *b*, stout, with numerous setae. Four dististyles, *d*, or profound branches; outer style a simple flattened blade that narrows very gradually to the acute darkened tip; intermediate style two-parted, the outer arm the longest element, a broad-based darkened blade that narrows to the obtuse apex, inner arm shorter, unequally bifid at outer end, outer spine twisted, acute at tip, inner blade very broad, apex truncated; inner style a simple straight rod, surface with several strong setae, apex subacute. Aedeagus, *a*, long and slender, pale throughout, before the short tip conspicuously expanded and provided with short pale setae.

Natal: Tugela Ferry, Zululand, May 1935 (BEVIS). — **Transvaal:** Komati Poort, November 1918 (R. W. TUCKER); Letaba Camp, Kruger National Park, at light, May 6,1951 (BRINCK–RUDEBECK), Loc. no. 295. — **Moçambique:** Lourenço Marques (C. W. HOWARD); Luabo, August 1957 (USHER). — **Southern Rhodesia:** Salisbury, April 6–8, 1957 (SMITHERS).

Type from Caffraria (J. A. WAHLBERG).

Gonomyia (Idiocera) subspuria ALEXANDER

Gonomyia (*Idiocera*) *subspuria* ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 17: 21; 1948.

Female: Length about 6.5 mm.; wing 6 mm.

General coloration brownish gray to plumbeous gray; antennae black; femora and tibiae obscure yellow, tips more infuscated; abdominal tergites dark brown.

Southern Rhodesia: Salisbury, Stamford Farm, December 1935 (CUTHBERTSON), type.

Gonomyia (Idiocera) thomassetiana ALEXANDER

(Fig. 95)

Gonomyia (*Idiocera*) *thomassetiana* ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 17: 22–23; 1948.

Male. — Length about 5 mm.; wing 5.5 mm.

Mesonotum chiefly gray, praescutum with four brown stripes; pleura yellow, vaguely patterned with more reddened areas; femora yellow, tips conspicuously brownish black; wings inconspicuously patterned with brown; cell R_3 very small. Hypopygium as in fig. 95.

Natal: Wienan (Weenen), December 1926 (DR. H. P. THOMASSET), type.

Gonomyia (Idiocera) tuckeri ALEXANDER

(Fig. 96)

Gonomyia (*Gonomyia*) *tuckeri* ALEXANDER; Ann. So. Afr. Mus., 18: 198–199; 1921.

Male. — Length about 5 mm.; wing about 5.5 mm.

Female. — Length about 5.5–6 mm.; wing 6–7 mm.

General coloration brownish gray, praescutal stripes relatively indistinct; antennae black; legs dark brown; wings weakly tinged with yellow, stigma indistinct.

Hypopygium (fig. 96) with apical lobe of basistyle, *b*, elongate, dilated at base, with abundant setae. Three dististyles, *d*; outer style a long blackened rod, gradually narrowed into a straight spine, the margin with one smaller outer denticle and numerous microscopic roughenings, at near one-third the length with a strong lateral spine; intermediate style pale, subequal in length, slender, near tip constricted and thence produced into a narrow blackened cultrate blade, at base of latter with a small blackened knob; inner style pale, small and slender, with several small setae on lower margin and a much longer bristle at the subacute blackened tip. Aedeagus, *a*, dilated near base, thence straight to the obtuse tip.

Transvaal: Komati Poort, November 1918 (R. W. TUCKER), type; Five miles east of Badplaats, between Carolina and Barberton, near small stream in mountainous grassy veld, October 2, 1956 (COOKSON & STUCKENBERG). — **South West Africa:** Kaokoveld, Sanitatas, about 85 miles WSW of Ohopoho, at light at camp near waterhole in dry mopane bush, June 16, 1951 (BRINCK–RUDEBECK), Loc. no. 340.

Gonomyia (Idiocera) xenopyga sp. n.

(Figs. 91, 97)

Size medium (wing of male 5 mm.); general coloration of mesonotum yellow, patterned with reddish brown, pleura with a yellow longitudinal stripe; wings subhyaline, unpatterned; *Sc* long, cell R_3 large; hypopygium with apical lobe of basistyle pale, apex subtruncate; three dististyles, the outer and intermediate bifid, inner style simple, acutely pointed at tip; apex of aedeagus recurved.

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

Described from alcoholic material.

Rostrum, palpi and antennae brown. Head infuscated above, orbits broadly yellow, especially behind.

Pronotum yellowed. Mesonotal praescutum with disk reddish brown, humeral and lateral regions broadly yellow; posterior sclerites of notum yellowed, scutal lobes reddish brown; mediotergite with central and posterior parts brown, pleurotergite yellowed above, restrictedly reddened below. Pleura reddish brown, with a broad yellowed longitudinal stripe beginning behind the fore coxa, widened posteriorly to include most of the pteropleurite, meron and metapleura. Halteres whitened. Legs with fore coxae reddened, remaining coxae and trochanters yellow; femora yellow, scarcely darkened outwardly; tibiae yellow, tips very narrowly infuscated; tarsi brownish yellow. Wings (fig. 91) broken and details may be slightly inaccurate; subhyaline, unpatterned, stigma barely indicated; veins pale brown. Macrotrichia on veins beyond general level of origin of *Rs*. Venation: Sc_1 ending about opposite two-fifths *Rs*, Sc_2 before origin of the latter; veins R_{1+2} and R_3 narrowly separated at margin, cell R_3 large; cell *2nd* M_2 nearly three times its petiole; *m–cu* slightly more than its own length before fork of *M*.

Abdominal tergites brown, posterior borders narrowly yellowed, sternites slightly paler. Male hypopygium (fig. 97) with apical lobe of basistyle, *b*, pale throughout, slightly dilated outwardly, apex truncated. Three dististyles, *d*, outer complex, including a long slender outer blade, tip subacute, on inner margin near base with an acute black spine, still nearer base with a stout arm, blackened outwardly, tip microscopically bidentate; intermediate style longest, pale throughout, including a dilated longer blade, narrowed to the obtuse tip, with a much smaller obtuse lower arm and a further hyaline blade in its axil; inner style simple, broadest at near midlength, narrowed to an acute black apical spine. Aedeagus, *a*, slender, the long apex strongly recurved to appear crook-like.

South West Africa: Kaokoveld, Sanitatas, about 85 miles WSW of Ohopoho, in dry mopane bush near waterhole, June 14 1951. Holotype, alcoholic ♂ (BRINCK—RUDEBECK), Loc. no. 340.

Gonomyia (*Idiocera*) *xenopyga* is quite distinct from all other described species in the Ethiopian fauna. It is most similar to *G.* (*I.*) *tuckeri* ALEXANDER, differing in venation and especially in the very different hypopygium.

Gonomyia (Gonomyia) gnophosoma ALEXANDER

Gonomyia (*Gonomyia*) *gnophosoma* ALEXANDER; Ann. Natal Mus., 13: 429–430, fig. 35 (ven.), fig. 37 (♂ hyp.); 1956.

Male. — Length about 4–4.2 mm.; wing 5 mm.; antenna about 0.8 mm.

Belongs to the *tenella* group; general coloration of thorax, including mesonotal scutellum, dark brown; pleura more pruinose, without a pale stripe; antennae, halteres and legs brownish black to black.

Natal: Cathedral Peak Area, 6400 feet, March 19–23, 1955; Indumeni Forest, Drakensberg, March 22, 1955 (STUCKENBERG), types.

Gonomyia (Gonomyia) mimetica ALEXANDER

(Fig. 85)

Gonomyia (*Gonomyia*) *mimetica* ALEXANDER; Ann. So. Afr. Mus., 18: 198, pl. 3, fig. 14 (wing), pl. 4, fig. 23 (♂ hyp.); 1921.
Gonomyia mimetica WOOD; Ann. So. Afr. Mus., 39: 278–279; 1952.

Male. — Length about 4.5 mm.; wing 5–5.2 mm.

Belongs to the *tenella* group; general coloration gray, praescutal stripes ill-defined; pleura yellow, patterned ventrally with brown; legs pale brown (fig. 85).

Cape Province: Montagu, October 1919 (R. W. TUCKER); Assegaaibos, 30 miles WNW of Humansdorp, at light in wet ravine near stony stream with luxuriant vegetation, February 28, 1951 (BRINCK–RUDEBECK), Loc. no. 191; Hout Bay, Skoorsteenkop, 300–600 feet, insect trap on dry sandy mountain slope, December 13–26, 1950, January, February 3–7, 1951 (BRINCK–RUDEBECK), Loc. nos. 78, 82, 95, 157, 171. — **Natal:** Kranskop, November 1917 (BARNARD), type; New Hanover, November 29, 1914 (C. B. HARDENBERG); Masongwaan Forest, Cathedral Peak Area, March 23, 1955 (STUCKENBERG); Hostel, National Park, 5000 feet, at light, March 31–April 3, 1951 (BRINCK–RUDEBECK), Loc. nos. 256, 259; Tugela Valley, National Park, 5000 feet, insect trap in meadow near stony stream, April 11, 1951 (BRINCK–RUDEBECK), Loc. no. 271; Doomey Mt., National Park. 5500 feet, along small stony stream, April 1, 1951 (BRINCK–RUDEBECK), Loc. no. 257. — **Basutoland:** Nazareth M. S., 20 miles E S E of Maseru, 6250 feet, at light near marshy ground, March 23–24, 1951 (BRINCK–RUDEBECK), Loc. nos. 245, 246; Mamathes, 5 miles ENE of Teyateyaneng, at light in dry hilly country with small stony streams, March 29, 1951 (BRINCK–RUDEBECK), Loc. no. 252.

Gonomyia (Gonomyia) sparsisetosa ALEXANDER

Gonomyia (*Gonomyia*) *sparsisetosa* ALEXANDER; Ann. Natal Mus., 15: 29–31, figs. 25 (wing), 30 (♂ hyp.); 1960.

Male. — Length about 4.3–4.5 mm.; wing 4.5–5 mm.

Belongs to the *tenella* group; mesonotum dark brown, posterior border of scutellum obscure yellow, pleura and pleurotergite chiefly testaceous; antennae black; legs dark brown.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG), type.

Gonomyia (Gonomyia) unispicata ALEXANDER

Gonomyia (*Gonomyia*) *unispicata* ALEXANDER; Durban Mus. Novit., 4: 320–321, fig. 16 (ven.), fig. 21 (♂ hyp.); 1956.

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

Belongs to the *tenella* group; general coloration of praescutum brownish gray, darker stripes indistinct, pleura bluish yellow patterned with brown, rostrum yellow.

Natal: Umkomazana, November 26, 1941 (BEVIS), December 21, 1938 (BEVIS), type.

Gonomyia (Lipophleps) apiculata ALEXANDER

Gonomyia (Lipophleps) apiculata ALEXANDER; Ann. Natal Mus., 15: 31—32, figs. 26 (wing), 31 (♂ hyp.); 1960.

Male. — Length 3.8–4 mm.; wing 3.7–4.1 mm.

General coloration of thorax gray, scutellum broadly yellow, pleura brown with a yellow longitudinal stripe; rostrum dark brown; femora brownish yellow with an inconspicuous darker subterminal ring; wings restrictedly patterned with brown, costa whitish yellow, cell R_3 present; abdominal tergites dark brown, posterior borders broadly yellow.

Moçambique: Luabo, July—September 1957 (USHER), types.

Gonomyia (Lipophleps) elachistos ALEXANDER

Gonomyia (Lipophleps) elachistos ALEXANDER; Ann. Natal Mus., 13: 428—429, fig. 34 (ven.), fig. 38 (♂ hyp.); 1956.

Male. — Length about 3.5 mm.; wing 4.2 mm.

General coloration of mesonotum brownish gray, scutellum with posterior border narrowly brightened, pleura brownish yellow with a broad pale yellow longitudinal stripe; legs brownish yellow; wings weakly suffused, costal region light yellow, cell R_3 very small.

Cape Province: Peninsula, Table Mountain, Blinkwater Ravine, about 1500 feet, in dense bush along stony stream, November 4, 1950 (BRINCK—RUDEBECK), Loc. no. 23; Tzitzikama Mountains, Stormsrivier, at light, January 13, 1951 (BRINCK—RUDEBECK), Loc. no. 134. — **Natal:** Cathedral Park Area, Drakensberg, 6400 feet, March 19—23, 1955 (STUCKENBERG), type.

Gonomyia (Lipophleps) fimbriata ALEXANDER

Gonomyia (Lipophleps) fimbriata ALEXANDER; Journ. Ent. Soc. So. Afr., 22: 61—63, fig. 9 (ven.), fig. 14 (♂ hyp.); 1959.

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

Belongs to the *pilifera* group; praescutum brownish gray, scutellum yellow with a brownish gray central spot; pleura striped yellow and brown; femora brownish yellow with a broad brown subterminal ring; wings whitish subhyaline, extensively clouded with pale brown, cell R_3 present; abdominal segments bicolored, dark brown, with about the posterior third pale, hypopygium brownish yellow.

Southern Rhodesia: Salisbury, January 20, 1957 (SMITHERS), type. — **South West Africa:** Kaokoveld, 5 miles SE of Kowares, at light in dry grassveld, June 2, 1951 (BRINCK—RUDEBECK), Loc. no. 322; Ohopoho, at light, June 4, 1951 (BRINCK—RUDEBECK), Loc. no. 325.

Gonomyia (Lipophleps) houtensis sp. n.

(Fig. 87)

Mesonotum dark brown, lateral margins more yellowed, pleura brown with a yellow longitudinal stripe; rostrum dark brown; wings brownish yellow, stigma pale brown, *Sc* short, cell R_3 lacking; abdominal tergites brown, paler laterally.

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

Described from alcoholic material.

Rostrum and palpi dark brown. Antennae with scape and pedicel yellow, flagellum broken. Head apparently darkened.

Mesonotum dark brown, lateral borders of praescutum and scutal lobes more yellowed, central line of scutum narrowly darkened; posterior sclerites of notum brownish yellow. Pleura brown with a longitudinal yellow stripe; sternopleurite broadly darkened. Halteres with stem whitened, knob pale. Legs with coxae and trochanters yellowed; remainder of legs broken. Wings (fig. 87) faintly brownish yellow, prearcular and costal fields pale yellow; stigma oval, pale brown; veins light brown, the more basal ones paler, cord somewhat darker. Longitudinal veins beyond cord with macrotrichia, basad of cord lacking on *Sc*, *Rs*, *M* and basal section of Cu_1; a few trichia on distal section of Cu_1 and tips of the Anal veins. Venation: *Sc* short, Sc_1 ending a distance before origin of *Rs* about equal to two-thirds the length of the latter, Sc_2 near its tip; *Rs* angulated to spurred at origin; cell R_3 lacking; *m–cu* about two-thirds its length before the fork of *M*.

Abdominal tergites brown, patterned laterally with paler; sternites yellow. Genital segment yellow; ovipositor with cerci elongate, gently upcurved.

Cape Province: Hout Bay, Skoorsteenkop, 600 feet, in indigenous forest on mountain slope, in insect trap, January 1951. Holotype, alcoholic ♀, (BRINCK–RUDEBECK), Loc. no. 157.

The most similar species is *Gonomyia* (*Lipophleps*) *mashona* ALEXANDER, most readily separated by the venation, where *m–cu* is close to the fork of *M*. In this latter species *Rs* has several macrotrichia over virtually the entire length excepting the base and tip.

Gonomyia (Lipophleps) mashona ALEXANDER

Gonomyia (*Lipophleps*) *mashona* ALEXANDER; Journ. Ent. Soc. So. Afr., 22: 60–61, fig. 8 (ven.); 1959.

Female. — Length about 5.2 mm.; wing 4.8 mm.

Mesonotal praescutum grayish brown, anterior half with a darker median vitta, pleura brown with a whitened longitudinal stripe; legs pale brown; wings tinged with brown, costal border pale yellow, stigma pale brown; cell R_3 lacking.

Southern Rhodesia: Salisbury, December 31, 1956 (SMITHERS), type.

Gonomyia (Lipophleps) milangensis ALEXANDER

Gonomyia (*Lipophleps*) *milangensis* ALEXANDER; Ann. Natal Mus., 15: 32—34, figs. 27 (wing), 32 (♂ hyp.); 1960.

Male. — Length 3.4–3.5 mm.; wing 3.9–4 mm.

General coloration of mesonotum brownish gray, scutellum margined with obscure yellow, pleura with a broad white longitudinal stripe; femora obscure yellow, with a weak darker subterminal ring; wings faintly patterned, costal border whitened, cell R_3 present; hypopygium with three simple dististyles.

Moçambique: Mount Gorongoza, 840 meters, September 1957 (STUCKENBERG); Machinjiri Mt., April 29, 1958 (USHER), types.

Gonomyia (Lipophleps) noctabunda ALEXANDER

Gonomyia (*Gonomyia*) *noctabunda* ALEXANDER; Ann. Mag. Nat. Hist. (9) 6: 36–37; 1920.

Male. — Length 2.8–3 mm.; wing 3.2–3.3 mm.

Mesonotum light brown, scutellum bordered posteriorly by pale; pleura dark brown, with a conspicuous white longitudinal stripe; legs pale yellowish brown, femora with a narrow dark brown subterminal ring; abdomen blackened, segments narrowly bordered with yellowish white; hypopygium with two dististyles, gonapophysis a long blackened spine.

Cape Province: Mossel Bay, February 1922 (R. E. TURNER). — **Transvaal:** Lot 30, De Kaap Block B, near Kaapmuiden, October 11, 1919 (H. K. MUNRO), type. — **Moçambique:** Luabo, July 1957 (USHER). — **Southern Rhodesia:** Salisbury, April 10, 1956 (SMITHERS).

Gonomyia (Lipophleps) silinda ALEXANDER

Gonomyia (*Lipophleps*) *silinda* ALEXANDER; Ann. Natal Mus., 14: 151–152, fig. 16 (♂ hyp.), fig. 22 (ven.); 1957.

Male. — Length about 3 mm.; wing 3.5 mm.

General coloration of thorax brownish gray, scutellum broadly whitened posteriorly, pleura brownish gray with a conspicuous whitened longitudinal stripe; femora brownish yellow with a brownish black nearly terminal ring; wings dusky, variegated with paler, cell R_3 present, small; abdomen dark brown, posterior borders of segments broadly pale; hypopygium with three dististyles.

Southern Rhodesia: Chirinda Forest, January 25, 1955 (STUCKENBERG), type.

Gonomyia (Lipophleps) sulphurelloides ALEXANDER

(Fig. 86)

Gonomyia (*Gonomyia*) *sulphurelloides* ALEXANDER; Ann. So. Afr. Mus., 18: 197–198, pl. 3, fig. 11 (wing); 1921.

Gonomyia sulphurelloides WOOD; Ann. So. Afr. Mus., 39: 266–271, fig. 87 (ad., larva), fig. 88 (pupa); 1952.

Male. — Length about 3.5–3.7 mm.; wing 4.3–4.4 mm.

Mesonotum light yellow, praescutum with three dark brown stripes, scutellum yellow, darkened at base; pleura striped brown and yellow; legs brownish yellow; wings grayish,

stigma pale, cell R_3 present, very small; abdominal tergites brown, posterior borders yellow; hypopygium with three dististyles, intermediate style complex (fig. 86).

Dr. WOOD found the immature stages in saturated gravelly sand a short distance from the margin of water. Occurring nearby were the immature stages of *Tipula* (*Acutipula*) *pomposa* BERGROTH and *Conosia angustissima* ALEXANDER. Dr. WOOD's figure of the male hypopygium disagrees with the actual structure in the present species and possibly represents a distinct though closely allied fly.

Cape Province: Seven Weeks Poort, January 1935 (WOOD); Tzitzikama Forest, Storms Rivier, at light, January 14, 1951 (BRINCK–RUDEBECK), Loc. no. 134. — **Natal:** Kranzkop, November 1917 (BARNARD), type; Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG). — **Transvaal:** Florida, December 1918 (R. W. TUCKER). — **Basutoland:** Mamathes, January 8, 1957 (CHARLES JACOT-GUILLARMOD). — **Southern Rhodesia:** Salisbury, March 1900 (G. A. K. MARSHALL).

Gonomyia (Lipophleps) usherae ALEXANDER

Gonomyia (*Lipophleps*) *usherae* ALEXANDER; Ann. Natal Mus., 15: 34—36, figs. 28 (wing), 34 (♂ hyp.); 1960.

Male. — Length about 4.5–5 mm.; wing 3.8–4 mm.

General coloration of thorax dark brown, scutellum and a narrow pleural stripe whitened; femora yellow with a broad black subterminal ring; wings strongly suffused, costal and apical margins broadly whitened; cell R_3 lacking; hypopygium with three dististyles.

Moçambique: Luabo, August–September 1957 (USHER), types.

Trentepohlia BIGOT

Trentepohlia BIGOT; Ann. Soc. Entomol. France (3) 2: 456, 473; 1854.
Subgenera: *Mongoma* WESTWOOD, Trans. Ent. Soc. London 1881: 364; 1881.
Paramongoma BRUNETTI; Rec. Indian Mus., 295; 1911.

