REVISION OF THE SPECIES OF THE GENUS *EUCHROMIUS* GUENÉE, 1845 (LEPIDOPTERA: PYRALIDAE: CRAMBINAE) OCCURRING IN THE AFROTROPICAL REGION

by

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Key words: Lepidoptera; Pyralidae; Crambinae; *Euchromius*; key; new species; Afrotropical Region.

The Afrotropical species of the genus *Euchromius* Guenée are revised. Eighteen species are treated of which nine are new, *labellum, locustus, nigrobasalis, erum, aris, donum, geminus, tanalis* and *gnathosellus*. A key is provided together with full (re)descriptions of each species, with notes on distribution and ecology. Most species live in dry or humid savannas and woodlands, no species occur in true tropical rainforest.

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INTRODUCTION

The genus *Euchromius* has not previously been studied for the Afrotropical Region. The Palaearctic species have been revised by Bleszynski (1965), the Neotropical and South-Nearctic species (in part) by Capps (1966). Study of the Palaearctic and Neotropical species revealed many new data and misidentifications, even by Bleszynski. In a future paper these, together with the Australian and Oriental species, will be revised. The present study is restricted to species south of, or occurring in the Sahara desert belt.

The members of *Euchromius* show little intraspecific variation in external characters or genitalia. Some variation may still be discovered since many of the species are only known from unique or very few specimens.

The present revision deals with 18 species of which nine are new, a full (re)description of each species is given together with drawings of the genitalia. Of two species only the female is known. A 19th species, occurring in Zaire, is not described awaiting better, additional material. For many of the species the known range has been greatly expanded, but our knowledge of the zoogeography is still very poor. More species can be expected especially from poorly collected areas as Northern Angola and North-West Zambia.

The first true *Euchromius* species from the Afrotropical Region were described by Hampson (1919), later Rothschild (1921) and Bleszynski (1961, 1962, 1966, 1970) added several more.

Vari & Kroon (1986) incorrectly listed *Euchromius superbellus* (Zeller, 1849) as belonging to the fauna of Southern Africa. This record was based on a publication of De Joannis (1927). De Joannis misidentified his specimens, they belong to *Euchromius klimeschi* Bleszynski. *Euchromius ramburiellus* (Duponchel, 1836) also listed by Vari & Kroon (1986) should be withdrawn from the list of African species as there is no reliable labelled material of this species from Southern Africa. The species is widely distributed in the Mediterranean but does not occur further south than Central Algeria.

Euchromius delicatalis (Hampson, 1919) is not dealt with, this species is not congeneric with *Euchromius* as will be pointed out in a later publication.

The sequence followed in the key does not imply any phylogenetic relation-

ship. It is merely meant to key out the different species as convenient as possible, starting with external characters and when necessary followed by characters of the genitalia. The sequence of the species in the text is only based on overall similarity. No phylogenetic conclusions should be drawn from this sequence. Data on labels of specimens belonging to newly described species are literally quoted. Countries between square brackets were not written on the labels.

DEPOSITORIES

BMNH	British Museum (Natural History), London
BRIO	Biosystematic Research Institute, Ottawa
DERR	Mr. G. Derra, Bamberg
JAWL	Mr. J. A. W. Lucas, Rotterdam
KBIN	Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussel
LNK	Landessammlungen für Naturkunde, Karlsruhe
LACM	Natural History Museum of Los Angeles County, Los Angeles
MHNG	Museum d'Histoire naturelle, Genève
MNHM	Museum National d'Histoire Naturelle, Paris
MRAC	Musée Royal de l'Afrique Centrale, Tervuren
NHMS	National Natural History Museum, Sofia
NMB	National Museum, Bulawayo
NMK	National Museums of Kenya, Nairobi
NMW	Naturhistorisches Museum, Wien
NRS	Naturhistoriska Riksmuseet, Stockholm
RMNH	Rijksmuseum van Natuurlijke Historie, Leiden
TMP	Transvaal Museum, Pretoria
TMMA	Termeszettudo manyi Museum Allattara, Budapest
UCEB	University of California, dept. of Entomology, Berkeley
ZMA	Instituut voor Taxonomische Zoologie, Amsterdam
ZMC	Universitetets Zoologiske Museum, Copenhage
ZSM	Zoologischen Sammlung des Bayerischen Staates, München

SYSTEMATICS

Euchromius Guenée, 1845

Euchromius Guenée, 1845: 324
Eromene Hübner, [1825]: 366 (nomen praeoccupatum)
Ommatopteryx Kirby, 1897: 274 (nomen novum pro *Euchromius* Guenée)

Type species: *Tinea bella* Hübner, 1796.

The genus is characterized by:

1. a single or double yellowish medial fascia,

2. a subterminal line on the forewing starting from the tornus, ending in the middle of the termen above the terminal black dots,
3. a row of large black terminal dots divided into several groups,
4. a divided row of silver spots behind the groups of terminal dots,
5. M1 of the hindwing starts above the cell.

MORPHOLOGY

Head (fig. 1). The relative size of the labial palp compared to the eye diameter can be used to separate some species. In the text this is given as labial palp two, meaning that the length of the labial palp is twice that of the eye diameter. The palps are usually creamy white to brown, with the upper and undersides of a lighter colour than the lateral sides. The scales of the frons are of two types, small fine sales, as in *E. discopis* (Hampson) and scales of the same size as on the rest of the thorax, e.g. *E. ocelleus* (Haworth). The colour of the frons is uniform or there is a darker centre. The vertex does not provide diagnostic characters. The shape of the frons is a very important character, it can be produced forward or not, bear one or more points, be rounded without

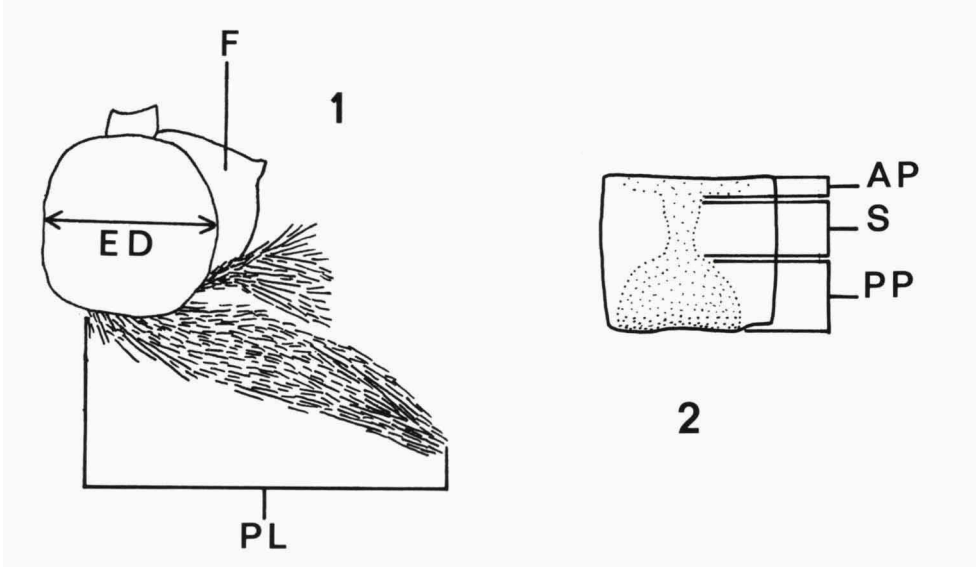

Fig. 1. Head. *E. vinculellus*, lateral aspect, scales removed from frons. F = frons, ED = eye diameter, PL = labial palp length.
Fig. 2. Sclerite of tergite VIII. AP = anterior part, S = stalk, PP = posterior part; *E. vinculellus*, slide RS 305, Jericho, Jordania.

a point, have a ventral ridge above the proboscis or not. The antenna are always serrate in males and setaceous in females. The scales on the antenna may be unicolourous or more or less clearly ringed.

Thorax. Thorax usually uniformly coloured, creamy white to brown. Patagia uniformly coloured or with two broad longitudinal dark stripes. Tegulae with a dark patch in the middle or uniformly creamy white to brown-grey. The tegulae provide a good diagnostic character.

Venation (fig. 3). The venation is very uniform and does not give characters at the species level.

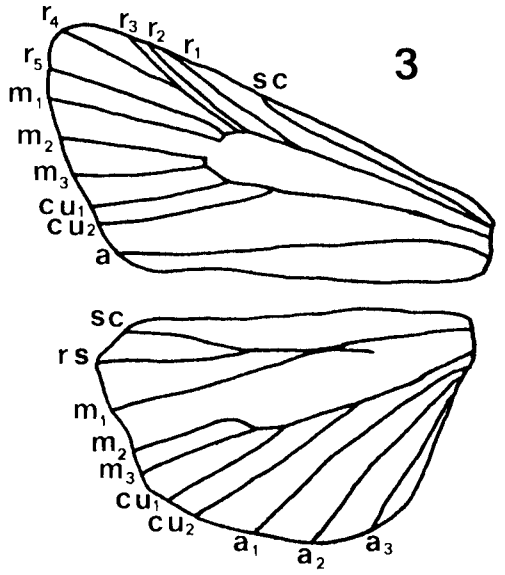

Fig. 3. Venation in *Euchromius*.

Wing pattern (fig. 4). The markings on the forewing offer good characters for distinguishing between species or species groups. Especially the formula of the black terminal dots is very important. Groundcolour white to creamy white, usually densely suffused with ochreous to dark brown or black scales. The anterior area is uniformly coloured or with a dark patch. The posterior area can bear no, a yellow or a dark spot. The medial fascia is single or double, straight to arched or bent beneath the costa. The ratio between the distance from the outer part of the fascia to the tornus and the total length of the dorsum gives a good diagnostic feature in some cases. The subterminal line is ochreous to dark brown and runs about midway between the termination of the posterior area and the terminal black dots or closer to the termination of

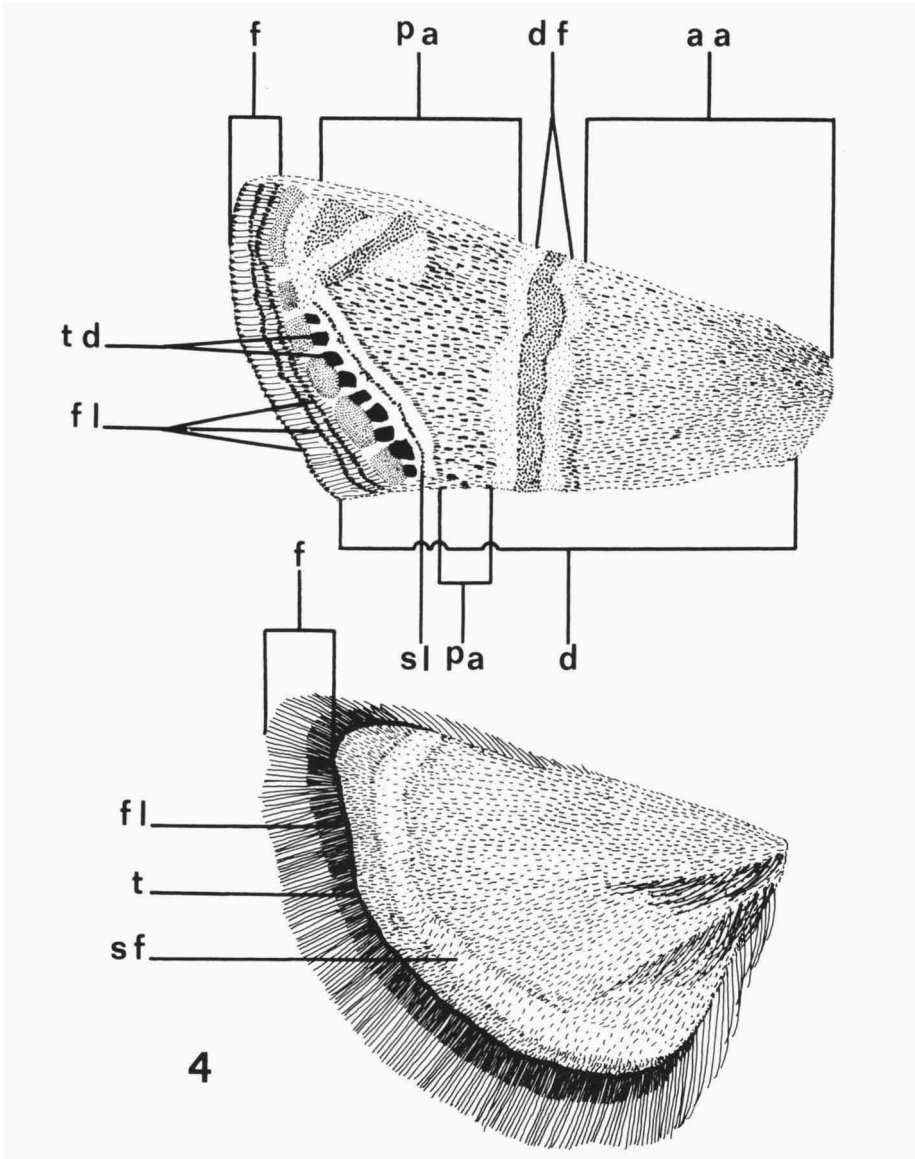

Fig. 4. Wing pattern. aa = anterior area; d = dorsum; df = double fascia; f = fringe; fl = fringe line; Pa = Posterior area; sf = subterminal fascia; sl = subterminal line; t = termen; td = terminal dots.

