Annals of the Natal Museum, Vol. XIV, part 3, issued 16th February, 1960.)

A Review of the South African Acroceridæ (Diptera).

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With 29 Text-figures.

CONTENTS.

INTRODUCTION.

A SYSTEMATIC account of the South African Acroceridæ (= Cyrtidæ) has never been attempted. Since the descriptions of the few poorly known species are widely scattered through the literature, it seemed desirable to sum up the available information on these flies, and at the same time diagnose the known genera and describe the several new species which have come to my attention through the years.

This is the fourth in a series of regional or generic articles on the Acroceridæ which has been prepared as a prerequisite to a generic revision of the family. Articles including descriptions of new genera and new species that have already been published by the author include a revision of *Pialea* Erichson (1956), a review of *Rhysogaster* Aldrich including two new genera, *Neopanops* Schlinger and *Astomelloides* Schlinger (1959*a*), and a revision of the largest acrocerid genus, *Ogcodes* Latreille (1959*b*). A fifth article in this series, concerning the acrocerids of Madagascar, is now in press (1959*c*).

The area of study involved in this report includes that part of Africa south

of the equator, but does not include Madagascar or its adjacent islands. A total of 11 genera and 21 species has been recorded from this region. The addition of a new genus and 14 new species now shows 12 genera and 35 species to occur in Africa south of the equator. The acrocerid genera and species treated in this work are as follows ;

Subfamily PANOPINÆ
- *Cornoncodes* Speiser
  - *coronatus* Speiser
- *Astomella* Lamarck
  - *acuta* Schlinger
  - *capensis* n. sp.
- *Pterodontia* Gray
  - *smithi* Johnson
- *Stenopialea* Speiser
  - *beckeri* Speiser
  - *primitiva* n. sp.

Subfamily ACROCERINÆ
- *Acrocera* Meigen
  - *lindneri* Sabrosky
  - *natalensis* n. sp.
  - *pallidivena* n. sp.
  - *rhodesiensis* n. sp.
  - *turneri* n. sp.
- *Cyrtus* Latreille
  - *nyasæ* Brunetti
- *Meruia* Sabrosky
  - *somereni* Sabrosky
- *Ogcodes* Latreille
  - *caffer* Loew
  - *clavatus* Becker
  - *congœnsis* Brunetti
  - *guttatus* Costa
  - *neavei* Brunetti
  - *varius pallidimarginalis* Brunetti
- *Psilodera* Gray
  - *fasciata* (Wiedemann)
  - *confusa* n. sp.
  - *hessei* n. sp.
  - *nhluzane* n. sp.
  - *bipunctata* (Wiedemann)
  - *valida* (Wiedemann)
  - *natalensis* n. sp.
  - *stuckenbergi* n. sp.

Sabroskya n. gen.
ogcodoides n. sp.
Subfamily PHILOPOTINÆ
Terphis Erichson
acroceroides Sabrosky
gertschi n. sp.
Thyllis Erichson
crassa (Fabricius)
turgida Erichson
obesa Erichson
compressa Erichson
colei n. sp.

ACKNOWLEDGMENTS.

Without the help of the following persons and their institutions in loaning me specimens, this study would have not been possible: Dr. M. A. Cazier, American Museum of Natural History, New York [A.M.N.H.], Dr. A. J. Hesse, Capetown Museum, Capetown [C.M.], Dr. H. Oldroyd, British Museum of Natural History, London [B.M.N.H.], Dr. C. W. Sabrosky, United States Department of Agriculture, United States National Museum, Washington, D. C. [U.S.N.M.], and Mr. B. R. Stuckenberg, Natal Museum, Pietermaritzburg [N.M.].

Special thanks are due Mr. Brian Stuckenberg for the loan of his large and most important collection, for his helpful comments concerning South African localities and distributional problems, and for aid in the publication of this manuscript.

Particular thanks are also due Dr. Sabrosky for loaning me copies of his notes on certain type specimens of acrocerids in some European collections. These notes are cited in this article as Sabrosky (1953).

BIOLOGY.

Biological data on the Acroceridæ are few, and as far as I know there are no published biological references to any Ethiopian species. All known species are solitary internal parasites of true spiders. The eggs are laid either on branches or in flight in large numbers, and the first-instar planidial larvæ wait for or seek out their hosts and burrow inside. Here they transform as the spider develops and after a period of time (six months or longer) rapidly consume the host, emerge and pupate outside the host skin. The adults are mostly short-lived (ranging from one to six weeks). Some feed on floral nectars, others apparently do not feed, and mating takes place in flight.

For good general reviews of acrocerid biologies consult the works of Clausen

(1940) and Sèguy (1950), while more recent papers by Plomley (1947) and Schlinger (1952 and 1959*b*) have added further knowledge to these rarely studied flies.

Distribution and Phylogeny.

The African region south of the equator contains representatives of all three acrocerid subfamilies. The species of the Philopotinæ are quite restricted for the most part to the Cape region, while members of the Panopinæ and Acrocerinæ are widespread. There are, however, to my knowledge no published records of these flies from South West Africa, Angola and Bechuanaland. Perhaps deserts, such as the Namib and Kalahari, act as distinct geographical barriers, as was found to be the case in *Ogcodes* species in south-western United States (Schlinger, 1959*b*).

The subfamily Panopinæ contains 20 genera, four of which occur in this area. These are *Astomella*, *Corononcodes*, *Pterodontia* and *Stenopialea*. The genera *Astomella* and *Corononcodes* are closely related, and belong with the evolutionary branch that includes *Rhysogaster* Aldrich, *Physegastrella* Brunetti and *Astomelloides* Schlinger. These last three genera occur only in the Palearctic or Oriental regions. *Stenopialea*, on the other hand, which is a South African endemic, has as its closest relative the Neotropical *Pialea* Erichson (Schlinger, 1956), which suggests a much wider distribution of one and/or the other at some earlier time. *Pterodontia* is primarily a Holarctic genus : however, it is cosmopolitan and has at least one species that reaches as far south as Southern Rhodesia in Africa. Its phylogenetic relationships are not clear, and most authors place it in with the Acrocerinæ. However, on the basis of the presence of strong tibial spurs, I believe it fits better in the Panopinæ as a distant relative of the *Astomella* group. It is of interest to note that this subfamily does not occur in nearby Madagascar.

The subfamily Acrocerinæ contains 12 genera, six of which occur in South Africa. These are *Acrocera*, *Cyrtus*, *Meruia*, *Ogcodes*, *Psilodera* and *Sabroskya*. Two of these genera, *Meruia* and *Sabroskya*, are endemic and monotypic, while *Psilodera* is endemic except for one Indian species. *Acrocera*, *Ogcodes* and *Sabroskya* are all quite closely related at the top of the main evolutionary branch of the subfamily. *Cyrtus* and *Psilodera* are also closely related, and the latter may represent the most primitive member of the subfamily, showing relationships to both *Apsona* Westwood of the Panopinæ and to a branch of *Thyllis* of the Philopotinæ. *Meruia* was stated by Sabrosky (1950) to be most closely related to *Pterodontia*, but it seems that its actual relationships are obscured. In one distinct feature, that of having a definite cervical region, *Meruia* appears to be related to *Sabroskya*. As in the Panopinæ, no representative of the Acrocerinæ is as yet known from Madagascar.

The subfamily Philopotinæ contains five genera, of which two—*Terphis*

and *Thyllis*—occur in this region. *Terphis* has representatives in the Neotropical region as well, while *Thyllis* is endemic to South Africa and Madagascar. *Terphis* apparently evolved from *Thyllis*, and *Thyllis* is quite closely related to both *Philopota* Wiedemann and *Megalybus* Phillippi from the Palearctic, Oriental and Neotropical regions.

The only South African species that has been found to occur in other geographical regions is *Ogcodes guttatus* Costa, a Palearctic-Oriental species. The closest relatives of South African species outside of the area appear to occur in the Mediterranean and southern Neotropical regions. There are also some affinities shown for both the Oriental and Nearctic regions.

Systematics.

The family Acroceridæ is one of the orthorrhaphus brachycerus eremochætus Diptera, which I feel is more closely related to the Tabanidæ than to any other family. Most authors have related the acrocerids to the Nemestrinidæ and Bombyliidæ, but all available evidence shows little such association.

The family is divided into three subfamilies (Panopinæ, Acrocerinæ and Philopotinæ) all of which were originally established by Schiner (1868). The family now contains about 40 genera and about 350 species.

Although there have been relatively few large works completed on this family, the following major revisional and large works may be referred to: Erichson (1840, general), Schiner (1868, general), Verrall (1909, British species), Wandolleck (1914, general), Cole (1919*b*, Nearctic species), Edwards (1930, Chilean species), Pleske (1930) and Sack (1936, Palearctic species), Sabrosky (1944 and 1948, Nearctic species), and Schlinger (1959*b*, *Ogcodes* of world).

Key to the Subfamilies of the Acroceridæ.

1. Prothoracic lobes strongly developed, coming together dorsally to form a shield in front of mesonotum . . . . . Philopotinæ
   Prothoracic lobes weakly or well developed, but never joining above in front of mesonotum 2
2. Tibiæ produced on outer apical margin into an acute spur, often with an additional, shorter, inner spur; antennæ with terminal segment long, often flattened or rounded throughout, without *distinct* terminal setæ (except in *Pterodontia* which also has a short terminal segment); eyes sometimes dioptic, particularly in ♀ . . Panopinæ
— Tibiæ without apical spurs; antennæ with terminal segment styliform, or shortened and rod-like, with or without apical seta or setæ; eyes holoptic in both sexes Acrocerinæ

Subfamily Panopinæ.

This cosmopolitan subfamily comprises 20 genera of which only four occur in South Africa. Only *Stenopialea* is endemic, while its close relative, *Corononcodes*, contains but two species, one from the Cape Province and the other from the Canary Islands and Sicily. *Pterodontia*[1] is a cosmopolitan genus, while

[1] *Pterodontia* Gray is usually considered a member of the Acrocerinæ, but I believe it belongs to the Panopinæ.

Astomella occurs throughout parts of the Palearctic, Oriental and Ethiopian regions (see Schlinger, 1959*a*).

KEY TO THE SOUTH AFRICAN GENERA.

1. Eyes pilose ; antennæ inserted well below vertex 2
— Eyes apilose ; antennæ inserted near vertex . . . . . *Corononcodes* Speiser
2. Terminal antennal segment elongate, more than one-half as long as head height ; costa not thickened at apex of vein R_1 3
— Terminal antennal segment short, not more than three times longer than segment 2 ; costa thickened at apex of vein R_1 in ♀, produced to point in ♂ . *Pterodontia* Gray
3. Antennæ inserted low on head near mouth . . . . . *Astomella* Lamarck
— Antennæ inserted about midway between middle of head and vertex *Stenopialea* Speiser

Genus *Astomella* Lamarck.

Astomella Lamarck, 1816, Hist. Nat. Anim. sans Vert., **3** : 415.

Type species.—*Astomella Hispaniæ* Lamarck (monotypic).

Diagnosis.—Large flies (6–15 mm.), somewhat bee-like, brown or black with yellow or orange markings ; antennæ with three segments, pendant, inserted under antennal tubercle just above mouth ; proboscis absent or short ; eyes pilose ; ocelli wanting, or 1, 2, or 3 present, often quite indistinct and difficult to see ; tibial spur present only on outer margin ; wing venation incomplete, no longitudinal veins reaching wing margin beyond R_{2+3}, hence only posterior cells 1 and 4 are closed ; wing short and stumpy ; male genitalia large, ventral ; female genitalia placed far forward near thorax, making all sternites small and compressed.

Of the eight recognized species of *Astomella*, only two occur south of the equator in Africa. These are *A. acuta* Schlinger and *A. capensis* n. sp. described below.

Astomella acuta Schlinger.

Astomella acuta Schlinger, 1959*a*, Ann. Ent. Soc. Amer., 52 (2) : 154.

Type locality.—Old Shinyanga, Tanganyika (♀, B.M.N.H.).

This species was described from a unique female, and I have not examined any other specimen. *A. acuta* is distinct from all known *Astomella* species in having the humeri produced into acute angles above.

Astomella capensis n. sp. Text-figs. 1–2.

Male.—Length of entire specimen 15 mm., wing length 8 mm.

Colour black, brown, and brownish-yellow. Black are eyes, antennal segment 1, antennal tubercle, mesonotum, scutellum, sternopleura, mesopleura and apices of tarsal claws ; dark brown are antennal segment 2, posterior margin of antennal segment 3, proboscidial covering, postalar callus, wing veins, posterior spot on coxa 1, ventral spot on femora, all of coxæ 2 and 3,

most of tarsus 3, tergite 1, fasciæ on anteromedian half of tergites 2 and 3, anterolateral fourth of tergites 2 and 3, anterior two-thirds of tergite 4, all of tergites 5 and 6, genitalia, spiracles 2 to 4, anterior fourth of sternite 2, anterior half of sternites 3 and 4, and all of sternites 5 to 7; brownish-yellow are humerus, pro- and metathoracic spiracles, remainder of legs, narrow squamal rim and remainder of abdomen; light brown are anteromarginal two-thirds of antennal segment 3, halter and pulvilli; occiput grey.

Pile brownish-yellow and dense on thorax, coxae, occiput and tergite 2, about as long as hind distitarsus; that on eyes dense, dark brown and about as long as antennal segment 1, somewhat longer on vertex; that on femora brownish-yellow, about as long as eye pile; that on tibiæ and tarsi short, dark brown almost setate; that on squama white, sparse, about as long as eye pile; abdominal tergal pile dense, concolorous with ground colour for the most part, longer medially and laterally on each segment, remainder somewhat appressed except on tergites 5 and 6 where it is long and erect throughout; sternal pile brownish-yellow, rather sparse, erect on segments 2 to 5, quite appressed on 6 and 7. Wing with short brown setæ along costal margin and vein R_1.

Head higher than long in profile (text-fig. 2); ocellar tubercle flat, barely rising above eye margin, no visible ocelli, but anterior pit present; eyes occupy slightly more than one-half of the head capsule, antennal tubercle quite indistinct; antennal segments 1 and 2 short, covered with short, stiff hairs, segment 3 long and bare; eyes separated below antennæ by about width of antennal tubercle; no proboscis or maxillary palpus present, but small proboscidial covering present.

Thorax with enlarged forecoxal cavity; legs strong, only femora swollen, all femora and tarsi longer than corresponding tibiæ, hind tarsus noticeably thicker than others, femora only little longer than tibiæ; tibial spur present on each leg, but short, not as long as antennal segment 1; humerus somewhat swollen anteromedially, but not pointed; scutellum about twice as wide as long; wing hyaline, venation as in text-fig. 1, similar to *A. hispaniæ* Lamarck, but vein $Cu_1 + M_{3+4}$ stronger, reaching wing margin: squama semiopaque, white.

Abdomen with seven tergites and sternites visible, widest at segment 2: genitalia ventral, but more terminal than in *A. hispaniæ*; spiracles free in intersegmental membrane of segments 2 to 5.

Female.—Unknown.

Type material.—Holotype ♂, Cape Province, Grahamstown, 6.i.1940 (N.M.).