Trentepohlia is a very extensive genus, with numerous species occurring throughout the tropics of both hemispheres. In Africa, including Madagascar, it is one of the best known and characteristic genera of crane-flies, with many species, a small number of which range into southeastern Africa. These fall in three of the seven known subgenera, mostly in the typical subgenus.

The adult flies of some species have been noted hanging on horizontal spider webs, quite as in the manner of certain species of *Limonia* of the subgenera *Euglochina* and *Thryptiocomyia*, previously mentioned. It is of interest that in all these cases the species concerned have snowy white tarsi. The larvae of *Trentepohlia* (*Mongoma*) *pennipes* have been found in decaying plant stems. In tropical America the larvae of a small number of species live in water and accumulated organic matter in the leaf axils of epiphytic bromeliaceous plants, associated with a large and varied microfauna.

Key to South African *Trentepohlia*

1. Three branches of *M* reach the wing margin. (Subgenus *Mongoma* WESTWOOD). (Moçambique; Seychelles, Oriental-Australasian) . . . . . *pennipes* (OSTEN SACKEN)

— Two branches of *M* reach the wing margin (fig. 82) 2
2. Veins Cu_1 and *1st A* separate at margin, cell *Cu* widely open; cell *1st* M_2 closed. (Subgenus *Paramongoma* BRUNETTI). (Moçambique) . . . . . *fuscistigmosa* ALEXANDER
— Veins Cu_1 and *1st A* fused for a distance back from margin, in most of the local species extensively so; cell M_2 open (fig. 82). (Subgenus *Trentepohlia* BIGOT) 3
3. Wings subhyaline, unpatterned; apical fusion of veins Cu_1 and *1st A* very extensive, longer than the free section of Cu_1 4
— Wings whitish or pale, faintly to conspicuously patterned with brown; apical fusion of veins Cu_1 and *1st A* slight, much shorter than the free section of Cu_1 (fig. 82) 6
4. Wings long and narrow, approximately six times as long as broad (average about 6.7×1.05 mm.); cell R_5 very deep, from five to seven times its petiole, the latter subequal to first section of vein M_{1+2}; abdomen long and slender (over 7 mm.). (Transvaal, Southern Rhodesia; Madagascar) *gracilis* ENDERLEIN
— Wings of normal shape, approximately four and one-half to five times as long as broad (average about 5×1 to 5.5×1.25 mm.); cell R_5 of moderate depth, about two to three times its petiole, the latter about three times the first section of M_{1+2}; abdomen of normal length (about 5 mm. or less) 5
5. Legs with femora black, tibiae blackened basally, the outer two-thirds, with the proximal three tarsal segments, snowy white; wings grayish yellow, veins poorly defined against the ground. (Southern Rhodesia) . . . . . *leucophaea* ALEXANDER
— Legs light brown, the tips of femora and tibiae narrowly darker; wings faintly suffused with brown, veins darker brown, clearly defined. (Natal, Moçambique) . . . . . *zambesiae* (ALEXANDER)
6. Wings subhyaline, base and costal region yellowed, darkened pattern very pale, appearing chiefly as narrow seams along *Cu* and cord and a weak clouding at wing tip; (legs yellow, tips of tibiae and tarsi darker; costal fringe of male long and conspicuous; abdomen of male reddish brown, outer segments brownish black). (Moçambique) . . . . . *pamela* ALEXANDER
— Wings with dark pattern conspicuous, including the broad wing tip and broad brown seams over cord and Cu_1 7
7. Mesonotal praescutum obscure fulvous, with a central brown stripe; costal fringe of male long and conspicuous; dark area over *Rs* with a pale center (fig. 82). (Cape Province, Natal, Moçambique, Southern Rhodesia) . . . . . *exornata* (BERGROTH)
— Mesonotal praescutum blackened, humeri reddened; costal fringe short in both sexes; dark area over *Rs* solid or only vaguely brightened on central part. (Natal, Transvaal, Southern Rhodesia) . . . . . *humeralis* ALEXANDER

Trentepohlia (Paramongoma) fuscistigmosa ALEXANDER

Trentepohlia (Paramongoma) fuscistigmosa ALEXANDER; Ann. Natal Mus., 15: 28, fig. 22 (wing); 1960.

Female. — Length about 7 mm.; wing 6.5 mm.

General coloration pale yellow, mesonotum and abdominal tergites patterned with pale brown; halteres yellow; legs brownish yellow; wings pale yellow, stigma brown, distinct, triangular in outline.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG), type.

Trentepohlia (Mongoma) pennipes (OSTEN SACKEN)

Mongoma pennipes OSTEN SACKEN; Berlin. Entomol. Zeitsch., 31: 204; 1887.
Trentepohlia (Mongoma) pennipes ALEXANDER; Ann. Natal Mus., 15: 29; 1960.

Male. — Length about 7–8 mm.; wing 6–7 mm.

Brownish yellow, praescutum with more brownish stripes; head and base of antenna pale yellow, flagellum dark brown; legs brown, tips of tibiae and tarsi snowy white, mid-tibiae at tips slightly dilated and conspicuously fringed with short white setae; wings hyaline, costal border more yellowed, stigma lacking, veins pale.

Moçambique: Luabo, October 1957, April 1958 (USHER).

The first authentic record of this wide-spread Palaeotropical species in continental Africa.

Trentepohlia (Trentepohlia) exornata (BERGROTH)

(Fig. 82)

Mongoma exornata BERGROTH; Ent. Tidskr. 9: 135–136, fig. 3 (wing); 1888.
Mongoma exornata ALEXANDER; Ann. So. Afr. Mus., 17: 154; 1917.

Male. — Length about 6.3–6.5 mm.; wing 6.5–6.8 mm.

General coloration of thorax obscure fulvous, praescutum with a median brown stripe, pleura dark brown; legs yellow, tips of femora and tibiae darkened; wings with dark pattern conspicuous, areas at origin of *Rs* and in cell R_3 with pale centers, costal fringe of male long; abdomen, including hypopygium, brownish black.

Natal: Durban (F. MUIR); The Bluff, Durban, August 1915 (BELL-MARLEY). — **Moçambique:** Delagoa Bay (BERGROTH, ex VON RÖDER); Quelimane, December 20–25, 1908 (C. W. HOWARD); Luabo, June 1957 (USHER); Salone Forest, July 13, 1957 (STUCKENBERG). — **Southern Rhodesia:** Salisbury, December 1956 (SMITHERS); Victoria Falls, in dense wet vegetation near the Zambezi River, May 16, 1951 (BRINCK–RUDEBECK), Loc. no. 307.

Type from Caffraria (J. A. WAHLBERG).

Trentepohlia (Trentepohlia) gracilis ENDERLEIN

Trentepohlia gracilis ENDERLEIN; Zool. Jahrb., Syst., 32: 61–62, fig. (ven.); 1912.
Trentepohlia gracilis continentalis ALEXANDER; Ann. So. Afr. Mus., 18: 202–203; 1921.

Male. — Length about 8–8.5 mm.; wing 6–6.5 mm.; abdomen about 7 mm. or over.

Thorax brownish gray, praescutum with a dark brown median stripe; wings long and narrow, grayish yellow, costal border light yellow, veins pale, inconspicuous; abdomen unusually long in both sexes.

Transvaal: Kaapmuiden, October 30, 1918 (R. W. TUCKER), type of *continentalis*. — **Southern Rhodesia:** Salisbury, April 30, 1956 (SMITHERS).

Trentepohlia (Trentepohlia) humeralis ALEXANDER

Trentepohlia (*Trentepohlia*) *speiseri humeralis* ALEXANDER; Ann. So. Afr. Mus., 18: 201–202; 1921.
Trentepohlia (*Trentepohlia*) *humeralis zuluensis* ALEXANDER; Durban Mus. Novit., 4: 322–323; 1956.

Male. — Length 6.5–7.5 mm.; wing 6.8–7 mm.

Mesonotum blackened, humeral region of praescutum more reddened, pleura dark brown to virtually black; legs yellow, tips of femora and tibiae narrowly dark brown; wings with

a heavy brown pattern, area at origin of *Rs* solid, in cell R_3 with a pale central spot; costal fringe short; abdomen, including hypopygium, brownish black to black.

Natal: Eshowe, Zululand, November—December 1943 (BEVIS), type of *zuluensis*; Pietermaritzburg, March 27, 1955 (STUCKENBERG). — **Transvaal:** Kaapmuiden, October 30, 1918, June 10—23, 1919 (H. K. MUNRO, R. W. TUCKER), type of *humeralis*. — **Southern Rhodesia:** Nyachowa Falls, near Umtali, Vumba Mts., January 16, 1955 (STUCKENBERG), as *zuluensis*; Zimbabwe, Fort Victoria, January 29, 1955 (GRAHAM & STUCKENBERG), as *zuluensis*.

Trentepohlia (Trentepohlia) leucophaea ALEXANDER

Trentepohlia (Trentepohlia) leucophæa ALEXANDER; Journ. Ent. Soc. So. Afr., 22: 57—58; 1959.

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

Female. — Length about 4.8—5 mm.; wing 5 mm.

General coloration of mesonotum brownish yellow, praescutum darker brown medially in front, posterior sclerites yellowish white; femora brownish black, tibiae with basal third blackened, remainder and most of tarsi snowy white; wings grayish yellow, veins pale yellow, inconspicuous.

Southern Rhodesia: Salisbury, January—March 1957 (SMITHERS), types.

Trentepohlia (Trentepohlia) pamela ALEXANDER

Trentepohlia (Trentepohlia) pamela ALEXANDER; Journ. Ent. Soc. So. Afr., 22: 56—57, fig. 5 (ven.); 1959.

Male. — Length 5.5—5.7 mm.; wing 5—5.5 mm.

Female. — Length 7—7.3 mm.; wing 5.8—6 mm.

General coloration of thorax brownish yellow; legs yellow, the narrow tips of tibiae and tarsi darker; wings subhyaline, with a very restricted and inconspicuous pale brown pattern, chiefly apical, in cases almost lacking; costal fringe of male long and conspicuous.

The species much resembles the genotype, *Trentepohlia (Trentepohlia) trentepohlii* (WIEDEMANN), with a vast distribution in the Oriental-Australasian region, differing evidently in the long conspicuous costal fringe of the wing of the male.

Moçambique: Luabo, February, April 1957 (USHER), types.

Trentepohlia (Trentepohlia) zambesiae (ALEXANDER)

Mongoma zambesiæ ALEXANDER; Canad. Ent., 44: 86—88, fig. (ven.); 1912.

Male. — Length about 4.5—5 mm.; wing 4.8—5.5 mm.

Mesonotum dark brown, praescutum paler behind, pleura dark brown above, more brownish yellow ventrally; femora brown, tibiae paler, tips narrowly darkened, tarsi obscure yellow; wings weakly brownish gray, stigma and a small axillary cloud vaguely darker, veins distinct.

Natal: Umbilo, Durban, April 23, 1955 (BEVIS). — **Moçambique:** Quelimane, Zambezi River, December 1908 (C. W. HOWARD), type; Luabo, April—June 1957 (USHER).

Teucholabis OSTEN SACKEN

Teucholabis OSTEN SACKEN; Proc. Acad. Nat. Sci. Philadelphia 1859: 222; 1859.

Teucholabis is an extensive genus, greatly developed in the Neotropical region, with fewer species elsewhere. In the Old World the Oriental region is richest, while in Africa there appears to be a single species in the typical subgenus, with several subspecies or races, two of which occur within our faunal limits. The immature stages live in rotten logs or beneath the bark of dead trees, living in the cambial region or in the decaying wood.

The genus is represented in South Africa by one species, viz. *T. nodipes* SPEISER (1913). The typical form of the species occurs in tropical Africa, from Liberia and the Cameroons to Uganda. The species described by WOOD as *Teucholabis nova* (1952) is a synonym of *Limonia* (*Limonia*) *flavopyga* (ALEXANDER), q. v.

Key to South African *Teucholabis*

1. Mesonotal praescutum and adjoining part of scutal lobes polished black; abdomen with segments bicolored, brownish yellow basally, with broad subapical black rings. (Cape Province, Natal) . . . . . *nodipes clitelligera* ALEXANDER

— Mesonotal praescutum polished orange, the posterior half with three relatively small and isolated black stripes; abdomen uniformly orange, only the genital segment black (fig. 101). (Natal) . . . . . *nodipes marleyi* ALEXANDER

Teucholabis (Teucholabis) nodipes clitelligera ALEXANDER

Teucholabis (*Teucholabis*) *clitelligera* ALEXANDER; Rev. Zool. Bot. Africaine, 19: 360—361, fig. 7 (♂ hyp.), fig. 25 (wing); 1930.

Male. — Length about 7—8 mm.; wing 7—8 mm.

General coloration of thorax orange yellow, praescutum polished black; head, halteres and legs black; wings dusky, with a darker pattern.

Cape Province: Port St. Johns, Pondoland, March 18—31, 1924 (R. E. TURNER). — **Natal:** Eshowe, Zululand, May 6—31, 1926 (R. E. TURNER), type.

Teucholabis (Teucholabis) nodipes marleyi ALEXANDER

(Fig. 101)

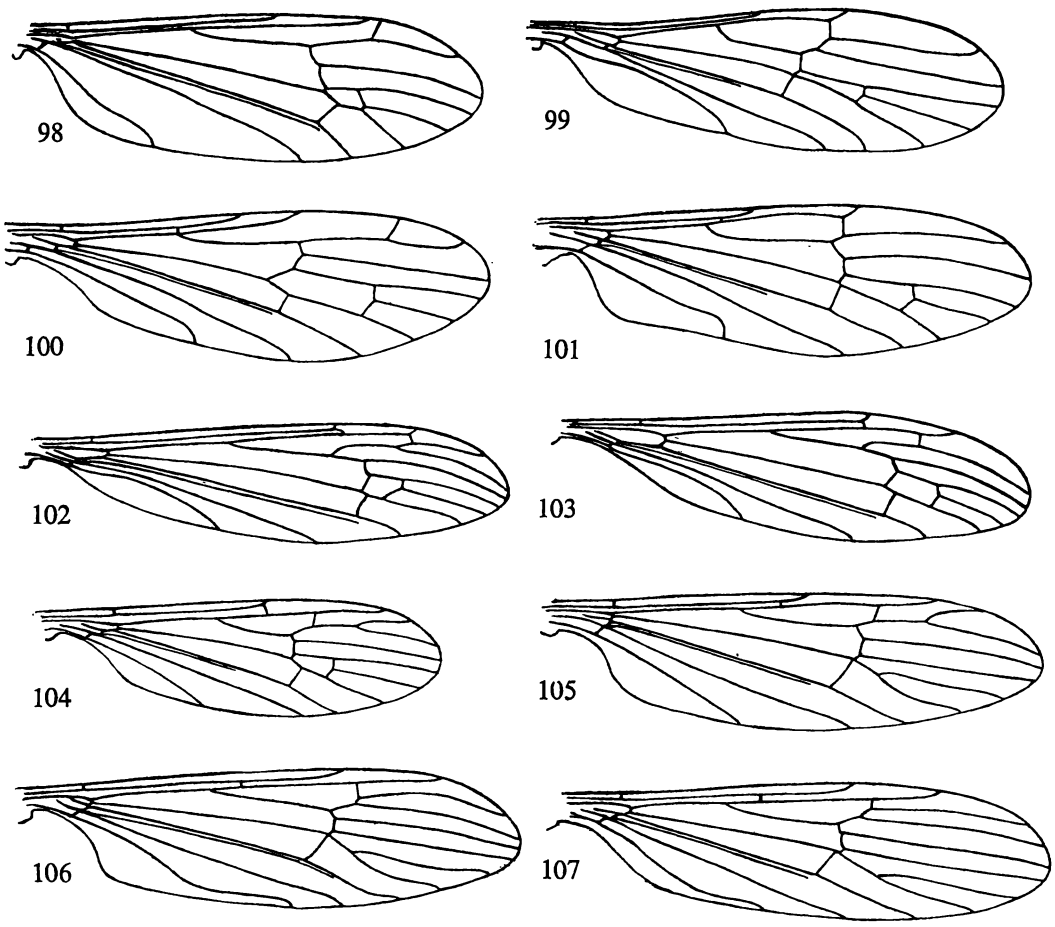
Teucholabis (*Teucholabis*) *nodipes marleyi* ALEXANDER; Durban Mus. Novit. 4: 321—322; 1956.

Female. — Length about 7 mm.; wing 6.3 mm.

Thorax almost uniformly orange, praescutum with three relatively small black stripes; head black; legs black; wings faintly yellowed, very restrictedly patterned with dark brown, especially at cord and extreme wing tip (fig. 101).

Natal: Durban, March 7, 1945 (BELL-MARLEY), type.

The larva occurs beneath bark of dead trees in moist situations (BELL-MARLEY).



Figs. 98-107. — 98. *Rhabdomastix* (*Sacandaga*) *indigena* ALEXANDER. — 99. *Gymnastes* (*Gymnastes*) *teucholaboides* (ALEXANDER). — 100. *Hovamyia venustipes* (ALEXANDER). — 101. *Teucholabis* (*Teucholabis*) *nodipes marleyi* ALEXANDER. — 102. *Limnophilomyia* (*Limnophilomyia*) *lacteitarsis* (ALEXANDER). — 103. *Limnophilomyia* (*Eulimnophilomyia*) *abnormalis* ALEXANDER, sp. n. — 104. *Cheilotrichia* (*Cheilotrichia*) *brincki* ALEXANDER, sp. n. — 105. *Cheilotrichia* (*Empeda*) *bonae spei* (ALEXANDER). — 106. *Erioptera* (*Erioptera*) *peringueyi* BERGROTH. — 107. *Erioptera* (*Meterioptera*) *subaurea* BERGROTH.

Gymnastes BRUNETTI

Gymnastes BRUNETTI; Rec. Indian Mus., 6: 281; 1911, Fauna Brit. India, Dipt. Nematocera, pp. 432—433; 1912.

A relatively small genus, chiefly in the Oriental-Australasian regions, with fewer species extending beyond these limits, including the Ethiopian region.

Gymnastes (Gymnastes) teucholaboides (ALEXANDER)

(Fig. 99)

Paratropeza (Gymnastes) teucholaboides ALEXANDER; Ann. Mag. Nat. Hist. (9) 5: 346–347; 1920.

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

General coloration black, dorsopleural membrane yellow; front and anterior vertex silvery white; halteres black, knobs light yellow; legs dark brown to black, femora blackened and strongly dilated at ends, preceded by a narrow yellow ring, tibiae and tarsi dark brown, proximal end of basitarsus yellowed; wings dark brown, base and two narrow crossbands whitened; abdomen black, in male the posterior borders of tergites narrowly yellow (fig. 99).

Moçambique: West side of Gorongoza Mt., 1200 meters, September 1957 (STUCKENBERG). — **Southern Rhodesia:** Chirinda Forest, October 1905 (G. A. K. MARSHALL), type.

Hovamyia ALEXANDER

Hovamyia ALEXANDER; Mem. Inst. Scient. Madagascar, (A) 5: 54–55; 1951.

The genus includes a few species in Madagascar, with a single additional species on the African mainland. Despite the striking differences in venation between the two groups, it appears that the closest relative is *Gymnastes* BRUNETTI.

Hovamyia venustipes (ALEXANDER)

(Fig. 100)

Gonomyia (Gonomyia) venustipes ALEXANDER; Ann. Mag. Nat. Hist. (9) 6: 38–40; 1920.
Hovamyia venustipes ALEXANDER; Ruwenzori Exped., 1934–35, 1, no. 7: 334–335; 1956.

Male. — Length about 4–4.5 mm.; wing 4–5.5 mm.

Female. — Length about 4–5 mm.; wing 4.5–6 mm.

Mesonotal praescutum whitened, cinnamon brown sublaterally, the white lateral triangles delimited by dark brown; scutellum white, posterior border dark brown; femora with tips light brown, preceded by a white ring; tibiae white, tips and a ring before midlength broadly brownish yellow; proximal tarsal segments white, tips of basitarsi and outer tarsal segments darkened; wings very pale yellowish subhyaline, with small dark brown spots and dots that are restricted to the veins, largest area at arculus (fig. 100).

Moçambique: West slope of Gorongoza Mt., 840 meters, September 1947 (STUCKENBERG); Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG). — **Southern Rhodesia:** Chirinda Forest, November 1930 (CUTHBERTSON).

Limnophilomyia ALEXANDER

Limnophila (Limnophilomyia) ALEXANDER; Ann. So. Afr. Mus., 18: 208–209; 1921.
Limnophilomyia WOOD; Ann. So. Afr. Mus., 39: 206–215; 1952.
Limnophilomyia ALEXANDER; Ruwenzori Exped., 1934–35, 1, no. 7: 335–336; 1956.
Subgenus *Eulimnophilomyia* subgen. n.