the posterior area leaving a broad area adjacent to the terminal black dots. The area adjacent to the terminal dots is usually white, but yellow in some species. The formula of the black terminal dots is calculated starting with the group

closest to the apex; 2-2-3-2 means that the black terminal dots start with a group of two dots closest to the apex, followed by a second group of two dots, a group of three dots and finally a group of two dots near the tornus. Posterior of each group is a highly shining silver spot. A similar silver spot(s) or line is found posterior of the yellow apical mark. The fringes of the forewing are evenly coloured or divided by up to three ochreous to dark brown lines. Hindwings white to grey-brown, usually with a subterminal fascia, fringes almost always with a darker line.

Abdomen (fig. 2). Characters of the abdomen are not frequently used, but the sclerotizations on tergite VIII of the male offer additional information.

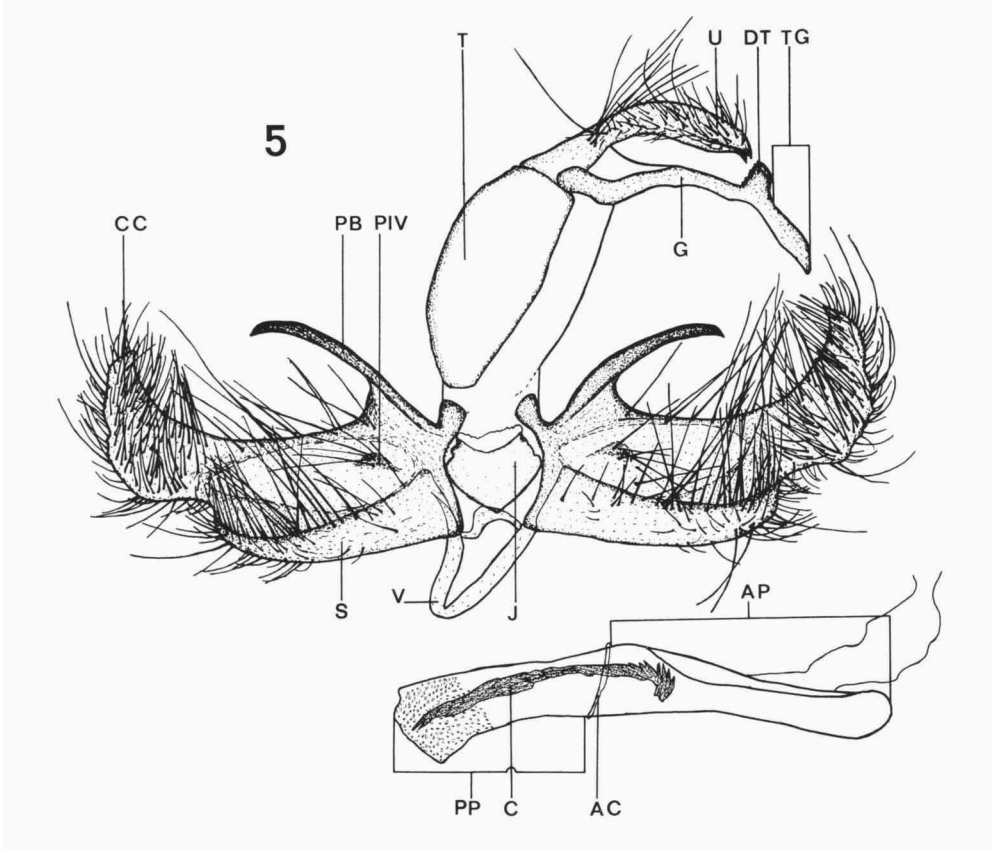

Fig. 5. Diagram of male genitalia in *Euchromius*; ventro-caudal aspect, valvae spread, aedoeagus separated lateral aspect. AC = anellus connection; AP = anterior part; C = cornuti; CC = cucullus; DT = dorsal thorns; G = gnathos; J = juxta; PB = processus basalis; PIV = processus inferior valvae; PP = posterior part; S = sacculus: T = tegumen; TG = terminal part of gnathos; U = uncus; V = vinculum.

The tympanal organs have not been studied in this revision. I hope to treat them in a fortcoming paper.

Genitalia. The terminology used is after Tuxen (1956). Male genitalia (fig. 5). The male genitalia offer excellent diagnostic characters. The uncus is usually slender, tapering to a sharp-pointed tip, but can also be broad and bilobed. The basal part can bear a crest or a differently shaped projection. The gnathos is usually longer than the uncus; at the base it may bear wing-shaped,

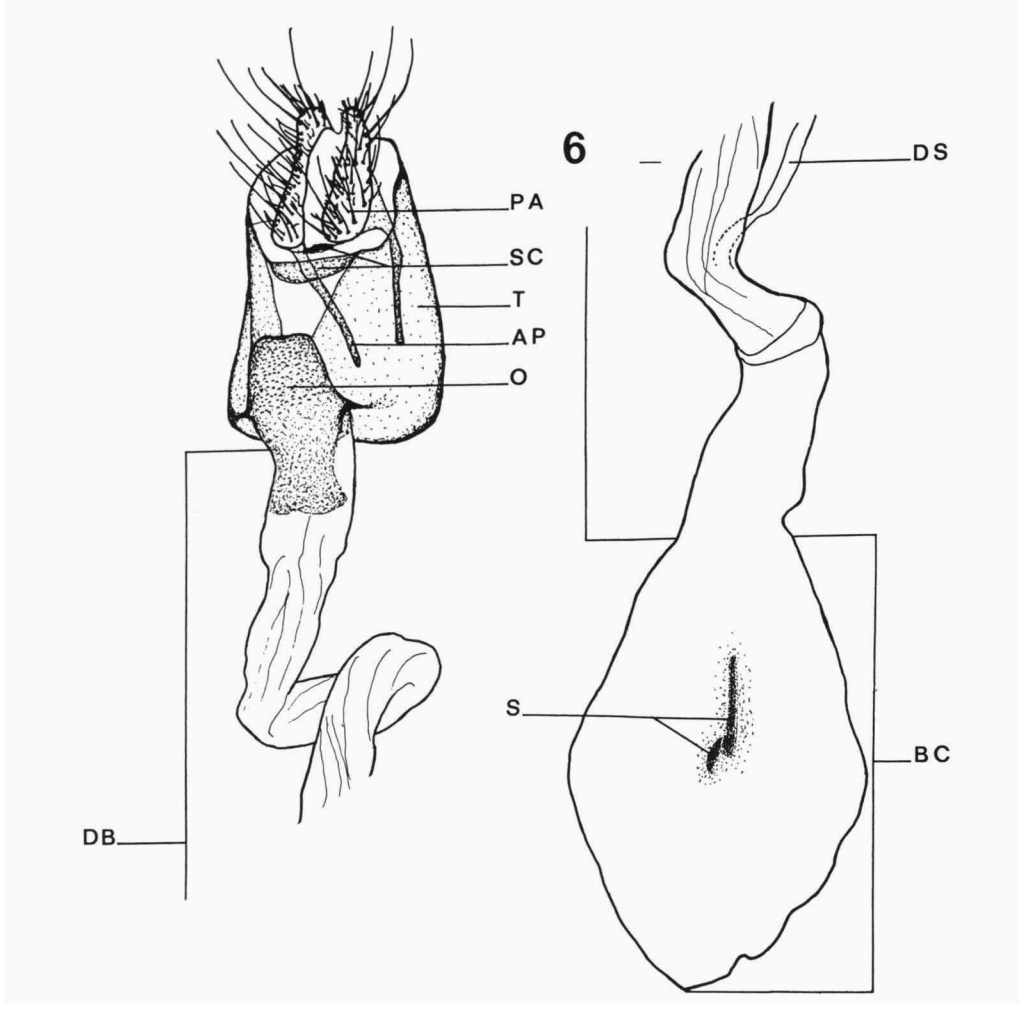

Fig. 6. Diagram of female genitalia in *Euchromius*; ventral aspect. AP = posterior apophyses; BC = bursa copulatrix; DB = ductus bursae; DS = ductus seminalis; O = ostium; PA = papillae anales; S = signa; SC = sclerotizations in membrane of tergite VIII; T = tergite.

dagger-shaped or dentated projections; it can be with or without two dorsal thorns, with a long or short terminal part. Tegumen in some species with a more or less clear appendix angularis. Sacculus very slender to very broad, with or without a processus. The processus can vary in length, bending upward or having a second broad or narrow lobe. The processus basalis is of variable size or reduced in some species. The processus inferior valvae can be single, double or absent. The cucullus is short, notched, broad, pointed, slender, dentate or bifurcate. The juxta is usually triangular to rectangular in shape, large or small. Vinculum broad to slender. Aedoeagus long and slender to short and swollen, usually with cornuti. Female genitalia (fig. 6). Papillae anales large to small, hairs of different size, or of nearly equal size and bent at the top. Apophyses posteriores short to long. Membrane of tergite VIII with or without sclerotizations. Edges of tergite VIII free or connected. Apophyses anteriores short or reduced. Ostium variable in size and form, lamella postvaginalis usually small, lamella antevaginalis small or large and complex of structure. Ductus bursae short or long, with or without sclerotizations, ductus seminalis narrow or starting broad and narrowing soon, with or without sclerotizations, bursa copulatrix small, large, elongated or round, with none, one, two or three signa.

ECOLOGY

Very little is known about the ecology of the different species. Except for *E. ocelleus* (Haworth) none of the larvae have been described. The larva of *E. ocelleus* has been described by Hinton (1943); it is supposed to live on dry vegetable material. Capps (1966) doubts this and states that the larvae live on the roots of corn and milo maize (*Sorghum*).

The species are found in desert regions, through macchia, dry woodlands and savannas into subtropical woodland and monsoon areas. None of the species known at present enters real tropical rainforest, but several occur at the edge of it. Fig. 67 shows the main vegetation types in Africa. Most species inhabit areas of low altitudes but some go up to 3250 m.

DISTRIBUTION

As for many other small Lepidoptera the distribution of most *Euchromius* species is poorly known. The range of several species is largely known but further collecting will give a more detailed view of their distribution. For many

other species only one or very few specimens are known and the maps give little information on their range.

For each species a list of localities is given under ,,Material examined". All localities are listed, also several which could not be found on maps or in gazetteers; the latter are of course not depicted on the distribution maps. The countries are listed starting with Ethiopia, Somalia southward through East Africa to South Africa, then northward towards West Africa. The localities within a country are listed alphabetically.