Another ♂ without locality data (C.M.) appears to be this species, but is much smaller (11 mm.), has more pronounced ocellar tubercle, and has lateral margins of mesonotum dark brown.

This species is more closely related to *A. hispaniæ* from Europe than to the only other South African species, *A. acuta*. *A. capensis* can be distinguished from *A. hispaniæ* by its very small antennal tubercle and different colour

pattern, and from *A. acuta* by the absence of projections on the humeri and distinct colour differences.

This is the first record of the genus from Africa south of Tanganyika.

Genus *Corononcodes* Speiser.

Corononcodes Speiser, 1920, Zool. Jahrb., **43** : 208, figs. C and D.

Type species.—*Corononcodes coronatus* Speiser (monotypic).

Diagnosis.—Large flies (4–9 mm.) related to *Stenopialea*, but with greatly reduced wing venation much like that of *Ogcodes* species of the Acrocerinæ ; antennæ with three segments, placed high on head near raised or nearly flat vertex ; no proboscis or maxillary palpus evident ; eyes apilose ; wing with few longitudinal veins, and only subbasal and stub or r-m crossveins present ; vein R_{4+5} straight, unbranched ; vein M_{1+2} incomplete basally: discal cell absent : abdomen as in *Astomella*, with female genitalia placed near thorax.

There are now two known species of *Corononcodes*. The type species, *C. coronatus*, was described from the Cape by Speiser (1920) from a single male. Bezzi (1923) then described *C. siculus* from Sicily, a species now also known from the Canary Islands.

I have not examined any specimens of this genus, but I might add that judging from the original description of *C. coronatus*, Speiser very probably had a female instead of a male specimen as stated.

Genus *Pterodontia* Gray.

Pterodontia Gray, 1832, *In* Cuvier's Animal King., **15**, Insecta, **2** : 779.

Type species.—*Pterodontia flavipes* Gray (monotypic).

Diagnosis.—Small to large flies (3–13 mm.), black, or black or brown with red or yellow markings ; antennæ with three segments (appearing as two) inserted just above mouth region ; segments 1 and 2 short and round, terminal segment either short and round or drawn out and thin, but beset with several elongate setæ or hairs ; eyes pilose ; triocellate vertex small ; proboscis small when observable ; wing with costa thickened at apex of vein R_1 in ♀ and produced to a point in ♂ ; first and second basal, marginal, first submarginal and subdiscal cells usually present, often with anal and discal cells also present ; abdomen and thorax quite pilose ; genitalia of both sexes small and partly concealed.

This cosmopolitan genus has about 19 included species, of which only one, *P. smithi* Johnson (1899), is recorded from the Ethiopian region. This species was originally described from Somaliland, and Brunetti (1926) later examined specimens of what he took to be this species from Nyasaland. Sabrosky (1950) recorded a female of what is perhaps *P. smithi* from Mashonaland (Southern Rhodesia), and this is the only specimen that I have examined from Africa.

It seems very possible that several species may be involved in this region, but further collecting will have to be done in order to clarify this issue.

Genus *Stenopialea* Speiser.

Stenopialea Speiser, 1920, Zool. Jahrb., **43** : 205, figs. A and B.

Type species.—*Stenopialea beckeri* Speiser (monotypic).

Diagnosis.—Large flies (9–14 mm.), closely related to *Pialea* Erichson; antennæ with three segments, basal segment of each antenna somewhat fused, terminal segment longer than head height; antennæ inserted just above middle of head, under distinct (♀) or indistinct (♂) tubercle; ocellar tubercle well raised (♂) or small (♀); eyes dioptic, pilose; proboscis short to hardly visible, maxillary palpus absent; wing venation strong with long basal cells and a short discal cell; six posterior cells and a long thin anal cell present; genitalia terminal and ventral in both sexes.

Stenopialea is a South African endemic genus which contains two species—the type species *S. beckeri*, and the new species *S. primitiva* described below. Speiser described *S. beckeri* from a single male from Willowmore, Cape, and apparently this species has not been collected since its description. *S. primitiva* is known from only the unique female but is quite distinct from *S. beckeri* by colour and wing venational characteristics.

Stenopialea primitiva n. sp. Text-figs. 3–4.

Female.—Length of entire specimen 14 mm., wing length 11 mm.

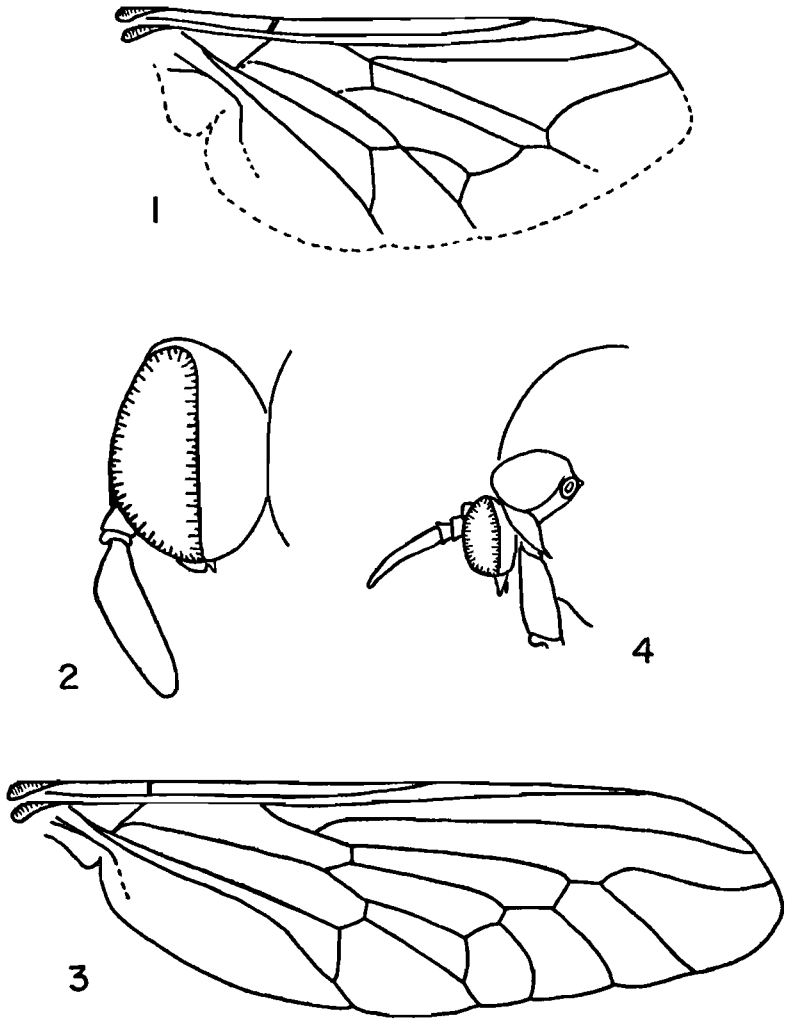
Colour brown, black and yellow. Black are eyes, occiput, proboscidial covering, antennal tubercle and apices of tarsal claws; dark brown are antennal segments 2 and 3, two faint mesonotal vittæ, metanotum, pteropleura, parts of sternopleura, ventral half of mesopleura, posterior side of coxa 1, most of femora 1, coxæ 2 and 3, femur 2 and 3, most of tibiæ 2 and 3, distitarsus 3, wing veins, fasciæ on anterior half of tergites 2 to 4, anterior three-fourths of tergite 5, anterior five-sixths of tergite 6, and fasciæ on anterior three-fourths of all sternites though somewhat less medially; light brown are antennal segment 1, remainder of legs and thorax (except median line on mesonotum), halters, squamal rim, and remainder of abdominal tergites except 1; brownish-yellow are remainder of abdominal sternites and pulvilli; brownish-orange is wide median vitta on mesonotum running back from head to line about equal to wing base; tergite 1 brownish-yellow on anterior fourth, remainder white.

Pile yellow and dense on thorax, legs and squama, about as long as tarsal claw: that on eyes shorter, reaching just beyond tip of antennal segment 1, longer on lateral margins; that on abdomen yellow, short, appressed (though some longer pile is evident, its placement is obscured due to the rubbed condition

of the specimen), but some lateral pile is longer and more erect; that on sternites sparse, somewhat longer than on tergites. Wing with few setal hairs only on base of costa.

Head minute, about one-fourth as high as thorax (text-fig. 4); ocellar tubercle flat, area above antennal tubercle rather depressed; antennal tubercle large, raised dorsally, its dorsal margin with three longitudinal ridges; antennæ

TEXT-FIGS. 1–4.



1. *Astomella capensis* n. sp. (holotype ♂), wing. 2. *Astomella capensis* n. sp. (holotype ♂), head in lateral view. 3. *Stenopialea primitiva* n. sp. (holotype ♀), wing. 4. *Stenopialea primitiva* n. sp. (holotype ♀), head in lateral view.

(text-fig. 4) longer than head height, segment 2 with many short, thin, dorsal hairs; eyes occupy more than one-half of head capsule, are separated above antennal tubercle by width of tubercle and separated below antennæ by width of antennal socket, but somewhat less separated near proboscidial covering: occiput slightly raised above eye margin dorsally; proboscis and maxillary palpus not evident.

Thorax robust, with enlarged forecoxal cavity as in *Astomella* species; legs strong, femora longer than tibiæ, tibiæ longer than tarsi, tarsi much thinner than tibiæ; tibial spur strong, about as long as pulvillus, spur on tibia 2 longest; prothoracic lobes separated by distance less than head width; mesonotum somewhat swollen just in front of and lateral to scutellum; scutellum about $1\frac{1}{2}$ times wider than long; wing hyaline, lightly browned, venation strong (text-fig. 3); squama semi-opaque, lightly browned.

Abdomen nearly twice as long as thorax, with six tergites and seven sternites visible; genitalia ventral and terminal, not as in *Astomella* species, although sternites 6 and 7 are of short width due to overlapping of tergites 5 and 6.

Male.—Unknown.

Type material—Holotype ♀, Cape Province (?), Marley, July 22, 1916 (E. E. Cook, C.M.). There is also a small pink label with the number " 935 ".

This holotype is the first ♀ known for the genus, and it therefore seems appropriate to note some of the apparent sexual dimorphic traits. The only known ♂ is the type of *S. beckeri*, also from the Cape. In comparing the female head of *S. primitiva* (text-fig. 4) with that of the male of *S. beckeri* in Speiser's figure (1920, fig. B), it can be seen that the latter species has a well-raised ocellar tubercle, a distinct cervical region, an extremely long and wide terminal antennal segment, and a much shorter proboscidial covering. The male of *S. beckeri* was stated as having its eyes separated throughout, but just how much separation is not certain. The eyes are widely separated in the female of *S. primitiva*, and if the same holds true for the *Stenopialea* sexes as was the case in *Pialea* (Schlinger, 1956), then the male of *Stenopialea* species should have the eyes much closer together.

S. primitiva can be easily distinguished from *S. beckeri* by its wing venation in having vein R_4 dipping upwards at its apex (instead of gently curving down as in *S. beckeri*), and vein R_{2+3} dipping down at its apex (while in *S. beckeri* this vein is straight). Also, the anal cell is triangular at its apex in *S. primitiva*, while in *S. beckeri* the cell is narrow and nearly acute apically.

Subfamily Acrocerinae.

The cosmopolitan Acrocerinæ contains 12 genera of which six, or 50 per cent., are known to occur in South Africa. *Meruia* and *Sabroskya* are both endemic to this region, while *Psilodera* is largely South African with *P. aurata* (Brunetti) from India being the only species occurring outside of this region.

Ogcodes is cosmopolitan, and *Acrocera* is cosmopolitan except for the Australian region. *Cyrtus* is largely Palearctic, but does contain three Oriental and one presumably South African species.

KEY TO THE SOUTH AFRICAN GENERA.

1.	Eyes pilose	2
—	Eyes apilose	4
2.	Antennæ inserted near mouth	3
—	Antennæ inserted near vertex	*Cyrtus* Latreille
3.	Proboscis present; thorax normally swollen, about as high as long	*Sabroskya* n. gen.
—	Proboscis absent; thorax greatly swollen, higher than long	*Meruia* Sabrosky
4.	Proboscis short, usually not visible	5
—	Proboscis well developed	*Psilodera* Gray
5.	Antennæ inserted near vertex	*Acrocera* Meigen
—	Antennæ inserted near mouth	*Ogcodes* Latreille

Genus *Acrocera* Meigen.

Acrocera Meigen, 1803, Illigers Mag. Ins., 2 : 266.

Type species.—*Syrphus orbiculus* Fabricius, as *Syrphus globulus* Panzer (monotypic).

Diagnosis.—Small flies (2–5 mm.) with orange or yellow and brown or black markings. Antennæ with three segments, the last segment styliform, inserted just below triocellate vertex; proboscis absent; eyes apilose; wing venation fairly strong to weak, with veins R_{2+3}, R_4 and R_5 present or absent, but when R_{2+3} present R_{4+5} usually present; discal cell large, being combined with first basal cell; abdomen usually maculated, nearly without pile, convex and narrow (♂) or often rather flat and wide (♀); genitalia obvious and extruded, bulb-like in male, rather acute with long cerci in female.

I recognize about 37 described species of *Acrocera*. This genus is cosmopolitan except for the Australian region, and about 80 per cent, of the known species are Holarctic. Only two species have been recorded from the Ethiopian region, one being *A. orbicula* (Fabricius) from Abyssinia by Brunetti (1926), and the other *A. lindneri* Sabrosky (1954) from Tanganyika. These two species, together with the four new species described below, now show six species to occur in this region.

The four species groups of *Acrocera*, as outlined by Sabrosky (1944) for the North American species, seem to apply equally well to the Ethiopian species. In fact these groups may be found in all regions when adequate materials can be examined. The only group not known to be present in South Africa is group II, one which includes a single North American species at present.

Sabrosky's groups are differentiated on the basis of wing venational characteristics as follows:

Group I (venation complete, R_{2+3} present).

Group II (venation nearly complete, but only apical spur of R_{2+3} present).

Group III (venation incomplete, both branches of vein R_{4+5} present, but vein R_{2+3} absent).

Group IV (venation incomplete, veins R_{2+3} and R_{4+5} both absent).

KEY TO THE SOUTH AFRICAN SPECIES OF *Acrocera* MEIGEN[2]

1. Vein R_{2+3} absent 2
— Vein R_{2+3} present 3
2. Vein R_4 present throughout its length . . . . . *turneri* n. sp.
— Vein R_4 present only as basal stub . . . . . *pallidivena* n. sp.
3. Mesonotum vittate or spotted; abdomen predominantly orange with brown or black markings 4
— Mesonotum black; abdomen predominantly dark brown with yellow markings *natalensis* n. sp.
4. Vein R_{2+3} complete; coxæ yellowish-brown; tergite 2 mostly orange *rhodesiensis* n. sp.
— Vein R_{2+3} incomplete apically; coxæ dark brown; tergite 2 mostly black *lindneri* Sabrosky

Acrocera lindneri Sabrosky.

Acrocera lindneri Sabrosky, 1954, Bull. Brooklyn Ent. Soc., **49** : 36.

Type locality.—Kisangara, Tanganyika (♀).