A very small genus, restricted to the Ethiopian region, and chiefly to South Africa. The group is closest to *Lipsothrix* LOEW, of the northern hemisphere, differing in several important regards. The systematic position of these genera remains in doubt and their assignment to the Eriopterini may be questioned. Further discussion will be found in the 1956 paper above cited. The discovery of a new subgenus, *Eulimnophilomyia*, with the venation of the radial field further reduced, is of particular interest. It is likewise of interest that all of the local species have the tarsi extensively or wholly creamy white to snowy white. The immature stages occur in partly submerged decaying logs in streams, a habitat that is quite like that found in *Lipsothrix*.

Key to South African *Limnophilomyia*

1. Wings with vein R_3 atrophied, *Rs* with two branches reaching the margin (fig. 103). (Subgenus *Eulimnophilomyia* new) (Cape Province) . . . . . *abnormalis* sp. n.
— Wings with three branches of *Rs* reaching the margin (fig. 102). (Subgenus *Limnophilomyia* ALEXANDER) 2
2. Wings with R_2 faint, beyond the fork, leaving an element R_{2+3}; antennae of male about three-fourths the body, flagellar vestiture relatively short; legs with basitarsi chiefly darkened, outer segments creamy white; hypopygium with tergal lobes narrower than the deep median emargination (fig. 102). (Cape Province) . . . . . *lacteitarsis* (ALEXANDER)
— Wings with R_2 distinct, shorter than R_{1+2}, placed at or close to the fork; antennae of male nearly as long as body, flagellar vestiture long, erect; tarsi snowy white; hypopygium with tergal lobes broader than the shallow median emargination 3
3. Legs with tips of tibiae and all tarsi snowy white; wings with R_2 before the fork, leaving a short element R_{3+4}; hypopygium with the dististyle slender. (Natal) . . . . . *stuckenbergi* ALEXANDER
— Legs with tibiae darkened, tarsi snowy white; wings with R_2 just beyond the fork, leaving a short element R_{2+3}; hypopygium with the dististyle stouter, dilated shortly before tip. (Transvaal) . . . . . *transvaalensis* ALEXANDER

Eulimnophilomyia subgen. n.

Characters as in the typical subgenus but with vein R_3 atrophied so *Rs* has two branches reaching the margin. Claws of female longer than in the typical group, apparently without teeth.

Type of subgenus. — *Limnophilomyia* (*Eulimnophilomyia*) *abnormalis* sp. n. (Ethiopian region: Cape Province).

Limnophilomyia (Eulimnophilomyia) abnormalis sp. n.

(Fig. 103)

Size small (wing of female about 5 mm.); general coloration orange yellow; tips of basitarsi and outer tarsal segments whitened; wings fulvous brown, veins pale brown.

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

Described from alcoholic material.

Rostrum and palpi brownish yellow. Antennae brownish yellow; flagellar segments cylindrical, exceeding their verticils (terminal segments broken). Head dark brown.

Pronotum orange yellow, posterior part with several long erect black setae. Mesonotum almost uniformly orange; praescutal interspaces with sparse setae, the more posterior ones very long, scutum and scutellum with shorter setae; postnotum and pleura glabrous. Pleura orange yellow. Halteres whitened, knob weakly suffused. Legs with coxae and trochanters yellow; remainder of legs brownish yellow, apex of basitarsi and remaining tarsal segments white. Wings (fig. 103) tinged with fulvous brown, cells *C* and *Sc* somewhat darker; veins pale brown. Macrotrichia on longitudinal veins of outer half of wing, including a few at outer ends of *M* and the Anal veins, lacking on basal section of Cu_1. Venation: R_2 faint but evident, about one-half R_{1+2}; vein R_3 atrophied; cell *1st* M_2 rectangular, subequal in length to vein M_4; *m–cu* about one-third to one-fourth its length beyond the fork of *M*. In one wing of type a detached fragment of a vein indicates the former presence of vein R_3.

Abdomen light brown, with abundant short black setae. Ovipositor with cerci very long and slender, gently upcurved to the acute tips.

Cape Province: Kogelbaai, 10 miles south of Strand, near stony stream in shady bush, December 19, 1950. Holotype, alcoholic ♀, (BRINCK–RUDEBECK), Loc. no. 85.

The present fly is quite distinct from the members of the typical subgenus by the loss by atrophy of vein R_3.

SUBGENUS Limnophilomyia ALEXANDER

Limnophilomyia (Limnophilomyia) lacteitarsis (ALEXANDER)

(Fig. 102)

Limnophila (Limnophilomyia) lacteitarsis ALEXANDER; Ann. So. Afr. Mus., 18: 209–210; 1921.
Limnophilomyia lacteitarsis WOOD; Ann. So. Afr. Mus., 39: 205–215, fig. 66 (ad.), fig. 67 (larva), fig. 68 (pupa); 1952.

Male. — Length 6–7 mm.; wing 6.5–7.7 mm.; antenna 4.2–4.5 mm.

General coloration of thorax brownish black; antennae moderately long, normal vestiture shorter than the verticils; halteres darkened; legs black, outer tarsal segments creamy white; wings strongly darkened, veins darker; vein R_2 pale to scarcely indicated. In the holotype, R_{1+2} likewise is semi-atrophied, without trichia, but in other specimens is longer and provided with trichia (fig. 102).

Dr. WOOD found the immature stages living along streams in partly submerged decaying logs of *Cunonia* (Cunoniaceae, Rosales). They occurred at and near the water level, where the wood was soft and saturated. In this soggy environment the larvae form tunnels chiefly beneath the surface, before pupation coming virtually to the surface, where the pupal chamber is formed. The adult flies commonly rest on the under surface of the log from which they have emerged. In treeless mountain areas where the species occurs, the adult flies rest among the stems of plants of the family Restionaceae.

Cape Province: Peninsula, Oudekraal Ravine, August 1933; Platteklip, November 1933; Window Gorge, November 1932 (WOOD); Oudebosch, 1500 feet, January 1919 (BARNARD), type, January 1933, 1934, Septem-

ber 1937 (WOOD); Bains Kloof, May 1933; Du Toits Kloof road, September 1933; French Hoek Pass, December 1934, October 1933; Landdrost, January 1933; Palmiet River, January 1937; Seven Weeks Poort, January 1935; Steenbras, November 1932 (WOOD); Kirstenbosch, November 5, 1950, among stones along small stream shaded by rich vegetation, (BRINCK—RUDEBECK), Loc. no. 25.

Limnophilomyia (Limnophilomyia) stuckenbergi ALEXANDER

Limnophilomyia stuckenbergi ALEXANDER; Ann. Natal Mus., 13: 400—402, fig. 2 (ven.), fig. 10 (♂ hyp.); 1956.

Male. — Length 6—6.3 mm.; wing 6.5—7.2 mm.; antenna 5.5—6 mm.

General coloration of thorax brown, praescutum with three more brownish yellow stripes, pleura more yellowed; antennae of male nearly as long as body, flagellar segments with long outspreading setae that exceed the verticils; legs brown, tarsi and narrow tips of tibiae snowy white; wings with a strong blackish suffusion, cell *1st* M_2 rectangular.

Natal: Indumeni Forest, Cathedral Peak Area, Drakensberg, February 3, 1954 (STUCKENBERG), type; Town Bush, Pietermaritzburg, November 11, 1954, October 12, 1956 (STUCKENBERG); Kranskop, October 12, 1956, November 11, 1954 (STUCKENBERG).

Limnophilomyia (Limnophilomyia) transvaalensis ALEXANDER

Limnophilomyia transvaalensis ALEXANDER; Ann. Natal Mus., 14: 269—270, fig. 13 (ven.), fig. 17 (♂ hyp.); 1958.

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

General coloration of praescutum obscure yellow, interspaces darker, pleura testaceous yellow; antennae of male elongate, verticils very long and conspicuous; femora and tibiae brown, tarsi abruptly snowy white; wings strongly darkened.

Transvaal: Mariepskop, 4400 feet, October 4—8, 1956 (STUCKENBERG), type.

Rhabdomastix SKUSE

Rhabdomastix SKUSE; Proc. Linn. Soc. New South Wales (2) 4: 828; 1890.
Subgenus *Sacandaga* ALEXANDER; Ent. News, 22: 351—352; 1911.

Rhabdomastix is a relatively large genus, with representatives in all regions of the world, including New Zealand, but to the present date, not in Madagascar. Species of the typical subgenus, with the male antennae excessively lengthened, occur in Australia and South America, with a few in the Oriental region, including the Himalayas. The South African species fall in the subgenus *Sacandaga*, with the antennae short in both sexes. The immature stages live in sandy soil at the margins of streams.

Key to South African *Rhabdomastix*

1. Size relatively large (wing over 4.5 mm.); wings with veins at outer end of cell *1st* M_2 unequal, *m* being three or more times the basal section of M_3 (fig. 98). (Natal) . . . . . *indigena* ALEXANDER
— Size smaller (wing 4 mm. or less); wings with veins at outer end of cell *1st* M_2 subequal or with *m* somewhat

shorter 2

2. Mesonotal praescutum rufous brown, with a narrow median dark brown stripe that is split by a capillary yellow vitta; thoracic pleura with two light brown stripes separated by a paler longitudinal stripe; wings with Sc_1 ending about opposite two-thirds *Rs*. (Cape Province) . . . . . *afra* WOOD

— Mesonotum and pleura uniformly brownish yellow, unpatterned; wings with Sc_1 ending about opposite midlength of *Rs* (fig. 118). (Natal) . . . . . *tugela* sp. n.

Rhabdomastix (Sacandaga) afra WOOD

Rhabdomastix afra WOOD; Ann. So. Afr. Mus., 39: 279–286, fig. 92 (ad., larva), fig. 93 (pupa); 1952.

Male. — Length 4–4.5 mm.; wing 3–3.2 mm.

General coloration of thorax rufous, praescutum with a narrow dark brown stripe, divided by a yellow vitta; pleura patterned; wings pale, stigma indistinct, veins yellowish brown; abdomen rufous brown, pleural membrane darker.

Dr. WOOD describes the antennae as being elongate, two and one half times the combined head and thorax, yet extending only to the tip of the first abdominal segment. There is an error here since an antenna with such dimensions would be practically as long as the entire body.

Cape Province: Peninsula, Orange Kloof, March 1934; Platteklip, November 1932, 1934, December 1934 (WOOD); Oudebosch, September 1933 (WOOD).

Rhabdomastix (Sacandaga) indigena ALEXANDER

(Fig. 98)

Rhabdomastix (Sacandaga) indigena ALEXANDER; Ann. Natal Mus., 14: 270–271, fig. 18 (ven.), fig. 22 (♂ hyp.); 1958.

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

General coloration of mesonotum dark brown, without distinct pattern; antennae black throughout; wings with a strong dusky tinge; cell *1st* M_2 irregular in outline, *m* much shorter than basal section of M_3; hypopygium with gonapophysis pale, tip acutely pointed (fig. 98).

Natal: Kranskop, October 12, 1956 (STUCKENBERG), type.

Rhabdomastix (Sacandaga) tugela sp. n.

(Fig. 118)

Size medium (wing of female 4 mm.); general coloration of thorax uniformly brownish yellow; halteres pale; wings weakly tinged with brown, base more yellowed; macrotrichia on distal section of vein R_5 and outer branches of *M*.

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

Described from alcoholic material.

Rostrum and palpi pale. Antennae light brown, moderately long, if bent backward extending about to the wing root; flagellar segments cylindrical, exceeding the verticils. Head brown, orbits and genae paler; anterior vertex broad.

Thorax uniformly brownish yellow, unpatterned; pseudosutural foveae pale, poorly defined; vestiture very sparse. Halteres pale. Legs with coxae brownish yellow; trochanters yellow; femora brownish yellow, outer leg segments paling to yellow. Wings (fig. 118) weakly tinged with brown, the base more yellowed; no evident stigma; veins pale brown, prearcular field more yellowed. Macrotrichia on distal section of R_5 and outer branches of *M*. Venation: Sc_1 ending about opposite midlength of *Rs*, Sc_2 apparently lacking; vein R_3 nearly erect, about as long as distance on costa between it and R_{1+2}; veins issuing from cell *1st* M_2 nearly straight, M_{1+2} scarcely arched; *m—cu* nearly its own length beyond the fork of *M*.

Abdomen uniformly yellowish brown.

Natal: Tugela Valley, National Park, 5000 feet, along the Tugela River, April 3, 1951. Holotype, alcoholic ♀, (BRINCK—RUDEBECK), Loc. no. 258.

The relationships to *Rhabdomastix (Sacandaga) afra* are shown in the key.

Baeoura ALEXANDER

Erioptera (Baeoura) ALEXANDER; Ann. Ent. Soc. America, 17: 67; 1924.

The genus *Baeoura* is represented by numerous species in the Oriental and Ethiopian regions. The group has been placed as a subgenus of *Cryptolabis* OSTEN SACKEN but the venation, especially the very long *Rs*, is so distinct from typical *Cryptolabis* that it seems advisable to consider the two groups as being distinct. The antennae of the local species are 15-segmented, the only species where the condition remains unknown being *Baeoura brevipilosa*. The immature stages of *Baeoura claripennis* were found under conditions that seem to indicate a strictly aquatic habitat.

Key to South African *Baeoura*

1. Wings with cell *1st* M_2 closed 2
— Wings with cell M_2 open by the atrophy of *m* 3
2. Antennae short in both sexes, verticils subequal to the segments, normal vestiture short; (hypopygium with dististyle a stout simple structure, the swollen body with long conspicuous setae, the more narrowed apex blackened; phallosome with a pair of blackened spines). (Transvaal) . . . . *cooksoni* (ALEXANDER)
— Antennae of male elongate, flagellar segments long with abundant erect setae, verticils scarcely differentiated; (hypopygium with setae of dististyle delicate; phallosome with a single blackened spine). (Natal) . . . . . *producticornis* (ALEXANDER)
3. Hypopygium with outer angle of basistyle produced into a strong spine or sclerotized rod, longer than the dististyle; (dististyle with a short basal lobe and a longer fleshy one provided with conspicuous erect setae; *Rs* long, more than twice *R*). (Cape Province) . . . . . *longicalcarata* (WOOD)
— Hypopygium with the basistyle unproduced at apex 4
4. *Rs* of moderate length, not more than one-half longer than *R*. 5
— *Rs* long, approximately twice *R* or more 6
5. *Sc* long, Sc_1 ending beyond fork of *Rs*, Sc_2 removed from its tip, Sc_1 nearly as long as *m—cu*; vein *2nd A* convexly arched. (Transvaal, Moçambique) . . . . . *brevipilosa* (ALEXANDER)
— *Sc* shorter, both Sc_1 and Sc_2 ending before the fork of *Rs*; vein *2nd A* nearly straight; (dististyle a flattened pubescent blade, about twice as long as broad, terminating in two small points, the outer one longer). (Cape Province) . . . . . *brumata* (WOOD)

6. Ninth tergite of hypopygium with a dorsal plate or ledge and two lower lobes that are directed ventrad, separated by a deep narrow notch, each lobe truncated and blackened at tip; (dististyle stout basally, bent and tapering outwardly, apex short and broad, sclerotized) (fig. 111). (Cape Province) . . . . . *claripennis* (ALEXANDER)

— Hypopygium with the tergite not as above 7

7. Hypopygium with the tergite consisting of two short stout pale lobes, densely setiferous, separated by a shallow notch; dististyle a simple flattened pale blade, its apex narrowly obtuse. (Cape Province) . . . . . *unistylata* ALEXANDER

— Hypopygium with the tergite produced medially into a short slender acute point; dististyle a flattened blade, broad at base, produced into a small ventral pubescent lobe and an elongate sclerotized blade that bears a small tooth before the truncated apex. (Cape Province) . . . . . *witzenbergi* (WOOD)

Baeoura brevipilosa (ALEXANDER)

Erioptera nigrolatera brevipilosa ALEXANDER; Ann. Mag. Nat. Hist. (9) 5: 467–468; 1920.

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

Praescutum gray medially, lateral stripes black; pleura brown, sparsely pruinose, dorsopleural membrane yellowed; legs brownish black, vestiture appressed, inconspicuous; wings grayish subhyaline.

Transvaal: De Kaap Block B, near Kaapmuiden, October 1919 (H. K. MUNRO), type. — **Moçambique:** Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG).

Baeoura brumata (WOOD)

Erioptera brumatus WOOD; Ann. So. Afr. Mus., 39: 304, fig. 100 (ad.); 1952.

Male. — Length 3.4–4.2 mm.; wing 2.8–3 mm.

Praescutum brownish yellow, unpatterned; legs blackish brown; wings hyaline, stigma lacking; hypopygium terminating in a broadly rounded or subtruncate lobe; basistyle short and stout, dististyle subterminal.

Cape Province: Graafwater, August 1938 (C. W. THORNE), type.

Baeoura claripennis (ALEXANDER)

(Fig. 111)

Erioptera (*Erioptera*) *claripennis* ALEXANDER; Ann. So. Afr. Mus. 18: 191–192, pl. 3, fig. 10 (ven.); 1921.
Erioptera claripennis WOOD; Ann. So. Afr. Mus., 39: 288–293, fig. 94 (ad.), fig. 95 (larva, pupa); 1952.

Male. — Length about 3 mm.; wing 4.4–4.5 mm.

General coloration of thorax black, gray pruinose, apex of scutellum dull yellow; legs dark brown; wings grayish subhyaline, base more yellowed, stigma indistinct; R_{2+3+4} very short, scarcely longer than basal section of R_5 (fig. 111).

Dr. and Mrs. WOOD found the immature stages along a splashing sunlit stream where they occurred in small pools, presumably under strictly aquatic conditions.

Cape Province: Peninsula, Fernwood, November 1933; Orange Kloof, November 1931 (WOOD); Matroosberg, Ceres Division, 3500 feet, January 1917 (LIGHTFOOT), type; French Hoek Pass, December 1932, 1933, January 1935; Palmiet River, January 1937 (WOOD).

Baeoura cooksoni (ALEXANDER)

Cryptolabis (*Baeoura*) *cooksoni* ALEXANDER; Ann. Natal Mus., 14: 271–273, fig. 19 (ven.), fig. 23 (♂ hyp.); 1958.

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

General coloration of thorax grayish brown, pleura clearer gray; legs black; wings strongly blackened, cell *1st* M_2 closed; hypopygium with tergal border heavily blackened.

Transvaal: Mariepskop, 4400 feet, October 4–6, 1956 (STUCKENBERG), type.

Baeoura longicalcarata (WOOD)

Erioptera longicalcaratus WOOD; Ann. So. Afr. Mus., 39: 295–297, fig. 97 (ad.); 1952.

Male. — Length 4–4.5 mm.; wing 5–5.5 mm.

Mesonotum dark brown, paler posteriorly, pleura yellowish brown; legs yellowish brown; wings pale brown, stigma indistinct; abdominal tergites brown, sternites more yellowed.

Cape Province: Peninsula, Orange Kloof, March 1933, November 1934; Silvermine Valley, March 1933 (WOOD); Du Toits Kloof, west side, May 1934; Oudebosch, January, September 1934; Sneeuwgat, November 1932 (WOOD).

Baeoura producticornis (ALEXANDER)

Cryptolabis (*Baeoura*) *producticornis* ALEXANDER; Ann. Natal Mus., 14: 394, fig. 27 (♂ hyp.), fig. 34 (ven.); 1960.

Male. — Length about 5 mm.; wing 6 mm.; antenna about 2.3 mm.

General coloration of mesonotum almost uniformly brownish black, posterior sclerites and pleura more pruinose; antennae of male elongate; hypopygium with dististyle narrowed and blackened on outer half.

Natal: Byrne District, Enon Estates, January 25, 1957 (STUCKENBERG), type.

Baeoura unistylata (ALEXANDER)

Cryptolabis (*Baeoura*) *unistylata* ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy) 18: 158–159; 1949.

Male. — Length 3.8–4 mm.; wing 4–4.4 mm.

Thorax light grayish brown, unpatterned, pleura more reddened, heavily pruinose; halteres yellow, knobs very weakly darkened; legs light brown; wings grayish, stigma scarcely indicated; abdomen dark brown, hypopygium slightly more brightened; hypopygium with gonapophysis a broadly flattened pale blade, outer apical angle produced into a long arm or point.

Cape Province: Great Winterhoek, Tulbagh, 4000 feet, November 1916 (BARNARD), type.

Baeoura witzenbergi (WOOD)

Erioptera witzenbergi WOOD; Ann. So. Afr. Mus., 39: 297–299, fig. 98 (ad.); 1952.

Male. — Length 3.5–3.8 mm.; wing 4–4.2 mm.

Mesonotum blackish brown, pleura paler brown; wings yellowish brown, stigma indistinct; abdomen dark brown.

Cape Province: Skurfteberge and Witzenberge, October 1937 (C. W. THORNE), types.

Tasiocera SKUSE

Tasiocera SKUSE; Proc. Linn. Soc. New South Wales, (2) 4: 815; 1890.
Subgenus *Dasymolophilus* GOETGHEBUER; Bull. Soc. Ent. Belgique, 2: 132; 1920.