KEY TO THE SPECIES

1. Six or seven black terminal dots at termen of forewing 2
– Eight, nine or ten black terminal dots at termen of forewing 4
2. Medial fascia clearly angled under costa ..... *labellum*
– Medial fascia straight, not angled under costa 3
3. Frons without a corneous point. Area of forewing adjacent to black terminal dots white ..... *klimeschi*
– Frons with corneous point, sometimes very small but seldom absent. Area of forewing adjacent to black terminal dots yellow ..... *vinculellus*
4. Yellow medial fascia double, divided by a silvery or white line 5
– Yellow medial fascia single 14
5. Terminal dots arranged according to the formula 2-2-2-2-1 or 2-2-2-2-2, a group of three dots is never present ..... *matador*
– Terminal dots arranged according to the formula 1-2-3-2 or 2-2-3-2 or 2-2-3-1 6
6. Frons strongly produced forward, armed with several ridges (fig. 20) ..... *zephyrus*
– Frons produced forward or not, rounded or with one corneous point 7
7. Frons with a clear ventral ridge (fig. 19), strongly conical with a corneous point ..... *gnathosellus*
– Frons without a clear ventral ridge (figs. 15, 16, 17, 21), strongly conical or not, with or without a corneous point 8
8. ♂ (the male of *E. geminus* is unknown) 9
– ♀ 11
9. Aedoeagus with three groups of cornuti (fig. 58) ..... *ocelleus*
– Aedoeagus with one group of cornuti forming a packed row (figs. 52, 53) 10
10. Cucullus club-shaped, processus basalis normal-sized, not broadly blade-like at base. Two clear processi inferior valvae (fig. 52) ..... *tanalis*
– Cucullus pointed, processus basalis long, broadly blade-like at base. One

clear processus inferior valvae (fig. 53) ..... *mythus*
11. Ostium tooth-shaped (figs. 66, 67) 12
– Ostium toadstool or lip-shaped, not tooth-shaped (figs. 65, 71) 13
12. Ductus bursae with light sclerotizations near ductus seminalis. Sclerotization under ostium most prominent at the edges. Ostium longer than broad (ca. 1.5 times) (fig. 71) ..... *tanalis*
– Ductus bursae without sclerotizations near ductus seminalis. Sclerotization under ostium more in centre, less at the edges. Ostium as long as broad (fig. 72) ..... *mythus*
13. Signa unequal in size (fig. 70) ..... *geminus*
– Signa of equal size (fig. 76) ..... *ocelleus*
14. Medial fascia broad, entire length sprinkled with black scales, reminding of a fingerprint. Anterior area of the forewing for most part covered with black scales ..... *nigrobasalis*
– Medial fascia normal, with or without sprinkle of silvery scales. Anterior area of the forewing not covered with black scales, sometimes a few black scales present, anterior area usually greyish or brownish 15
15. Frons conical with a point (fig. 14). Fringes of forewing with several dark lines (fig. 4) ..... *donum*
– Frons bluntly produced forward, without a point (figs. 8, 9, 11, 12, 13, 46). Fringes of forewing evenly grey-brown 16
16. ♂ 17
– ♀ 22
17. Gnathos without two dorsal thorns and terminal part, processus basalis absent (fig. 38, 41, 47) 18
– Gnathos with two dorsal thorns and terminal part, processus basalis clearly visible (figs. 34, 43, 44) 20
18. Tegumen with appendix angularis (fig. 38) ..... *locustus*
– Tegumen without appendix angularis (fig. 41, 47) 19
19. Valvae with many heavy spines (fig. 41) ..... *erum*
– Valvae without heavy spines (fig. 47) ..... *aris*
20. Dorsal spike at base of processus of sacculus (fig. 34) ..... *discopis*
– No dorsal spike at base of processus of sacculus (figs 43, 44) 21
21. Processus basalis narrowing abruptly, anterior part of aedoeagus normal (fig. 43) ..... *viettei*
– Processus basalis narrowing more gradually, anterior part of aedoeagus very slender (fig. 44) ..... *hampsoni*
22. Bursa copulatrix with two signa (fig. 62, 66) 23
– Bursa copulatrix with one signum (figs. 60, 64, 67, 68) 24
23. Projection formed by connected edges of tergite VIII broadest at its base

(fig. 66) ..... *aris*
- Projection formed by connected edges of tergite VIII not broadest at base but more posteriorly (fig. 62) ..... *locustus*

24. Ductus bursae for most part strongly sclerotized with large cornuti (fig. 64) ..... *erum*
- Ductus bursae not strongly sclerotized (figs. 60, 67, 68) 25

25. Ostium tooth-shaped (fig. 60) ..... *discopis*
- Ostium not tooth-shaped (figs. 67, 68) 26

26. Lamella antevaginalis without anterior fold (fig. 67) ..... *viettei*
- Lamella antevaginalis with clear anterior fold (fig. 68) ..... *hampsoni*

CHECKLIST OF SPECIES

klimeschi Bleszynski, 1961
discopis (Hampson, 1919)
labellum spec. nov.
locustus spec. nov.
nigrobasalis spec. nov.
erum spec. nov.
aris spec.nov.
viettei Bleszynski, 1961
hampsoni (Rothschild, 1921)
vinculellus (Zeller, 1847)
donum spec. nov.
geminus spec. nov.
tanalis spec. nov.
mythus Bleszynski, 1970
matador Bleszynski, 1966
gnathosellus spec. nov.
zephyrus Bleszynski, 1962
ocelleus (Haworth, 1811)

DESCRIPTIONS OF SPECIES

Euchromius klimeschi Bleszynski, 1961
(figs. 7, 22, 33, 59, 78)

Euchromius klimeschi Bleszynski, 1961: 467, figs. 12, 20 (♂ genit.), 26 (♀ genit.). Holotype, ♂, "Natal Weenen 1-iii-1927 H. P. Thomasset", GS 5096 BM. Paratypes: ♀, "Natal Weenen xi.1927 H. P. Thomasset", GS 5097 BM. ♀, "Weenen 3/95 Natal", GS 1207 BM. All in British Museum (Natural History), London; Bleszynski & Collins, 1963: 306.
Ommatopteryx superbellus (Zeller, 1849), misidentification, De Joannis, 1927: 194.

Material — 14♂, 29♀. Ethiopia: Dana R., 1♀ (BMNH); Dogge Ganale R., 1♀ (BMNH). Somalia: Afgoi, 1♂, 1♀ (BMNH); Bulo Burtie, 1♀ (BMNH); Mogadiscio, 1♂, 1♀ (BMNH). Kenya: Isiolo, 1♂ (NMB); 20 km SW Isiolo 1♂, 1♀ (RMNH). Tanzania: Old Shinyanga, 1♀ (BMNH); Sibwesa, 2♀ (RMNH). Zaire: De Kindu, 1♀ (MRAC). Zambia: Magoye, 1♀ (BMNH). Zimbabwe: Bulawayo, 1♀ (JAWL); Sawmills, 4♀ (TMP), 1♂ (RTAS), 1♂ (BMNH). Madagascar: Betroka, 1♂ (BMNH). Mozambique: Mavalane, 1♀ (MNHN), 2♂, 2♀ (MHNG),

1♀ (RTAS). South Africa: Natal, 1♂ (BMNH); Nijlstroom, 1♀ (TMP); Sarnia, 1♀ (TMP); Verulam, 1♂, 2♀ (TMP); Weenen, 3♂, 3♀ (BMNH). Namibia: Kombat, 1♂ (BMNH); Otjitambi, 1♀ (BMNH).

Diagnosis. — This species differs from most African species in having only seven or six black terminal dots, formula 2-3-2 or 2-3-1. Differs from *E. labellum* by its straight medial fascia. The area adjacent to terminal black dots is white, yellow in *E. vinculellus*.

External characters (fig. 7). — Width 12-15 mm. Frons produced forward, rounded without point, brown, darker in centre, no ventral ridge; vertex light brown; labial palp two, sides creamy white at base, becoming brown, creamy white from above and below; maxillary palp light brown, dark ringed at base of last segment; antenna creamy white. Thorax light brown; patagia creamy white with two broad longitudinal light brown stripes; tegulae creamy white with dark patch in the middle. Forewing, groundcolour creamy white, densely suffused with ochreous brown to brown scales; medial fascia single, broad, nearly straight, running to one-fourth of the dorsum; subterminal line ochreous brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; seven or six black terminal dots, formula 2-3-2 or 2-3-1; fringes shiny, evenly white-grey to grey-brown. Hindwing grey-brown, subterminal fascia faintly present, termen darkly bordered; fringes creamy white with brownish line.

Tergite VIII (fig. 22). — Sclerite uniformly sclerotized, no clear pattern visible.

Male genitalia (fig. 33). — Uncus slender, tapering to sharp-pointed tip; gnathos slightly longer, slender, dorsal thorns absent; tegumen without appendix angularis; sacculus small, processus of sacculus absent, processus basalis small, finger-shaped, bent inwardly, processus inferior valvae small, melted with dorsal part of sacculus, cucullus slender, long, arched dorsally; juxta normal-sized, strongly sclerotized at tips; vinculum normal-sized; aedoeagus small, slender, one large, three minute cornuti.

Female genitalia (fig. 59). — Papillae anales normal; apophyses posteriores long; membrane of tergite VIII without sclerotizations; ostium tooth-shaped; ductus bursae short, sclerotized, two lateral folds; ductus seminalis narrow; bursae copulatrix oblong, three signa, one large, circular, distinctly dentate anterior of ductus seminalis, other two smaller, more or less round.

Ecology. — Recorded from thorn bush savanna and dense vegetation near a stream at 1500 m (Kenya). Also caught on *Brachystegia* clothed hills passing into savanna and plains, a region with little or no evergreen trees (Tanzania) (Kielland pers. comm.). Flight-period October-December and Februari-

March. In Somalia this species has also been caught in April, May and June.

Distribution (fig. 78). — East and South African species: Ethiopia, Somalia, Kenya, Tanzania, Zaire, Zambia, Zimbabwe, Madagascar, Mozambique, South Africa and Namibia.

Euchromius discopis (Hampson, 1919)
(figs. 8, 23, 34, 60, 79)

Ommatopteryx discopis Hampson, 1919: 534. Holotype, ♀, "Transvaal 1907-122 Pretoria 21.10.06 A. J. T. Janse II", GS 7049 BM, British Museum (Natural History), London.
Euchromius discopis (Hampson) Bleszynski & Collins, 1963: 306.

Material. — 23♂, 24♀. Zimbabwe: Bulawayo, 1♂ (BMNH); Devuli R., 1♀ (NMB); Kariba, 1♂ (RTAS); Victoria Falls, 3♂ (BMNH). Botswana: Thamalakane R. Maun, 1♂, 1♀ (NMB). South Africa: Messina, 1♀ (TMP); Modderfontein, 1♂ (BMNH); Pretoria, 1♀ (RTAS), 1♂, 3♀ (TMP), 1♂, 1♀ (ZMA), 1♀ (BMNH); Swellendam, 1♂ (BMNH); Weenen, 2♀ (BMNH). Namibia: Aarfarm, 1♀ (BMNH); Abachaub, 1♂, 1♀ (TMP); Hoffnung, 2♂, 5♀ (BMNH); Karibib, 2♂ (BMNH); Kuiseb, 1♀ (BMNH); Okahandja, 3♂, 3♀ (BMNH); Otjikoko, 1♂, 1♀ (BMNH); Otjiwarongo, 1♂ (BMNH); Windhoek, 3♂, 1♀ (BMNH).

Diagnosis. — Externally almost indistinguishable from *E. viettei, E. hampsoni, E. locustus, E. erum* and *E. aris*. In male genitalia this species differs from *E. viettei* and *E. hampsoni* in having a dorsal spike at the base of the processus of the sacculus. *E. discopis* differs from *E. erum* and *E. aris* in having a processus basalis. Females of above mentioned species can be distinguished from *E. discopis* in not having a simple tooth-shaped ostium.

External characters (fig. 8). — Width 14-16 mm. Frons bluntly produced forward, rounded without point, creamy white, darker in centre, no ventral ridge; vertex creamy white; labial palp two and a half, sides white to creamy white at base, becoming brown, brown from above, creamy white from below; maxillary palp brown, terminal part creamy white; antenna creamy white. Thorax light brown; patagia creamy white with two broad longitudinal brown stripes; tegulae creamy white with dark patch in the middle. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales, anterior part with large dark brown streak; medial fascia single, slightly arched, running to one-fourth of the dorsum; subterminal line ochreous brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white, seldom slightly yellow; eight or nine terminal black dots, formula 2-2-3-1 or 2-2-3-2; fringes shiny, evenly grey-brown. Hindwing grey-brown, subterminal fascia faintly present, termen darkly bordered; fringes creamy white with brownish line.