This species was described from a unique female, and in 1954 I had the opportunity to examine the type specimen, and hence to make direct comparisons between it and the new species herein described. *A. lindneri* belongs in species group I of Sabrosky (1944), except that vein R_{2+3} is not as complete as in the other included species. *A. rhodesiensis* appears to be the closest relative of *A. lindneri* : however, the nearly all black, non-vittate mesonotum, the presence of a complete vein R_{2+3}, and the abdominal coloration of the former species easily distinguishes it from *A. lindneri*.

Acrocera natalensis n. sp. Text-fig. 5.

A member of species group I of Sabrosky (1944).

Female.—Length of entire specimen 3·5 mm., wing length 4 mm.

Head black, ocelli white, antennæ dark brown : occiput covered with short white pile : oral region black.

Thorax covered with fairly dense whitish-yellow pile, about as long as tarsal claw; mesonotal disc shining black, except for dark brown lateral margin near postalar callus; humerus, pleura, metanotum, and postalar callus shining dark brown; scutellum black; squama nearly opaque white, covered with extremely short, dense white hairs, squamal rim narrow, white; halter stem light brown, knob creamy-white; wing venation as in text-fig. 5, vein light brown : membrane hyaline; legs yellow except for extreme apices of tarsi and tarsal claws which are dark brown.

[2] Only the male is known for *A. turneri*, while females are known for all species except the latter.

Abdomen dark brown and yellow as follows; tergite 1 (barely visible) and 2 entirely dark brown; tergite 3 brownish-yellow except for dark brown lateral margins and large median triangle whose apex barely reaches tergite 4; tergites 4 and 5 (as far as discernible) entirely yellow; tergites 6 and 7 are apparently all dark brown; cerci light reddish-brown, nearly as high as long, not acuminate; sternites 1, 6, and 7 dark brown, sternites 2 to 5 light yellowish-brown; pile yellowish-white, short and sparse, somewhat longer and more dense on ovipositor.

Male.—Unknown.

Type material.—Holotype ♀, Natal, Estcourt, September and October 1896 (G. A. K. Marshall, 1903–17, B.M.N.H.).

This species is related to both *A. lindneri* and *A. rhodesiensis*; however, it is easily distinguished from both of the latter species by the all-black mesonotum and the darker coloration of the abdomen.

Acrocera rhodesiensis n. sp. Text-fig. 6.

A member of species group I of Sabrosky (1944).

Female.—Length of entire specimen 4·5 mm., wing length 5·5 mm.

Head black, ocelli dark brown, antennal bases (remainder broken off) black: pile of occiput short, brown; oral region obscured by method of mounting.

Thorax shining black, except: shining dark brown are anterior and posterior lateral margins of postalar callus, anterior lateral spot on metanotum and large anteriolateral spots on mesonotum, separated in front by about width of head; light brown are humeral tip and prothoracic spiracle; entire thorax covered with brown pile, about as long as tarsal claw; squama opaque white, covered with short, dense, white hairs; squamal rim narrow, yellowish-white: halter stem light brown, knob creamy white; wing venation as in text-fig. 6, veins dark brown, wing membrane light brown infuscated; legs yellowish-brown, except for extreme apices of tarsi and pulvilli dark brown, and black tarsal claws (parts of legs missing).

Abdomen light brownish-orange except as follows: small median anterior triangle on tergite 2 and a smaller one on tergite 3, dark brown; tergite 4 with dark brown median quadrangular area which extends about one-third of way to lateral margin; sternite 6 has lateral margins dark brown (genitalia missing); pile yellowish-brown, short and sparse.

Male.—Unknown.

Type material.—Holotype ♀, Northern Rhodesia, Lake Bangweulu, Monfuli, elev. 3,960 ft., 29.ix.1946 (M. Steele, B.M. 1947–351, B.M.N.H.).

This species is related most closely to *A. lindneri*, and is somewhat less related to *A. natalensis* as noted in the key to species above.

Acrocera turneri n. sp. Text-figs. 7–8.

A member of species group III of Sabrosky (1944).

Male.—Length of entire specimen 3 mm., wing length 2·5 mm.

Head black, ocelli and antennæ dark brown; occiput covered with short, white pile, which gives occiput grey appearance; oral region light brown behind, shining black in front.

Thorax shining black (except for white intersutural area around wing base), covered with dense white pile that is nearly as long as hind basitarsus; squama nearly opaque white, covered with extremely short, dense, white hairs; squamal rim narrow, white; halter stem light brown, knob creamy white; wing venation as in text-fig. 7, veins dark brown, membrane hyaline; legs yellowish-white, except for dark brown coxæ and tarsal claws.

Abdomen dark brown with yellow maculations on tergites as shown in text-fig. 8; tergite 5 is yellowish-white; sternites dark brown with white fasciæ occupying posterior one-third of sternites 2 and 3; sternite 4 brown with large median brownish-yellow area occupying about one-half of sternite; sternite 5 all brown; genitalia brownish-yellow, concealed under partially transparent tergite 5; pile white, short and sparse.

Female.—Unknown.

Type material.—Holotype ♂, Orange Free State, Harrismith, ii.1927 (R. E. Turner, 1927–117, B.M.N.H.).

This species, being the only member of the species group III known in South Africa, has no known relatives. The species is named in honour of R. E. Turner, the collector, who has collected many interesting acrocerids in this region.

Acrocera pallidivena n. sp. Text-figs. 9–10.

A member of species group IV of Sabrosky (1944).

Male.—Length of entire specimen 3 mm., wing length 2·5 mm.

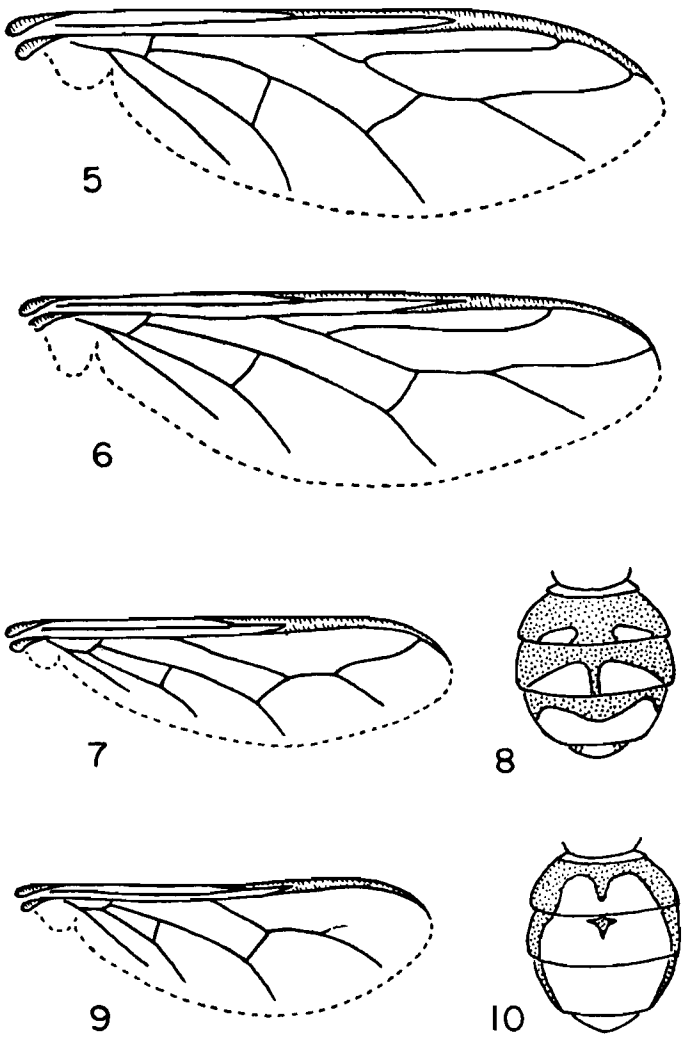
Head black, ocelli and antennæ dark brown; occiput covered with short, white pile; oral opening black.

Thorax shining black, except for light brown humerus and posterior margin of postalar callus, covered with short, white pile about as long as tarsal claw; squama nearly opaque white, covered with extremely short, dense, white hairs; squamal rim narrow, white; halter stem brownish-white, knob creamy-white; wing venation as in text-fig. 9, veins white, mostly difficult to ascertain, membrane hyaline; legs brownish-yellow except for dark brown coxæ and extreme apices of tarsi, and black tarsal claws.

Abdomen yellow with dark brown markings on tergites as in text-fig. 10; tergite 5 is yellowish-white; sternites dark brown with white or yellow posterior fasciæ as follows: sternite 2 with white fascia occupying one-third

of segment, somewhat more medially; sternite 3 same as 2 except centre of fascia is yellow and occupies two-thirds of segment medially; sternite 4 with very narrow mesolateral yellow fascia that widens to three-fourths the length of segment medially; sternite 5 with yellow spot medially, narrowly

TEXT-FIGS. 5–10.



5. *Acrocera natalensis* n. sp. (holotype ♀), wing. 6. *Acrocera rhodesiensis* n. sp. (holotype ♀), wing. 7. *Acrocera turneri* n. sp. (holotype ♂), wing. 8. *Acrocera turneri* n. sp. (holotype ♂), abdomen in dorsal view. 9. *Acrocera pallidivena* n. sp. (holotype ♂), wing. 10. *Acrocera pallidivena* n. sp. (holotype ♂), abdomen in dorsal view.

fasciate along mesolateral margin; genitalia dark brown below, yellow above; pile white, short and sparse.

Female.—Lengths of two specimens 4–4·5 mm., wing lengths 3–3·5 mm. As described for male except as follows:

Thorax with humerus and posterior margin of postalar callus light or dark brown; wing veins white or light brown, more easily seen than in male; legs mostly dark brown or at least coxæ and femora dark brown, when the latter then tibiæ and tarsi light brown.

Abdomen altogether different from male: tergites 1 to 3 entirely dark brown or black; tergites 6 and 7 dark brown; cerci light brown, sharply acuminate: sternites 2 to 7 dark brown to black with narrow posterior white fasciæ occupying one-fifth to one-sixth of each segment; sternite 8 entirely dark brown.

Type material.—Holotype ♂, Cape Province, Ceres, elev. 1,500 ft., i.1921 (R. E. Turner, 1921–78, B.M.N.H.).

Paratopotypes.—One ♂ and 1 ♀: also 1 ♀, same data except, 2–21.iii.1921. The paratopotypes will be deposited in the B.M.N.H. and E.I.S. collections.

The paratopotype male fits the description of the holotype except as follows: tergite 4 also contains a small dark brown median spot, and the sternal posterior fasciæ are nearly even in width on each segment and are mostly white.

This species is not related to any South African species known to the author. The specific name, *pallidivena*, refers to the pale wing veins.

Genus *Cyrtus* Latreille.

Cyrtus Latreille, 1796, Prec. Car. Gen. Ins., p. 154.

Type species.—*Syrphus gibbus* Fabricius (monotypic).

Diagnosis.—Small to large flies (5–10 mm.), usually black with yellow markings, but also dark green or black without maculations; antennæ with three segments, segment 3 styliform, inserted just below triocellate vertex; proboscis present, short to long, maxillary palpus absent; eyes pilose; wing venation strong with vein R_4 branched, cells all complete; genitalia small, well concealed.

Cyrtus contains about 10 species, all of which occur in the Old World. A single species, *C. nyasæ* Brunetti (1926), has been recorded from South Africa. The unique specimen, sex not given, was from Mlanje Plateau, Nyasaland, 6,500 ft., 12–14.xi.1913 (Dr. S. A. Neave), and is in the B.M.N.H. The entire description of *C. nyasæ* sounds as though it could be a species of *Psilodera*, with one gross exception—eyes with long pubescence. I have not seen any specimen referable to this species, nor do I know of any further reference to the species.

Genus *Meruia* Sabrosky.

Meruia Sabrosky, 1950, Proc. Roy. Ent. Soc. Lond., **19** (3–4) : 47.

Type species.—*Meruia somereni* Sabrosky (monotypic).

Diagnosis.—Large flies (7 mm.) ; antennæ with three segments (apparently about as in *Pterodontia*), inserted just above mouth ; proboscis absent ; triocellate vertex slightly raised ; eyes pilose ; distinct cervical area present ; scutellum placed high on thorax, so that large area of metanotum is visible ; wing venation strong ; vein R_{2+3} joins R_1 before wing margin, R_4 distinctly bowed, four posterior cells and a small anal lobe present.

This genus is known from only its type species, and I have not seen any specimens of the species. *M. somereni* was described from a unique ♀ from Meru, Kenya, and was said to be related to *Pterodontia* species. The distinct cervical area would now seem to relate *Meruia* to *Sabroskya*, since the latter genus is the only other one to have this characteristic.

Genus *Ogcodes* Latreille.

Ogcodes Latreille, 1796, Prec. Car. Gen. Ins., p. 154.

Type species.—*Musca gibbosa* Linnaeus (monotypic).

Diagnosis.—Small to large flies (2–10 mm.), black or brown with yellow or white posterior tergal fasciæ, or varicoloured brown or black with white, yellow or orange markings ; antennæ with three segments, inserted just above mouth ; proboscis absent, or when present, minute ; eyes apilose ; wing venation weak, but veins R_1, R_{4+5}, M_4, and anal usually present ; genitalia small, partly concealed.

Schlinger (1959*b*) prepared a revision of this cosmopolitan genus, and divided the 90 species into three subgenera. Only the subgenus *Ogcodes* appears to be present in South Africa. Thirteen names have been applied to the *Ogcodes* species of the Ethiopian region. Sabrosky (1950) found one synonym, Schlinger (1959*b*) found another, and three more are added below, so that there now appear to be nine valid species. Of these, seven occur south of the equator and are treated below. Due to the aforementioned revision of *Ogcodes*, only notes and distributional data are given at this time.

Key to the Ethiopian Species of *Ogcodes*[3]

1.	Mesonotum black or dark brown, not patterned	2
—	Mesonotum not unicolorous, with or without vittæ	5
2.	Abdomen fasciate, without additional spots ; scutellum dark	3
—	Abdomen fasciate, but with additional spotted areas ; scutellum yellow	*alluaudi* Becker
3.	Mesonotum entirely black	4
—	Mesonotum entirely dark brown	*coffeatus* Speiser

[3] The species *O. coffeatus* Speiser (from the Cameroons) and *O. trilineatus* Brunetti (from the Gold Coast) are given in the key since they may be found to range south of the equator, but they are not treated formally in this review.

4. Vein M_1 absent ; femora mostly brown . . . . . *caffer* Loew
— Vein M_1 present (text-fig. 11) ; femora mostly black *varius pallidimarginalis* Brunetti
5. Scutellum wholly orange-brown 6
— Scutellum black or brown, with distinct pale margins 8
6. Femora brown, orange or yellow ; abdominal dorsum with spots on segments 2 to 5 . 7
— Femora black ; abdomen orangish-brown without spots . . . *trilineatus* Brunetti
7. Coxæ and apex of femora black ; abdominal dorsum mostly orangish-brown *neavei* Brunetti
— Coxæ dark brown ; femora orangish-yellow ; abdominal dorsum mostly orangish-yellow . . . . . *congœnsis* Brunetti
8. Anterior half of abdominal sternites dark brown, remainder yellowish-white ; anal vein ends free from vein Cu_2 at wing margin ; hind tibia of ♂ incrassate . *clavatus* Becker
— Only narrow strip of abdominal sternites brown, remainder yellowish-white ; anal vein ends in vein Cu_2 far above wing margin ; hind tibiæ of ♂ not incrassate *guttatus* Costa

Ogcodes alluaudi Becker.