A small genus, with slightly more than fifty known species. The typical subgenus, with greatly lengthened antennae in the male, is almost entirely Australasian, while *Dasymolophilus*, with short antennae in both sexes, is widespread throughout the Holarctic, Ethiopian and Oriental regions. The immature stages remain undiscovered but almost certainly occur in organic mud at the margins of streams.

Key to South African *Tasiocera*

1. Hypopygium with the phallosomic structure a depressed plate, its caudal margin slightly concave, each posterior angle produced into a slender smooth darkened spine; (size very small, wing of male 2.2 mm) (figs. 113, 124). (Cape Province) . . . . . *liliputana* (ALEXANDER)
— Hypopygium with phallosome not as above 2
2. Dististyle strongly narrowed outwardly, with four strong spines along lower margin. (Natal, northwards) . . . . . *probosa* ALEXANDER
— Dististyle without spines 3
3. Dististyle a broad flattened blade, tapering to a short acute spine; phallosome with a single black spine that is subequal in length to the aedeagus (fig. 112). (Cape Province). . . . *eriopteroides* (ALEXANDER)
— Dististyle a pale blade that narrows from the base to the subacute tip; phallosome including a pair of hooks and a single structure that is produced into a long spine. (Natal) . . . . . *cyrtacantha* ALEXANDER

Tasiocera (Dasymolophilus) cyrtacantha ALEXANDER

Tasiocera (Dasymolophilus) cyrtacantha ALEXANDER; Ann. Natal Mus., 14: 273–274, fig. 24 (♂ hyp.); 1958.

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

General coloration brownish black to black; antennae, halteres and legs black; wings strongly tinged with blackish; cell *1st* M_2 apparently closed.

Natal: Town Bush, Pietermaritzburg, July 5, 1956 (STUCKENBERG), type.

Tasiocera (Dasymolophilus) eriopteroides (ALEXANDER)

(Fig. 112)

Molophilus eriopteroides ALEXANDER; Ann. So. Afr. Mus., 18: 193–194, pl. 3, fig. 12 (wing); 1921.

Male. — Length about 1.8–2 mm.; wing 3.2–3.3 mm.

Praescutum gray, with three more infuscated stripes, remainder of thorax gray pruinose; legs dark brown; wings faintly darkened, cell M_2 open by atrophy of *m*; abdomen dark brown, hypopygium paler (fig. 112).

Cape Province: Landdrost Kloof, Hottentots Holland Mts., 4000 feet, 1917 (BARNARD), type; French Hoek Pass, January 1935; Witte River, October 1933 (WOOD).

Tasiocera (Dasymolophilus) liliputana (ALEXANDER)

(Figs. 113, 124)

Dasymolophilus liliputanus ALEXANDER; Encycl. Entomol., Diptera, 7: 61–62; 1934.
Dasymolophilus liliputanus WOOD: Ann. So. Afr. Mus., 39: 305; 1952.

Male. — Length about 1.5 mm.; wing 2.2 mm.

Thorax dark brown, slightly pruinose; antennae and legs brown; wings grayish brown, veins darker (figs. 113, 124).

Cape Province: Ceres, April 1925 (R. E. TURNER), type.

Tasiocera (Dasymolophilus) probosa ALEXANDER

Tasiocera (Dasymolophilus) probosa ALEXANDER, Ruwenzori Exped., 1934–35, 1, no. 7: 340–342, fig. 165 (♂ hyp.); 1956.
Tasiocera (Dasymolophilus) probosa ALEXANDER; Ann. Natal Mus., 14: 274; 1958.

Male. — Length about 3–3.3 mm.; wing 3.3–4 mm.

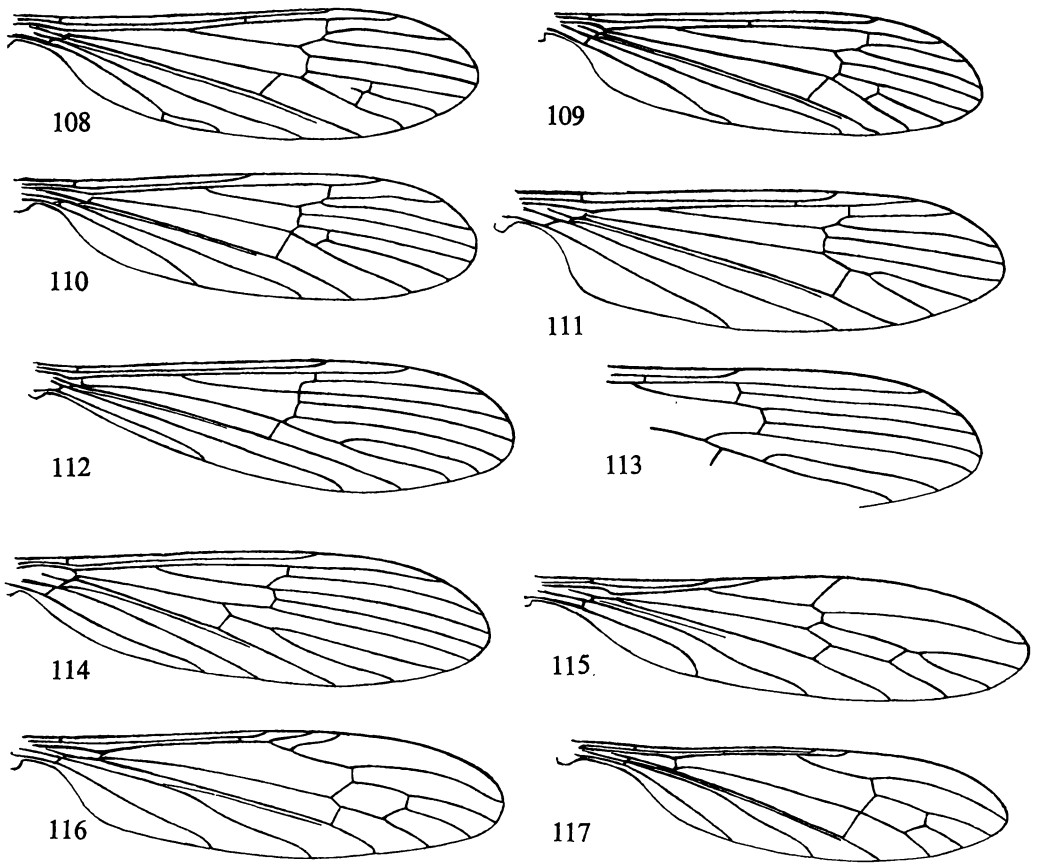
General coloration dark reddish brown; legs brownish yellow, tibiae and tarsi darker; wings dusky, veins darker; cell *1st* M_2 closed, elongate; abdomen, including hypopygium, black.

Natal: Masongwaan Forest, Cathedral Peak Area, Drakensberg, March 23, 1955 (STUCKENBERG); Karkloof, near Howick, April 17, 1955 (STUCKENBERG).

Ormosia RONDANI

Ormosia RONDANI; Prodr. Dipterol. Italicae, 1: 180; 1856.
Subgenus *Trichotrimicra* ALEXANDER; Ann. So. Afr. Mus., 18: 195; 1921.

The genus *Ormosia* is essentially Holarctic in distribution, with numerous species throughout the North Temperate zone. The subgenus *Trichotrimicra* is entirely Ethiopian, six species being known to date, with three in the local fauna. As is the case with many genera in the family, the structure of the male hypopygium provides the strongest characters for the separation of the species, and has been used throughout the keys. Nothing is known concerning the immature stages of *Trichotrimicra* but the various species of the typical subgenus, as known, occur in organic mud, usually near water and beneath a protective cover of decaying leaves.



Figs. 108-117. — 108. *Erioptera* (*Podoneura*) *anthracogramma* (BERGROTH). — 109. *Erioptera* (*Trimicra*) *pilipes pilipes* (FABRICIUS). — 110. *Ormosia* (*Trichotrimicra*) *hirtipennis* (ALEXANDER). 111. *Baeoura claripennis* (ALEXANDER). — 112. *Tasiocera* (*Dasymolophilus*) *eriopteroides* (ALEXANDER). — 113. *Tasiocera* (*Dasymolophilus*) *liliputana* (ALEXANDER). — 114. *Molophilus* (*Molophilus*) *natalicola* ALEXANDER.—115. *Styringomyia stuckenbergi* ALEXANDER. — 116. *Toxorhina* (*Ceratocheilus*) *drysdalei* ALEXANDER. — 117. *Toxorhina* (*Toxorhina*) *cuthbertsoni* ALEXANDER.

Key to South African *Ormosia*

Males

1. Hypopygium with inner dististyle slightly expanded at outer end and recurved into a short spine; phallosome with outer angle produced caudad into a long very slender rod, its extreme tip recurved; (lateral arm of outer dististyle dilated at tip) (figs. 110, 120, 123). (Natal) . . . . . *hirtipennis* (ALEXANDER)

— Hypopygium with inner dististyle a simple blade; phallosome not as above 2

2. Hypopygium with phallosome broad, on either side produced into a slender gently incurved horn, its tip acute; lateral arm of outer dististyle triangularly dilated. (Natal) . . . . . *antilopa* ALEXANDER

— Hypopygium with phallosome with four conspicuous spines, lateral arms outcurved, unequally bispinous; lateral arm of outer dististyle slender. (Natal). . . . . *tchaka* ALEXANDER

Ormosia (Trichotrimicra) antilopa ALEXANDER

Ormosia (*Trichotrimicra*) *antilopa* ALEXANDER; Ann. Natal Mus., 14: 394–395, fig. 28 (♂ hyp.), fig. 35 (ven.); 1960.

Male. — Length about 4.2–4.3 mm.; wing 5–5.2 mm.; antenna about 0.9–1 mm. Wings darkened; hypopygium with the outer dististyle deeply forked, inner style without tooth on outer margin.

Natal: Zwartkop, near Pietermaritzburg, May 16, 1957 (STUCKENBERG), types.

Ormosia (Trichotrimicra) hirtipennis (ALEXANDER)

(Figs. 110, 120, 123)

Trimicra (*Trichotrimicra*) *hirtipennis* ALEXANDER; Ann. So. Afr. Mus., 18: 195–196; 1921.
Ormosia (*Trichotrimicra*) *hirtipennis* ALEXANDER; Ann. Natal Mus., 14: 395–396, fig. 29 (♂ hyp.); 1960.

Male. — Length about 3.7–4 mm.; wing 4–4.5 mm.

Hypopygium (fig. 123) with outer dististyle large and conspicuous, forked at near mid-length; inner style subequal in length, more slender, outer end slightly expanded; phallosome with outer angles of central mass produced caudad into a long very slender rod, the extreme tip recurved. The two figures (figs. 110, 120) show the venation and the distribution of the macrotrichia respectively.

Natal: Kranskop (Krantzkop), November 1917 (BARNARD), type; November 11, 1954 (STUCKENBERG); Durban, without further data; Indumeni Forest, Cathedral Peak Area, Drakensberg, March 22, 1955 (STUCKENBERG).

Ormosia (*Trichotrimicra*) *tchaka* ALEXANDER

Ormosia (*Trichotrimicra*) *tchaka* ALEXANDER; Ann. Natal Mus., 14: 396–397, fig. 30 (♂ hyp.); 1960.

Male. — Length about 4.5–5 mm.; wing 5.8–6.8 mm.; antenna about 1–1.2 mm. General coloration dark brownish gray to plumbeous; wings dusky; hypopygium with outer dististyle profoundly bifid, outer arm slender; phallosome with lateral arms outcurved, each with a small recurved marginal spine.

Natal: Nhluzana Mt., Dargle District, above 5000 feet, May 10, 1957 (STUCKENBERG), types.

Cheilotrichia ROSSI

Cheilotrichia ROSSI; Verz. österreich. Dipt., p. 12; 1848.
Subgenus- *Empeda* OSTEN SACKEN; Mon. Dipt. No. Amer., 4: 183; 1869.

Cheilotrichia is a relatively large genus, particularly with the inclusion of the numerous species of *Empeda*. As so interpreted, the genus is widespread in all major regions, including New Zealand. Nothing appears to be known concerning the immature stages.

Key to South African *Cheilotrichia*

1. Wings with cell *1st* M_2 closed (fig. 104). (Subgenus *Cheilotrichia* Rossi) 2
— Wings with cell M_2 open by atrophy of *m* (fig. 105). (Subgenus *Empeda* Osten Sacken) 3
2. Size small (wing about 3 mm.); general coloration brown; legs uniformly pale brown; wings weakly tinged with brown, veins clearly defined; *Sc* short, Sc_1 ending before midlength of *Rs*. (Cape Province) . . . . . *clausa* (Alexander)
— Size larger (wing about 3.5 mm.); general coloration yellow; legs yellow, tips of femora narrowly black; wings pale yellow, veins very poorly indicated against the ground; *Sc* longer, Sc_1 ending about opposite two-thirds *Rs* (fig. 104) (Cape Province, Natal, Transvaal, Southern Rhodesia) . . . . . *brincki* sp. n.
3. Wings without macrotrichia in the cells; veins R_3 and R_4 divergent, cell R_3 at margin more extensive than cell R_2; hypopygium with two dististyles, the outer one deeply forked, its inner branch tridentate at apex; phallosome not produced into spines (fig. 105). (Cape Province) . . . . . *bonae spei* (Alexander)
— Wings with macrotrichia in all cells except near base; veins R_3 and R_4 nearly parallel to one another, cell R_2 at margin more extensive than cell R_4; hypopygium with three dististyles, outer style shallowly forked, two inner styles appearing as long slender spines; phallosome produced into two elongate spines. (Natal) . . . . . *telacantha* Alexander

Cheilotrichia (Cheilotrichia) brincki sp. n.

(Fig. 104)

General coloration pale yellow; antennae yellow; legs yellow, tips of femora narrowly and abruptly brownish black; wings very pale yellow, unpatterned; *Sc* long, Sc_1 ending about opposite two-thirds *Rs*; cell *1st* M_2 closed, with *m–cu* beyond the fork.

Female. — Length about 3 mm.; wing 3.5–3.6 mm.

Described from alcoholic material.

Rostrum brownish yellow, palpi pale brown. Antennae pale yellow; flagellar segments oval, with long conspicuous verticils. Head yellow.

Thorax almost uniformly yellow, the mesonotum a trifle more ferrugineous, pleura clear yellow. Halteres with stem pale, knob very faintly darkened. Legs with coxae and trochanters yellow; femora yellow, the tips narrowly but conspicuously brownish black; tibiae yellow, in cases the bases narrowly darkened; remainder of legs pale yellow. Wings (fig. 104) very pale yellow, unpatterned; veins slightly darker than the ground, poorly seen against the ground. Venation: *Sc* long, Sc_1 ending nearly opposite two-thirds the length of *Rs*, Sc_2 close to its tip; veins R_3 and R_4 subparallel at bases, more divergent outwardly; cell *1st* M_2 closed, *m* and basal section of M_3 subequal; *m–cu* at near one-third the length of M_{3+4}.

Abdomen yellow, genital shield a trifle darkened. Ovipositor with cerci smooth, upcurved to the acute tips.

Natal: Royal Natal National Park, Tugela Valley, 5000 feet, 1 ♀ holotype + paratopotypes (♀♀) in insect trap in meadow near stony stream, April 3–4, 1951 (Brinck–Rudebeck), Loc. no. 258. — Natal National Park, The Hostel, 5000 feet, 1 alcoholic ♀, paratype, April 9, 1951 (Brinck–Rudebeck), Loc. no. 271. — Drakensberg, Cathedral Peak Area, Masongwaan Forest, 1 ♀, March 23, 1955 (Stuckenberg). — **Transvaal:** Mariepskop, 4400 feet, 1 ♀, October 4–6, 1956 (Stuckenberg). — **Cape Province:** Tzitzikama Forest, Stormsrivier, 4 alcoholic ♀♀ at light, dense indigenous forest with scattered cultivated fields (Brinck–Rudebeck), January 11–13, 1951, Loc. no. 134. — **Southern Rhodesia:** near Inyanga, 1 ♀, January 14, 1955 (Stuckenberg).

I am privileged to dedicate this very distinct crane-fly to Dr. BRINCK. The species is entirely different from all previously described members of the genus but there are still other allied forms awaiting description, some ranging northwards into tropical east Africa.

Cheilotrichia (Cheilotrichia) clausa (ALEXANDER)

Erioptera (Empeda) clausa ALEXANDER; Ann. So. Afr. Mus., 18: 190–191; 1921.
Erioptera clausa WOOD; Ann. So. Afr. Mus., 39: 301–303, fig. 100 (ad.); 1952.

Male. — Length about 1.8–2 mm.; wing about 3 mm.

Praescutum dark brown, brighter on sides, pleura dull yellow, indistinctly striped with brown; antennae 15-segmented; hypopygium with median region of tergite produced, obtusely rounded; three dististyles, all simple, the outer two acute at tips, inner style smallest, its apex obtuse.

Mr. Thorne found the species swarming over grass clumps in a mountain valley.

Cape Province: French Hoek Pass, 2500–3600 feet, December 4, 1916 (BARNARD), type; Pass between Skurfteberge and Witzenberge, October 1937 (THORNE).

Cheilotrichia (Empeda) bonae spei (ALEXANDER)

(Fig. 105)

Erioptera (Empeda) bonae spei ALEXANDER; Ann. So. Afr. Mus., 17: 148–149, pl. 10, fig. 11 (wing); 1917.

Male. — Length about 3–3.2 mm.; wing 3.9–4 mm.

Thorax light brownish gray; antennae 16-segmented, pedicel and basal flagellar segments enlarged; halteres yellow, knobs slightly more darkened; wings gray, costal region more yellowed; abdomen dark brown, hypopygium reddish yellow (fig. 105).

Cape Province: Peninsula, Cape Town, August 1909 (LIGHTFOOT), type; Oranjezicht, August 1933 (BARNARD); Du Toits Kloof, west side, May 1934 (WOOD). — **Natal:** M'fongosi, Zululand, May 1917 (W. E. JONES); possibly not conspecific with the type.

Cheilotrichia (Empeda) telacantha ALEXANDER

Cheilotrichia (Empeda) telacantha ALEXANDER; Ann. Natal Mus., 14: 397–398, fig. 31 (♂ hyp.), fig. 36 (ven.); 1960.

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

General coloration brown; halteres dark brown, base of stem yellowed; wings weakly suffused, cells with macrotrichia; Sc_1 ending shortly before fork of *Rs*; hypopygium with three dististyles, the inner two appearing as long slender spines; phallosome terminating in two long slender divergent spines.

Natal: Zwartkop, near Pietermaritzburg, May 16, 1957 (STUCKENBERG), type.

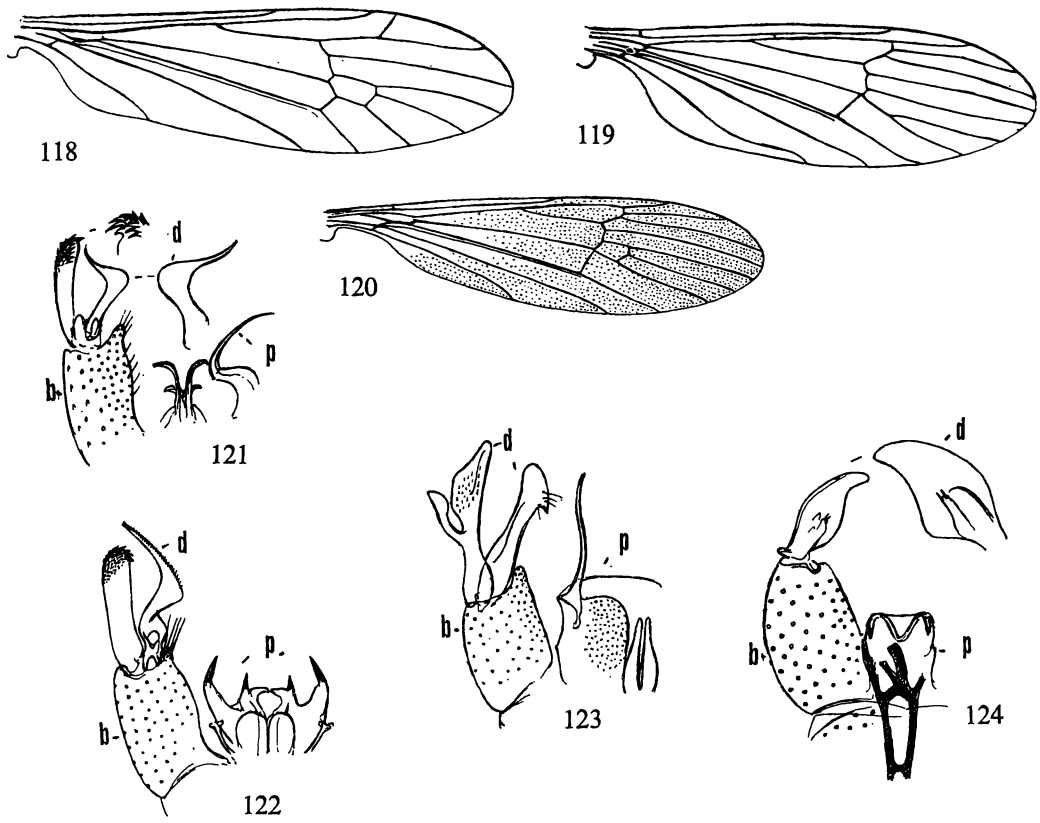
Erioptera MEIGEN

Polymeda MEIGEN; Nouv. Class. Mouch., p. 14 (nom. nud.); 1800.
Erioptera MEIGEN; Illiger's Mag., 2: 262; 1803.
Subgenera: *Trimicra* OSTEN SACKEN; Proc. Acad. Nat. Sci. Philadelphia 1861: 290; 1861.
Podoneura BERGROTH; Entomol. Tidskr., 9: 133; 1888.
Meterioptera ALEXANDER; Philippine Jour. Sci., 53: 462–463; 1934.