Tergite VIII (fig. 23). — Sclerite resembling a sand-glass, very lightly sclerotized, posterior part large, stalk short, anterior part very faint.

Male genitalia (fig. 34). — Uncus slender, tapering to sharply hooked, pointed tip, strongly sclerotized; gnathos longer, two dorsal thorns very large, terminal part long, ventrally bent, blunt; tegumen without appendix angularis; sacculus normal, processus of sacculus long, nearly reaching end of cucullus, strongly sclerotized, dorsal spike at base of processus of sacculus, processus basalis short, bent inwardly, processus inferior valvae at base of processus basalis, inconspicuous, valvae with fold dorsal of sacculus and one at base of processus of sacculus, cucullus normal-sized, nearly straight to slightly bent upward; juxta broad; vinculum normal-sized; aedoeagus swollen at anellus connection, one group of very small cornuti.

Female genitalia (fig. 60). — Papillae anales small; membrane of tergite VIII with very narrow sclerotized patch; ostium tooth-shaped; ductus bursae broad, narrowing posterior of ductus seminalis, very lightly sclerotized near ductus seminalis; ductus seminalis starting broad, narrowing soon; bursa copulatrix oblong, one signum.

Ecology. — Mainly found in steppe, dry woodland areas and macchia vegetations; up to 2000 m altitude. Specimens have been caught from October to April with peaks in October and Februari.

Distribution (fig. 79). — Confined to the southern part of Africa: Zimbabwe, Botswana, South Africa and Namibia.

Euchromius labellum spec. nov.
(figs. 35, 36, 37, 61, 79)

Material. — Holotype, ♀, "Afrika Kenya Samburu Game Reserve, Lodge 15.2.1975 LF leg. D. Buckh.", GS R.S. 393. Muséum d'Histoire naturelle, Genève. Paratypes: 1♂ (MHNG), 1♂, 1♀ (RTAS) same label as holotype; 1♂ same locality as holotype, but 12.2.1975; 1♂ same locality as holotype, but 13.2.1975; 2♂, 1♀ same locality as holotype, but 7.2.1975 (all MHNG); 1♂ same locality as holotype, but 7.2.1975, GS R.S. 394 (RTAS); 1♀, "E. of Amboseli Res. KENYA 3000' 4 March 1986 R. Leuschner", (LACM); 1♀, "Samburu Res. KENYA 2800' 6 March '86 R. Leuschner", (LACM).

Diagnosis. — Differs from *E. nigrobasalis* in lacking the black anterior part of the forewing. Distinguished from the other African species in having the medial fascia angled under the costa.

External characters (fig. 36). — Width 11-13 mm. Frons bluntly produced forward, rounded without point, creamy white darker in centre, no ventral ridge; vertex creamy white to light brown; labial palp two, sides creamy white

at base becoming brown to dark grey-brown, creamy white from above and below; maxillary palp creamy white, dark brown ringed at base of last segment; antenna creamy white to grey-brown, dark ringed. Thorax light to dark brown; patagia light brown with two broad longitudinal brown stripes; tegulae light brown with dark patch in the middle. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales, anterior part with large brown streak, posterior part with more or less clear dark brown spot; medial fascia single, angled under costa, running to one-third of the dorsum; subterminal line brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; seven or six terminal black dots, formula 2-3-2, 2-3-1 or 1-2-3-1; fringes shiny evenly yellow grey-brown. Hindwing creamy white to grey, subterminal fascia present, termen darkly bordered, fringes creamy white with brown line.

Tergite VIII (fig. 37). – Sclerite lightly sclerotized, posterior part broad, anterior part not visible.

Male genitalia (fig. 35). — Uncus normal, tip bilobed; gnathos longer, dorsal thorns small, terminal part long, ventrally bent; tegumen without appendix angularis; sacculus broad, processus of sacculus slender, long, strongly sclerotized, dorsal spike at base of processus of sacculus, processus basalis short, bent inwardly, starting broad at base narrowing very abrubtly, processus inferior valvae at base of processus basalis, very small, valvae with small fold dorsal of sacculus, cucullus normal sized, nearly straight to slightly bent upward; juxta small, triangular; vinculum normal sized; aedoeagus short, one clear cornutus connected to three faint sclerotizations.

Female genitalia (fig. 61). — Papillae anales normal; membrane of tergite VIII posteriorly with faint sclerotization, more anteriorly punctated sclerotizations, edges connected; ostium broad rounded, tongue-shaped; ductus bursae broad, narrowing posterior of ductus seminalis, very lightly sclerotized near ductus seminalis; ductus seminalis starting broad narrowing soon; bursa copulatrix roundish, one circular signum.

Ecology. — Specimens were caught in Februari and March at an altitude of up to 1000 m.

Distribution (fig. 79). — Sofar only known from Kenya.

Euchromius locustus spec. nov.
(figs. 9, 38, 39, 62, 80)

Material. — Holotype, ♀, "Zambia Mbala 3-8.x.1974 Locust Cont. Ctr. BM.1975-92.", GS 12086 BM. British Museum (Natural History), London. Paratypes: 1♀, "Tanzania Sibwesa Mpanda Dec. 1969 J. Kielland", GS R.S. 153 (RMNH). 1♀, [Congo] "Ht Katanga Kyala 4.9.29 J.

Romieux", GS R.S. 389 (MHNG). 1♀, [Congo] "Ht Katanga Kyala 7.8.29 J. Romieux", GS R.S. 390 (MHNG). 1♂, [Congo] "Ht Katanga Tshinkolbwe 24.9.31 J. Romieux", GS R.S. 391 (MHNG). 1♂, [Congo] "Ht Katanga Tshinkolbwe 6.10.30 J. Romieux", GS R.S. 392 (RTAS).

Diagnosis. — Externally almost indistinguishable from *E. erum, E. aris, E. discopis, E. viettei* and *E. hampsoni*. The male of *E. locustus* can be distinguished from *E. discopis, E. viettei* and *E. hampsoni* in lacking the dorsal thorns on the gnathos. It differs from the males of *E. erum* and *E. aris* in having an appendix angularis. Differs in female genitalia from *E. viettei, E. hampsoni* and *E. discopis* in having two signa, from *E. aris* in having the projection, formed by the connected edges of tergite VIII, broadest posteriorly of the base.

External characters (fig. 9). — Width 14-17 mm. Frons bluntly produced forward, without point, creamy white, brown-yellow in centre, very minute ventral ridge; vertex creamy white to brown-yellow; labial palp two, sides creamy white at base, becoming brown, creamy white from above and below; maxillary palp creamy white, brown ringed at base of last segment; antenna creamy white. Thorax creamy white to light brown; patagia creamy white with two broad longitudinal brown stripes; tegulae creamy white with dark patch in the middle. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales, sometimes dark brown spot in the middle of posterior area; medial fascia single, straight or nearly so, running to one-fourth to one-third of the dorsum; subterminal line ochreous to dark brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; nine black terminal dots, formula 2-2-3-2; fringes creamy white at base then yellow-brown. Hindwing grey-brown, subterminal fascia present, termen darkly bordered; fringes creamy white with brownish line.

Tergite VIII (fig. 39). — Sclerite very lightly sclerotized.

Male genitalia (fig. 38). — Uncus slender, tip minutely bilobed; gnathos longer, very slender, dorsal thorns absent; tegumen with very large appendix angularis; sacculus normal, processus of sacculus short, armed with several heavy spines, processus basalis absent, processus inferior valvae absent, costa strongly elevated, armed with several heavy spines, cucullus very slender, bent upward; juxta very large, triangular lateral sides more strongly sclerotized; vinculum rectangular; aedoeagus short, tapering posteriorly of anellus connection, one group of cornuti.

Female genitalia (fig. 62). — Papillae anales normal; no sclerotization on membrane of tergite VIII; tergite VIII laterally indented, edges connected,

forming diamond-shaped, dorsally bent, projection; ostium complex, broad, many waved folds, lamella postvaginalis square, corners rounded; ductus bursae short, anterior part broad, narrowing posteriorly of ductus seminalis, sclerotized near ductus seminalis; ductus seminalis starting broad, narrowing soon; bursa copulatrix roundish, two round signa, one slightly larger than the other.

Ecology. — The Tanzanian specimen was caught in *Brachystegia* clothed hills passing into savanna and plains, a region with little or no evergreen trees (Kielland pers. comm.). Specimens caught in August, September, October and December, one female was caught at 1100 m altitude.

Distribution (fig. 80). — Tanzania, Zaire and Zambia.

Euchromius nigrobasalis spec. nov.
(figs. 10, 24, 40, 63, 81)

Material. — Holotype, ♂, [South Africa] "Pretoria 11.x.1958 L. Vari", GS R.S. 155, Transvaal Museum, Pretoria. Paratypes: 1♂, Pretoria 16.x.1958 L. Vari GS R.S. 129 (RTAS); 1♀, Pretoria x.'22 A. J. T. Janse GS R.S. 130 (TMP); 1♀, Pretoria 23.x.1958 L. Vari (TMP); 1♀, Pretoria x.'22 A. J. T. Janse (BMNH); 1♂, Pretoria 15.x.20 A. J. T. Janse (BMNH); 1♀, Chirundu Bridge Zambezi River Rhodesia 4-xi-1965 Nat. Museum S. Rhodesia (NMB).

Diagnosis. — This dark species can be separated from the other African species by its anterior area being black for most part, a broad single medial fascia which is sprinkled with black scales giving it a fingerprint impression.

External characters (fig. 10). — Width 12-16 mm. Frons produced forward, rounded without point, creamy white, no ventral ridge; vertex creamy white, brown in centre; labial palp one and a half, sides white from above and below; maxillary palp brown, terminal part creamy white; antenna grey-brown. Thorax dark brown to black; patagia creamy white with two broad, longitudinal, dark brown stripes; tegulae creamy white with dark patch in the middle. Forewing, groundcolour white, densely suffused with dark brown to black scales, anterior area nearly black; medial fascia single, sprinkled with black, reminding of a fingerprint, angled under costa, broadening at inner margin, running to one-fourth of the dorsum; subterminal line brown, faint, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; eight or nine black terminal dots, formula 2-2-3-1 or 2-2-3-2; fringes shiny, evenly lead-grey. Hindwing grey, subterminal fascia faintly present, termen darkly bordered; fringes creamy white with greyish line.

Tergite VIII (fig. 24). — Sclerite very lightly sclerotized, stalk very short, slender, posterior part large, convex, anterior part very narrow. Sclerite resembling a wineglass turned upside down.

Male genitalia (fig. 40). — Uncus very broad, tip bilobed, hanging over the gnathos; gnathos longer, very slender, dorsal thorns absent; tegumen with very large appendix angularis; sacculus broad, processus of sacculus short, but very broad, armed with several heavy spines, processus basalis absent, processus inferior valvae absent, costa forming a strong fold, armed with several heavy spines, cucullus very slender, bent upward; juxta very large, triangular, lateral sides sclerotized, vinculum rectangular; aedoeagus short, tapering posteriorly of anellus connection, one circular group of cornuti.

Female genitalia (fig. 63). — Papillae anales normal; no sclerotization on membrane of tergite VIII; tergite VIII laterally indented, edges connected, forming broad, waved, lip-shaped projection; ostium complex, lamella postvaginalis square; ductus bursae short, broad, narrowing posterior of ductus seminalis, sclerotized near ductus seminalis; ductus seminalis starting broad, narrowing soon; bursa copulatrix drop-shaped, two roundish signa, one large, one small.

Ecology. — Unknown. The specimens were caught in October and November.

Distribution (fig. 81). — Zimbabwe and South Africa.