Oncodes Alluaudi Becker, 1914, Ann. Ent. Soc. France, **83** : 120.

Type locality.—Mt. Kenya, between the Amboni and Naremuru rivers, 1,900–2,200 m. One ♂, probably in the Paris Museum.

I have not seen this species, nor has it been recorded subsequently in the literature.

Ogcodes caffer Loew.

Oncodes caffer Loew, 1857, Ofvers. K. Vet. Akad. Forhandl., **14** : 368 ; 1861, Dipt. Fauna Sudafrika, **2** (2) : 255 (both references cite this as a new species).
? *Oncodes sorellus* Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 603 (synonymy by Schlinger, 1959*b*).

Type locality.—" Caffrerei " (for *caffer*) and Howick, Natal (for *sorellus*). There appears to be some doubt as to what *O. caffer* really is, and I now feel that the synonymy of *O. sorellus* may have been premature on my part. Sabrosky (1953) saw the type ♀ of *O. caffer* in the Wahlberg Collection at Stockholm, but even with his notes it is difficult to place the species. In my paper on *Ogcodes* (1959*b*), I discussed this species with reference to a series of specimens from two localities in the Cape Province. It now seems probable that at least two and perhaps three species are involved in what is called *O. caffer*.

Ogcodes clavatus Becker. Text-fig. 11.

Oncodes clavatus Becker, 1909, Bull. Mus. Hist. Nat. Paris, **15** : 113 ; 1910, Ann. Ent. Soc. France, **79** : 22.
Oncodes cepisetes Speiser, 1910, *In* Sjostedt's Kilimandjaro-Meru Exped., **10** : 74 (synonymy by Sabrosky, 1950).
Oncodes crassitibialis Brunetti, 1926, Ann. Mas. Nat. Hist., **18** : 602 (New Synonymy).
Ogcodes clavatus ; Sabrosky, 1950, Proc. Roy. Ent. Soc. Lond., **19** (3–4) : 51.

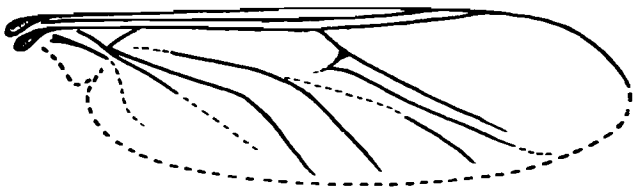
Type locality.—British East Africa (♂, *clavatus*), Mt. Meru (♂, *cepisetis*), and Langenbury, East Africa (♂, *crassitibialis*).

This beautifully marked species occurs from Kenya to Transvaal, and was recorded in large series by Sabrosky (1950). I have examined many of

this latter series and could find no differences between *O. clavatus* and *O. crassitibialis*, and since Brunetti (1926) did not include *O. clavatus* in his discussion of *Ogcodes*, it appears as though he was unaware of its existence.

New distribution record.—Transvaal, Pretoria, 1 ♂, 10.ii.1942 (N.M.).

TEXT-FIG. 11.



Ogcodes clavatus Becker (Pretoria, ♂), wing.

Ogcodes congœnsis Brunetti.

Oncodes congœnsis Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 596.

Type locality.—Belgian Congo.

I have not seen specimens of this species, but its distinct markings, as pointed out in the key above, should make it easily recognizable.

Ogcodes guttatus Costa.

Ogcodes guttatus Costa, 1854, Ann. Sci. Napoli, **1** : 80 ; Schlinger, 1959*b*, Proc. U.S. Nat. Mus. (in press).
Oncodes benacensis Pokorny, 1887, Verh. Zool.-Bot. Ges. Wien, **37** : 389.
Oncodes octomaculatus Brunetti, 1912, Rec. Ind. Mus., **7** : 476 ; 1920, Fauna Brit. Ind., **1** : 170 1926, Ann. Mag. Nat. Hist., **18** : 591 (synonymy by Schlinger, 1959*b*).
Oncodes distinctus Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 597 (New Synonymy).
Oncodes nyasæ Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 598 (New Synonymy).
Oncodes guttatus ; Pleske, 1930, Konowia, **9** : 164 ; Sack, 1936, Die Fliegen, **98** : 19.
Ogcodes distinctus ; Sabrosky, 1950, Proc. Roy. Ent. Soc. Lond., **19** (3–4) : 51.

Type locality.—Italy (*guttatus*), Italy (*benacensis*), India (*octomaculatus*), Kenya (*distinctus*), and Nyasaland (*nyasæ*).

This species was found to occur in South Africa only recently (Schlinger, 1959*b*), and due to the extension of its normally considered range, the two species, *O. distinctus* and *O. nyasæ*, described from South Africa became involved. I interpret the slight pattern differences of Brunetti's species as mere variations of *O. guttatus*, and hence place both *O. distinctus* and *O. nyasæ* as synonyms of the latter. I might add that Sabrosky (1950) examined two specimens of this species (cited as *O. distinctus*) from Tanganyika. Specimens I have seen are from Greece, Turkey, and Mitchell's Pass, near Capetown, South Africa (Schlinger, 1959*b*).

Ogcodes neavei Brunetti.

Oncodes neavei Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 595.

Type locality.—Kakamega Forest, Kenya (♂, B.M.N.H.).

I have not seen this species and know of no record other than the original description.

Ogcodes varius pallidimarginalis Brunetti.

Oncodes varius Latr., var. *pallidimarginalis* Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 602.

Type locality.—Nandi Plateau, British East Africa (sex not stated, B.M.N.H.) Brunetti cited three other specimens of this species from British East Africa and the Belgian Congo. These may or may not be the same species, and I feel quite sure that the specimen from N'Gwees, Lac Kivu Cheff, Belgian Congo, is another species.

I have seen five specimens which I tentatively place as this subspecies, but unfortunately they were all ♀♀ and therefore I cannot be certain as to whether this would be a subspecies or a species at present. The sex of the type was not stated, and if it should be a ♀ perhaps we shall never know the exact status of this species.

New distribution records.—Natal, St. Helier Estate, near Hillcrest, 2 ♀, 20.xii.1954 (B. R. Stuckenberg, N.M. and E.I.S.): Cape Province, Ceres, 3,500 ft., 3 ♀, xi.1917 (Lightfoot, C.M. and E.I.S.).

Sabroskya Schlinger, n. gen.

Description.—Small flies related to *Ogcodes* Latreille and *Thersitomyia* Hunter.

Head small in relation to thorax ; eyes pilose, holoptic ; three ocelli on raised tubercle, median ocellus smallest, occiput short ; antennæ inserted just above mouth, formed about as in *Ogcodes*, with two short basal segments and a long styliform terminal segment, except that bulbar base of segment 3 is more swollen and longer than segment 2, and style is very thin and not enlarged, nor does it bear setæ at its apex ; also, segment 2 bears a long lateral bristle (text-fig. 13) ; proboscis present, short, but distinct, covered with short, stiff hairs ; maxillary palpus absent.

Thorax longer and not as humped as in *Ogcodes*, about as long as abdomen, antepronotum quite produced ; the presence of a distinct collar-like prothorax, similar to that described for *Meruia* Sabrosky, is quite distinct from *Ogcodes* ; humeri well separated, swollen ; scutellum well raised above metanotum ; legs quite thin, three pulvilli ; squama large as in *Ogcodes* ; wing venation strong with marginal, submarginal, five posterior, discal, an anal, and two basal cells present (text-fig. 12).

Abdomen about as long as wide with six tergites and seven sternites visible ; all tergites bent under laterally to become partially ventral ; genitalia ventral, situated under tergite 6.

Pile erect, short, little longer than tarsal claw, quite dense over entire body except for glabrous sternopleura ; that on legs and eyes somewhat shorter.

Type species.—Sabroskya ogcodoides n. sp.

This genus is apparently a descendent of the *Villalus* Cole-*Holops* Philippi branch (both from South America), but its closest relatives are undoubtedly *Ogcodes* and *Thersitomyia*. *Sabroskya* can be distinguished from both of the last-named genera by its stronger wing venation and the presence of a proboscis, and from *Ogcodes* by its pilose eyes. The prothoracic collar shows a marked similarity to *Meruia*.

I take pleasure in naming this genus after Dr. Curtis W. Sabrosky of the United States Department of Agriculture, Washington, D.C., whose works on the Acroceridæ have been a great inspiration to me, and to whom I am indebted for his constant help with this and other projects.

Sabroskya ogcodoides n. sp. Text-figs. 12–13.

Female.—Length of entire specimen 6·5 mm., wing length 5 mm. Colour black, with various shades of brown ; black are occiput, ocellar tubercle, mesonotum (except anterior corners), scutellum and metanotum ; dark brown are eyes, antennæ, sternopleura, coxæ, tarsal claws, wing veins and most of abdomen ; light brown are proboscis, remainder of thorax, legs, which become nearly white near their extremities, pulvilli and halter stem ; halter knob is nearly creamy-white. Pile of eyes brown and about as long as tarsal claw, that on rest of body white and somewhat longer, longest on mesonotum, shortest on tibiæ and tarsi.

Head with proboscis projecting downwards about as long as hind basitarsis ; anteclypeus (?) present and shining.

Thorax with large hyaline squama, covered with dense pile ; squamal rim narrow, white ; wing venation as in text-fig. 12, entire wing lightly browned, but hyaline.

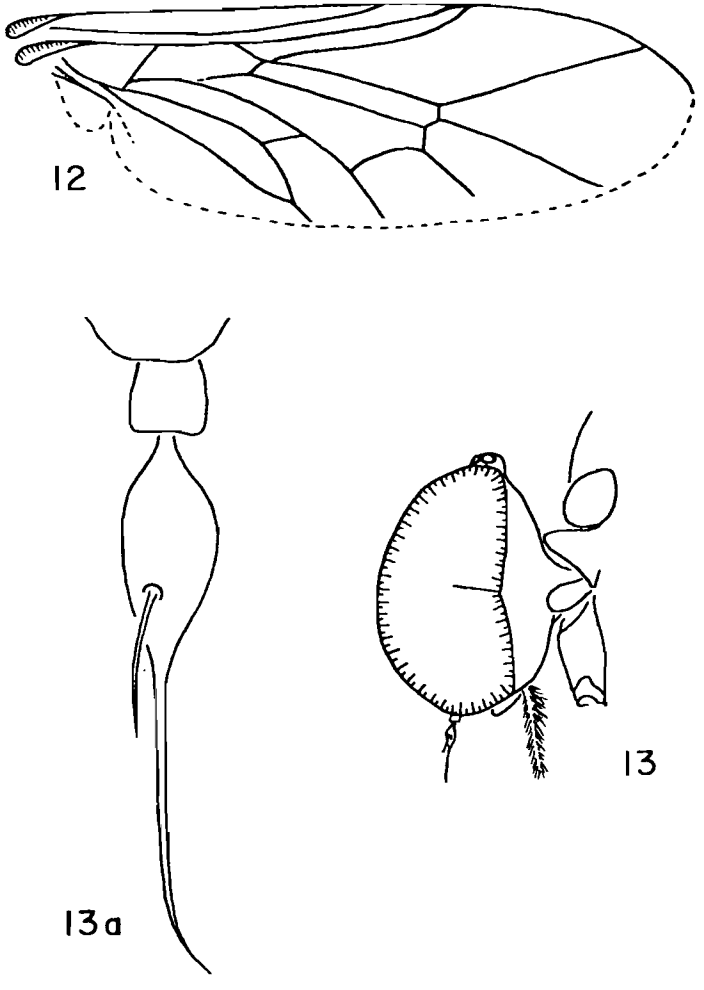
Abdomen widest at segment 2, segments 2 to 4 about equal width, 5 and 6 taper sharply to apex ; tergite 1 barely visible under scutellum.

Male.—Unknown.

Type material.—Holotype, ♀, East Cape Province, Grahamstown, 28.x.1952 (B. R. Stuckenberg, N.M.). Paratype, ♀, East Cape Province, Katberg, 15–30.i.1933 (R. E. Turner, 1933–108, B.M.N.H.).

The specific name *ogcodoides*, was chosen because of the likeness of this species to those of the genus *Ogcodes*.

TEXT-FIGS. 12–13.



12. *Sabroskya ogcodoides* n. sp. (holotype ♀), wing. 13. *Sabroskya ogcodoides* n. sp. (holotype ♀), head and antenna in lateral view.

Genus *Psilodera* Gray.

Psilodera Gray, 1832, *In* Cuvier's Animal Kingdom, 15, Insecta, 2 : 779 ; Loew, 1861 (1860), Dipt. Fauna Sudafrika's, 2 (2) : 253.

Type species.—Cyrtus bipunctatus Wiedemann as *Psilodera capensis* Gray (monotypic).

Diagnosis.—Large flies (5–14 mm.), brown or black with yellow or orange

markings; antennæ with three segments, inserted in middle of head just above anteclypeus, segment 2 and base of 3 longer than 1, segment 3 styliform with short apical seta; eyes apilose, joined only above antennal tubercle; antennal tubercle a small triangle; triocellate vertex flat with long pile, ocelli placed far forward; occiput small; proboscis present and long; maxillary palpus absent; prothoracic lobes close together, separated by about one-third head width; wing venation similar to *Lasia* Wiedemann, with veins R_{2+3}, R_4, and R_5 swinging forward at their apices (text-figs. 14, 15, 17, 18, 19, 20, and 22); genitalia small, ventral.

Psilodera is primarily a South African endemic genus, with only one species, *P. aurata*, being known from elsewhere (India). I recognize eight species from South Africa, not including *P. orbifer* (Walker). Of these, three were described by Widemann and five are described below as new. Loew (1861) is the only one to attempt a revision of this genus, and although no revision is contemplated at this time, certain synonymy and deductions have been noted, based primarily on Sabrosky's notes of the type species (1953) and upon an examination of about 100 specimens.

There appear to be two species groups involved in *Psilodera*; namely, the *fasciata* and *bipunctata* groups.

The *fasciata* group includes those species which have distinct yellow fasciæ on the abdominal tergites and whose mesonotal discs are dark brown or black without yellow markings. Also, the mesonotal pile is very dense and consists of long simple hairs and many shorter minutely branched hairs. Also, most species have weaker wing venation along the posterior margin, with veins M_1 and $Cu_1 + M_{3+4}$ strong only basally and M_2 absent except in *P. fasciata*. Species included in this group are: *P. fasciata* (Wiedemann), *P. confusa* n. sp., *P. hessei* n. sp., *P. nhluzane* n. sp., and presumably *P. orbifer* (Walker).