Erioptera is a vast genus, with representatives in all regions of the world, chiefly because of the great range of *Trimicra*, where what appears to represent a single species, *Erioptera* (*Trimicra*) *pilipes* (FABRICIUS), is found in every region, including Madagascar and New Zealand, and likewise on various remote islands of the southern and subantarctic oceans. In the local fauna, the two larger groups are *Erioptera* and *Meterioptera*, but *Podoneura* and *Trimicra*, each represented by a single species, are common and widespread. The immature stages occupy a variety of habitats but always in wet soil, ranging from silty mud or muck, with much organic débris, to the sandy or gravelly margins of streams.

Key to South African *Erioptera*

1. Wings with cell *1st* M_2 closed 2
— Wings with cell M_2 open 5
2. Vein *2nd A* shallowly forked at outer end (fig. 108). (Subgenus *Podoneura* BERGROTH) (Cape Province, Natal, Basutoland, Southern Rhodesia, northwards) . . . . . *anthracogramma* (BERGROTH)
— Vein *2nd A* simple 3
3. Antennae with outer three flagellar segments abruptly smaller than the others; wings unpatterned or with vague darkened clouds at cord; vein *2nd A* short and almost straight, ending far before level of *m–cu* (fig. 109). (Subgenus *Trimicra* OSTEN SACKEN) 4
— Antennae with flagellar segments progressively smaller outwardly; wings conspicuously patterned, with small spots along the veins; vein *2nd A* long and sinuous on outer half, ending about opposite level of *m–cu*. (Subgenus incertum) (Transvaal, Southern Rhodesia, northwards) . . . *subirrorata* ALEXANDER
4. Legs with conspicuous erect setae (fig. 109). (Cape Province, Natal, Transvaal, northwards; cosmopolitan) . . . . . *pilipes pilipes* (FABRICIUS)
— Legs with setae appressed, relatively inconspicuous. (Cape Province, Natal, Orange Free State) . . . . . *pilipes inconspicua* (LOEW)
5. Wings unpatterned; vein *2nd A* straight or sinuous on distal fourth or more, longest in *persinuata*; basal flagellar segments more or less fused; hypopygium with inner dististyle simple, at near midlength bent at a right angle into a spine (figs. 107, 119). (Subgenus *Meterioptera* ALEXANDER) 6
— Wings (of local species) pale, patterned with darker; vein *2nd A* long and sinuous on nearly the outer half; flagellar segments distinct; hypopygium with inner dististyle of various shapes but not simple and angularly bent at near midlength (figs. 4, 106). (Subgenus *Erioptera* MEIGEN) 11
6. Wings with vein *2nd A* straight, without apical sinuation; *m–cu* some distance beyond fork of *M*; hypopygium with outer dististyle not terminating in a head covered with spinoid setae. (Natal) . . . . . *ablusa* ALEXANDER
— Wings with vein *2nd A* sinuous on the outer fourth or more; *m–cu* at or before the fork of *M*; hypopygium with the outer dististyle clavate, at apex with rows of appressed spinoid setae 7
7. Wings with vein *2nd A* very strongly sinuous on outer two-fifths (fig. 119). (Basutoland) *persinuata* sp. n.
— Wings with vein *2nd A* less evidently sinuous, involving about the outer fourth 8
8. Hypopygium with gonapophyses appearing as long very slender curved rods, longer than either dististyle (fig. 107). (Cape Province, Natal, Southern Rhodesia) . . . . . *subaurea* BERGROTH



Figs. 118-124. — 118. *Rhabdomastix* (*Sacandaga*) *tugela* ALEXANDER, sp. n.; venation. — 119. *Erioptera* (*Meterioptera*) *persinuata* ALEXANDER, sp. n.; venation. — 120. *Ormosia* (*Trichotrimicra*) *hirtipennis* (ALEXANDER); venation, showing trichiation. — 121. *Erioptera* (*Meterioptera*) *persinuata* ALEXANDER, sp. n.; male hypopygium. — 122. *Erioptera* (*Meterioptera*) *quadrispicata* ALEXANDER; male hypopygium. — 123. *Ormosia* (*Trichotrimicra*) *hirtipennis* (ALEXANDER); male hypopygium. — 124. *Tasiocera* (*Dasymolophilus*) *liliputana* (ALEXANDER); male hypopygium.
(Symbols: *b*, basistyle; *d*, dististyle; *p*, phallosome).

— Hypopygium with gonapophyses appearing as shorter spikes, the narrowed outer part shorter than the dististyle 9
9. Halteres yellow (fig. 122). (Southern Rhodesia) . . . . . *quadrispicata* ALEXANDER
— Halteres with knobs darkened 10
10. Wings more strongly infuscated, including the costal border; distal section of vein Cu_1 straight; hypopygium with a single pair of short stout strongly curved gonapophyses. (Natal, Transvaal, Southern Rhodesia) . . . . . *fumipennis* ALEXANDER
— Wings less infuscated, costal border more yellowed; distal section of vein Cu_1 gently upcurved on outer half; hypopygium with two pairs of short blackened gonapophyses. (Natal) . *quadripilata* ALEXANDER
11. Legs with femora uniformly yellow 12
— Legs with femora patterned with darker, at least the tips infuscated 13
12. Wings with a weak brown suffusion, the cord, including the veins, conspicuously pale. (Transvaal) . . . . . *carior* ALEXANDER

— Wings pale yellow, the cord, including the veins, as well as the narrow wing tip darkened. (Southern Rhodesia) . . . . . *circumambiens* ALEXANDER

13. Mesonotum yellow, patterned with black, pleura blackened; halteres with knobs yellowed at tips; legs extensively darkened, femora dark brown with a broad yellow subterminal ring; wings brown, with more or less distinct whitened crossbands, at base and before and beyond cord, in cases the whitened areas very extensive; hypopygium with inner dististyle stout, shallowly forked; phallosome with inner apophyses extended into sharp black spines (figs. 4, 106). (Cape Province, Natal, Transvaal, Basutoland, Southern Rhodesia, northwards) . . . . . *peringueyi* BERGROTH

— Mesonotum and pleura blackened, ventral pleurites yellowed; halteres with knobs blackened; femora yellow, tips blackened; wings with ground strongly darkened, with four pale areas before cord, two costal and two anal in position, no brightenings beyond cord 14

14. Wing base and costal region darkened, slightly variegated by pale; femora with broader darkened tips; hypopygium with inner dististyle small, simple, angularly bent at near midlength. (Cape Province) . . . . . *celestissima* ALEXANDER

— Wings with prearcular fields and costal cell pale yellow; femora with darkened tips very narrow to scarcely evident; hypopygium with inner dististyle yellow, profoundly forked from a short base, tips of the branches pointed. (Moçambique, northwards) . . . . . *nitidiuscula* ALEXANDER

Erioptera (Trimicra) pilipes pilipes (FABRICIUS)

(Fig. 109)

Tipula pilipes FABRICIUS; Mantissa Ins., 2: 324; 1787.
Limnobia lanuginipes WALKER; Ins. Saunders., p. 435; 1856.

Male. — Length about 6–9 mm.; wing 8–12 mm.

Praescutal stripes brown, interspaces, including the capillary midline, brownish black; pleura pruinose; scutellum chiefly obscure yellow; antennae darkened; legs brown, femora with a darker brown subterminal to nearly terminal ring, legs with long conspicuous erect setae; wings subhyaline, with vague narrow darkenings at cord and outer end of cell *1st* M_2; abdomen brown, hypopygium large, reddish brown (fig. 109).

Records for typical *pilipes* and the subspecies *inconspicua* have been badly confused in the literature and some of these listed below may actually pertain to *inconspicua.* It should be noted that both races are common and widespread and perhaps have generally similar ranges. Specimens, especially of the male sex, vary greatly in size and in degree of leg pilosity.

BARNARD and THORNE found larvae in gravelly sand spits beneath a rocky shelter in the shallow part of a broad stream, the larvae moving to drier parts of the spits for pupation (WOOD).

Cape Province: Peninsula, Cape Town, September 1913 (PÉRINGUEY), November 1918 (BARNARD); Kasteels Poort, October 1932 (THORNE); Stellenbosch, September 1913 (PÉRINGUEY); Knysna, October 1916 (PÉRINGUEY); Krom River, September 1935 (BARNARD); French Hoek Pass, October 1932; Meirings Poort, October 1937; Verkerde Vlei, October 1937 (WOOD); Ladismith, at light, January 4, 1951 (BRINCK—RUDEBECK), Loc. no. 115; Tzitzikama Forest, Stormsrivier, indigenous forest with scattered cultivated fields, January 14, 1951 (BRINCK—RUDEBECK), Loc. no. 134. — **Natal:** Pietermaritzburg, December 18, 1917 (H. G. RICH); Camperdown, September 29, 1918 (BAKER); Tugela Ferry, Zululand, May 1935 (BEVIS). — **Transvaal:** Barberton, May 8—15, 1913 (H. K. MUNRO); Junction of Crocodile and Marico Rivers, February 1918 (R. W. TUCKER). — **Basutoland:** Nazareth M. S., 20 miles ESE of Maseru, 6250 feet, at light, March 23,

1951 (BRINCK—RUDEBECK), Loc. no. 246. — **Southern Rhodesia:** Salisbury, in vlei among long grass in wet patch in shade, January 19, 1935 (CUTHBERTSON); abundant, March—April 1957 (SMITHERS). — **Orange Free State:** Smithfield (KANNEMEYER); Modderpoort, October 30, 1914, March 10, 1918 (W. ROSS). — **South West Africa:** Kaokoveld, 5 miles SE of Kowares, at light in dry grass veld, June 2, 1951 (BRINCK—RUDEBECK), Loc. no. 322.

Erioptera (Trimicra) pilipes inconspicua (LOEW)

Gnophomyia inconspicua LOEW; Berlin. Entomol. Zeitschr., 10: 59; 1866.
Trimicra inconspicua ALEXANDER; Ann. So. Afr. Mus., 17: 149, pl. 10, fig. 13 (wing); 1917; 18: 194; 1921.
Trimicra inconspicua WOOD; Ann. So. Afr. Mus., 39: 316—321, fig. 103 (ad.), fig. 104 (larva), fig. 105 (pupa); 1952.

For comparisons with typical *pilipes*, consult key and preceding account. As stated, probably some of the previous records are confused with the present fly.

Cape Province: Assegaaibos, 30 miles W N W of Humansdorp, at light in wet ravine with luxuriant vegetation near stony stream, February 28, 1951 (BRINCK—RUDEBECK), Loc. no. 191; Tzitzikama Forest, Stormsrivier, at light in dense indigenous forest with scattered cultivated meadows, January 11, 1951 (BRINCK—RUDEBECK), Loc. no. 134; Rhodes, 5900 feet, in meadows along Kraai River, March 10, 1951 (BRINCK—RUDEBECK), Loc. no. 224; Bredasdorp, at light, January 2, 1951 (BRINCK—RUDEBECK), Loc. no. 106. — **Natal:** National Park, Tugela Valley, 5000 feet, insect trap in meadow near stony stream, April 11, 1951 (BRINCK—RUDEBECK), Loc. no. 271. — **Orange Free State:** Zastron, at light, March 20, 1951 (BRINCK—RUDEBECK), Loc. no. 242.

Erioptera (Podoneura) anthracogramma (BERGROTH)

(Fig. 108)

Podoneura anthracogramma BERGROTH; Entomol. Tidskr., 9: 133—134, fig. (wing); 1888.
Podoneura anthracogramma ALEXANDER; Ann. So. Afr. Mus., 17: 151, pl. 10, fig. 14 (wing); 1917.
Podoneura anthracogramma WOOD; Ann. So. Afr. Mus., 39: 307—309, fig. 101 (ad.); 1952.

Male. — Length about 4—5.5 mm.; wing 4.5—6 mm.

General coloration of thorax light gray, praescutum with conspicuous brownish black stripes; pleura whitish yellow; head silvery in front, center of vertex light gray, sides dark brown; antennae black, basal two segments light yellow; legs black, femora with a narrow yellow subterminal ring; wings subhyaline, conspicuously patterned with brown on the crossveins, cells extensively washed with paler brown; *m—cu* far before fork of *M*; abdominal tergites brown, sternites and hypopygium obscure yellow (fig. 108).

Cape Province: Peninsula, Cape Town, November 1887 (PÉRINGUEY), type; January 1918 (COWPER); Steenbras, January 1933 (WOOD); Hout Bay, Skoorsteenkop, 300 feet, on dry sandy mountain slope, near small stony stream, December 13, 1950 (BRINCK—RUDEBECK), Loc. no. 82; 600 feet, insect trap on mountain slope, January 28, 1951 (BRINCK—RUDEBECK), Loc. nos. 157, 161. — **Natal:** Kranskop, November 1917, (BARNARD); Shafton Springs, November 10, 1918 (A. G. SHAW); National Park, Tugela Valley, 5000 feet, insect trap in meadows near stony river, April 4, 1951 (BRINCK—RUDEBECK), Loc. no. 261. — **Basutoland:** Mokhotlong, 7800 feet, January 24, 1955 (BEVIS); Quthing, at light near meadows, March 12, 1951 (BRINCK—RUDEBECK), Loc. no. 232; Nazareth M. S., 20 miles ESE of Maseru, 6250 feet, in marshy ground at night, March 23—24, 1951 (BRINCK—RUDEBECK), Loc. nos. 245, 246. — **Southern Rhodesia:** Salisbury, March 21, 1901 (F. L. SNOW); March—April 1957 (SMITHERS); near Inyanga, January 14, 1955 (STUCKENBERG).

Erioptera (Erioptera) carior ALEXANDER

Erioptera (*Erioptera*) *carior* ALEXANDER; Ann. Mag. Nat. Hist., (9) 5: 466–467; 1920.

Male. — Length 4.5–5 mm.; wing 5–5.5 mm.

Mesonotal praescutum shiny dark brown, lateral and humeral borders more yellowed, pleura dark brown; legs light yellow, tarsal segments darker; wings with costal border light yellow, stigma oval, dark brown; abdomen dark brown; hypopygium with inner dististyle terminating in a blackened beak and with a long curved posterior extension, acutely pointed at tip; phallosome with four blackened apophyses, lateral pair stouter.

Transvaal: Kaapmuiden, October 1919 (H. K. MUNRO), type; Wyllies Poort, Zoutpansberg Range, January 30, 1955 (GRAHAM & STUCKENBERG).

Erioptera (Erioptera) celestissima ALEXANDER

Erioptera (*Erioptera*) *celestissima* ALEXANDER; Ann. Natal Mus., 13: 404–406, fig. 5 (ven.), fig. 12 (♂ hyp.); 1956.

Male. — Length about 4 mm.; wing 4.6 mm.

Head and thorax polished black, ventral thoracic pleura polished yellow; femora obscure yellow, tips vaguely darker; wings dark brown with four large pale yellow areas before cord.

Cape Province: Grahamstown, May 2, 1953, October 15, 1953 (STUCKENBERG), types.

Erioptera (Erioptera) circumambiens ALEXANDER

Erioptera (*Erioptera*) *circumambiens* ALEXANDER; Ann. Natal Mus., 14: 152–153; 1957.

Female. — Length about 6 mm.; wing 5.5 mm.

General coloration of thorax fulvous, praescutum with a narrow brown median stripe, pleura chiefly yellow; head yellow; antennae yellow basally, outer segments brownish black; legs yellow; abdominal tergites obscure yellow, sternites clearer yellow.

Southern Rhodesia: near Inyanga, January 14, 1955 (STUCKENBERG), type.

Erioptera (Erioptera) nitidiuscula ALEXANDER

Erioptera (*Erioptera*) *carissima nitidiuscula* ALEXANDER; Ann. Mag. Nat. Hist. (9) 6: 29; 1920.

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

Thoracic dorsum and pleura brownish black, with a light yellow area on mesepisternum before and below the wing root; wings brown, costal border and four major areas before cord light yellow.

Moçambique: Luabo, August 1957 (USHER).

The types were from Kenya.

Erioptera (Erioptera) peringueyi BERGROTH

(Figs. 4, 106)

Erioptera Peringueyi BERGROTH; Ent. Tidskr., 9: 129–130; 1888.
Erioptera peringueyi ALEXANDER; Ann. So. Afr. Mus., 17: 149, pl. 10, fig. 12 (wing); 1917.
Erioptera peringueyi WOOD; Ann. So. Afr. Mus., 39: 299–301, fig. 99 (ad.); 1952.
Erioptera (Erioptera) peringueyi ALEXANDER; Ruwenzori Exped., 1934–35, 1, no. 7: 354, fig. 219 (wing); 1956.

Male. — Length 4.5–5.5 mm.; wing 5.5–6 mm.

Thorax yellowed, patterned with brownish black, pleura darkened; head brownish gray, eyes of male large; antennae with scape dark brown, pedicel and base of flagellum reddened, outer segments dark brown; abdomen dark brown (figs. 4, 106).

The Rhodesian population is darker than others, the entire body being black with the exception of the praescutal humeri and lateral borders; wing pattern more extensively darkened; legs black or brownish black, the yellow femoral ring distinct.

Cape Province: Peninsula, Camps Bay slopes, September 1932 (WOOD); Hout Bay, Skoorsteenkop, 600 feet, insect trap on mountain slope, in indigenous forest, December 27, 1950, January 22, 1951, February 2–14, 1951 (BRINCK–RUDEBECK), Loc. nos. 95, 157, 166, 171, 183; Stellenbosch, November 1887 (L. A. PÉRINGUEY), type; Palmiet River, January 1937 (WOOD); Ladismith, at light, January 4, 1951 (BRINCK–RUDEBECK), Loc. no. 115; Mount Frere, at light, March 5, 1951 (BRINCK–RUDEBECK), Loc. no. 207; Assegaaibos, 30 miles WNW of Humansdorp, at light in wet ravine with luxuriant vegetation near stony stream, February 28, 1951 (BRINCK–RUDEBECK), Loc. no. 191; Tzitzikama Forest, Stormsrivier, dense indigenous forest with scattered cultivated meadows, January 11–14, 1951 (BRINCK–RUDEBECK), Loc. nos. 134, 135. — **Natal:** Kranskop, November 1917 (BARNARD); Ladysmith, July 2, 1918 (M. R. M. MATTHEWS); Umkomazana, December 21, 1938 (BEVIS); The Hostel, National Park, at light, April 4, 1951 (BRINCK–RUDEBECK), Loc. no. 259; National Park, Tugela Valley, 5000 feet, insect trap in meadow near stony river, April 11, 1951 (BRINCK–RUDEBECK), Loc. no. 271. — **Transvaal:** Pretoria, November 19, 1918 (BEDFORD). — **Basutoland:** Mamathes, January 1–9, 1953 (BEVIS); Quthing, 5600 feet, at light, March 12–14, 1951 (BRINCK–RUDEBECK), Loc. no. 232; Nazareth M. S., 20 miles ESE of Maseru, 6250 feet, at light, marshy ground around well, March 23, 1951 (BRINCK–RUDEBECK), Loc. no. 245. — **Southern Rhodesia:** Salisbury, at light, June 20–25, July 2–4, August 13, 16, 24, 1956 (SMITHERS).

Erioptera (Meterioptera) ablusa ALEXANDER

Erioptera (Meterioptera) ablusa ALEXANDER; Ann. Natal Mus., 14: 274–275, fig. 20 (ven.), fig. 25 (♂ hyp.); 1958.

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

General coloration of body pale yellow; antennae 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; hypopygium with outer dististyle entirely pale, bifid at apex; apex of inner dististyle and the gonapophyses appearing as long slender spines.

Natal: Kranskop, October 12, 1956 (STUCKENBERG), type.

Erioptera (Meterioptera) fumipennis ALEXANDER

Erioptera (Erioptera) fumipennis ALEXANDER; Ann. So. Afr. Mus., 18: 192–193; 1921.

Male. — Length about 3 mm.; wing 3.5 mm.