Euchromius erum spec. nov.
(figs. 11, 23, 41, 64, 81)

Material. — Holotype, ♀, "Kenya: 5 mi NE Kargi Marsabit District elev. ca 1500 feet 28 Jan.-3 Feb. 1973 Julian P. Donahue", GS R.S. 365. Paratypes: 1♂, 8♀, "Samburu Res. KENYA 2800' 6 March '86 R. Leuschner", all Natural History Museum of Los Angeles County, Los Angeles; 1♂, [Ethiopia] "Haro-Ali Gurra 6.April 01. (C. V. Erlanger)", GS 17600 BM, (BMNH); 1♂, 1♀, "Samburu Res. KENYA 2800' 6 March '86 R. Leuschner", (RTAS).

Diagnosis. — Externally very similar to *E. discopis, E. viettei, E. hampsoni, E. locustus* and *E. aris*. Differs from *E. discopis, E. viettei* and *E. hampsoni* in lacking the two dorsal thorns on the gnathos and the almost totally reduced processus basalis. Can be separated from *E. locustus* in lacking the appendix angularis, from *E. aris* in having heavy spines on the valvae. The ductus bursae is strongly sclerotized in the upper two-third this lacking in the above mentioned species.

External characters (fig. 11). — Width 14 mm. Frons bluntly produced

forward, without point, creamy white, brown in centre, minute ventral ridge; vertex creamy white, brown in middle; labial palp two, sides white at base, becoming brown, creamy white from above and below; maxillary palp brown, terminal part creamy white; antenna grey-brown. Thorax creamy white to brown; patagia creamy white with two broad, longitudinal, brown stripes; tegulae creamy white with dark patch in the middle. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales, anterior area sometimes with dark grey streak; medial fascia single, running to one-fourth of the dorsum; subterminal line ochreous brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; nine or eight black terminal dots, formula 2-2-3-2 or 2-2-3-1; fringes shiny, lead-grey. Hindwing light brown, subterminal fascia absent, termen darkly bordered; fringes creamy white with greyish line.

Tergite VIII (fig. 23). — Sclerite very lightly sclerotized, stalk slender, posterior part small, convex, anterior part very narrow.

Male genitalia (fig. 41). — Uncus broad, tip bilobed; gnathos slightly longer, very slender, dorsal thorns absent; tegumen without appendix angularis; anellus armed with a heavily sclerotized scale-shaped projection with a dorsal spine at its base; sacculus very broad, processus of sacculus short, armed with several heavy spines, processus basalis very reduced, only visible as more strongly sclerotized part of the costa, processus inferior valvae absent, costa elevated, armed with many heavy spines, cucullus very slender, slightly bent upward; juxta triangular; vinculum rectangular; aedoeagus short, tapering posteriorly of anellus connection, one group of cornuti.

Female genitalia (fig. 64). — Papillae anales normal; no sclerotization on membrane of tergite VIII; tergite VIII laterally indented, edges connected, forming blackberry-like projection; ostium complex; ductus bursae short, broad, anterior two-third densely sclerotized with spines, lightly sclerotized near ductus seminalis; ductus seminalis starting broad, narrowing soon; bursa copulatrix roundish, one round signum.

Ecology. — The specimens were caught in January, February, March and the first week of April. Found up to ca. 900 m altitude.

Distribution (fig. 81) — Ethiopia and Kenya.

Euchromius aris spec. nov.
(figs. 45, 46, 47, 48, 66, 82)

Material. — Holotype, ♂, "Samburu Res. KENYA 2800' 6 March '86 R. Leuchner", GS R.S. 420. Paratypes: 7♂, 18♀, same label as holotype, all in Natural History Museum of Los Angeles County, Los Angeles; 2♂, 2♀, same label as holotype, (RTAS).

Diagnosis. — Externally indistinguishable from *E. discopis, E. viettei, E. hampsoni, E. locustus* and *E. erum*. The males of *E. aris* differ from the first three mentioned species in not having a terminal part of the gnathos. *E. aris* differs from *E. locustus* and *E. erum* in not having heavy spines on the valvae. In female genitalia *E. aris* can be distinguished from *E. discopis, E. viettei, E. hampsoni* and *E. erum* in having two signa. It differs from *E. locustus* in having the broadest part of the projection formed by the connected edges of tergite VIII at the base; in *E. locustus* it is situated more posteriorly.

External characters (fig. 46). — Width 12-14 mm. Frons bluntly produced forward, without point, creamy white, brown in centre, minute ventral ridge; vertex creamy white to brown; labial palp two, sides white at base, becoming brown, creamy white from above and below; maxillary palp brown, terminal part creamy white; antenna not clearly greyish ringed. Thorax creamy white to brown; patagia creamy white with two broad longitudinal brown stripes; tegulae creamy white with dark patch in the middle. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales, anterior area with large dark brown streak; medial fascia single, straight or nearly so, running to one-third to one-fourth of the dorsum; subterminal line brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; nine black terminal dots, formula 2-2-3-2; fringes shiny, creamy white at base becoming lead-grey to grey-brown. Hindwing grey to light brown, subterminal fascia faintly present, termen darkly bordered; fringes creamy white with grey-brown line.

Tergite VIII (fig. 45). — Sclerite very lightly sclerotized, only posterior part visible.

Male genitalia (figs. 47, 48). — Uncus stout, tapering to sharply pointed tip; gnathos short, curved upward at tip, dorsal thorns absent; tegumen without appendix angularis; sacculus very broad, processus of sacculus absent, processus basalis absent, processus inferior valvae very faint, costa elevated forming strong dorsal projection, cucullus bent upward, pointed, dorsally with strong sclerotized zone; juxta triangular with two dorsal spines; vinculum long; aedoeagus normal with one long cornutus.

Female genitalia (fig. 66). — Papillae anales normal; no sclerotization on membrane of tergite VIII; tergite VIII laterally slightly indented, edges connected, forming lip-shaped projection which is bent dorsally, ostium complex, lamella postvaginalis square; ductus bursae short, broad, lightly sclerotized near ductus seminalis; ductus seminalis starting broad, narrowing soon; bursa copulatrix roundish, two round signa.

Ecology. — Unknown, all specimens were caught on March 6 at an altitude

of ca. 900 m.

Distribution (fig. 82). — Kenya.

Euchromius viettei Bleszynski, 1961
(figs. 12, 26, 42, 43, 67, 82)

Euchromius viettei Bleszynski, 1961: 455, figs. 3, 4, 14 (♂ genit.). Holotype, ♂, ,,Arabia: Hejaz, Jidda. 22.XI.1926 H. St. J. B. Philby", GS 5091 BM. Paratype: 1♂, same label as holotype, but date 9-XII-1926. Both in British Museum (Natural History), London; Bleszynski & Collins 1963: 308; Bleszynski 1965: 81.

Material. — 6♂, 3♀. Chad: Binni Erdi, 4♂, 2♀ (BMNH). Saudi Arabia: Hejaz, 2♂, 1♀ (BMNH).

Diagnosis. — Externally almost indistinguishable from *E. locustus, E. hampsoni, E. discopis, E. erum* and *E. aris*. In male genitalia *E. viettei* differs from *E. locustus, E. erum* and *E. aris* in having a processus basalis, from *E. discopis* in lacking a dorsal spike at the base of the processus of the sacculus, from *E. hampsoni* in having an abruptly narrowing processus basalis. In female genitalia it differs from *E. locustus* and *E. aris* in only having one signum, from *E. erum* in lacking the strongly sclerotized upper part of the ductus bursae, from *E. hampsoni* in lacking the anterior fold of the lamella antevaginalis, from *E. discopis* in having a complex, strongly wavy ostium.

External characters (fig. 12). — Width 14 mm. Frons bluntly produced forward, without point, creamy white, brown-yellow in centre, very minute ventral ridge; vertex brown-yellow; labial palp two, sides creamy white at base, becoming brown, creamy white to brown from above and below; maxillary palp creamy white to brown, dark brown ringed at base of last segment; antenna creamy white, from about the middle darkly ringed. Thorax creamy white to brown; patagia creamy white with two broad, longitudinal, brown stripes; tegulae creamy white with dark patch in middle. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales; medial fascia single, straight, running to one-fourth of the dorsum; subterminal line dark brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; nine black terminal dots, formula 2-2-3-2; fringes creamy white becoming yellow-brown at tips. Hindwing grey to light brown, subterminal fascia present, termen darkly bordered; fringes creamy white with brownish line.

Tergite VIII (fig. 26). — Sclerite normally sclerotized, posterior part small, stalk broad, anterior part large.

Male genitalia (figs. 42, 43). – Uncus normal, tapering to a sharp-pointed tip; gnathos longer, with two dorsal thorns, terminal part long; tegumen without appendix angularis; sacculus broad; processus of sacculus forming short fold and heavily spined lobe, processus basalis broad at base narrowing very abruptly, bent inward and ventrally, processus inferior valvae very small, inconspicuous, cucullus small, more or less bent upward; juxta more or less rectangular; vinculum slightly rectangular; aedoeagus short, one patch of minute cornuti.

Female genitalia (fig. 67). — Papillae anales normal; membrane of tergite VIII with sclerotized patch; tergite VIII laterally indented, edges connected, forming a minute projection; ostium complex, much folded, lamella postvaginalis rectangular, ductus bursae short, anteriorly broad, narrowing posteriorly of ductus seminalis, sclerotized near ductus seminalis, ductus seminalis starting broad, narrowing soon, bursa copulatrix roundish, one round signum.

Ecology. — Unknown. Inhabits the desert belt from Chad to Oman.

Distribution (fig. 82). — In Africa this species is only known from Chad, outside Africa it also occurs in Saudi Arabia and Oman.

Remarks. — The female specimen depicted in Bleszynski (1965) (Arabia, Jidda Hejaz 22.XI.1926) is lost, the slide GS 3126 BM is still in BMNH.

Euchromius hampsoni (Rothschild, 1921)
(figs. 13, 44, 68, 82)

Ommatopteryx hampsoni Rothschild, 1921: 220. Holotype, ♂, „Azzal N.of Agades 13. July 20. (A. Buchanan)", GS 5676 BM. Paratype: 1♀, „Aouderas Asben, 23. July 20.", GS 5099 BM. Both in British Museum (Natural History), London.

Euchromius hampsoni (Rothschild, 1921) Bleszynski 1961: 454; Bleszynski & Collins 1963: 306; Bleszynski 1965: 80.

Material. — 1♂, 1♀. Niger: Azzal, 1♂ (BMNH); Aouderas, 1♀ (BMNH).

Diagnosis. — Externally almost indistinguishable from *E. locustus, E. viettei, E. discopis, E. erum* and *E. aris*. Differs in male genitalia from *E. erum* and *E. aris* in having a processus basalis, from *E. discopis* in lacking a dorsal spike at the base of the processus of the sacculus, from *E. viettei* in having a more gradually tapering processus basalis. In female genitalia *E. hampsoni* differs from *E. locustus* and *E. aris* in having only one signum, from *E. erum* in lacking the strongly sclerotized upper part of the ductus bursae. It can be distinguished from *E. viettei* in having an anterior fold in the lamella antevaginalis. It differs from *E. discopis* in having complex, strongly wavy ostium.

External characters (fig. 13). — Width 14 mm. Frons bluntly produced forward, without point, creamy white, brown-yellow in centre, ventral ridge present; vertex brown-yellow; labial palp two, sides creamy white at base, becoming brown, creamy white from above and below; maxillary palp creamy white, dark brown ringed at base of last segment; antenna creamy white, from about the middle inconspicuously darkly ringed. Thorax light brown-yellow; patagia creamy white with two broad longitudinal brown stripes; tegulea creamy white with dark patch in middle. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales; medial fascia single, straight or nearly so, running to one-fourth of the dorsum; subterminal line ochreous to dark brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; eight or nine black terminal dots, formula 2-2-3-1 or 2-2-3-2; fringes creamy white at base, rest yellow-brown. Hindwing creamy white to light brown, subterminal fascia present, termen darkly bordered; fringes creamy white with brownish line.

Tergite VIII. — Due to the poorly dissected abdomen it is not possible to give a description of the tergite.