The *bipunctata* group is characterized by species having distinct mesonotal and abdominal patterns of yellow or orange-brown colour mixed with dark brown or black, and by having veins M_1 and $Cu_1 + M_{3+4}$ usually strong and complete, and vein M_2 present. The mesonotal pile is not too dense, does not obscure the colour pattern, and all the hairs are simple and unbranched. Species included in this group are: *P. bipunctata* (Wiedemann), *P. valida* (Wiedemann), *P. natalensis* n. sp., *P. stuckenbergi* n. sp., and presumably *P. aurata* (Brunetti).

Key to the South African Species of *Psilodera* Gray[4]

1. Species with black to dark brown thorax and abdomen, latter bearing distinct yellow fasciæ on tergites and usually on sternites; at least some of mesonotal pile consisting of some minutely branched hairs (*fasciata* group) 2
— Species with variously patterned thorax and abdomen, but not as above; mesonotal pile consisting entirely of simple hairs (*bipunctata* group) 5

[4] This key does not include the Indian *P. aurata*, nor could the poorly described *P. orbifer* be included at this time (see discussions under appropriate species in text).

2. Anteclypeus longer than labellum ; vein M_2 absent ; scutellum with distinct yellowish-brown posterior margin 3
— Anteclypeus shorter than labellum ; vein M_2 present at least basally ; scutellum usually all dark brown . . . . . *fasciata* (Wiedemann)
3. Small species (5–8 mm.) ; vein R_{2+3} coalesces with, or is very close to vein R_4 at apex ; abdominal tergites 4 and 5 with yellow fasciæ, somewhat enlarged medially into sub-triangular areas, or at least most of tergite 6 yellow 4
— Large species (10–14 mm.) ; vein R_{2+3} well separated from vein R_4 at apex ; abdominal tergites 4 and 5 mostly black without enlarged yellow medial areas ; tergite 6 black *confusa* n. sp.
4. Vein R_{2+3} coalesces with vein R_4 at apex ; vein R_5 ends at apex of wing ; abdominal sternites without yellow fasciæ, but with yellow median triangles directed anteriorly, and sternites 2 to 4 with sublateral yellow spots . . . . . *nhluzane* n. sp.
— Vein R_{2+3} close to vein R_4, but not united at apex ; vein R_5 ends before apex ; abdominal sternites 2 to 4 with narrow, rather even yellow fasciæ . . . *hessei* n. sp.
5. Thorax mostly yellow, only parts of sternopleura and most or mesonotal disc black . 6
— Thorax mostly shining black, only humerus and narrow area behind it running back to postalar callus, yellow . . . . . *natalensis* n. sp.
6. Abdomen without distinct fasciæ (♂ ♀) ; at least abdominal tergites 2 and 3 yellow with small dark brown or black medial and lateral triangular spots 7
— Abdomen yellowish-brown with broad yellow fasciæ (♂) or abdomen mostly dark brown without complete fasciæ (♀), including tergite 3 . . . *bipunctata* (Wiedemann)
7. Large species (11–13 mm.) ; tergites 2 to 6 (♀) or 4–6 (♂) dark brown ; apical half of anteclypeus yellowish-brown . . . . . *stuckenbergi* n. sp.
— Smaller species (6–10 mm.) ; tergites 1 to 6 yellowish-brown ; anteclypeus entirely shining black . . . . . *valida* (Wiedemann)

Psilodera fasciata (Wiedemann). Text-fig. 14.

Cyrtus fasciatus Wiedemann, 1819, Zool. Mag., **1** : 14 ; 1830, Ausser. Zweifig. Ins., **2** : 14.
Psilodera fasciata ; Loew, 1861, Dipt. Fauna Sudafrika's, **2** (2) : 257 ; Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 583 (in part, if at all).
Psilodera contigua Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 583 (New Synonymy).

Type locality.—(*fasciata*) Cape of Good Hope (three ♂, two labelled " type ", in Wiedemann's collection in Copenhagen) ; (*contigua*) Mossel Bay, Cape Province (eight specimens, no sex given, in B.M.N.H.).

Brunetti (1926) actually redescribed *P. fasciata* in his description of *P. contigua*. This is evidenced by the fact that I have seen specimens of both *P. fasciata* and my new species *P. confusa*, determined as such by Brunetti, but probably these specimens were determined at quite different times. I have also seen specimens of typical *P. fasciata* determined by Brunetti as his *P. contigua*. The problem was simply this. Brunetti had before him two species like *P. fasciata*, one of which was *P. fasciata* and the other a new species. He mistakenly called the new species *P. fasciata* and then described *P. fasciata* as *P. contigua*. The new species he had before him was the species described below as *P. confusa*.

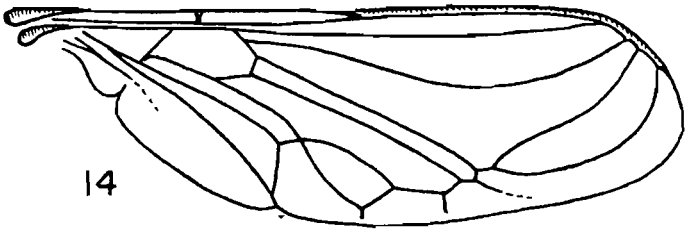
Sabrosky's notes on the type of *P. fasciata* (1953), clearly show that *P. contigua* is *P. fasciata* and not *P. confusa*. Furthermore, Brunetti's types of *P. contigua* were from Mossel Bay, an area outside the known range of *P. confusa*. Thus, I place *P. contigua* in synonymy with *P. fasciata*.

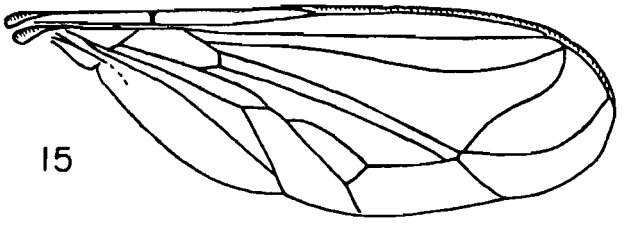
Distribution.—This is probably the most common species of *Psilodera*. It is, however, quite restricted in its distribution to the coast of South Africa

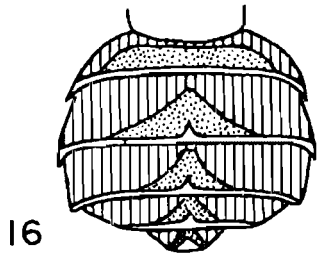
from the Cape of Good Hope to Natal, being quite sympatric with *P. bipunctata*.

New distribution records.—Specimens examined : 21 ♂, 7 ♀, all from Cape Province and Natal. *Cape Province :* 5 ♂, 4 ♀, Grahamstown, xii.1949, 15–20. xii.1952, 30.x.1952, 16.iii.1953, 15.x.1953 (B. R. Stuckenberg, N.M. and E.I.S.) ; 1 ♂, Uitenhage, 30.x.1931 (J. Ogilvie, U.S.N.M.) ; 1 ♂, Port Elizabeth, 29.x. ; (J. O., A.M.N.H.) ; 1 ♀, Mossel Bay, xii.1934 (R. E. Turner,

TEXT-FIGS. 14–16.







14. *Psilodera fasciata* (Wiedemann) (Grahamstown, ♂), wing. 15. *Psilodera nhluzane* n. sp. (holotype ♀), wing. 16. *Psilodera nhluzane* n. sp. (holotype ♀), abdomen in dorsal view.

U.S.N.M.) ; 1 ♂, 1 ♀, Colesberg, xi.1939 (C.M.) ; 4 ♂, 1 ♀, Goedehoop, x.1951 (C.M.) ; 2 ♂, East London, 1915 (Lightfoot, C.M.) ; 4 ♂, Goshen, nr. Cathcart, iii.1954 (C.M.) ; 1 ♂, Citrusdal, xi.1948 (C.M.) ; 1 ♂, Willow River, Uitenhage, x.1938 (C.M.). *Natal* ; 1 ♂, Weenen, iii.1925 (H. P. Thomasset, U.S.N.M.).

Psilodera nhluzane n. sp. Text-figs. 15–16.

A member of the *fasciata* group.

Female.—Length of entire specimen 9 mm., wing length 9 mm. Colour black, brown, and yellow. Black are antennal tubercle, anteclypeus, proboscis, labellum except tip, mesonotum, most of pleura, apices of tarsal claws, costal vein to tip of wing, parts of abdominal tergites as in text-fig. 16 and tergite 1 ; dark brown are eyes, ocellar tubercle, antennal segment 3, tip of labellum, remainder of wing veins, halter, squamal rim, prothoracic spiracle, coxæ, trochanters, posterior edge of femora 1 and 2, hind tarsus mostly, parts of abdominal tergites as in text-fig. 16, sternite 1, lateral and submedian spots on sternites 2 and 3 and most of sternites 4 to 7 ; light brown are antennal segments 1 and 2 ; yellow are proepisternum, humerus, spots around wing base, upper margin of postalar callus, mesopleural suture, most of legs, narrow posterior tergal fasciæ as in text-fig. 16, large round sublateral spot and median spot on sternites 2 and 3, small transverse linear sublateral spot and median triangular spot on sternite 4, and small median subtriangular spot on each of sternites 5 to 7 ; occiput grey ; scutellum dark brown an anterior third, remainder brownish-yellow.

Pile fairly dense on thorax, consisting of two types : (1) sparse, simple, brown pile about as long as labellum, and (2) short, minutely branched, white pile appearing partly appressed, that on pleura only of the latter type ; that on legs brownish-yellow, long and short on femora and tibiæ, only short on tarsi : that on squama of type (2) above ; that on scutellum of type (1) and also short, brown, erect hairs beneath ; that on abdomen of several lengths and colours as follows ; sparse, long, brown, erect pile about as long as antennal style over entire dorsum ; short, white, appressed, silky pile on posterior lateral and sublateral margins of tergites 2 to 4 ; other than where latter pile occurs, entire dorsum covered with minute, dense, appressed, brown hairs ; sternites with some long, sparse, brown pile, particularly on sternites 3 to 5 but mostly covered sparsely with brownish-white pile about as long as hind distitarsus. Wing with short, inconspicuous brown setæ only along base of costa.

Head $1\frac{1}{2}$ time higher than long ; anteclypeus about one-half of head height, flattened above, rounded and lightly, transversely ridged below ; antennæ much shorter than anteclypeus, segment 1 barely reaching out beyond antennal tubercle, segment 2 twice the length of 1 ; antennal tubercle glabrous, barely raised (in profile), about $1\frac{1}{2}$ times higher than wide, triangular in outline with small median depression ; triocellate vertex barely raised ; eyes joined above antennæ for distance equal to length of antennal style ; proboscis long, reaching beyond tip of abdomen ; labellum narrow, about two-thirds the length of anteclypeus (in profile).

Thorax about as long as abdomen ; scutellum about $2\frac{1}{2}$ times wider than

long ; legs long and thin, femora, tibiæ and tarsi on corresponding leg of equal lengths ; squama opaque white, upper corner quite sharply angled ; wing hyaline, very faintly browned in costal and first marginal cell, venation (text-fig. 15) unique in having vein R_{2+3} uniting with vein R_4 at their apices ; vein M_2 absent, veins M_1 and $Cu_1 + M_{3+4}$ present.

Abdomen no longer than wide, slightly longer than high, widest at tergite 3 (text-fig. 16) ; a feature not shown in text-fig. 16 are the nearly acute angles formed at the lateral margins of tergites 4 and 5, and somewhat swollen angles on 3 ; sternites nearly flat, 1 to 3 of about equal length, 4 slightly less, 5 and 6 about half as long as 3 ; genitalia small, well concealed, ventral.

Male.—Unknown.

Type material.—Holotype ♀, Natal, Nhluzane Mountain, ii.1957 (B. R. Stuckenberg, N.M.).

In all probability the specimen from Karkloof, Natal, February, 1897 (G. A. K. Marshall), that Brunetti (1926 : 583) cited under *P. fasciata*, will turn out to be *P. nhluzane*.

This species is easily distinguished from all other *Psilodera* species in having veins R_{2+3} and R_4 uuited at their apices, as well as by its distinct colour features. It is apparently most closely related to *P. hessei* and *P. confusa*.

The species is named after the Nhluzane Mountain, its type locality.

Psilodera hessei n. sp. Text-fig. 17.

A member of the *fasciata* group.

Male.—Length of entire specimen 7·5 mm., wing length 6·5 mm. As described for *P. nhluzane* n. sp. above, except as follows : black are only mesonotum and tips of tarsal claws, remainder of black parts as described for *P. nhluzane* are dark brown ; posterior edge of femora and all tarsi light brown ; anterior two-thirds of tergites 2 to 5 dark brown, remainder yellow, forming quite even fasciæ on tergites 2 to 4, tergite 5 with broad median yellow triangular spot directed anteriorly, tergite 6 almost all yellow ; sternites 2 to 6 all with quite narrow, uneven, posterior yellow fasciæ that occupy about one-third to one-fourth of each sternite ; proepisternum light brown, humerus and upper margin of postalar callus dark brown ; scutellum light brown ; antennal segments 1 and 2 very light brown ; genitalia dark brown.

Pile same, even more dense on mesonotum.

Head about $1\frac{1}{3}$ time higher than long ; anteclypeus less than one-half of head height ; antennæ about as long as anteclypeus, segment 1 reaches out beyond antennal tubercle by half its own length ; antennal tubercle about as high as wide, without median depression : labellum as long as anteclypeus.

Thorax slightly shorter than abdomen ; upper corner of squama more broadly rounded ; wing lightly browned throughout, only slightly darker in costal and marginal cell area ; venation as in text-fig. 17, with veins R_{2+3}

and R_4 ending close to each other but not united ; distinctive feature of venation is small subtriangular cell (4th posterior) just below discal cell.

Abdomen same, but genitalia concealed under more narrowly produced tergite 6.

Female.—As described for male except for sexual characters and as follows : yellow fasciæ on abdomen brownish-orange ; yellow parts of legs more pale brownish-yellow ; head higher than in male.

Type material.—Holotype ♂, Southern Rhodesia, Mt. Selinda, xi–xii.1930 (R. H. R. Stevenson, C.M.).

Paratopotypes.—Three ♂, and 1 ♂ + 1 ♀ *in copula* (C.M. and E.I.S.) ; 1 ♂, 25.i.1955 (B. R. Stuckenberg, N.M.).

Paratypes.—Southern Rhodesia : 1 ♂, Tardai, 16.ix.1927 (R. H. R. Stevenson, A.M.N.H.). Transvaal : 1 ♂, Johannesburg, 23.x.1948 (R. L. Capener, E.I.S.) ; 1 ♂, Barberton, xii.1911 (H. Edwards, C.M.). Orange Free State ; 1 ♂, Caledon River, between Bethulie and Aliwal, x.1935 (C.M.).

It seems quite probable that the specimen from Barberton, which Brunetti (1926 : 583) cited under *P. fasciata*, represents *P. hessei*.

P. hessei is most closely related to *P. nhluzane* from Natal, and besides, the characters given in the key to species above can be separated from the latter by the more distinctive tergal fasciæ and wing venation. *P. hessei* is the only South African species known to occur in Southern Rhodesia, and is one of the few species not known to occur in Cape Province and/or Natal.

I take pleasure in naming this species after Dr. A. J. Hesse of the Capetown Museum.