Female. — Length about 3.8 mm.; wing 4 mm.

General coloration medium brown, without distinct pattern, pleura pale brown, mesopleura paler; legs light brown; wings brownish gray, veins darker.

Natal: Krantzkop (Kranskop), November 1917 (BARNARD). — **Transvaal:** Lydenburg (P. KROEGER), type. — **Southern Rhodesia:** Salisbury, January 29, 1957 (SMITHERS).

Erioptera (Meterioptera) persinuata sp. n.

(Figs. 119, 121)

General coloration yellow, patterned with reddish brown; head yellow, center of vertex dark brown; antennae with ten segments beyond the fusion; wings fulvous, veins yellow, vein *2nd A* unusually long, outer two-fifths sinuous; hypopygium with lateral apophyses slender, gently curved.

Male. — Length about 3.7–3.8 mm.; wing 4 mm.

Described from alcoholic material.

Rostrum light brown, palpi darker. Antennae brown, pedicel enlarged; fusion-segment long-conical, with ten free segments beyond; longest verticils exceeding the segments. Head with center of vertex dark brown, the front and broad orbits yellowed.

General coloration of mesonotal praescutum and scutal lobes reddish brown, the areas narrowly bordered by darker; posterior sclerites of notum more yellowed, especially the mediotergite. Pleura obscure yellow, variegated by darker on anepisternum, ventral sternopleurite and meron. Halteres pale, knobs large, obscure yellow. Legs with coxae reddish brown; trochanters obscure yellow, darker beneath; remainder of legs yellowish brown, outer tarsal segments slightly darker. Wings (fig. 119) with a fulvous tinge, prearcular and costal fields more yellowed, stigma narrowly more darkened; veins yellow. Venation: *Rs* elongate; vein *2nd A* unusually long with about the outer two-fifths strongly sinuous.

Abdomen obscure yellow, outer segments slightly darker, hypopygium yellow. Male hypopygium (fig. 121) with outer dististyle, *d*, relatively narrow, inner style dilated at midlength, the terminal spine gently upcurved to the acute point. Lateral apophyses, *g*, slender, gently curved.

Basutoland: Nazareth Mission Station, 6250 feet, at light in marshy land around a well, March 24, 1951. Holotype, alcoholic ♂, (BRINCK–RUDEBECK), Loc. no. 246. Paratopotypes, 2 ♂♂, March 23, 1951.

Most similar to *Erioptera* (*Meterioptera*) *subaurea* BERGROTH, differing evidently in the venation, especially the long sinuous vein *2nd A* which approximates the condition found in the typical subgenus.

Erioptera (Meterioptera) quadripilata ALEXANDER

Erioptera (*Meterioptera*) *quadripilata* ALEXANDER; Ann. Natal Mus., 14: 275–276, fig. 26 (♂ hyp.); 1958.

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

General coloration of thorax gray, posterior border of scutellum yellowed; head, including rostrum, chiefly yellowed; halteres with stem white, knob dark brown; legs yellow;

wings weakly tinged with brown; phallosome of hypopygium with four blackened spines or apophyses.

Natal: Town Bush, Pietermaritzburg, November 11, 1955 (STUCKENBERG), type.

Erioptera (Meterioptera) quadrispicata ALEXANDER

(Fig. 122)

Erioptera (Meterioptera) quadrispicata ALEXANDER; Proc. Roy. Ent. Soc. London (B, Taxonomy), 18: 158; 1949.

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

General coloration of mesonotum reddish brown, posterior sclerites and pleura yellowed; halteres yellow; wings grayish yellow, prearcular and costal fields lighter yellow; hypopygium like in fig. 122.

Southern Rhodesia: Salisbury, January 1930 (CUTHBERTSON), type.

Erioptera (Meterioptera) subaurea BERGROTH

(Fig. 107)

Erioptera subaurea BERGROTH; Ent. Tidskr. 9: 130; 1888.

Male. — Length about 4–4.5 mm.; wing 4–5 mm.

Thorax ochreous, praescutum with three more brownish stripes, pleura ochraceous pruinose; halteres yellow; legs light yellow; wings light yellow, veins slightly darker, inconspicuous; abdomen brownish yellow, patterned with darker (fig. 107).

Natal: Weenen, December 1926 (H. P. THOMASSET); The Hostel, Natal National Park, 5000 feet, at light, April 1, 1951 (BRINCK–RUDEBECK), Loc. no. 256. — **Southern Rhodesia:** Salisbury, November 30, 1956 (SMITHERS).
Type from Caffraria (J. A. WAHLBERG).

Erioptera subirrorata ALEXANDER

Erioptera subirrorata ALEXANDER; Ann. Mag. Nat. Hist. (9) 6: 29–30; 1920.

Male. — Length about 5–5.2 mm.; wing 5.5–5.8 mm.

General coloration of thorax pale brownish gray, praescutum with a narrow central brown line, pleura yellow, in cases slightly darker dorsally; halteres light brown; legs brownish yellow, tarsi darker; wings brownish yellow, base of costa clearer yellow, anal field infuscated; veins of outer two-thirds of wing with numerous small brown spots; hypopygium with outer dististyle stout, blackened, deeply bifid, the two parts opposable; phallosome with gonapophysis bifid, inner arm with a long straight spine, setiferous on outer half, outer arm much smaller, curved to the acute tips.

Transvaal: Pretoria, January 23, 1921 (H. K. MUNRO). — **Southern Rhodesia:** River Makabusi, near Salisbury, in marsh and wet grassland, associated with *Pseudolimnophila rhodesiae*, January 1930 (CUTH-

BERTSON); Salisbury, March 1932 (CUTHBERTSON), February 16, 1957 (SMITHERS); Vumba Mts., March 1935 (DRYSDALE); Penhalonga, January 17, 1955 (STUCKENBERG).

In our present state of knowledge it seems inadvisable to assign this isolated fly to any subgenus.

Molophilus CURTIS

Molophilus CURTIS; British Entomology, p. 444; 1833.

Molophilus is the third largest genus of crane-flies, exceeded in number of known species only by *Limonia* and *Tipula*. It includes hundreds of species found in all biotic regions, including Madagascar and New Zealand. The diversity and distribution of species groups in the southern hemisphere would seem to indicate an antarctic origin for the genus. In Africa, including Madagascar, there are surprisingly few species, all belonging to the *gracilis* group, two having been discovered in South Africa. The immature stages are found in saturated soil, as organic mud or silt, commonly in wooded or shaded areas.

Key to South African *Molophilus*

Males

1. Male hypopygium with two dististyles, one a longer darkened blade, the other a slender black spine (fig. 114). (Natal) . . . . . *natalicola* ALEXANDER
— Hypopygium with a single dististyle, appearing as a flattened curved blade, narrowed to a long acute spine. (Moçambique) . . . . . *erugatus* ALEXANDER

Molophilus (Molophilus) erugatus ALEXANDER

Molophilus (*Molophilus*) *erugatus* ALEXANDER; Ann. Natal Mus., 15: 37—38, fig. 35 (♂ hyp.); 1960.

Male. — Length about 3.5–4 mm.; wing 4–4.5 mm.; antenna about 1–1.2 mm.

Belongs to the *gracilis* group and subgroup; general coloration of head and mesonotum dark gray, pleura blackened; halteres yellow; legs dark brown, femoral bases narrowly obscure yellow; wings weakly darkened, veins with long dark-colored trichia; hypopygium with a single long gently curved dististyle, narrowed outwardly into a long apical spine.

Moçambique: Gorongoza Mt., 840 meters, September 1957 (STUCKENBERG); Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG), types.

Molophilus (Molophilus) natalicola ALEXANDER

(Fig. 114)

Molophilus (*Molophilus*) *natalicolus* ALEXANDER; Ann. Natal Mus., 14: 276–277, fig. 27 (♂ hyp.); 1955.

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

Belongs to the *gracilis* group and subgroup; general coloration of mesonotum brownish black, praescutum more grayish brown medially; antennae short, black, basal segments

yellow; halteres pale yellow; legs dark brown; wings strongly infuscated; hypopygium with basistyle trilobed at apex, dorsal lobe long and slender; dististyles two, very unequal, the shorter inner style a needlelike rod (fig. 114).

Natal: Kranskop, November 11, 1954 (STUCKENBERG), type.

Styringomyia LOEW

Styringomyia LOEW; Dipt. Beitr., 1: 6; 1845.
Idiophlebia GRÜNBERG; Zool. Anzeig., 26: 524–528; 1903.
Pycnocrepis ENDERLEIN; Zool. Jahrb., Syst., 32: 65; 1912.
Mesomyites COCKERELL; Proc. U. S. Nat. Mus., 52: 377; 1917.

An extensive group of tropicopolitan crane-flies, with approximately 100 species now known, chiefly in the Old World but with a few in tropical America. In Africa the genus is abundantly represented both on the continent and in Madagascar, with nine species in the local fauna. *Styringomyia* is the only known genus of crane-flies that first was described as a fossil and later was found to have existing species. It was originally described by LOEW from Baltic amber and copal. The first record of a living species was by OSTEN SACKEN (Mon. Dipt. No. Amer., 3: vii, 1873; Berlin. Entomol. Zeitschr., 31: 185–186, 1887) who reported seeing specimens in the Stockholm Museum taken in Caffraria by WAHLBERG. Unfortunately this material appears to be lost and the identity of the species remains in question. From its distribution it would appear to have been either *Styringomyia vittata* or *S. edwardsiana.* The immature stages of the genus, as known, occur in decaying vegetable matter, as in rotting banana fibre, in *S. ingrami* EDWARDS and *S. obscuricincta* EDWARDS, in West Africa.

Key to South African *Styringomyia*

1. Thoracic dorsum in large part black or brownish black 2
— Thoracic dorsum chiefly yellow 4
2. Body uniformly black; legs black, tarsi extensively whitened; wings strongly darkened, with a still darker cloud over anterior cord; (male hypopygium with the sternite broad, its apex shallowly emarginate; basistyle unispinous; phallosome without setal brushes). (Natal, Moçambique, Southern Rhodesia, northwards) . . . . . *leucopeza* EDWARDS
— Body black, more or less patterned with yellow or brownish yellow 3
3. Body almost entirely black with pruinose reflections, ventral thoracic pleurites yellow; halteres with stem yellow, knob more darkened; femora yellow, ringed with black; wings pale, with darkened clouds over basal half of vein *Cu* and on anterior cord; vein *2nd A* bent strongly into the margin, cell *2nd* M_2 sessile. (Southern Rhodesia) . . . . . *marshalli* EDWARDS
— Mesonotal praescutum brownish black, with three more brownish yellow stripes, ventral thoracic pleura yellow; halteres infuscated; femora black, bases yellowed; wings strongly suffused with blackish, without distinct spots, vein R_5 seamed with darker; vein *2nd A* curved evenly into the margin, cell *2nd* M_2 petiolate; (hypopygium with sternite very narrow, truncated at apex; basistyle bispinous, the spines arising from elongate widely separated tubercles; phallosome near apex with two setal brushes) (fig. 115). (Natal) . . . . . *stuckenbergi* ALEXANDER
4. Wings yellow, weakly clouded along vein *Cu* but without spots; vein *2nd A* unspurred; hypopygium with basistyle bispinous, phallosome with two setal brushes. (Cape Province) . . . *edwardsiana* ALEXANDER
— Wings pale yellow to dusky, with evident still darker spots at cord, outer end of cell *1st* M_2 and tip of

vein *2nd A*, the latter spurred before apex; hypopygium with a single spine on basistyle, phallosome without setal brushes 5

5. Hypopygium with sternite deeply forked at apex; dark bands on legs broad and complete; wing membrane suffused with dusky, the still darker areas large and diffuse. (Moçambique, northwards) . . . . . *variegata* EDWARDS

— Hypopygium with apex of sternite entire; dark areas on legs narrow, interrupted beneath, not forming bands; wings yellow, the spots dark brown, clearly defined 6

6. Hypopygium with apex of tergite trilobed 7

— Hypopygium with apex of tergite a broad rounded cushion 8

7. Hypopygium with median lobe of tergite semioval, not more than twice as long as the slender darkened lateral lobes. (Moçambique; Madagascar) . . . . . *annulipes* (ENDERLEIN)

— Hypopygium with median lobe of tergite produced into a long narrow gently curved tongue, much longer than the pale obtuse lateral lobes. (Moçambique) . . . . . *tergata* ALEXANDER

8. Subterminal abdominal tergites with a central brown longitudinal stripe; hypopygium with sternite broad, setae widely separated, subterminal in position, from conspicuous basal tubercles. (Natal, Transvaal, Moçambique, Southern Rhodesia, northwards) . . . . . *vittata* EDWARDS

— Subterminal abdominal tergites with interrupted spots, not forming a central longitudinal stripe; hypopygium with sternite very narrow, at apex with two almost contiguous weak setae without basal tubercles. (Moçambique) . . . . . *tenuisterna* ALEXANDER

Styringomyia annulipes (ENDERLEIN)

Pycnocrepis annulipes ENDERLEIN; Zool. Jahrb., Syst., 32: 65–66, fig. (wing); February 1912.
Styringomyia howardi ALEXANDER; Canad. Ent., 44: 83–85, fig. (wing); March 1912.

Male. — Length 5.5–6.3 mm.; wing 4.4–5.5 mm.

General coloration brownish yellow; legs yellow, restrictedly patterned with brown; wings yellow, with small brown spots at *r–m*, *m–cu*, outer end of cell *1st* M_2 and tip of vein *2nd A*, the latter with a short spur; hypopygium with apex of tergite trilobed, the broad median cushion subtended by slender darkened lobes.

Moçambique: Quelimane (C. W. HOWARD), type of *howardi*; Lorenço Marques, February 1957 (N. L. H. KRAUSS); Luabo, June 1957 (STUCKENBERG), August–October 1957 (USHER).

The type of *annulipes* was from Madagascar.

Styringomyia edwardsiana ALEXANDER

Styringomyia edwardsiana ALEXANDER; Rev. Zool. Bot. Africaine, 19: 365–367, fig. 14 (♂ hyp.); 1930.

Male. — Length about 7.3–7.5 mm.; wing 5.3–5.5 mm.

General coloration of thoracic dorsum obscure yellow, praescutal interspaces conspicuously darkened; dark femoral rings relatively narrow and ill-defined; wings yellow, without darkened pattern other than dusky washes over veins *Cu* and *2nd A*; second spine of basistyle on an elongate lobe at proximal end of style.

Cape Province: Port St. Johns, Pondoland, July 10–31, September 23, 1923 (R. E. TURNER). — **Natal:** Kloof, 1500 feet, September 1926 (R. E. TURNER), type; Eshowe, Zululand, April 1–22, 1926 (R. E. TURNER); Natal National Park, Tugela Valley, 5000 feet, insect trap in meadows near stony river, April 4, 1951 (BRINCK–RUDEBECK), Loc. no. 261.

Styringomyia leucopeza EDWARDS

Styringomyia leucopeza EDWARDS; Trans. Ent. Soc. London, 1914: 225; 1914.

Male. — Length about 6–6.2 mm.; wing 4–4.5 mm.

General coloration of body black; outer antennal segments and basal segments of tarsi yellowish white; wings darkened outwardly, darker markings diffuse and ill-defined, base in costal region more yellowed.

Natal: Winkle Spruit, May 1917 (CONRAD AKERMAN). — **Moçambique:** Luabo, August 1957 (USHER); Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG). — **Southern Rhodesia:** Mt. Chirinda (A. CUTHBERTSON).

The type was from Nyasaland.

Styringomyia marshalli EDWARDS

Styringomyia marshalli EDWARDS; Trans. Ent. Soc. London, 1914: 214, fig. 5 (wing), figs. 48, 49 (ovip.); 1914.

Thorax chiefly blackened, slightly pruinose, ventral half of pleura more yellowed; legs yellow, femora with very distinct brownish black rings, on fore and middle femora the outer ring terminal, on hind femora extreme tip yellowed; a darkened elongate cloud on vein *Cu* near wing base; veins dark, anterior veins and *2nd A* yellowed.

Southern Rhodesia: Salisbury, March 1900 (G. A. K. MARSHALL), type, a female.

Styringomyia stuckenbergi ALEXANDER

(Fig. 115)

Styringomyia stuckenbergi ALEXANDER; Ann. Natal Mus., 14: 277–278, fig. 21 (ven.), fig. 28 (♂ hyp.); 1958.

Male. — Length about 8–8.5 mm.; wing 5.8–6 mm.

General coloration brownish black to black, mesonotum patterned with brownish yellow, ventral thoracic pleura abruptly yellow; antennae black; legs black, tarsi, especially the posterior pair, chiefly pale; wings strongly blackened; abdomen black; hypopygium with tergite broad, sternite very narrow; spine bearing tubercles of basistyle widely separated; phallosome before apex with two setiferous lobes (fig. 115).

Natal: Kranskop, October 12, 1956 (STUCKENBERG), types.

Styringomyia tenuisterna ALEXANDER

Styringomyia tenuisterna ALEXANDER; Ann. Natal Mus., 15: 39—40, fig. 37 (♂ hyp.); 1960.

Male. — Length about 7 mm.; wing 5 mm.

General coloration yellow, mesonotum patterned with brown; darkened rings of femora incomplete; wings yellow, darkened spots large, vein *2nd A* angulated and spurred before tip; hypopygium with sternite unusually narrow.

Moçambique: Machinjiri Mt., July 1957 (STUCKENBERG), type; Luabo, October 1957 (USHER).

Styringomyia tergata ALEXANDER

Styringomyia tergata ALEXANDER; Ann. Natal Mus., 15: 40—41, fig. 38 (♂ hyp.); 1960.

Male. — Length about 6.5 mm.; wing 5 mm.

General coloration of body reddish brown, sparsely pruinose, vaguely patterned with darker; legs obscure yellow, the darkened pattern pale brown; wings yellowed, brighter on anterior third, darkened spots small, vein *2nd A* spurred before tip; abdomen obscure yellow, restrictedly patterned with brown, outer segments more extensively darkened; hypopygium with tergite produced medially into a long narrow tonguelike lobe that is subtended by pale setiferous shoulders.

Moçambique: Luabo, October—December 1957 (USHER), types.

Styringomyia variegata EDWARDS

Styringomyia variegata EDWARDS; Trans. Ent. Soc. London, 1914: 216, fig. 1 (dorsal aspect), fig. 2 (wing), figs. 17, 18 (♂ hyp.); fig. 54 (ovip.); 1914.

General coloration yellow, patterned with dark brown, on abdomen including a continuous line on seventh tergite, ninth sternite dark brown; legs yellow, dark pattern extensive, all femoral rings complete; knobs of halteres darkened; wings strongly dusky, patterned with darker, costal region near base more yellowed; hypopygium with sternite deeply forked.

Moçambique: Machinjiri Mt., 5400 feet, July 1957 (STUCKENBERG).

Styringomyia vittata EDWARDS

Styringomyia vittata EDWARDS; Trans. Ent. Soc. London, 1914: 217, 218, fig. 23 (♂ hyp.), figs. 60—63 (ovip.); 1914.

Styringomyia vittata ALEXANDER; Ann. So. Afr. Mus., 17: 147, pl. 13, figs. 46, 47 (♂ hyp.); 1917.

Styringomyia vittata SÉGUY; Faune du Mozambique, Voyage LESNE (1928—29), p. 11, fig. 1 (entire insect, ♂); 1933.

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

General coloration brownish yellow, thorax restrictedly patterned with darker; halteres yellow; abdomen in male with a broad continuous brown central stripe on tergites, posterior borders of segments darker; legs yellow, darkened femoral rings incomplete; wings yellow, with four blackened spots, tip of vein *2nd A* angulated and spurred.

Natal: Durban, 1914 (W. HAYGARTH); April 1915 (BELL-MARLEY); September 27, 1914, 5.30 to 6 P. M., in the bush (LIONEL BEVIS), no. 1391, December 9, 1914, no. 1480, Durban Museum; Winkle Spruit, May 1917 (CONRAD AKERMAN), Natal Museum; M'fongosi, Zululand, April 1916 (W. E. JONES), South African Museum. — **Transvaal:** Komati Poort, November 1918 (R. W. TUCKER); Kaapmuiden, October 5, 1919 (H. K. MUNRO). — **Moçambique:** Delagoa Bay (EDWARDS 1914); Vila-Pery, April (SÉGUY, 1933); Machapanda, near Umtali, January 19, 1955 (GRAHAM & STUCKENBERG). — **Southern Rhodesia:** Salisbury, December 1934 (CUTHBERTSON); April 7—12, 1956 (SMITHERS); Nyachowa Falls, near Umtali, Vumba Mts., January 16, 1955 (STUCKENBERG).

Toxorhina LOEW

Toxorhina LOEW; Linnaea Entomologica, 5: 400; 1851.
Toxorrhina OSTEN SACKEN; Proc. Philadelphia Ent. Soc., 1865: 232; 1865.
Subgenus *Ceratocheilus* WESCHÉ; Journ. Linn. Soc., Zool., 30: 358; 1910.
Neostyringomyia ALEXANDER; Canad. Ent., 44: 85; 1912.
Conithorax BRUNETTI; Rec. Indian Mus., 15: 298–299; 1918.