Male genitalia (fig. 44). — Uncus normal, tapering to sharp-pointed tip; gnathos longer, with two dorsal thorns, terminal part long; tegumen without appendix angularis; sacculus broad, processus of sacculus in the form of a fold and a heavy spined lobe, processus basalis broad at base, tapering soon, bent inwardly, processus inferior valvae small, inconspicuous, cucullus slender, slightly bent; juxta broadly rectangular; vinculum rectangular; aedoeagus small, starting very slender, widening at anellus connection, one circular group of cornuti.

Female genitalia (fig. 68). — Papillae anales normal; no sclerotization on membrane of tergite VIII; tergite VIII laterally indented, edges connected; ostium complex, strongly folded, lamella postvaginalis square, lamella antevaginalis with clear anterior fold; ductus bursae short, anterior broad, narrowing posterior of ductus seminalis, sclerotized near ductus seminalis; ductus seminalis starting broad, narrowing soon; bursa copulatrix roundish, one round signum.

Ecology. — Unknown. The specimens were caught in July.

Distribution (fig. 82). — Niger.

Euchromius vinculellus (Zeller, 1847)
(figs. 1, 2, 49, 50, 51, 65, 91)

Crambus vinculellus Zeller, 1847: 760. Lectotype, ♂, GS 628 B1. Institut f. Spezielle Zoologie, Berlin.

Ommatopteryx corsicalis Hampson, 1919: 534. Holotype, ♂, ,,Vizzavona Corsica 11. VI.1899 Wlsm 1910. 166", GS 5647 BM. British Museum (Natural History), London.

Ommatopteryx asbenicola Rothschild, 1921: 220. Holotype, ♀, ,,Aouderas, Asben 26 July 20 (A. Buchanan)", GS 5675 BM. British Museum (Natural History), London.

Eromene joiceyella Schmidt, 1934: 538. Holotype, ♂, ,,42.27. Timmel S.E. Slopes Great Atlas Morocco 20. V. 27 at light Talbot & Le Cerf", British Museum (Natural History), London. Paratype, 1♂, ,,42.27. Timmel Zone of Lavenders Great Atlas Morocco 19. V. 27 at light Talbot & Le Cerf", Muséum National d'Histoire Naturelle, Paris. Paratypes two (not seen), ,,Timmel Great Atlas 18/21. V. 27 at light in rain Talbot & Le Cerf", Termeszettudo manyi Museum Allattarra, Budapest.

Eromene bahrlutella Amsel, 1949: 236. Lectotype, ♂, ,,Sudende des Toten Meeres 15.-27. 3. 33 Aigner leg. H. Amsel", GS 320. Paralectotype, 1♀, same data as lectotype, GS 3709. Both in Landessammlungen für Naturkunde, Karlsruhe. Paralectotype, 1♂, ,,7. 10. 38 Awhaz", GS 12386 BM. British Museum (Natural History), Londen.

Material. — 5♂, 3♀. Kenya: South Horr, 1♀ (LACM). Niger: Aouderas, 1♀ (BMNH). France: Corse, 1♂ (BMNH). Morrocco: Timmel, 1♂ (BMNH), 1♂ (MNHN). Israel: South end Dead Sea, 1♂, 1♀ (LNK). Irak: Awhaz, 1♂ (BMNH).

Diagnosis. — This species is easily distinguished from all other Afrotropical species in having a single medial fascia in combination with six or seven black terminal dots and a yellow area adjacent to the terminal dots.

External characters (fig. 1). — Width 13-21 mm. Frons produced forward with or without point, creamy white to dark brown-grey, no ventral ridge; vertex creamy white to brown; labial palp two to two and a half, sides creamy white becoming light brown, creamy white from above and below; maxillary palp creamy white to light brown; antenna creamy white. Thorax creamy white to light brown-grey; patagia creamy white to light brown-grey with two very inconspicuous, broad longitudinal, light brown stripes; tegulae creamy white to light brown-grey evenly mottled. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales; medial fascia single, arched to nearly straight, running up to one-fourth to one-third of the dorsum; subterminal line brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots yellow, seldom slightly white; six or seven black terminal dots, formula 2-3-1 or 2-3-2; fringes shiny, evenly grey-brown. Hindwing light brown to grey-brown, subterminal fascia present or not, termen darkly bordered; fringes creamy white with brownish line.

Tergite VIII (fig. 2). — Normally sclerotized, posterior part larger than anterior, rounded.

Male genitalia (figs. 49, 50, 51). — Uncus rather broad, ending in double pointed tip; gnathos longer, many minute dorsal thorns; tegumen without appendix angularis; sacculus normal, processus of sacculus broad, strongly sclerotized, ending in small hook, processus basalis broad at base, rounded to

sharp-pointed, processus inferior valvae small, indistinct, cucullus club-shaped, rather variable in length; juxta normal; vinculum normal; aedoeagus slender, bent, one bent, dentate apical sclerite, one small posterior cornutus.

Female genitalia (fig. 65). — Papillae anales normal; membrane of tergite VIII without sclerotizations; ostium simple, lip-shaped; ductus bursae long, second part broad, strong sclerotized pouch under ostium, second patch of strong sclerotization under pouch; ductus seminalis narrow; bursa copulatrix rounded, indistinctly separated from ductus bursae, no signum.

Ecology. — The two specimens of this species found in the Afrotropical Region were caught in July (Niger) and January (Kenya). The latter was caught at 1650 m.

Distribution (fig. 91). — The main distribution of this species is not Afrotropical but Palaearctic. It occurs from Spain, Morocco east to Saudi Arabia, Oman and Afghanistan. In the Afrotropical Region it is only known from Niger and Kenya. The distribution outside the Afrotropical Region will be discussed in more detail in a forthcoming paper. In fig. 91 the distribution of this species has been omitted for the following countries: Mauretania, Morocco, Algeria, Tunesia, Libya, Sudan and Egypt.

Remarks. — This species is rather variable, the processus basalis shows some geographical variation. In Afghanistan and Iran the processus basalis is more or less rounded, it starts developing a small point in Jordania and Israel which becomes larger when going west towards Spain and Morocco. Also the frons shows some slight variation but this is not geographically determined. As depicted in fig. 1 the frons has a minute point, but in a very few specimens the point is absent.

Euchromius donum spec. nov.
(figs. 14, 69, 83)

Material. — Holotype, ♀, [Ethiopia] „Haro-Ali, Gurra 6. April 01. (C. V. Erlanger).", GS 12111 BM. British Museum (Natural History), London.

Diagnosis. — *E. donum* differs from *E. locustus, E. erum, E. aris, E. viettei, E. hampsoni* and *E. discopis* in having a conical frons with clear point.

External characters (fig. 14). — Width 14 mm. Frons produced forward, with clear point, creamy white, slightly brown in centre, very minute ventral ridge; vertex creamy white; labial palp two, sides creamy white at base, becoming brown, creamy white from above and below; maxillary palp creamy

white, brown at base of last segment; antenna creamy white,from about the middle darkly ringed. Thorax creamy white to brown; patagia creamy white with two broad, longitudinal, brown stripes; tegulae creamy white with dark patch in the middle. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales, anterior part dark brown, dark brown spot in the middle of posterior area; medial fascia single, straight, running to one-third of the dorsum; subterminal line brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white to yellow; nine or eight black terminal dots, formula 2-2-3-2 or 2-2-3-1; fringes creamy white with two brown lines. Hindwing grey-brown, subterminal fascia absent, termen darkly bordered; fringes creamy white with brownish line.

Female genitalia (fig. 69). — Papillae anales normal; no sclerotization on membrane of tergite VIII; edges of tergite VIII connected; rectangular groove posterior to tongue-shaped ostium; ductus bursae normal, partly sclerotized; ductus seminalis normal; bursa copulatrix large, elongated, no signa.

Ecology. — Unknown. Specimen caught in the first week of April.

Distribution (fig. 83). — Only known from the holotype, Ethiopia.

Euchromius geminus spec. nov.
(figs. 15, 70, 84)

Material. — Holotype, ♀, [Kenya] ,,Nairobi, BEA. may 1927. (D. M. Hopkins)", GS 17483 BM. British Museum (Natural History), London.

Diagnosis. — Externally indistinguishable from *E. mythus* and *E. tanalis*. Differs from *E. matador* in the formula of the black terminal dots: 2-2-2-2-1 or 2-2-2-2-2 in *E. matador*, 2-2-3-1 in *E. geminus*. The African specimens of *E. ocelleus* have a less strongly produced frons (figs. 15, 21). The female genitalia differ from *E. ocelleus* in having a large and small signum, whereas *E. ocelleus* has two large signa. The ostium is broadly triangular in *E. geminus*, not tooth-shaped as in *E. mythus* and *E. tanalis*, nor with ear-like projections as in *E. matador*.

External characters (fig. 15). — Width 14.5 mm. Frons sharply produced forward, with clear point, creamy white to light brown, no ventral ridge; vertex creamy white; labial palp three, sides creamy white at base, becoming light brown, creamy white from above and below; maxillary palp creamy white, dark brown ringed at base of last segment, terminal part creamy white; antenna creamy white. Thorax brown; patagia light brown; tegulae brown,

evenly mottled. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales; median fascia double, slightly arched, running to one-fifth to one-fourth of the dorsum; subterminal line ochreous brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; eight black terminal dots, formula 2-2-3-1; fringes shiny, creamy white with two to three ochreous brown lines. Hindwing creamy white to light brown, subterminal fascia present, termen darkly bordered; fringes whitish with brownish line.

Female genitalia (fig. 70). — Papillae anales normal; membrane of tergite VIII with sclerotization near papillae anales, second, stronger, triangular sclerotization more towards ostium; ostium broadly triangular, two sclerotized folds at the sides; ductus bursae relatively short, sclerotized patches under ostium; ductus seminalis narrow; bursa copulatrix normal, large and small signum present.

Ecology. — Unknown. Specimen caught in May.

Distribution (fig. 84). — Only known from the holotype, Kenya.

Euchromius tanalis spec. nov.
(figs. 16, 27, 52, 71, 85)

Material. — Holotype, ♂, [Kenya] "Tana R. B.E. Africa. 3800 ft. 2.i.99. R. Crawshay 99-216", GS 17482 BM. British Museum (Natural History), London. Paratypes: 6♂, [Ethiopia] Wagna Dabat, 9000' 30 mls N. of L. Tana 24 Oct. 1926 (R. E. Cheeseman) GS 12104 BM, (BMNH). 1♂, [Ethiopial] Kosogay Wagra 1000' 30 mls N. of L. Tana 22. Oct.1926 (R. E. Cheeseman) (BMNH). 1♂, [Ethiopia] Akaki R., S. of Adis Abeba 24. Oct. 00 (C. V. Erlanger) (BMNH). 1♀, [Kenya] Isiolo Apr-May 1951 Mrs. Adamson, GS RS 449 (NMK).1♂, [Kenya] Nairobi B.E.A. May 1927 (D. M. Hopkins). 1♂, Nairobi B.E.A. v. 1927 (D. M. Hopkins) GS 17480 BM. 1♀, Nairobi B.E.A. v. 1927 (D. M. Hopkins) GS 17481 BM. 1♂ Nairobi B.E.A. June 1927 (D. M. Hopkins) GS 17487 BM. All in BMNH. 1♂ Nairobi B.E.A. May 1927 (D. M. Hopkins) (RMNH).

Diagnosis. — Externally indistinguishable from *E. mythus* and *E. geminus*. Differs from *E. matador* in the formula of the black terminal dots: 2-2-2-2-1 or 2-2-2-2-2 in *E. matador*, 2-2-3-1 or 2-2-3-2 in *E. tanalis*. The African specimens of *E. ocelleus* have a less produced frons (figs. 16, 21). In male genitalia *E. tanalis* differs from the other species in having a club-shaped cucullus. The cornuti form a packed row, aedoeagus is shorter and less slender than in *E. mythus*. The large tooth-shaped ostium distinguishes *E. tanalis* from *E. ocelleus*, *E. matador* and *E. geminus*. *E. tanalis* differs from *E. mythus* in having a lightly sclerotized part in the ductus bursae near the ductus seminalis. The sclerotized part under the ostium is also of different shape.