Psilodera confusa n. sp. Text-fig. 18.

A member of the *fasciata* group.

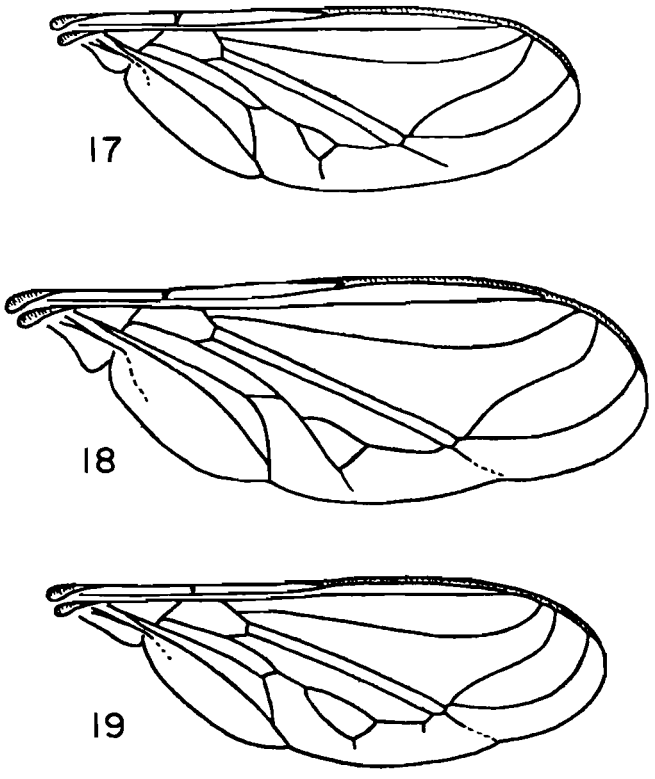
Male.—Length of entire specimen 11 mm., wing length 10 mm. Colour black, brown and yellow. Black except : antennal segments 1 and 2, base of proboscis, tip of labellum, hind tarsus, anterior half of scutellum (almost greyish-brown), squamal rim, wing veins (except black costa), dark brown ; tarsi 1 and 2 light brown ; remainder of legs, spot at wing base, narrow posterior fasciæ on tergites and sternites 2 to 4 which are wider at lateral margins, occupying one-sixth to one-eighth of each segment, those on tergites 4 and 5 becoming indistinct medially, those on sternites 4 and a mostly absent, yellow.

Pile same as described for *P. nhluzane* n. sp. except as follows : much more dense on mesonotum, appearing more brownish-yellow than brown, and consisting primarily of the minutely branched type of hairs ; the short, white, silky, appressed pile of the abdomen also occurs along posterior margin of tergite 4 and in triangular median area of tergites 4 and 5 ; quite dense, erect, white pile on sternites 1 and 2, longest on anterior margin of 1.

Head $1\frac{1}{2}$ time higher than long ; anteclypeus little less than one-half of head height, flattened above, rounded and lightly, transversely ridged below ;

antennæ little shorter than anteclypeus, segment 1 barely visible under antennal tubercle, segment 2 at least twice the length of 1 ; antennal tubercle not much higher than wide, barely raised (in profile), broadly triangular, without median depression, covered with minute, but dense, tomentum ; triocellate vertex barely raised, median ocellus present, but very small ; eyes joined above

TEXT-FIGS. 17–19.



17. *Psilodera hessei* n. sp. (paratopotype ♂), wing. 18. *Psilodera confusa* n. sp. (holotype ♂), wing. 19. *Psilodera valida* (Wiedemann) (Grahamstown, ♂), wing.

antennal tubercle for distance equal to length of antennal style ; proboscis long, reaching beyond tip of abdomen ; labellum narrow, about two-thirds the length of anteclypeus (in profile).

Thorax shorter than abdomen ; scutellum nearly 3 times wider than long ; legs long, thin, femora, tibiæ and tarsi of corresponding leg subequal in length except hind tibiæ longer than hind femur ; squama opaque white, large, upper corner broadly rounded ; wing hyaline, lightly browned throughout,

somewhat darker along costal margin; venation (text-fig. 18) similar to *P. hessei* n. sp.

Abdomen about as long as wide, almost as high as long, widest at segment 3: tergites 2 to 6 of equal length; sternites 1 to 4 subequal in length, 5 and 6 about half as long as 2; tergite 6 almost cone-shaped, concealing genitalia; rather sharp angles are present on posterolateral margins of tergites 4 and 5, and somewhat swollen on 3; a distinct submedian, transverse depression is present on tergite 3, just behind margin of 2.

Female.—As described for male except for sexual characters and as follows: yellow fasciæ on abdomen may be brownish-orange; legs may be mostly brownish-orange or yellow; posterior half of scutellum may be brownish-orange or yellow; white pile on tergites more pronounced and occurring almost as fasciæ on tergites 2 to 4, and is also present medially on tergite 3.

Type material.—Holotype ♂, Zululand, Ngoye Forest, Port Durnford Area, 18.ii.1957 (B. R. Stuckenberg, N.M.).

Paratopotypes.—Two ♂ (N.M. and E.I.S.).

Paratypes.—Zululand: 1 ♀, Eshowe, 18.iv.1949 (J. M. McGough, U.S.N.M.); 2 ♂, Mfongosi, W.S.W. of Nkandhla, x.1911 (W. E. Jones, C.M.). *Natal:* 2 ♂, Kranskop, xi.1917 (K. H. Barnard, C.M.): 1 ♂, 20.x (Marley ?, C.M.); 1 ♂, 7 miles E. Kranskop, x.1956 (B. R. Stuckenberg, N.M.); 2 ♂, Umbilo, 27.v.1915 (Marley ?, C.M.); 1 ♂, 1 ♀, Durban, 13.v.1915 (U.S.N.M.); 1 ♂, Durban, 3.iv.1920 (C. N. Barker, C.M.); 1 ♀, Durban, vii.1891 (C.M.). *Transvaal:* 1 ♂, Mariepskop, x.1956 (B. R. Stuckenberg, N.M.).

This species was misunderstood by Brunetti (1926: 583) for he believed it to be *P. fasciata.* Undoubtedly his specimens from Durban and Umbilo refer here, but as stated earlier the specimen from Barberton is probably *P. hessei*, and the specimen from Karkloof is very probably *P. nhluzane.*

Aside from the characters mentioned in the key to species above, *P. confusa* can be separated from both *P. fasciata* and *P. hessei* by having quite narrow yellow abdominal fasciæ, larger size and tomentum on the antennal tubercle. From *P. nhluzane* it differs markedly by having veins R_{2+3} and R_4 separate at their apices.

Psilodera bipunctata (Wiedemann).

Cyrtus bipunctatus Wiedemann, 1819, Zool. Mag., **1**: 15; 1830, Ausser. Zweiflg. Ins., **2**: 14.
Psilodera capensis Gray, 1832, *In* Cuvier's Animal King., 15, Insecta, **2**: 779; Westwood, 1848, Trans. Ent. Soc. Lond., **5**: 92 (Synonymy based on Brunetti, 1926).
Mesocera flavicornis Macquart, 1838, Dipt. Exot., **1** (2): 174 (Synonymy based on Loew, 1861).
Psilodera cingulata Loew, 1861, Dipt. Sudafrika's, **2** (2): 256 (New synonymy, based in part on Sabrosky, 1953).
Psilodera bipunctata; Loew, 1861, Dipt. Sudafrika's, **2** (2): 255; Brunetti, 1926, Ann. Mag. Nat. Hist., **18**: 584.

Type locality.—(*bipunctata*) Cape of Good Hope (three ♂, two labelled types, in Wiedemann's collection in Copenhagen); *capensis* (no sex given), *flavicornis* (1 ♀), and *cingulata* (1 ♂) all from Cape of Good Hope.

This is a very striking species, with its yellow and black patterned mesonotum, yet it does not appear to have ever been collected commonly. I agree with Brunetti (1926) that *P. capensis* is the same as *P. bipunctata* and not *P. fasciata* as some authors have stated. Also, through the help of Sabrosky's notes on the type of *P. cingulata*, I have concluded that it is the same as *P. bipunctata*.

Although *P. bipunctata* has been reported from the Cape or Cape of Good Hope from time to time, usually no further data has been given; therefore the distribution records cited below may be of interest. This species appears to range in the coastal area of South Africa from the Cape of Good Hope to Kranskop, Natal.

New distribution records.—Specimens examined: 6 ♂ and 3 ♀, all from Cape Province and Natal. *Cape Province:* 1 ♂, Mossel Bay, 9.xii.1943 (D. E. Willis, C.M.); 2 ♂, Hout Bay, xi.1943 (R. Smithers, C.M.); 1 ♂, Mowbray (C.M.): 1 ♂ "Cap.", 1872 (Trieste Museum, E.I.S.); 1 ♀, Port Elizabeth, i.1952 (B. R. Stuckenberg, N.M.); 1 ♀, Montague Pass, 4.xi.1931 (Miss A. Mackie, E.I.S.); 1 ♂, Orange Kloof, i.1933 (H. G. Wood, C.M.). *Natal:* 1 ♀, Kranskop, 7.iv.1917 (Marley, C.M.).

Psilodera valida (Wiedemann). Text-fig. 19.

Cyrtus validus Wiedemann, 1830, Ausser, Zweiflg. Ins., **2**: 13.
Psilodera valida; Westwood, 1848, Trans. Ent. Soc. Lond., **5**: 92; Loew, 1861, Dipt. Sudafrika, **2** (2): 254, 256; Brunetti, 1926, Ann. Mag. Nat. Hist., **18**: 584.
Psilodera affinis Westwood, 1848, Trans. Ent. Soc. Lond., **5**: 92 (Synonymy based on Loew, 1861).

Type locality.—"Kafferei" (2 ♀, (?) labelled types, in Wiedemann's collection in Copenhagen). The type of *affinis* (no sex given) was from Cape of Good Hope, and is in the Hope Museum.

There is very little confusion about the proper identity of this species. Westwood (1848, op. cit.) apparently described the male of *P. valida* when he described *P. affinis*, and I agree with Loew (1861) that they are the same species.

This species, like *P. bipunctata*, seems to have a coastal distribution from the Cape Province to Natal; however, I have not seen specimens south or west of East London.

New distribution records.—Specimens examined: 13 ♂, 8 ♀, all from Cape Province and Natal. *Cape Province:* 1 ♂, East London, 6.iv.1924 (H. K. Munro, E.I.S.); 2 ♂, Cathkin Peak, i.1941 (R. F. Lawrence, C.M.); 2 ♂, Grahamstown, 19.iii.1921 (H. K. Munro, C.M.). *Natal:* 1 ♂, Weenen, nr. Kulombi Mt., 30.i.1927 (H. P. Thomasset, B.M.N.H.); 2 ♀, Howick, 1904 and 1946 (J. P. Cregoe, B.M.N.H.); 1 ♂, Natal Nat. Park, iii.1932 (Miss A. Mackie, E.I.S.); 4 ♀, Pietermaritzburg, 27.iii.1955 (B. R. Stuckenberg, N.M., E.I.S.); 3 ♂, 1 ♀, Kranskop, 30.iii and 19.iv.1921 (H. K. Munro, C.M., E.I.S.); 3 ♂, Kranskloof, nr. Durhan, 20.iii.1919 (Marley, C.M., E.I.S.); 1 ♀, same locality, 17.iv (Marley, C.M.).

Psilodera stuckenbergi n. sp. Text-figs. 20–21.

A member of the *bipunctata* group.

Male.—Length of entire specimen 10 mm., wing length 9 mm.

Colour black, brown, and yellow. Black are eyes, ocellar tubercle, antennal tubercle, basal half of anteclypeus, basal posterior half of proboscis, large spots on sternopleura, anterior vitta and large posterior area of mesonotum as in text-fig. 21, apical third of tarsal claws and costa vein from subcosta to vein R_1; light brown are antennæ, ocelli, basal two-thirds of tarsal claws, pulvilli, thin, longitudinal, median line running from sternites 1 to 4, median spots on tergites 2 to 4 (text-fig. 21) and genitalia; dark brown are apical half of proboscis (nearly black), labellum, wing veins mostly and tergal markings as in text-fig. 21; brownish-yellow are apical half of anteclypeus, lateral margins and prescutellar spots on mesonotum as in text-fig. 21, scutellum and median area of sternites 4 to 6; bright yellow are basal anterior half of labellum, humerus, pleura, legs, halter, all of sternites 1 to 3, lateral margins of 4 to 6, and tergal markings as in text-fig. 21; occiput grey.

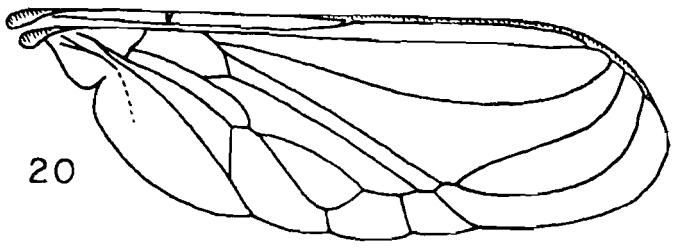
Pile on thorax dense, but not obscuring colour pattern; that on mesonotum and ocellar tubercle yellowish-brown, erect, about as long as antennal style; that on prothoracic area, pleura, and coxæ yellow, erect, somewhat shorter than on mesonotum; that on scutellum and abdominal tergites brown, mostly semiappressed, shorter than on mesonotum, that on tergites 4 to 6 more yellowish brown; that on squama brown, erect, shorter than on mesonotum; that on abdominal sternites, yellowish-white, erect, longer on sternite 1; that on femora yellow, shorter than tarsal claw on femur 1, about as long as sternal pile on femora 2 and 3, somewhat longer at base; that on tibiæ and tarsi brown, shorter than tarsal claw, thicker on tarsi. Wing with short brown hairs only on base of costa.

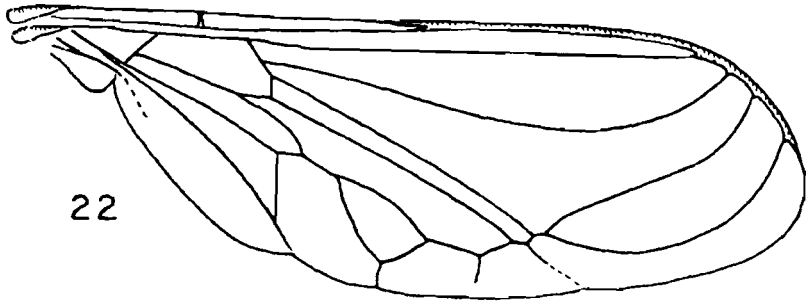
Head twice as high as long; anteclypeus about one-fourth of head height, somewhat rounded above and medially depressed forming a thin line, smooth below; antennæ about as long as anteclypeus, segment 1 barely visible, about one-third as long as 2; antennal tubercle small, globose, glabrous, reaching out (in profile) to about one-half the length of antennal segment 2, about as high as wide, triangular in outline, without median depression; triocellate vertex flat, all ocelli distinct; eyes joined above antennæ for distance about equal to labellum; proboscis long, reaching just to tip of abdomen; labellum wider basally than preceding part of proboscis, about $1\frac{1}{3}$ times longer than anteclypeus (in profile).