Toxorhina is a relatively large and very isolated group of crane-flies, with representatives in all of the major biotic regions, including New Zealand and Madagascar. Two of the three known subgenera occur in southeastern Africa. The immature stages remain unknown but were believed by the late Dr. J. SPEED ROGERS possibly to be found in fragments of rotting wood imbedded in the saturated soil of swamps. The discovery of these very desirable stages will undoubtedly throw further light on the systematic position of the group.

Key to South African *Toxorhina*

1. Two branches of *R* reach the wing margin, *Rs* thus appearing to be unbranched (the element reaching the margin is R_5) (fig. 117). (Subgenus *Toxorhina* LOEW) 2
— Three branches of *R* reach the wing margin, *Rs* thus appearing two-branched (R_3 and R_5) (fig. 116) (Subgenus *Ceratocheilus* WESCHÉ) 3
2. Wings hyaline; veins R_5 and M_{1+2} with abundant macrotrichia; *m–cu* close to fork of *M* (fig. 117). (Southern Rhodesia, northwards) . . . . . *cuthbertsoni* ALEXANDER
— Wings tinged with dusky; outer veins virtually glabrous; *m–cu* beyond fork of *M*. (Southern Rhodesia) . . . . . *mashona* ALEXANDER
3. Wings with a darkened pattern, including areas at Sc_2, tips of veins Sc_1 and R_1 and along the cord . . . 4
— Wings without evident darkened pattern 5
4. Thoracic pleura narrowly darkened above; legs pale brown; wing pattern restricted, with no darkenings at arculus, tip of R_3 or on vein *1st A*. (Southern Rhodesia, northwards) . . . . . *scimitar* ALEXANDER
— Thoracic pleura with a broad black dorsal stripe; legs dark brown; wing pattern extensive, especially along costal border, with small darkened areas at arculus, tip of R_3 and on vein *1st A*. (Moçambique, northwards) . . . . . *nigripleura* (ALEXANDER)
5. Wings pale yellowish subhyaline, veins pale yellow; *m–cu* at or close to fork of *M*; rostrum short, about two-thirds the wing. (Southern Rhodesia) . . . . . *claripennis* ALEXANDER
— Wings slightly suffused with brown, veins dark; rostrum nearly as long as wing 6
6. Legs black; general coloration of mesonotum gray, praescutum with three confluent dark brown stripes; pleura black, paler ventrally; hypopygium black (fig. 116). (Southern Rhodesia) *drysdalei* ALEXANDER
— Legs obscure yellow; general coloration of mesonotum light brown, praescutum with three slightly darker brown stripes; pleura obscure yellow, slightly darker dorsally; hypopygium obscure yellow. (Moçambique) . . . . . *phœoneura* ALEXANDER

Toxorhina (Toxorhina) cuthbertsoni ALEXANDER

(Fig. 117)

Toxorhina (Toxorhina) cuthbertsoni ALEXANDER; Occas. Pap. Nat. Mus. So. Rhodesia, 6: 9–10, fig. 3 (ven.), fig. 7 (♂ hyp.); 1937.
Toxorhina (Toxorhina) cuthbertsoni ALEXANDER; Ruwenzori Exped., 1934–35, 1, no. 7: 368, fig. 186 (♂ hyp.); 1956.

Female. — Length, excluding rostrum, about 6.5–7 mm.; wing 4.5–4.8 mm.; rostrum about 3.5 mm.

General coloration dark blue-gray; halteres brownish black; legs black; wings hyaline, veins brownish black, Sc_1 ending just beyond origin of *Rs*, *m—cu* close to fork of *M* (fig. 117); hypopygium with a single dististyle, broad at base, narrowed into a long spine.

Southern Rhodesia: Salisbury, January 12, 1935 (CUTHBERTSON), types. Feeding at dusk on flowers of wild mint, *Mentha longifolia* HUDSON, among marsh vegetation (CUTHBERTSON).

Toxorhina (Toxorhina) mashona ALEXANDER

Toxorhina (*Toxorhina*) *mashona* ALEXANDER; Journ. Ent. Soc. So. Africa, 22: 73, fig. 10 (ven.); 1959.

Female. — Length, excluding rostrum, about 5.5—6 mm.; wing 4.5—4.8 mm.; rostrum about 2.2—2.8 mm.

General coloration of thorax almost uniformly very dark brownish gray to brownish black, without pattern; knobs of halteres infuscated; legs brownish yellow, passing into black; wings tinged with dusky, base more yellowed; *m—cu* beyond fork of *M*.

Southern Rhodesia: Salisbury, January 19—20, 1957 (SMITHERS), types.

Toxorhina (Ceratocheilus) claripennis ALEXANDER

Toxorhina (*Ceratocheilus*) *claripennis* ALEXANDER; Bull. IFAN (A) 20, 1: 136—138, fig. 13 (ven.), fig. 18 (♂ hyp.); 1958.

Male. — Length, excluding rostrum, about 6.5 mm.; wing 5 mm.; rostrum about 3.3 mm.

General coloration of mesonotum brown, including three praescutal stripes and darkened interspaces, pleura grayish brown; knobs of halteres weakly darkened; legs brown; wings weakly brownish gray, without pattern, veins very pale brown; hypopygium with two dististyles, arms of aedeagus short.

Southern Rhodesia: Salisbury, April 3—7, 1956, at light (SMITHERS), type.

Toxorhina (Ceratocheilus) drysdalei ALEXANDER

(Fig. 116)

Toxorhina (*Ceratocheilus*) *drysdalei* ALEXANDER; Occas. Pap. Nat. Mus. So. Rhodesia, 6: 10—11, fig. 4 (ven.); 1937.

Female. — Length, excluding rostrum, about 8 mm.; wing 5.8—6 mm.; rostrum about 5.5 mm.

General coloration gray, praescutum with three confluent dark brown stripes, pleura black, paler ventrally; halteres dusky, knobs brownish black; legs black; wings strongly blackened, more intense along the veins, *m—cu* beyond fork of *M* (fig. 116); abdomen black.

Southern Rhodesia: Vumba Mts., near Umtali, December 1934, January 1935, among low vegetation near stream (J. E. DRYSDALE), types; Chirinda Forest, January 25, 1955 (GRAHAM & STUCKENBERG).

Toxorhina (Ceratocheilus) nigripleura (ALEXANDER)

Ceratocheilus nigripleura ALEXANDER; Bull. Mus. Hist. nat., Paris, 1919: 611–612; 1919.
Toxorhina (Ceratocheilus) nigripleura ALEXANDER; Ruwenzori Exped., 1934–35, 1, no. 7: 365, fig. 221 (wing); 1956.

Female. — Length, excluding rostrum, about 7 mm.; wing 6.5 mm.; rostrum about 7 mm.

Mesonotal praescutum buffy with three broad brown stripes, pleura pale yellow below, above with a broad brownish black stripe; wings subhyaline, patterned with darker, including five costal areas, *m–cu* close to fork of *M*; abdomen dark brown, bases of sternites narrowly yellowed.

Moçambique: Luabo, August 1957 (USHER).

Toxorhina (Ceratocheilus) phæoneura ALEXANDER

Toxorhina (Ceratocheilus) phæoneura ALEXANDER; Ann. Natal Mus., 15: 42–43, fig. 29 (wing), fig. 40 (♂ hyp.); 1960.

Male. — Length, excluding rostrum, about 5.5 mm.; wing 4.8 mm.; rostrum about 5 mm.

Mesonotal praescutum light brown, with three vaguely darker brown stripes, pleura obscure yellow, slightly more darkened dorsally; legs obscure yellow; wings weakly infuscated, veins brown, conspicuous; abdomen brown, hypopygium obscure yellow, the dististyles small.

Moçambique: Luabo, May 31, 1957 (USHER), type.

Toxorhina (Ceratocheilus) scimitar ALEXANDER

Toxorhina (Ceratocheilus) scimitar ALEXANDER; Ruwenzori Exped., 1934–35, 1, no. 7: 369–370, fig. 185 (♂ hyp.); 1956.

Male. — Length, excluding rostrum, about 6.5 mm.; wing 6 mm.; rostrum about 5 mm.

General coloration of thorax brown, praescutum with three more reddish brown stripes; legs pale brown; wings subhyaline, restrictedly patterned with darker; hypopygium with outer dististyle a slender curved blade; arms of aedeagus long and slender.

Southern Rhodesia: Zimbabwe, near Fort Victoria, January 29, 1955 (STUCKENBERG).

The type was from Uganda.

DIPTERA TANYDERIDAE PTYCHOPTERIDAE TIPULIDAE – TIPULINAE	SW. Cape Province	Eastern Cape Prov.	Northern Cape Prov.	Orange Free State	Basutoland	Natal	Zululand	Transvaal	Swaziland	Moçambique	South Rhodesia	Bechuanaland	South West Africa	N of Southern Africa
TANYDERIDAE														
1. *Peringueyomyina barnardi* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
PTYCHOPTERIDAE														
1. *Ptychoptera capensis* ALEX.	—	—	—	—	—	—	●	●	—	—	—	—	—	—
2. *P. stuckenbergi* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
TIPULIDAE TIPULINAE														
1. *Megistocera filipes filipes* (FAB.)	—	●	—	—	—	●	—	—	—	●	—	—	—	●
2. *Ctenacroscelis brunneus basiproductus* ALEX.	—	—	—	—	—	●	—	●	—	●	●	—	—	●
3. *C. quathlambicus* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
4. *Longurio* (*Leptotipula*) *limnophiloides* (ALEX.)	—	—	—	—	—	●	—	—	—	—	—	—	—	—
5. *L. africanus* (ALEX.)	—	—	—	—	—	●	—	—	—	—	—	—	—	—
6. *L. albicubitalis* sp. n.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
7. *L. anoplostylus* sp. n.	—	●	—	—	—	—	—	—	—	—	—	—	—	—
8. *L. aspropodus* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	—
9. *L. basuticanus* ALEX.	—	—	—	—	●	—	—	—	—	—	—	—	—	—
10. *L. belloides* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
11. *L. bonae spei* (BERGR.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
12. *L. caffer* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
13. *L. capicolus* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
14. *L. chionoides* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
15. *L. cinereilineus* (ALEX.)	—	—	—	—	—	●	●	—	—	—	—	—	—	—
16. *L. coronatus* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
17. *L. dolichoros* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
18. *L. drakensbergensis* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
19. *L. eshowensis* ALEX.	—	—	—	—	—	—	●	—	—	—	—	—	—	—
20. *L. flagellatus* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
21. *L. inaequipes* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
22. *L. jonesi* (ALEX.)	—	—	—	—	—	—	●	—	—	—	—	—	—	—
23. *L. melanopterus* (ALEX.)	—	●	—	—	—	—	—	—	—	—	—	—	—	—
24. *L. micropteryx* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
25. *L. minusculoides* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
26. *L. minusculus* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
27. *L. mitiformis* ALEX.	—	—	—	—	—	—	●	—	—	—	—	—	—	—
28. *L. mossambicensis* (ALEX.)	—	—	—	—	—	—	—	—	—	●	—	—	—	—
29. *L. mosselensis* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
30. *L. niphopodus* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
31. *L. piger* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
32. *L. rhodesiae* (ALEX.)	—	—	—	—	—	—	—	—	—	—	●	—	—	—

DIPTERA TIPULIDAE TIPULINAE	SW. Cape Province	Eastern Cape Prov.	Northern Cape Prov.	Orange Free State	Basutoland	Natal	Zululand	Transvaal	Swaziland	Moçambique	South Rhodesia	Bechuanaland	South West Africa	N of Southern Africa
33. *L. rubroniger* (ALEX.)	—	—	—	—	—	●	—	—	—	—	—	—	—	—
34. *L. silvester* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
35. *L. spinosus* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
36. *L. stuckenbergi* ALEX.	—	●	—	—	—	—	—	—	—	—	—	—	—	—
37. *L. syndactylus* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
38. *L. versfeldi* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
39. *Idiotipula confluens* ALEX.	—	—	—	—	—	—	●	—	—	—	—	—	—	—
40. *Xenotipula munroi* ALEX.	—	●	—	—	—	—	—	—	—	—	—	—	—	—
41. *Goniotipula cuneipennis* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
42. *Nephrotoma antennata* (WIED.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
43. *N. basutoensis* sp. n.	—	●	—	—	●	—	—	—	—	—	—	—	—	—
44. *N. clanceyi* ALEX.	●	—	—	—	—	—	●	—	—	—	●	—	—	—
45. *N. crocea* (LOEW)	●	●	—	—	—	●	—	●	—	—	—	—	●	—
46. *N. cuthbertsoni* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
47. *N. edwardsi* ALEX.	—	—	—	—	—	—	—	●	—	—	—	—	—	—
48. *N. fumidapicalis* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	●
49. *N. gorongozae* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
50. *N. hemichroa* ALEX.	—	—	—	—	—	—	●	—	—	—	—	—	—	—
51. *N. lerothodi* ALEX.	—	—	—	—	●	—	—	—	—	—	—	—	—	—
52. *N. leucostigma* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
53. *N. livingstonei* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	●
54. *N. luaboensis* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
55. *N. marshalli* ALEX.	—	●	—	—	—	●	—	—	—	—	—	—	—	—
56. *N. moshesh* ALEX.	—	—	—	—	●	—	—	—	—	—	—	—	—	—
57. *N. mossambica* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
58. *N. oligochaeta* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
59. *N. petiolata* (MACQ.)	—	●	—	—	—	●	●	●	—	—	●	—	—	—
60. *N. smithersiana* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
61. *N. strenua* ALEX.	—	●	—	—	—	—	—	—	—	—	—	—	—	—
62. *N. tigrina* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
63. *N. tigrinoides* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	●
64. *N. tincta* (WALK.)	—	●	—	—	—	●	—	●	—	—	●	—	—	—
65. *N. tricincta* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	●
66. *N. tzitzikamae* sp. n.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
67. *N. umbripennis* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
68. *N. unicingulata* ALEX.	●	—	—	—	—	●	—	●	—	—	—	—	—	—
69. *Dolichopeza* (*Dolichopeza*) *cuthbertsoniana* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
70. *D.* (*Trichodolichopeza*) *altiarca* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
71. *D.* (*T.*) *aurantiaca* ALEX.	●	—	—	—	—	●	—	—	—	—	—	—	—	—
72. *D.* (*T.*) *barnardi* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
73. *D.* (*T.*) *byersiana* sp. n.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
74. *D.* (*T.*) *cathedralis* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—

DIPTERA TIPULIDAE TIPULINAE – LIMONIINAE	SW. Cape Province	Eastern Cape Prov.	Northern Cape Prov.	Orange Free State	Basutoland	Natal	Zululand	Transvaal	Swaziland	Moçambique	South Rhodesia	Bechuanaland	South West Africa	N of Southern Africa
75. *D.* (*T.*) *centrosoma* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
76. *D.* (*T.*) *chaka* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
77. *D.* (*T.*) *dingaan* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
78. *D.* (*T.*) *dorsoprojecta* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
79. *D.* (*T.*) *flavifrons* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
80. *D.* (*T.*) *fluminis* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
81. *D.* (*T.*) *hirtipennis* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
82. *D.* (*T.*) *insincera* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
83. *D.* (*T.*) *panda* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
84. *D.* (*T.*) *parvistyla* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
85. *D.* (*T.*) *peringueyi* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
86. *D.* (*T.*) *picticeps* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
87. *D.* (*T.*) *senzangakona* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
88. *D.* (*T.*) *thoracica* ALEX.	●	—	—	—	—	●	—	—	—	—	—	—	—	—
89. *D.* (*T.*) *vumbicola* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	—
90. *Tipula* (*Schummelia*) *scylla* sp. n.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
91. *T.* (*Oreomyza*) *draconis* sp. n.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
92. *T.* (*Tipula*) *bevisiana* ALEX.	●	—	—	—	●	●	—	—	—	—	—	—	—	—
93. *T.* (*T.*) *chubbi* ALEX.	—	—	—	—	●	—	—	—	—	—	—	—	—	—
94. *T.* (*T.*) *frater* ALEX.	—	—	—	●	—	●	—	●	—	●	●	—	—	—
95. *T.* (*T.*) *setosipennis* ALEX.	—	●	—	●	●	●	—	●	—	—	—	—	—	—
96. *T.* (*T.*) *soror* WIED.	●	●	—	—	●	●	—	—	—	—	●	—	—	—
97. *T.* (*Acutipula*) *amissa* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
98. *T.* (*A.*) *grahamiana* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
99. *T.* (*A.*) *jocosa* ALEX.	●	—	—	—	—	—	●	—	—	—	—	—	—	—
100. *T.* (*A.*) *natalia* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
101. *T.* (*A.*) *nyasae* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	●
102. *T.* (*A.*) *phaeocera* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
103. *T.* (*A.*) *pomposa* BERGR.	●	—	—	—	●	●	●	●	—	—	—	—	—	—
104. *T.* (*A.*) *silinda* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	—
105. *T.* (*A.*) *zambeziensis* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	●
106. *T.* (*A.*) *zuluensis* ALEX.	—	—	—	—	—	—	●	—	—	—	●	—	—	—
LIMONIINAE LIMONIINI														
107. *Limonia* (*Limonia*) *argopoda* ALEX.	—	—	—	—	—	—	●	—	—	—	—	—	—	—
108. *L.* (*L.*) *bethae* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	●
109. *L.* (*L.*) *capicola* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
110. *L.* (*L.*) *confusa* (ALEX.)	—	—	—	—	—	●	—	—	—	—	—	—	—	—
111. *L.* (*L.*) *cuthbertsoni* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
112. *L.* (*L.*) *dingaan* ALEX.	—	—	—	—	—	—	●	—	—	—	—	—	—	—
113. *L.* (*L.*) *ditior ditior* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	—
113a. *L.* (*L.*) *ditior subditior* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—

DIPTERA TIPULIDAE LIMONIINAE	SW. Cape Province	Eastern Cape Prov.	Northern Cape Prov.	Orange Free State	Basutoland	Natal	Zululand	Transvaal	Swaziland	Moçambique	South Rhodesia	Bechuanaland	South West Africa	N of Southern Africa
114. *L.* (*L.*) *flavopyga* (ALEX.)	●	—	—	—	—	●	—	—	—	—	●	—	—	●
115. *L.* (*L.*) *hovamendica makalaka* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
116. *L.* (*L.*) *irrorata* END.	—	—	—	—	—	●	—	●	—	●	●	—	—	●
117. *L.* (*L.*) *lebombo* ALEX.	—	—	—	—	—	●	●	—	—	—	—	—	—	—
118. *L.* (*L.*) *marleyi* (ALEX.)	—	—	—	—	—	●	—	—	—	—	—	—	—	—
119. *L.* (*L.*) *nyasaensis* (ALEX.)	—	—	—	—	—	—	—	—	—	—	●	—	—	●
120. *L.* (*L.*) *omnifulva* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
121. *L.* (*L.*) *peringueyi* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
122. *L.* (*L.*) *pondoensis* ALEX.	—	●	—	—	—	—	—	—	—	—	—	—	—	—
123. *L.* (*L.*) *potnia* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
124. *L.* (*L.*) *praetor* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
125. *L.* (*L.*) *saucroptera* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
126. *L.* (*L.*) *shawi* (ALEX.)	—	—	—	—	—	●	●	●	—	●	●	—	—	●
127. *L.* (*L.*) *subapicalis* ALEX.	●	●	—	—	—	●	—	—	—	—	—	—	—	●
128. *L.* (*L.*) *subconfusa* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
129. *L.* (*L.*) *umbrata* (DE MEIJ.)	—	—	—	—	—	●	—	—	—	—	—	—	—	●
130. *L.* (*L.*) *uniflava* (RIED.)	—	—	—	—	—	—	—	—	—	—	●	—	—	●
131. *L.* (*Metalimnobia*) *trichoptera* (ALEX.)	—	—	—	—	—	—	—	—	—	—	●	—	—	●
132. *L.* (*Libnotes*) *libnotina* (ALEX.)	●	●	—	—	—	●	—	—	—	—	●	—	—	—
133. *L.* (*Rhipidia*) *atomaria* (LOEW)	●	●	—	—	●	●	—	—	—	—	●	—	●	—
134. *L.* (*R.*) *endecamera* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
135. *L.* (*R.*) *femorasetosa taeniola* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
136. *L.* (*R.*) *miosema* SPEISER	—	—	—	—	—	●	—	—	—	●	●	—	—	●
137. *L.* (*R.*) *pallidipes* (ALEX.)	—	—	—	—	—	●	—	—	—	—	—	—	—	●
138. *L.* (*R.*) *seydeli* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	●
139. *L.* (*Dicranomyia*) *basuto* ALEX.	—	—	—	—	●	—	—	—	—	—	●	—	—	—
140. *L.* (*D.*) *contraria* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
141. *L.* (*D.*) *gardineri* (EDWARDS)	—	—	—	—	—	●	—	●	—	●	●	—	—	●
142. *L.* (*D.*) *guttula* (ALEX.)	—	—	—	—	—	—	—	—	—	●	—	—	—	●
143. *L.* (*D.*) *kraaiensis* sp. n.	—	●	—	—	—	—	—	—	—	—	—	—	—	—
144. *L.* (*D.*) *lawrencei* ALEX.	—	—	—	—	—	●	—	—	—	—	●	—	—	—
145. *L.* (*D.*) *luaboensis* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
146. *L.* (*D.*) *marshalli* (ALEX.)	—	—	—	—	—	—	—	—	—	—	●	—	—	—
147. *L.* (*D.*) *mosselica* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
148. *L.* (*D.*) *nairobii* (ALEX.)	●	—	—	—	●	●	—	—	—	—	●	—	—	●
149. *L.* (*D.*) *neoguttula* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
150. *L.* (*D.*) *satura* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
151. *L.* (*D.*) *tipulipes* (KARSCH)	●	●	—	●	●	●	—	●	—	●	●	—	●	●
152. *L.* (*D.*) *umkomazanae* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
153. *L.* (*D.*) *viator* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
154. *L.* (*Idioglochina*) *lightfooti* (ALEX.)	—	●	—	—	—	—	—	—	—	—	—	—	—	—
155. *L.* (*Geranomyia*) *alberticola* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	●
156. *L.* (*G.*) *dischidia* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—