External characters (fig. 16). — Width 20-24 mm. Frons sharply produced forward, with clear point, creamy white, labial palp three, sides creamy white at base, becoming brown, creamy white from above and below; maxillary palp creamy white, brown ringed at base of last segment, terminal part creamy white to light brown; antenna creamy white. Thorax creamy white to brown; patagia light brown with two inconspicuous, broad, longitudinal, brown stripes; tegulae creamy white to brown, evenly mottled. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales; medial fascia double, slightly arched, running to one-fifth of the dorsum; subterminal line ochreous brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; eight or nine black terminal dots, formula 2-2-3-1 or 2-2-3-2; fringes shiny, creamy white with two to three ochreous brown lines. Hindwing creamy white to light brown, subterminal fascia present, termen darkly bordered; fringes white with brownish line.

Tergite VIII (fig. 27). — Sclerite normally sclerotized, posterior part larger than anterior, both circa rectangular, connected by a stalk.

Male genitalia (fig. 52). — Uncus normal, tapering to sharp-pointed tip; gnathos longer, with two dorsal thorns, terminal part long, pointed; tegumen without appendix angularis; anellus with two, sometimes well developed, fingershaped projections; sacculus very broad, processus of sacculus absent, processus basalis medium sized, broad at base, tapering soon, strongly sclerotized, two processi inferiores valvae, slightly rounded to flattened, cucullus short, notched, basal part roughly dentate; juxta broad triangular with two sclerotized dorsal spots; vinculum normal-sized; aedoeagus normal-sized, dorsal tip longer than ventral part, one group of cornuti.

Female genitalia (fig. 71). — Papillae anales normal; membrane of tergite VIII with sclerotization near papillae anales and light sclerotization closer to ostium; ostium tooth-shaped, indented, granulated, edges folded, very strongly sclerotized, sclerotization continued on ductus bursae; ductus bursae long, sclerotization near ductus seminalis; ductus seminalis narrow; bursa copulatrix normal, large and small signum.

Ecology. — This species is found in the montane vegetation zones of Kenya and Ethiopia at altitudes ranging from ca. 1200 to 3250 m. In Ethiopia the specimens were caught in October, in Kenya in January, May and June.

Distribution (fig. 85). — Confined to the mountain areas of Kenya and Ethiopia.

Remarks. — The processus basalis of this species varies slightly in length, fig. 52 shows the largest size.

Euchromius mythus Bleszynski, 1970
(figs. 17, 28, 53, 72, 86)

Euchromius mythus Bleszynski, 1970: 2, fig. 3 (♂ genit.). Holotype, ♂, "Diego Suarez", GS 11310 BM. Paratypes: 2♂, 1♀ Diego Suarez GS 16658 BM. All types in British Museum (Natural History), London; Viette, 1971: 72.

Material. — 32♂, 19♀. Kenya: Nairobi, 1♂ (MNHN); Ilani, 1♂ (BMNH). Tanzania: Lake Manyara, 6♂, 6♀ (TMMA). Zaire: Elisabethville, 1♀ (MRAC); Geleka, 1♂ (MRAC); Kalenga, 1♀ (MRAC); Kapolowe, 1♂ (MRAC), 1♀ (RTAS); Mutando, 1♂ (MRAC). Malawi: Zomba, 5♂, 3♀ (BMNH). Comoro Isl.: Grand Comore, 1♀ (BMNH). Madagascar: Diego Suarez, 6♂, 2♀ (BMNH); Maevatanana, 1♂ (KBIN). Zimbabwe: Bulawayo, 1♂ (TMP); Gatooma, 2♂ (NMB); Livingstone, 1♀ (NMB); Nyamandlovu, 2♂ (NMB), 2♂ (RTAS). Namibia: Abachaub, 1♀ (RTAS); 1♂ (TMP). South Africa: Pretoria, 2♂, 1♀ (TMP), 1♀ (ZMA).

Diagnosis. — Externally indistinguishable from *E. tanalis* and *E. geminus*. Differs from *E. matador* in the formula of the black terminal dots: 2-2-2-2-1 or 2-2-2-2-2 in *E. matador*, 2-2-3-1 or 2-2-3-2 in *E. mythus*. The African specimens of *E. ocelleus* have a less strongly produced frons (figs. 17, 21). In male genitalia *E. mythus* differs from the other species in having very broad, blade-like sides of the processus basalis, most clearly visible near the base (fig. 53). The cornuti form a packed row, aedoeagus is longer and more slender than in *E. tanalis*, the processus basalis is also longer than in that species. The tooth-shaped ostium distinguishes *E. mythus* from *E. ocelleus*, *E. geminus* and *E. matador*. *E. mythus* differs from *E. tanalis* in lacking the lightly sclerotized part in the ductus bursae near the ductus seminalis. The sclerotized part under the ostium is also of different shape (figs. 71, 72).

External characters (fig. 17). — Width 13-22 mm. Frons sharply produced forward, with clear point, creamy white to brown, very minute ventral ridge; vertex creamy white to brown; labial palp two, sides white at base, becoming brown to dark brown, creamy white to brown from above and below; maxillary palp light brown to brown, dark brown ringed at base of last segment; antenna creamy white to grey-brown. Thorax creamy white to brown; patagia creamy white to brown; tegulae brown, evenly mottled. Forewing, groundcolour white to creamy white, densely suffused with ochreous to dark brown scales; medial fascia double, arched to nearly straight, running to one-fifth to one-sixth of the dorsum; subterminal line ochreous brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; nine or eight black terminal dots, formula 2-2-3-2 or 2-2-3-1; fringes shiny, creamy white with two or three, not always clear, ochreous brown lines. Hindwing creamy white to grey, subterminal fascia present or not, termen

darkly bordered; fringes white with brownish line.

Tergite VIII (fig. 28). — Sclerite normally sclerotized, posterior part small, convex, stalk normal, anterior part narrow.

Male genitalia (fig. 53). — Uncus bent, tapering to sharply pointed tip or sometimes quadrate with central point, dorsal crest of variable size, sometimes absent; gnathos normal, two dorsal thorns, relatively large, terminal part long; tegumen without appendix angularis; sacculus normal, processus of sacculus absent, processus basalis long, broad, flattened, strongly sclerotized, processus inferior valvae narrow in centre of valvae, cucullus broad, bent upwardly, ventral edge roughly dentate in basal half; juxta small, rounded; vinculum normal; aedoeagus long, slender, with one long row of cornuti.

Female genitalia (fig. 72). — Papillae anales normal; membrane of tergite VIII with sclerotized patch near papillae anales; ostium tooth-shaped, slightly indented or not, minutely granulated, very strongly sclerotized, sclerotization continued on ductus bursae; ductus bursae long; ductus seminalis narrow; bursa copulatrix normal, large and small signum present, with ridge.

Ecology. — In moist as well as in dry savanna and woodland areas, up to 1000 m. Caught in March, April and May in almost all localities, but also in June (Tanzania), July (Madagascar), August (Comoro) and September (Zaire).

Distribution (fig. 86). — Occurs in East and South Africa including Madagascar. Found in Kenya, Tanzania, Zaire, Malawi, Comoro Isl., Madagascar, Zimbabwe, Namibia and South Africa.

Remarks. — There is no paratype in MNHN as stated in the original description, all paratypes are in BMNH. The paratypes consist of 2♂, 1♀ and not of three males. In some specimens the uncus bears a more or less pronounced dorsal crest or ridge, not shown in fig. 53.

Euchromius matador Bleszynski, 1966
(figs. 18, 29, 54, 73, 87)

Euchromius matador Bleszynski, 1966: 470, pl. XLI, fig. 2, fig. 30 (♂ genit.). Holotype, ♂, "Elisabethville Belgian Congo 4.V.1947 Ch. Seydel", GS 4342 SB, type 8921. Paratypes: 2♂, one GS 4312 SB, same labels as holotype, but taken on 6.V.1947; holotype and one paratype in Biosystematic Research Institute, Ottawa, one paratype in British Museum (Natural History), London.

Material. — 20♂, 13♀. Tanzania: Sibwesa, 1♂, 2♀ (RMNH), 1♀ (RTAS). Zaire: Elisabethville, 1♂, 1♀ (BMNH), 2♂ (BRIO), 8♂, 2♀ (MRAC), 1♀ (RTAS); Geleka, 1♀ (MRAC); Kalenga, 1♀ (MRAC); Katentania, 1♂ (MRAC); Lumbumbashi, 1♂ (BMNH), 4♂, 1♀ (MRAC), 1♂ (RTAS); Rutshuru, 1♂, 1♀ (MRAC).

Diagnosis. — Externally *E. matador* differs from all other *Euchromius* species in the formula of the black terminal dots: 2-2-2-2-1 or 2-2-2-2-2, in all other species a group of three black dots is always present. In male genitalia *E. matador* is distinguished in having two basal-dorsal dagger-shaped projections on the gnathos (fig. 54). The ear-shaped projections of the ostium distinguishes the female from all other species (fig. 73).

External characters (fig. 18). — Width 20-24 mm. Frons sharply produced forward, with clear point, creamy white to light brown; labial palp two and a half to three, sides white at base, becoming light to dark brown, creamy white above and below; maxillary palp creamy white to brown, no ventral ridge; vertex creamy white, dark brown ringed at base of last segment, terminal part light brown; antenna creamy white. Thorax light brown; patagia light brown; tegulae light brown, evenly mottled. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales; medial fascia double, arched to nearly straight, running to one-sixth to one-seventh of the dorsum; subterminal line brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; nine or ten black terminal dots, formula 2-2-2-2-1 or 2-2-2-2-2; fringes shiny, creamy white with two to three ochreous brown lines. Hindwing creamy white to light grey, subterminal fascia present or not, termen darkly bordered; fringes white with brownish line.

Tergite VIII (fig. 29). — Sclerite strongly sclerotized, anterior part highly reduced, stalk normal, posterior part more or less rectangular.

Male genitalia (fig. 54). — Uncus basally with dorsal, club-shaped, pointed projection; gnathos longer, basally with dorsal dagger-shaped projection at each side of base, two dorsal thorns relatively large, terminal part long, very lightly sclerotized; tegumen without appendix angularis; sacculus normal, processus of sacculus absent, processus basalis long, dagger-shaped, strongly sclerotized, processus inferior valvae rounded, in centre of valvae, cucullus very slender, bent upward; juxta small, with two small finger-shaped arms; vinculum normal; aedoeagus small, broadest near anellus connection, group of minute cornuti posterior of larger cornuti.

Female genitalia (fig. 73). — Papillae anales normal; membrane of tergite VIII with slender sclerotization close to papillae anales and strongly sclerotized triangle closer to ostium; ostium with two ear-shaped projections, two dorsal folds, strongly sclerotized; ductus bursae broad, coiled near ostium; ductus seminalis narrow; bursa copulatrix normal, elongate, large and smaller signum present, with ridge.

Ecology. — A species from moist woodland and savanna areas, but also

caught in montane areas up to 1500 m. Appears in March, April, May and June and a second generation in November, December.

Distribution (fig. 87). — This species has a rather restricted distribution, only known from the eastern parts of Zaire and western Tanzania.