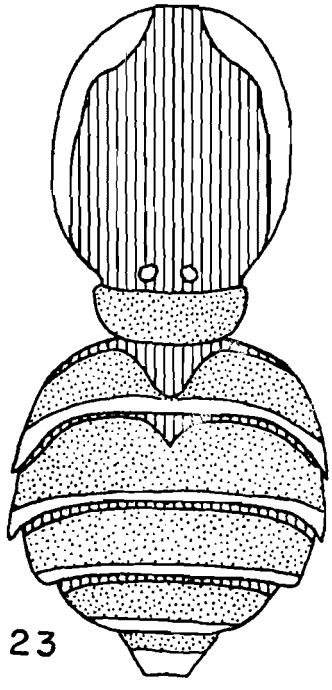
Thorax about as long as abdomen; scutellum about 2 times wider than long; legs long and thin, femora, tibiæ and tarsi of corresponding leg subequal in length; squama opaque brown, upper corner broadly rounded; wing hyaline, faintly browned throughout; venation as in text-fig. 20, with vein M_2 present.

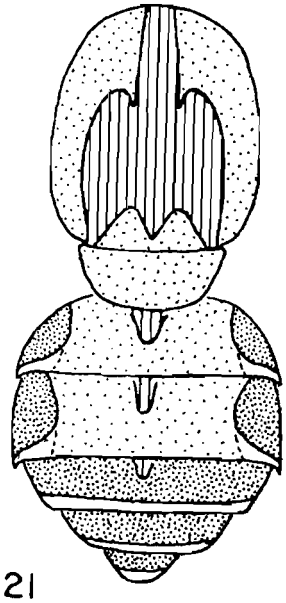
Abdomen somewhat longer than wide, slightly longer than high, widest at

TEXT-FIGS. 20–23.









20. *Psilodera stuckenbergi* n. sp. (holotype ♂), wing. 21. *Psilodera stuckenbergi* n. sp. (holotype ♂), thorax and abdomen in dorsal view. 22. *Psilodera natalensis* n. sp. (holotype ♂), wing. 23. *Psilodera natalensis* n. sp. (holotype ♂), thorax and abdomen in dorsal view.

tergite 3 (text-fig. 21); sternites convex, 1 to 3 subequal in length, 4 slightly less than 5, and 6 about one-half the length of 2; genitalia small, concealed under slightly produced tergite 6.

Female.—As described for male except for sexual characters and as follows; antennal segment 3 dark brown; no median longitudinal line present on sternites; dark brown are most of tergites 2 to 5, except for black anteromedian spots as in text-fig. 21, and narrow, posterolateral yellow lines, which become less in length from tergite 2 to 5; all sternites are yellow; pile on mesonotum, scutellum and abdominal tergites more golden-brown; head not quite twice as high as long; anteclypeus about one-third of head height, more flattened above, with much wider median depression; antennæ slightly shorter than anteclypeus; antennal tubercle larger than male, flattened medially with slight dorsomedian depression; labellum about as long as anteclypeus; abdomen about as long as wide, about as high as long; genitalia small, cerci barely visible between small tergite and sternite 7.

Type material.—Holotype ♂, Cape Province, Port Elizabeth, v.1950 (B. R. Stuckenberg, N.M.).

Paratopotypes.—Two ♂: also 1 ♂, same data except i.1952 (all N.M. and E.I.S.).

Paratypes.—Three ♂, 1 ♀, all from Cape Province. One ♂, 1 ♀, Mossel Bay, xi.1938 (R. Turner, C.M.); 1 ♂, East London, ii.1885 (P. Borchero, C.M.); 1 ♂ and pupal skin, Humansdorp-Coldstream, i.1921 (R. Tucker, E.I.S.).

This large species appears to be quite restricted to the coastal East Cape area. It closely resembles both *P. valida* (♂♀) and *P. bipunctata* (♀). Besides the characters given in the key to species above, *P. stuckenbergi* is most easily distinguished from the latter species in having the labellum as long as the anteclypeus (instead of two-thirds the length), and in having much more distinct anteromedian spots and yellow posterolateral lines on the tergites. From *P. valida* it is most clearly separated in having at least tergites 4 to 6 dark brown (instead of yellowish-brown), in having less distinct lateral and more distinct median tergal spots, and in having veins M_2 and $Cu_1 + M_{3+4}$ distinct (compare text-figs. 19 and 20).

It gives me great pleasure to name this species after Mr. B. R. Stuckenberg of the Natal Museum, who collected part of the type series of this species as well as many other interesting South African and Madagascar species, and whose collections have formed the basic part of the present paper.

Psilodera natalensis n. sp. Text-figs. 22–23.

A member of the *bipunctata* group.

Male.—Length of entire specimen 8 mm., wing length 7 mm.

Colour black, brown, and yellow. Black are eyes, ocellar tubercle, antennal tubercle, anteclypeus (almost blackish-brown), proboscis (except extreme

tip and labellum), most of mesonotum (text-fig. 23), most of pleura, apical half of tarsal claws, costal vein from subcosta to vein R_1, narrow anterior fasciæ on tergites 2 to 4 and anteromedian triangles on tergites 2 and 3 as in text-fig. 23 ; brown are antennæ, ocelli, small prelabellar spot, large posterobasal spot on coxa 1, trochanter 1, spot on trochanters 2 and 3, outer basal four-fifths of femur 1, spot near outer apex of femur 2, basal half of tarsal claws, pulvilli, dorsoposterior area of mesopleura, squama, halter. scutellum, wing veins mostly, most of tergites as in text-fig. 23, genitalia and narrow posterolateral line on sternite 1 ; dull yellow are remainder of legs, proepisternum, humerus, narrow lateral margins of mesonotum and prescutellar spots as in text-fig. 23, abdominal sternites (almost yellowish-white), narrow posterior fasciæ on tergites 2 to 5 and posterior half of tergite 6 ; occiput grey.

Pile on thorax dense, but not obscuring colour pattern ; that on mesonotum, upper pleura and ocellar tubercle dark brown, erect, about as long as antennal style ; that on prothoracic area, lower pleura and squama yellowish-brown, erect, about one-half as long as on mesonotum ; that on proepisternum, coxæ, femora 1 and 2 and sternites golden-yellow, erect, nearly as long as on mesonotum, somewhat longer medially and more appressed laterally on sternites; that on scutellum about as on mesonotum, but not as dense ; that on femur 1 and tibiæ yellow, long and short ; that on tarsi brown, dense and short ; that on abdominal tergites of two types : (1) sparse, erect, dark brown pile on broad median area and extreme lateral margins, about as long as on mesonotum, and (2) dense, appressed golden-brown pile over entire tergum, about as long as pulvillus, more dense on tergites 1 to 3. Wing with short hairs only on base of costa.

Head $1\frac{1}{2}$ times higher than long ; anteclypeus about one-half of head height, somewhat rounded above, with faint dorsomedian depression, smooth below ; antennæ about three-fourths as long as anteclypeus, segment 1 barely visible, about one-half as long as 2, basal swelling of antennal style about one-third the length of style ; antennal tubercle small, globose, glabrous, reaching out (in profile) to about one-half the length of antennal segment 2, about one-fourth higher than wide, triangular in outline, without median depression ; triocellate vertex much more swollen than in *P. fasciata* (Wied.), all ocelli distinct ; eyes joined above antennæ for distance about equal to antennal length ; proboscis long, reaching almost to tip of abdomen ; labellum about $1\frac{1}{3}$ times longer than anteclypeus (in profile).

Thorax about as long as abdomen ; scutellum about 2 times wider than long ; legs long, thin, femora, tibiæ and tarsi of corresponding leg subequal in length ; squama opaque brown, upper corner broadly rounded ; wing hyaline, faintly browned throughout ; venation (text-fig. 22) with vein M_2 partly present and vein $Cu_1 + M_{3+4}$ complete.

Abdomen little longer than wide, longer than high, widest at tergite 3 (text-fig. 23) ; sternites convex, especially 2 and 3 ; sternites 1 to 4 subequal

in length, 5 and 6 about one-half as long as 2 ; genitalia extruded under quite produced tergite 6.

Female.—Unknown.

Type material.—Holotype ♂, Natal, Geikie's Farm, Karkloof Range, 8.i.1957 (B. R. Stuckenberg, N.M.).

This species is apparently closely related only to *P. bipunctata.* Besides the characters given in the key to species above, *P. natalensis* can be separated from *P. bipunctata* by its distinct colour pattern, nearly all black mesonotum, black mesopleura, longer labellum and dark brown (instead of brownish-yellow) mesonotal pile. *P. natalensis* occurs within the known range of *P. bipunctata*, since the latter is now known from nearby Cathkin Peak.

Psilodera orbifer (Walker).

Cyrtus orbifer Walker, 1860, Trans. Roy. Ent. Soc. Lond., **5** : 276.
Psilodera orbifer ; Schlinger, 1959*a*, Ann. Ent. Soc. Amer., 52 (2) : 158.

Type locality.—Natal (one ♂, B.M.N.H.).

Loew (1861) did not include this species in his review of *Psilodera*, and to my knowledge the species has not been recognized since its description. Schlinger (1959*a*) placed the species in *Psilodera*, but until the type specimen can be studied, its status remains in doubt. It is the opinion of the author that *P. orbifer* probably represents *P. fasciata.*

Psilodera aurata (Brunetti).

Lasia aurata Brunetti, 1920, Fauna Brit. Ind. Dipt. Brachy., **1** : 164 ; Edwards, 1930, Dipt. Patagonia, **5** (2) : 188 (in footnote said this species belonged in *Psilodera*).
Psilodera aurata ; Schlinger, 1959*a*, Ann. Ent. Soc. Amer., 52 (2) : 158.

Type locality.—India as " Ind." (one specimen, no sex given, B.M.N.H.).

I have not seen this species, but judging from the original description, *P. aurata* is related to species of the *bipunctata* group. It is the only species known from outside South Africa, if indeed such is the case, for it seems quite possible that the type specimen could have beenl abelled incorrectly.

Subfamily PHILOPOTINÆ.

This small subfamily, which comprises five genera, has representatives in every region except North America and Australia proper. Of the two South African genera, only *Thyllis* is restricted to the Ethiopian region, having species in both South Africa and Madagascar. The other genus, *Terphis*, has a representative in South America as well as two species in South Africa.

KEY TO THE SOUTH AFRICAN GENERA.

Proboscis well developed, usually longer than thorax ; eyes pilose ; wing venation strong . . . . . *Thyllis* Erichson

Proboscis minute, hardly visible ; eyes apilose ; wing venation extremely weak *Terphis* Erichson

Genus *Terphis* Erichson.

Terphis Erichson, 1840, Entomographien, **1** : 168 ; Sabrosky, 1950, Proc. Roy. Ent. Soc. Lond., **19** (3–4) : 48.

Type species.—*Terphis nodosa* Erichson (monotypic).

Diagnosis.—Small flies (3–5 mm.), rather distinctly coloured black or brown with yellow and white markings ; antennæ with three segments, inserted just below middle of head, the terminal segment being styliform or substyliform ; eyes apilose, contiguous above and below antennæ ; proboscis and maxillary palpus absent ; triocellate tubercle with depression behind ; wing venation weak, with cell formation restricted to the anterior margin, even R_{4+5} and M_1 quite faint ; abdomen sometimes with dorsolateral bumps on tergites ; genitalia small, well concealed.

The two described species are *T. acroceroides* from the Belgian Congo and *T. nodosa* from Brazil. A third species, *T. gertschi*, is described below from the Cape Province. These species are apparently only rarely collected, as I know of only four literature records and I have examined only five other specimens.

It should be pointed out that although both *T. acroceroides* and *T. gertschi* are placed with *T. nodosa* in the same genus, certain differences between these South American and South African species exist. Some of the more obvious distinctions are as follows ;

(*nodosa*)	(*acroceroides* and *gertschi*)
Thoracic integument smooth.	Thoracic integument punctured.
Large head with narrow occiput.	Small head with wide occiput.
Abdomen (♂) with dorsolateral bumps.	Abdomen smooth (♂ and ♀).
Sternites 2–4 fused with tergites.	Sternites 2–4 separated from tergites.

If and when more specimens and/or more species can be studied, perhaps further differences will be found that may warrant the erection of a separate genus or subgenus for the South African species, but at present it seems best to keep them united under *Terphis*.

The South African species of *Terphis* can be separated as follows ;

Mesonotum black with some indication of yellow vittæ starting behind prothoracic lobes and running to scutellum (♂ and ♀), or if nearly all black (some ♀♀), abdominal, yellow, posterior fasciæ narrow, about one-third the width of each tergite ; legs mostly yellow (♂) or light brown (♀) ; wings lightly infuscated (♂) or quite browned (♀) ; narrow area between abdominal tergites not incised (♂ and ♀)
acroceroides Sabrosky

Mesonotum black with brown spot behind prothoracic lobe (only ♂ known) ; abdominal, yellow, posterior fasciæ occupy about one-half to two-thirds the width of each tergite ; legs mostly dark brown ; wings hyaline ; areas between abdominal tergites deeply incised . . . . . *gertschi* n. sp.

Terphis acroceroides Sabrosky.

Terphis acroceroides Sabrosky, 1950, Proc. Roy. Ent. Soc. Lond., **19** (3–4) : 50, figs. 1, 1*a* and 1*b*.

Type locality.—Tenke, Katanga Province, Belgian Congo (holotype ♂ and paratype ♂ in B.M.N.H. and U.S.N.M. respectively).

I have been able to examine the paratype male of this species, together with two unrecorded females. Most of the sexual differences are noted in the key to species above, and although the known males and females are from quite distant localities (southern Belgian Congo and Portuguese East Africa), I feel quite certain they belong to the same species.

One feature not specifically mentioned by Sabrosky (1950) for *T. acroceroides*, which is also a feature of *T. gertschi*, is the presence of a distinct but obscured median longitudinal furrow on the mesonotum. Also, both species have an indication of rather large rugose pits immediately behind the prothoracic lobe running back toward the scutellum which may or may not be accompanied by vittæ. Both of these characters are absent in *T. nodosa* from Brazil.

New distribution record.—Portuguese East Africa, 2 ♀, Villa Paiva d'Andrada, taken in gallery forest, ix.1957 (B. R. Stuckenberg, N.M.).

Terphis gertschi n. sp. Text-figs. 24–25.

Male.—Length of entire specimen 4 mm., wing length 4 mm.

Colour black, brown, yellowish-brown, and white. All black except : white are most of prothoracic lobe, wing veins (except extreme base) and squama including rim ; brown are ocelli, antennæ, spot around prothoracic spiracle and adjoining spot on prothoracic lobe, median posterior spot on prothoracic lobe, anterior lateral spot on mesonotum just behind tip of prothoracic lobe, wing base, upper ridge of postalar callus, median posterior and lateral posterior spot on scutellum, most of coxæ, most of femur and tibia 1 (other legs broken off), narrow margins of basal sternites, halter stem and genitalia ; yellowish-brown are apex of coxæ, trochanters, knee of leg 1, halter knob, spot behind on postalar callus, posterior margin of scutellum, posterior fasciae of tergites 2 to 6 and most of abdominal venter.