DIPTERA TIPULIDAE LIMONIINAE	SW. Cape Province	Eastern Cape Prov.	Northern Cape Prov.	Orange Free State	Basutoland	Natal	Zululand	Transvaal	Swaziland	Moçambique	South Rhodesia	Bechuanaland	South West Africa	N of Southern Africa
157. *L.* (*G.*) *errana* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	●
158. *L.* (*G.*) *euryphallus* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
159. *L.* (*G.*) *gracilipalpis* ALEX.	—	●	—	—	—	—	—	—	—	—	—	—	—	—
160. *L.* (*G.*) *mashonica* (ALEX.)	—	—	—	—	—	—	—	—	—	●	●	—	—	—
161. *L.* (*G.*) *rubrithorax* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
162. *L.* (*G.*) *rudebecki* sp. n.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
163. *L.* (*G.*) *sex-ocellata* (ALEX.)	●	—	—	—	—	●	—	—	—	—	—	—	—	—
164. *L.* (*G.*) *subimmaculata* (ALEX.)	—	—	—	—	—	●	—	—	—	—	—	—	—	—
165. *L.* (*G.*) *tugela* sp. n.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
166. *L.* (*Pseudoglochina*) *pamela* ALEX.	—	—	—	—	—	—	—	—	—	—	—	—	—	●
167. *L.* (*Thrypticomyia*) *nigeriensis* (ALEX.)	—	—	—	—	—	—	—	—	—	●	—	—	—	●
168. *L.* (*T.*) *niveitibia* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
169. *L.* (*Euglochina*) *connectans* (ALEX.)	—	—	—	—	—	—	—	—	—	●	●	—	—	●
170. *Helius* (*Helius*) *brevisector* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	●
171. *H.* (*H.*) *capensis* (ALEX.)	—	—	—	—	—	●	●	●	—	●	●	—	—	●
172. *H.* (*H.*) *dugaldi* ALEX.	—	—	—	—	—	●	—	—	—	●	●	—	—	—
173. *H.* (*H.*) *flavitarsis* (ALEX.)	—	—	—	—	—	—	—	—	—	●	—	—	—	●
174. *H.* (*H.*) *paramorosus* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	●
175. *Antocha* (*Orimargula*) *brevicornis* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
176. *A.* (*O.*) *indumeni* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
177. *A.* (*O.*) *melina* ALEX.	—	—	—	—	—	●	—	●	—	—	●	—	—	—
178. *A.* (*O.*) *setosa* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
179. *A.* (*O.*) *transvaalia* (ALEX.)	●	—	—	—	—	●	—	●	—	—	●	—	—	—
180. *A.* (*O.*) *venosa* sp. n.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
181. *Thaumastoptera natalensis* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
182. *Platylimnobia barnardi* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
183. *P. brinckiana* sp. n.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
184. *P. montana* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
185. *P. pseudopumila* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
186. *P. pumila* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
187. *Dicranoptycha natalia* ALEX.	—	—	—	—	—	●	●	—	—	—	—	—	—	—
188. *Orimarga* (*Orimarga*) *brevicula* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	●
189. *O.* (*O.*) *mashonensis* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
LECHRIINI														
190. *Ceratolimnobia* (*Ceratolimnobia*) *munroi* ALEX.	—	—	—	—	—	—	—	●	—	—	●	—	●	●
HEXATOMINI														
191. *Paradelphomyia* (*Oxyrhiza*) *annulipes* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
192. *P.* (*O.*) *bilobata* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	—
193. *P.* (*O.*) *faurei* (ALEX.)	—	—	—	—	—	●	●	—	—	—	●	—	—	—

DIPTERA TIPULIDAE LIMONIINAE	SW. Cape Province	Eastern Cape Prov.	Northern Cape Prov.	Orange Free State	Basutoland	Natal	Zululand	Transvaal	Swaziland	Moçambique	South Rhodesia	Bechuanaland	South West Africa	N of Southern Africa
194. *P.* (*O.*) *vumbensis* (ALEX.)	—	—	—	—	—	—	—	—	—	—	●	—	—	—
195. *Austrolimnophila* (*Phragmocrypta*) *albocoxalis* (ALEX.)	—	—	—	—	—	—	—	—	—	—	●	—	—	—
196. *A.* (*Austrolimnophila*) *canuta* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
197. *A.* (*A.*) *ephippigera* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
198. *A.* (*A.*) *griseiceps* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
199. *A.* (*A.*) *luteipleura* ALEX.	—	—	—	—	—	●	●	—	—	—	●	—	—	—
200. *A.* (*A.*) *medialis* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
201. *A.* (*A.*) *multiscripta* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
202. *A.* (*A.*) *natalensis* (ALEX.)	—	—	—	—	—	●	●	—	—	—	—	—	—	—
203. *A.* (*A.*) *pleurolineata* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
204. *A.* (*A.*) *pleurostria* ALEX.	—	—	—	—	—	●	●	—	—	—	—	—	—	—
205. *A.* (*A.*) *plumbeipleura* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
206. *A.* (*A.*) *spectabilis* (ALEX.)	—	—	—	—	—	●	—	—	—	—	—	—	—	—
207. *A.* (*A.*) *thornei* (WOOD)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
208. *A.* (*A.*) *transvaalica* (ALEX.)	—	—	—	—	—	—	—	●	—	—	—	—	—	—
209. *Pseudolimnophila* (*Calolimnophila*) *xanthomelania* ALEX.	—	—	—	—	—	—	●	—	—	—	—	—	—	—
210. *P.* (*Pseudolimnophila*) *aurantiaca* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
211. *P.* (*P.*) *auranticollis* ALEX.	—	—	—	—	—	—	—	●	—	—	—	—	—	—
212. *P.* (*P.*) *chrysopoda* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
213. *P.* (*P.*) *eremnonota* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
214. *P.* (*P.*) *frugi* (BERGR.)	—	●	—	—	—	●	●	●	—	●	—	—	●	●
215. *P.* (*P.*) *rhodesiae* (ALEX.)	—	—	—	—	—	●	—	—	—	—	●	—	—	—
216. *Limnophila* (*Elaeophila*) *dubiosa* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
217. *L.* (*E.*) *smithersi* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
218. *L.* (*E.*) *subannulata* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
219. *L.* (*E.*) *venaguttula* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
220. *L.* (*Elporiomyia*) *crepuscula* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
221. *L.* (*E.*) *nox* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
222. *L.* (*E.*) *woodiana* sp. n.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
223. *L. hetaira* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
224. *L. natalica* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
225. *L. suffilata* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
226. *Hexatoma* (*Eriocera*) *albonotata* (LOEW)	—	—	—	—	—	—	—	—	—	●	—	—	—	●
227. *H.* (*E.*) *bevisi* ALEX.	—	—	—	—	●	—	—	●	—	—	—	—	—	—
228. *H.* (*E.*) *capensis* (ALEX.)	—	—	—	—	—	—	—	●	—	—	—	—	—	—
229. *H.* (*E.*) *humilis* (ALEX.)	—	—	—	—	—	—	—	●	—	—	—	—	—	—
230. *H.* (*E.*) *prepositа* ALEX.	—	—	—	—	—	●	—	—	—	—	●	—	—	—
231. *H.* (*E.*) *shawanoensis* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	—
232. *Elephantomyia* (*Elephantomyia*) *aurantiaca* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
233. *E.* (*E.*) *grahami* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—

DIPTERA TIPULIDAE LIMONIINAE	SW. Cape Province	Eastern Cape Prov.	Northern Cape Prov.	Orange Free State	Basutoland	Natal	Zululand	Transvaal	Swaziland	Moçambique	South Rhodesia	Bechuanaland	South West Africa	N of Southern Africa
234. *E.* (*E.*) *laetifica* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
235. *E.* (*E.*) *luteipennis* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
236. *E.* (*E.*) *montana* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
237. *E.* (*E.*) *mossambica* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
238. *E.* (*E.*) *ovalistigma* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
239. *E.* (*E.*) *pleurolineata* ALEX.	—	●	—	—	—	●	—	—	—	—	—	—	—	—
240. *E.* (*E.*) *pringlei* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
241. *E.* (*E.*) *pseudosimilis* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
242. *E.* (*E.*) *wahlbergi* BERGR.	—	●	—	—	—	—	—	—	—	—	—	—	—	—
243. *Atarba* (*Atarba*) *stuckenbergi* ALEX.	—	—	—	—	—	●	●	—	—	—	—	—	—	—
244. *A.* (*Atarbodes*) *dolichophallus* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
245. *A.* (*A.*) *leptophallus* sp. n.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
246. *A.* (*A.*) *rhodesiae* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	—
247. *A. capensis* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
ERIOPTERINI														
248. *Conosia angustissima* ALEX.	●	—	—	—	●	●	●	●	—	●	●	—	●	●
249. *C. irrorata* (WIED.)	—	—	—	—	—	●	—	—	—	●	●	—	—	●
250. *Clydonodozus stuckenbergi* ALEX.	—	—	—	—	—	—	—	—	—	●	●	—	—	—
251. *Quathlambia stuckenbergi* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
252. *Idiognophomyia capicola* (ALEX.)	—	●	—	—	—	●	—	—	—	—	—	—	—	—
253. *I. ignava* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
254. *I. patula* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
255. *Gnophomyia* (*Eugnophomyia*) *chirindensis* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
256. *G.* (*E.*) *elegans* (WIED.)	—	●	—	—	—	●	●	—	—	—	—	—	—	—
257. *G.* (*E.*) *silindicola* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
258. *G.* (*E.*) *turneri* ALEX.	—	●	—	—	—	—	●	—	—	—	—	—	—	—
259. *Gonomyia* (*Progonomyia*) *brevifurca* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
260. *G.* (*P.*) *flaveola* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
261. *G.* (*P.*) *natalensis* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
262. *G.* (*P.*) *nigrobimbo* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
263. *G.* (*P.*) *pulchrissima* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
264. *G.* (*P.*) *transvaalensis* ALEX.	—	—	—	—	—	—	—	●	—	—	—	—	—	—
265. *G.* (*Idiocera*) *contracta* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
266. *G.* (*I.*) *daedalus* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
267. *G.* (*I.*) *glabriapicalis* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
268. *G.* (*I.*) *gunvorae* sp. n.	—	—	—	—	●	●	—	—	—	—	—	—	—	—
269. *G.* (*I.*) *mashonensis* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
270. *G.* (*I.*) *spuria* BERGR.	—	●	—	—	—	—	●	●	—	●	●	—	—	●
271. *G.* (*I.*) *subspuria* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
272. *G.* (*I.*) *thomassetiana* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
273. *G.* (*I.*) *tuckeri* ALEX.	—	—	—	—	—	—	—	●	—	—	—	—	●	—

DIPTERA TIPULIDAE LIMONIINAE	SW. Cape Province	Eastern Cape Prov.	Northern Cape Prov.	Orange Free State	Basutoland	Natal	Zululand	Transvaal	Swaziland	Moçambique	South Rhodesia	Bechuanaland	South West Africa	N of Southern Africa
274. *G.* (*I.*) *xenopyga* sp. n.	—	—	—	—	—	—	—	—	—	—	—	—	●	—
275. *G.* (*Gonomyia*) *gnophosoma* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
276. *G.* (*G.*) *mimetica* ALEX.	●	—	—	—	●	●	—	—	—	—	—	—	—	—
277. *G.* (*G.*) *sparsisetosa* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
278. *G.* (*G.*) *unispicata* ALEX..	—	—	—	—	—	●	—	—	—	—	—	—	—	—
279. *G.* (*Lipophleps*) *apiculata* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
280. *G.* (*L.*) *elachistos* ALEX.	●	—	—	—	—	●	—	—	—	—	—	—	—	—
281. *G.* (*L.*) *fimbriata* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	●	—
282. *G.* (*L.*) *houtensis* sp. n.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
283. *G.* (*L.*) *mashona* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
284. *G.* (*L.*) *milangensis* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
285. *G.* (*L.*) *noctabunda* ALEX.	●	—	—	—	—	—	—	●	—	●	●	—	—	●
286. *G.* (*L.*) *silinda* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
287. *G.* (*L.*) *sulphurelloides* ALEX.	●	—	—	—	—	●	—	●	—	—	●	—	—	●
288. *G.* (*L.*) *usherae* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
289. *Trentepohlia* (*Paramongoma*) *fuscistigmosa* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
290. *T.* (*Mongoma*) *pennipes* (O. S.).	—	—	—	—	—	—	—	—	—	●	—	—	—	●
291. *T.* (*Trentepohlia*) *exornata* (BERGR.)	—	●	—	—	—	●	—	—	—	●	●	—	—	—
292. *T.* (*T.*) *gracilis* END.	—	—	—	—	—	—	—	●	—	—	●	—	—	●
293. *T.* (*T.*) *humeralis* ALEX.	—	—	—	—	—	●	●	●	—	—	●	—	—	—
294. *T.* (*T.*) *leucophaea* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
295. *T.* (*T.*) *pamela* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
296. *T.* (*T.*) *zambesiae* (ALEX.)	—	—	—	—	—	●	—	—	—	●	—	—	—	—
297. *Teucholabis* (*Teucholabis*) *nodipes clitelligera* ALEX.	—	●	—	—	—	●	—	—	—	—	—	—	—	—
297a. *T.* (*T.*) *n. marleyi* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
298. *Gymnastes* (*Gymnastes*) *teucholaboides* (ALEX.)	—	—	—	—	—	—	—	—	—	●	●	—	—	●
299. *Hovamyia venustipes* (ALEX.).	—	—	—	—	—	—	—	—	—	●	●	—	—	●
300. *Limnophilomyia* (*Eulimnophilomyia*) *abnormalis* sp. n.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
301. *L.* (*Limnophilomyia*) *lacteitarsis* ALEX.	●	—	—	—	—	—	—	—	—	—	—	—	—	—
302. *L.* (*L.*) *stuckenbergi* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
303. *L.* (*L.*) *transvaalensis* ALEX.	—	—	—	—	—	—	—	●	—	—	—	—	—	—
304. *Rhabdomastix* (*Sacandaga*) *afra* WOOD	●	—	—	—	—	—	—	—	—	—	—	—	—	—
305. *R.* (*S.*) *indigena* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
306. *R.* (*S.*) *tugela* sp. n.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
307. *Baeoura brevipilosa* (ALEX.)	—	—	—	—	—	—	—	●	—	●	—	—	—	—
308. *B. brumata* (WOOD)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
309. *B. claripennis* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
310. *B. cooksoni* (ALEX.)	—	—	—	—	—	—	—	●	—	—	—	—	—	—
311. *B. longicalcarata* (WOOD)	●	—	—	—	—	—	—	—	—	—	—	—	—	—

DIPTERA TIPULIDAE LIMONIINAE	SW. Cape Province	Eastern Cape Prov.	Northern Cape Prov.	Orange Free State	Basutoland	Natal	Zululand	Transvaal	Swaziland	Moçambique	South Rhodesia	Bechuanaland	South West Africa	N of Southern Africa
312. *B. producticornis* (ALEX.)	—	—	—	—	—	●	—	—	—	—	—	—	—	—
313. *B. unistylata* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
314. *B. witzenbergi* (WOOD)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
315. *Tasiocera* (*Dasymolophilus*) *cyrtacantha* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
316. *T.* (*D.*) *eriopteroides* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
317. *T.* (*D.*) *liliputana* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
318. *T.* (*D.*) *probosa* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	●
319. *Ormosia* (*Trichotrimicra*) *antilopa* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
320. *O.* (*T.*) *hirtipennis* (ALEX.)	—	—	—	—	—	●	—	—	—	—	—	—	—	—
321. *O.* (*T.*) *tchaka* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
322. *Cheilotrichia* (*Cheilotrichia*) *brincki* sp. n.	●	—	—	—	—	●	—	●	—	—	●	—	—	—
323. *C.* (*C.*) *clausa* (ALEX.)	●	—	—	—	—	—	—	—	—	—	—	—	—	—
324. *C.* (*Empeda*) *bonae spei* (ALEX.)	●	—	—	—	—	—	●	—	—	—	—	—	—	—
325. *C.* (*E.*) *telacantha* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
326. *Erioptera* (*Trimicra*) *pilipes pilipes* (FABR.)	●	—	—	●	●	●	●	●	—	—	●	—	●	●
326a. *E.* (*T.*) *p. inconspicua* (LOEW)	●	—	—	●	—	●	—	—	—	—	—	—	—	—
327. *E.* (*Podoneura*) *anthracogramma* (BERGR.)	●	—	—	—	●	●	—	—	—	—	●	—	—	●
328. *E.* (*Erioptera*) *carior* ALEX.	—	—	—	—	—	—	—	●	—	—	—	—	—	—
329. *E.* (*E.*) *celestissima* ALEX.	—	●	—	—	—	—	—	—	—	—	—	—	—	—
330. *E.* (*E.*) *circumambiens* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
331. *E.* (*E.*) *nitidiuscula* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	●
332. *E.* (*E.*) *peringueyi* BERGR.	●	—	—	—	●	●	—	●	—	—	●	—	—	●
333. *E.* (*Meterioptera*) *ablusa* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
334. *E.* (*M.*) *fumipennis* ALEX.	—	—	—	—	—	●	—	●	—	—	●	—	—	—
335. *E.* (*M.*) *persinuata* sp. n.	—	—	—	—	●	—	—	—	—	—	—	—	—	—
336. *E.* (*M.*) *quadripilata* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
337. *E.* (*M.*) *quadrispicata* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
338. *E.* (*M.*) *subaurea* BERGR.	—	●	—	—	—	●	—	—	—	—	●	—	—	—
339. *E. subirrorata* ALEX.	—	—	—	—	—	—	—	●	—	—	●	—	—	●
340. *Molophilus* (*Molophilus*) *erugatus* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
341. *M.* (*M.*) *natalicolus* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
342. *Styringomyia annulipes* (END.)	—	—	—	—	—	—	—	—	—	●	—	—	—	●
343. *S. edwardsiana* ALEX.	—	●	—	—	—	●	●	—	—	—	—	—	—	—
344. *S. leucopeza* EDW.	—	—	—	—	—	●	—	—	—	●	●	—	—	●
345. *S. marshalli* EDW.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
346. *S. stuckenbergi* ALEX.	—	—	—	—	—	●	—	—	—	—	—	—	—	—
347. *S. tenuisterna* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
348. *S. tergata* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
349. *S. variegata* EDW.	—	—	—	—	—	—	—	—	—	●	—	—	—	●
350. *S. vittata* EDW.	—	—	—	—	—	●	●	●	—	●	●	—	—	●
351. *Toxorhina* (*Toxorhina*) *cuthbertsoni* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	●
352. *T.* (*T.*) *mashona* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—

DIPTERA TIPULIDAE LIMONIINAE	SW. Cape Province	Eastern Cape Prov.	Northern Cape Prov.	Orange Free State	Basutoland	Natal	Zululand	Transvaal	Swaziland	Moçambique	South Rhodesia	Bechuanaland	South West Africa	N of Southern Africa
353. *T.* (*Ceratocheilus*) *claripennis* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
354. *T.* (*C.*) *drysdalei* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	—
355. *T.* (*C.*) *nigripleura* (ALEX.)	—	—	—	—	—	—	—	—	—	●	—	—	—	●
356. *T.* (*C.*) *phaeoneura* ALEX.	—	—	—	—	—	—	—	—	—	●	—	—	—	—
357. *T.* (*C.*) *scimitar* ALEX.	—	—	—	—	—	—	—	—	—	—	●	—	—	●