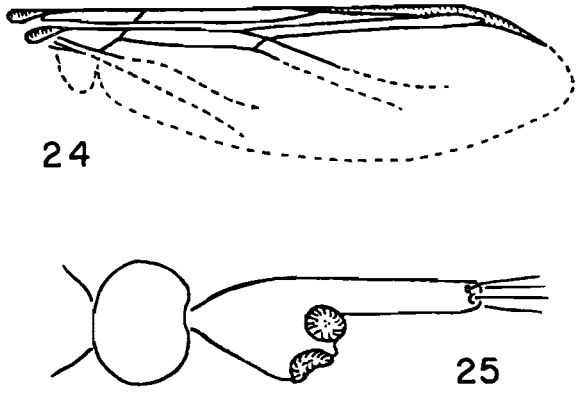
Pile short, appressed, silvery-white over entire body, somewhat longer and bristle-like behind ocellar depression.

Head spheroid, eyes holoptic ; antennæ minute, segment 1 hardly discernible under antennal tubercle, segment 2 short, round, with minute pubescence, segment 3 shiny, its round base with large apical sensorial pits, with a straight, short, broad style arising dorsally at apex, the style beset with four short apical setæ (text-fig. 25) ; small triangular area below antennæ without eye facets ; antennal tubercle shiny, longitudinally ridged, flat below, with acute median tip extending out beyond base of antennal segment 3, several long setæ present along lateral ventral margin, ocelli on broad triangle, median ocellus small, lateral ocellus large, touching eye margin, vertical depression rugose, as well

as ridge surrounding it, occiput smooth laterally, sculptured above on posterior margin ; mouthparts not visible, area surrounded by small raised lip.

Thorax rugose, with large irregular depressions most common on mesonotum just behind prothoracic lobe, where running posteriorly they form a longitudinal groove which extends to scutellum ; a narrow deep median groove begins just behind prothoracic lobe and stops just short of scutellum ; hypopleura swollen : sternopleura and upper part of postalar callus mostly smooth : coxæ rugose, remainder of leg 1 quite smooth, with few transverse ridges on femur ; wing whitish-hyaline, white veins prominent along anterior margin, venation simple as in text-fig. 24 ; squama higher than head height, rim largest along anterior ventral margin, attached solidly to thorax along whole anterior dorsal margin.

TEXT-FIGS. 24–25.



24. *Terphis gertschi* n. sp. (holotype ♂), wing. 25. *Terphis gertschi* n. sp. (holotype ♂), antenna.

Abdomen densely but shallowly punctured, no longer than thorax, widest at segment 3, segments 1 and 5 of equal width ; narrow anterior margins of tergites 2 to 4 deeply grooved throughout, no dorsal lateral bumps as in *T. nodosa* ; tergite 1 narrow in length, but prominently raised ; tergites 4 to 6 fold over ventrally so that sternites are narrow ; genitalia small, concealed, somewhat as in *Acrocera* species but much smaller.

Female.—Unknown.

Type material.—Holotype ♂, Cape Province, Ceres, 1,500 ft., 1–3.i.1921 (R. E. Turner, B.M.N.H., 1921–39).

Paratopotype.—♂, 3,500 ft., xi.1917 (Lightfoot, C.M.). The type is in good condition except for the absence of all legs but leg 1 as described above.

The paratopotype male had legs 2 and 3 present and gave the following colour characters : coxæ mostly black, rugose, remainder of legs dark shining brown except for knees and most of tarsi which were brownish-yellow ; tarsal claws black, the pulvilli light brown.

This species is named in honour of Dr. Willis J. Gertsch, Arachnologist with the American Museum of Natural History, New York, who has always been very helpful in determining the spider hosts associated with my studies of these flies.

Genus *Thyllis* Erichson.

Thyllis Erichson, 1840, Entomographien, **1** : 149 ; Cole, 1919*a*, Canad. Ent., **51** : 55.

Type species.—*Acrocera crassa* Fabricius, 1805, by present designation, as first of four included species of *Thyllis* by Erichson (1840).

Diagnosis.—Small to large flies (4–12 mm.), varicoloured with brown, black, yellow, red, and white, or all metallic blue or purple ; antennæ inserted just below middle of head, terminal segment styliform ; eyes with minute pile, separated narrowly only below antennæ and above anteclypeus ; proboscis produced up to length of abdomen ; maxillary palpus absent ; antennal tubercle large, flat or rounded, produced down over base of antennæ ; triocellate tubercle flat ; wing venation strong with anal, 2 basal, discal, 1st posterior, submarginal and marginal cells complete ; abdomen short, swollen and of near equal width throughout, or narrowed and tapering, or widened and spinate ; genitalia well concealed.

There are five described species of *Thyllis*, four of which are from South Africa, and one from Madagascar. A sixth species is described below from Natal, and another new species from Madagascar is described in a forthcoming paper (Schlinger, 1959*c*).

KEY TO THE SOUTH AFRICAN SPECIES OF *Thyllis* ERICHSON.

1. Wing either evenly light or dark brown ; costal region not distinctly darker than rest of wing 2
— Wing strongly infuscated dark brown throughout costal region ; posterior wing region hyaline or light brown 3
2. Wing entirely dark brown ; prothoracic lobes black with striking, bright yellow anterior fascia . . . . . *colei* n. sp.
— Wing entirely light brown ; prothoracic lobes mostly yellowish-brown, without indication of anterior fascia . . . . . *compressa* Erichson
3. Wing with lower (second) basal cell heavily infuscated 4
— Wing without lower basal cell infuscated . . . . . *obesa* Erichson
4. Posterior margin of wing hyaline ; femora black with yellow apices ; prothorax with only anterior margin yellow . . . . . *crassa* (Fabricius)
Posterior margin of wing light brown ; femora entirely red ; prothorax with both anterior and posterior yellow margins . . . . . *turgida* Erichson

Thyllis crassa (Fabricius). Text-fig. 26.

Acrocera crassa ; Fabricius, 1805, Syst. Antl., p. 332.
Cyrtus crassus ; Wiedemann, 1830, Ausser. Zweifl. Ins., **2** : 15.
Thyllis crassa ; Erichson, 1840, Entomographien, **1** : 150, pl. 1, fig. 7 ; Cole, 1919*a*, Canad. Ent., **51** : 55 (an English translation of Erichson, 1840) ; Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 569.

Type locality.—The Cape (this has not been restricted further).

This beautiful species was illustrated by Erichson (1840) in colour, and is

perhaps the most often encountered species of the genus. However, except for the record from East London by Brunetti (1926), no other specimens have been recorded to my knowledge. The specimens cited below from the " Cap." are those Wiedemann examined for his large work of 1830.

New distribution records.—Specimens examined: 7 ♂, 4 ♀, all from the Cape Province. One ♀, Swellendam, xi.1933 (R. E. Turner, B.M.N.H.); 5 ♂, Willow River, Uitenhage, x.1938 (C.M.); 1 ♂, 2 ♀, Meirings Poort, 23.x.1938 (C.M.); 1 ♂, 1 ♀, " Cap." (V.M.N.H.).

Thyllis turgida Erichson.

Thyllis turgida Erichson, 1840, Entomographien, **1** : 150; Cole, 1919*a*, Canad. Ent., **51** : 55 (an English translation of Erichson, 1840); Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 569.

Type locality.—" Caplande " (this has not been restricted further).

A close relative of *T. crassa*, *T. turgida* has been recorded only once since its original description, this being the report of Brunetti (1926) who saw specimens from Port Natal. I have not seen representatives of this species.

Thyllis obesa Erichson. Text-fig. 27.

Thyllis obesa Erichson, 1840, Entomographien, **1** : 151; Cole, 1919*a*, Canad. Ent. **51** : 56 (an English translation of Erichson, 1840); Brunetti, 1926, Ann. Mag. Nat. Hist., **18** : 568 (this may have referred to an entirely different species, since it was from Madagascar).

Type locality.—" Caplande " (this has not been restricted further).

I have seen only one specimen which I can safely call this species, and even this specimen did not fit the colour characteristics of *T. obesa* as set down by Erichson. The type specimen was said to have the markings in yellow, whereas in my specimen the markings (although apparently identical) are all reddish-brown. I feel that the patterns of these marks are more specific than their colour, and it may be that the colour of either Erichson's or my specimens were not natural when observed.

The only other record of this species was that given by Brunetti (1926). He redescribed *T. obesa* on the basis of an apparent male from " Fort Dauphin S.W. Region of Madagascar, August 1901 (Ch. Alluaud)." I believe he had another species closely related to *T. obesa*, since his description does not fit my specimen, nor does it fit that of Erichson as noted by Brunetti (1926 : 569).

New distribution record.—One ♂, Natal, Pietermaritzburg, 27.iii.1955 (B. R. Stuckenberg, N.M.).

Thyllis compressa Erichson. Text-fig. 28.

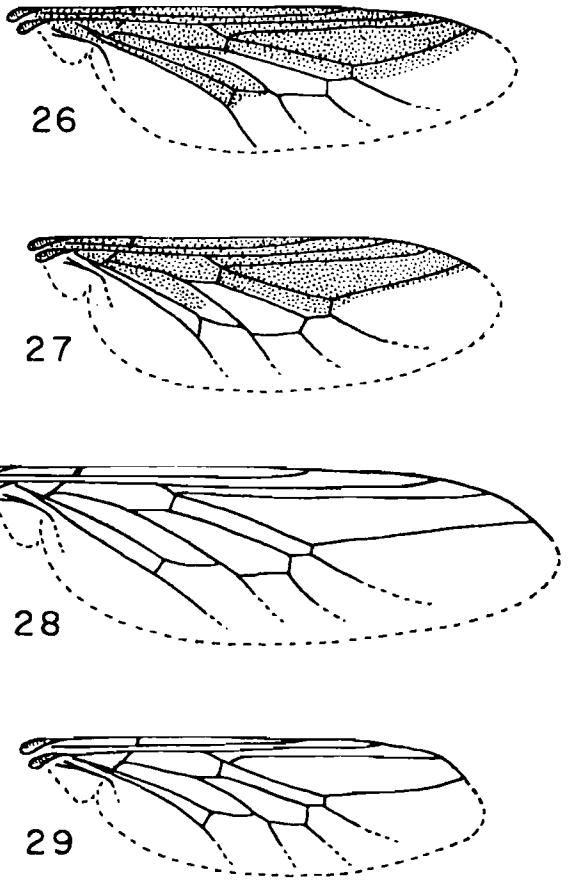
Thyllis compressa Erichson, 1840, Entomographien, **1** : 151; Cole, 1919*a*, Canad. Ent., **51** : 56 (an English translation of Erichson, 1840).
" *Thyllis*, sp. near *compressa* Erich.", Cole, 1919*a*, Canad. Ent., **51** : 57, pl. 2, fig. 2*a–c*.

Type locality.—" Caplande " (this has not been restricted further).

The only specimen of this peculiarly compressed species that I have examined

was the same specimen Cole (1919*a*) cited and figured in his work on *Thyllis*. Again, as in *T. obesa*, the only difference I can find between this example and Erichson's description is that of a slight change in the degree of colour. I

TEXT-FIGS. 26-29.



26. *Thyllis crassa* (Fabricius) Willow River, ♂), wing. 27. *Thyllis obesa* Erichson (Pietermaritzburg, ♂), wing. 28. *Thyllis compressa* Erichson (Willowmore, ♂), wing. 29. *Thyllis colei* n. sp. (holotype ♀), wing.

might add that his specimen, which was so well illustrated by Cole, was a male rather than a female as stated.

Specimen examined : 1 ♂, Cape Province, Willowmore (Dr. Brauns, E.I.S.).

Thyllis colei n. sp. Text-fig. 29.

A member of the *crassa* group.

Female.—Length of entire specimen 7 mm., wing length 6 mm.

Colour black with brown and creamy-yellow markings; creamy-yellow are broad entire anterior margin of prothoracic lobes, ventral anterior half of proboscis and most of posterior fascia on tergite 2; light brown are ocelli, posterior outer margin of prothoracic lobe, small spot on proepisternum, large median area of mesopleura, narrow mesonotal line running transversely from just inside posterior margin of prothoracic lobe nearly to mesopleura, then running longitudinally to wing base but not meeting postalar callus, the lines being separated in middle of mesonotum by distance of about one-half of head height, wing base, posterior half of postalar callus, posterior median spot on scutellum, lateral spot on metanotum, apical fourth of femora, tibiæ, tarsi abdominal fasciæ on tergites 3 to 6 occupying posterior fifth of each tergite, median portion of fascia on tergite 2 and narrow lateral margins of tergites 2 to 6; dark brown are antennæ, most of proboscis, basal three-fourths of femora, tarsal claws, squama, squamal rim (almost black), wing veins, wing membrane, fasciæ on sternites 2 to 6 occupying posterior third of each segment and genitalia; remainder of specimen black.

Pile white, extremely short, barely discernible on eyes and abdominal tergites, thickest on thorax and legs except femora which are nearly bare.

Head with short antennæ that are about as long as basitarsis 2; antennal tubercle glabrous, swollen medially, with small dorsomedian depression, slightly produced ventrally to point between antennal bases; three ocelli, median ocellus smallest, ocellar tubercle somewhat raised in front with distinct depression behind; occiput coarsely punctured; eyes holoptic above antennæ, but not actually meeting below antennæ, separated by width of antennal segment 1; depression below antennæ with distinct median ridge; oral margin with distinct, large ridge; anteclypeus glabrous and flat with deep anterior median depression; proboscis short, reaching to tip of abdominal segment 3; labellum thin and short, not as long as anteclypeus.

Thorax entirely coarsely punctured, punctures more sparse on prothoracic lobe and mesopleura; prothoracic lobe flat, sharply margined anteriorly, lobes joined in middle, the joined length is slightly shorter than length of antennal style; mesonotum with distinct longitudinal depression running from just behind union of prothoracic lobes to apparently just in front of scutellum (specimen damaged at this point), which is reminiscent of certain *Terphis* species; wing heavily and evenly infuscated, wing venation as in text-fig. 29; squama opaque, higher than long, covered with dense minute pubescence.

Abdomen with second segment widest, whole dorsum coarsely punctured, venter somewhat more finely punctured; tergites 2 to 6 with deep anterior

fascial grooves ; tergites 3 and 6 with small, but distinct, depressed longitudinal areas on each side of midline ; sternites 2 to 6 of nearly equal width, 7 and 8 much narrower, sternite 6 is somewhat emarginate behind and is produced downwards ; genitalia situated under tergite 6.

Male.—Unknown.

Type material.—Holotype ♀, Cape Province, Karroopoort, x.1940 (R. Smithers, C.M.).

This species is not closely related to any known species. Such features as the entirely, evenly darkened wing, and the striking, broad, bright yellow prothoracic fascia, as well as the rugose integument, distinguish *T. colei* from all known species.

It is with great pleasure that I name this species after Dr. F. R. Cole, of the University of California, Berkeley, who has been very helpful to me in my acrocerid work, and one to whom all dipterists are grateful for his excellent works on the family Acroceridæ.

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