Euchromius gnathosellus spec. nov.
(figs. 19, 30, 55, 74, 88)

Material. — Holotype, ♂, "Degbezere loc 7 12 km E Bouafle 15-XII-1983 at light, Cote D'Ivoire Bouafle R.T.A. Schouten & J. R. M. Buijsen", GS R.S. 101, Rijksmuseum Natuurlijke Historie, Leiden. Paratypes: 2♂, 2♀ Senegal: Sedhiou (BMNH). 1♂, 1♀, Sierra Leone (BMNH). Bouitha near Degbezere 15 km E Bouafle at light, Cote D'Ivoire Bouafle R.T.A. Schouten & J.R.M. Buijsen, 2♂, 1♀, 29-XI-1983, 1♀, 15-XI-1983, 1♀ 25-XI-1983 (RTAS); 1♀, 25-XI-1983 (TMP); 1♀, 8-XI-1983 (NMW). Bouafle at light, Cote D'Ivoire Bouafle R.T.A. Schouten & J.R.M. Buijsen, 1♀, 13-XI-1983 (NRS). Degbezere 15 km E Bouafle at light, Cote D'Ivoire Bouafle R.T.A. Schouten & J.R.M. Buijsen, 1♂, 8-XII- 1983 (BRIO), 1♀, 8-XII-1983, 1♀, 24-XI-1983 (RTAS); 1♀, 1-XII-1983 (KBIN); 1♀, 1-XII-1983 (NMB); 1♀, 24-XI-1983 (MRAC), 1♀, 24-XI-1983 (ZSM). Pakodji near Degbezere 15 km E Bouafle at light, Cote D'Ivoire Bouafle R.T.A. Schouten & J.R.M. Buijsen, 1♀, 28-XI-1983 (RTAS). Titekro 20 km E Bouafle at light, Cote D'Ivoire Bouafle R.T.A. Schouten & J.R.M. Buijsen, 1♀, 7-XII-1983 (LNK); 1♀, 16-XI-1983, 1♂, 30-XI-1983 (MHNG); 1♂, 1♀, 9-XI-1983 (ZMA); 1♀, 16-XI-1983 (TMMA); 1♀, 16-XI-1983, 2♂, 2♀, 30-XI-1983 (RTAS). 1♂, 4♀, Gold Coast N-Territories Kete-Krachi (BMNH). 1♂, 1♀, N. Nigeria 100 mls N. of Lokoja (BMNH). 2♀, Oei Ogruga River Niger (BMNH). 1♂, Congo Francais Fort Crampel (MNHN). 1♀, Dioudougou Hte Guinie (MNHN). 1♀, Kalikaut Senegal et Niger (MNHN).

Diagnosis. — Externally distinguishable from all other *Euchromius* species by a clear ventral ridge and a sharply produced frons with a clear point. In male genitalia *E. gnathosellus* differs in having two wing-shaped projections on the gnathos (fig. 55). The female is easily recognized by the collar around the papillae anales (fig. 74).

External characters (fig. 19). — Width 14-20 mm. Frons sharply produced forward, with clear point, creamy white to brown, ventral ridge present; vertex creamy white; labial palp two, sides creamy white at base, becoming light brown, sprinkled dark brown-grey, light brown from above and below; maxillary palp light brown, darkly ringed under last segment; antenna creamy white, grey at sides or sprinkled. Thorax creamy white to brown; patagia creamy white with two broad, longitudinal, brown stripes; tegulae creamy white with dark patch in middle. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales; medial fascia double, nearly straight, running to one-fifth to one-sixth of the dorsum; subterminal line dark brown, about midway between terminal dots and termination of

posterior area; area adjacent to terminal dots white; nine or eight black terminal dots, formula 2-2-3-2 or 2-2-3-1; fringes shiny, creamy white with two brown lines. Hindwing grey-brown, subterminal fascia present, termen darkly bordered, dark spot near cubital veins; fringes creamy white with brownish line.

Tergite VIII (fig. 30). — Sclerite normally sclerotized, posterior part large, triangular, stalk very short, anterior part faintly visible.

Male genitalia (fig. 55). — Uncus small, very slender, nearly straight, tapering to sharp-pointed tip; gnathos slightly longer, very slender, dorsal thorns absent, two wing-shaped projections at base of gnathos, scaled; tegumen without appendix angularis; sacculus normal, processus of sacculus absent, processus basalis long, strongly sclerotized, two very small, but distinct, processi inferiores valvae at base of processus basalis, cucullus slightly bifurcate; juxta of normal size, sclerotized; vinculum of normal size; aedoeagus of normal size, swollen near anellus connection, one cloud of minute cornuti and one row of larger cornuti.

Female genitalia (fig. 74). — Papillae anales small, with clear collar; membrane of tergite VIII with strongly sclerotized triangular patch, anteriorly three sclerotized narrow patches; ostium broad, lamella antevaginalis split in middle; ductus bursae normal; ductus seminalis narrow; bursa copulatrix heart-shaped, two signa, one large and elongate, other more drop-shaped.

Ecology. — This species was common in its localities in Ivory Coast. it is mainly found in plantation areas mixed with pockets of secondary forest. It often comes to light. It was caught from October until the beginning of December, reaching its peak in the last two weeks of November.

Distribution (fig. 88). — From West to Central Africa: Senegal, Sierra Leone, Ivory Coast, Ghana, Togo, Nigeria and the Central African Republic.

Euchromius zephyrus Bleszynski, 1962
(figs. 20, 31, 56, 57, 75, 89)

Euchromius zephyrus Bleszynski, 1962: 129, fig. 33 (♂ genit.). Holotype, ♂, "Ilesha So. Nigeria (Capt. Humfrey)", GS 7201 BM. Paratype 1♀, same label as holotype, both in British Museum (Natural History), London. Bleszynski & Collins, 1963: 112.

Material. — 27♂, 30♀. Senegal: Sedhiou, 3♂, 3♀ (BMNH). Mali: Kati, 1♂ (BMNH). Ivory Coast: Bouafle, 5♂, 4♀ (RTAS), 1♂ (KBIN), 1♀ (NRS), 1♀ (TMMA), 1♂ (DERR), 1♂, 1♀ (MHNG); Bouitha, 1♂ (MRAC), 1♂ (NHMS), 1♀ (MNHN), 1♀ (NMB), 1♂ (TMMA), 4♂, 3♀ (RTAS); Degbezere, 3♂, 3♀ (RTAS), 1♂ (UCEB); Pakodji 1♀ (MRAC), 1♀ (NHMS), 1♂ (DERR), 1♂ (NMB), 1♂, 2♀ (RTAS); Titekro, 1♂, 1♀ (TMP), 1♂ (LNK). Ghana: Kete-Krachi, 1♀ (BMNH). Nigeria: No Loc. 1♀ (BMNH); Ibadan, 1♂ (BMNH); Ilesha, 1♂, 1♀ (BMNH); Zungeru, 3♀ (BMNH).

Diagnosis. — Externally *E. zephyrus* differs from all other species in having a frons armed with several ridges (fig. 20). In male genitalia it differs in having a strongly bifurcated cucullus (fig. 56). The female can be distinguished from all other *Euchromius* species in having hairs on tergite VIII (fig. 75).

External characters (fig. 20). — Width 16-18 mm. Frons strongly produced forward, armed with several ridges, creamy white to brown, ventral ridge present; vertex armed with a crest, creamy white to light brown; labial palp two, sides creamy white at base, becoming light brown, sprinkled dark brown, light brown from above and below; maxillary palp light brown, darkly ringed under last segment; antenna creamy white, mingled with grey. Thorax brown; patagia light brown with two broad, longitudinal, brown stripes; tegulae brown, evenly mottled. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales; medial fascia double, arched to nearly straight, running to one-fourth of the dorsum; subterminal line dark brown, about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; nine, sometimes eight black terminal dots, formula 2-2-3-2 or 2-2-3-1; fringes shiny, creamy white with two brown lines. Hindwing grey-brown, subterminal fascia present, termen darkely bordered; fringes creamy white with brown line.

Tergite VIII (fig. 31). — Sclerite normally sclerotized, anterior and posterior part of nearly same size, triangular, stalk normal.

Male genitalia (figs. 56, 57). — Uncus normal, slightly arched, tapering to sharp-pointed tip; gnathos longer, stout, dorsal thorns normal, terminal part intermediate, rounded, lightly sclerotized; tegumen without appendix angularis; sacculus very broad, processus of sacculus absent, processus basalis stout, strongly sclerotized, ending blunt, processus inferior valvae rounded, second fold sometimes visible, cucullus bifurcate; juxta broad, double-wing-shaped, sclerotized; vinculum normal-sized; aedoeagus small, broad, two patches of cornuti, one with small cornuti, other consisting of larger cornuti, dorsal part sclerotized near connection with anellus.

Female genitalia (fig. 75). — Papillae anales very small, apophyses posteriores relatively long; membrane of tergite VIII without sclerotizations; tergite VIII with some hairs; ostium very broad, with many folds, strongly sclerotized; ductus bursae relatively short; ductus seminalis narrow; bursa copulatrix triangular, two small, differently sized signa, one elongate, the other more roundish.

Ecology. — Occurs in the same habitat as *E. gnathosellus*. In Ivory Coast it was found to be the commoner of the two. Flight starts in September and continues until the end of November, reaching its peak in the first two weeks of

November.

Distribution (fig. 89). — West Africa: Senegal, Mali, Ivory Coast, Ghana and Nigeria.

Remarks. — Examination of the holotype showed the frons to be strongly produced forward, armed with several ridges and not "conical with a corneous point" as stated in the original description.

Euchromius ocelleus (Haworth, 1811)
(figs. 21, 32, 58, 76, 90)

Palparia ocellea Haworth, 1811: 486. Holotype, ♂, "ocellea", GS 17541 BM. British Museum (Natural History), London.

Ommatopteryx ocelleus (Haworth, 1811) Rothschild, 1921: 220; De Joannis, 1927: 194.

Euchromius ocelleus (Haworth, 1811) Bleszynski, 1960: 214; Bleszynski, 1963: 3; Bleszynski, 1965: 84; Bleszynski & Collins, 1963: 307; Meyrick, 1927: 413.

Crambus cyrilli Costa, 1829: 11. Type material lost?

Phycis funiculella Treitschke, 1832: 200. Type material lost.

Eromene texana Robinson, 1870: 155. Type material lost?

Eromene gigantea Turati, 1924: 63. Lectotype, ♀, "Cyrenaica Bengasi 2.III.22 Geo. C. Kruger", GS 17540 BM. Paratypes: 2♂, 2♀, same label as lectotype, but date 15.III.22. All in British Museum (Natural History), London.

Material. — 263♂, 264♀. Ethiopia: Bourie, Dire Dawa, Harer, 3♂, 2♀; (MNHN, BMNH). Somalia: Berbera, 1♀ (BMNH). Kenya: Buffalo Springs Game Reserve, Eburru, Ikutha, Isioli, Kibwesi, Lokitang, Mt. Meru, Muguga, Nairobi, Nakuru, Samburu, Sukuta, Thika, Voi, 38♂, 34♀; (BMNH, LACM, MNHN, RMNH, ZSM). Tanzania: Kilimandjaro, Kilosa, Kilwa, Old Shinyanga, 4♂, 10♀; (BMNH, MNHN). Central African Republic: Crampel, 2♂ (MNHN). Zaire: Bambibi, Biano, Bunia, Kabinda, Luluabourg, Miss. H. De Saeger, Uele Moku Moto, Uvira-Kisougo, Yakoma, 12♂, 9♀; (BMNH, KBIN, MRAC). Uganda: Fort Portal, Kampala, Labonga Unyoro, 3♂, 4♀; (BMNH, MHNG). Malawi: Mt. Mlanje, 1♂ (BMNH). Seychelles: Aldabra W. Island, 2♂ (BMNH). Madagascar: Diego Suarez, 1♀ (BMNH). Mozambique: Mavulane, 2♂, 2♀ (MHNG). Zimbabwe: Bulawayo, 17 Km. S. Chiturpodzi, Gatooma, Matopos, Salisbury, 4♂, 4♀; (BMNH, NMB). South Africa: Natal, Annshaw, Beaufort, Bellesport, Bloemfontein, Camperdam, Capetown, Ceres, Citrusdal, Clanwilliam, Die Panne, Dunbrody, Durban, George, Grahamtown, Isipingo, Johns, Kamieskroon, Ladsmith, Lamberts, Limpopo R., Matjesfontein, Melkbosch, Mosselbaai, Naukluft Mts., Pietersburg, Pretoria, Prins Albert, Riebeekkasteel, Rondebosch, Rosmead, Somerset East, Stellenbosch, Swellendam, Tweefont., Voigts, Weenen, Winburg, Worcester, 84♂, 83♀; (BMNH, MNHN, NMB, RMNH, TMP, ZMA). Botswana: Gaborone, Ghanzi, 42 Mls. W. Kalkfontein, Kanye, Kukepan, Makala-mabedi, Maun, 8 Mls. N. Maun, Lake Ngami, Semowane R., Topsi, 9♂, 8♀; (BMNH, NMB, ZMC). Namibia: Aarfarm, Abachaub, Ai-Ais, Auob-Nossob, Gibeon, Gobabeb, Gobabis, 8 Mls. W. Gobabis, Gobiswater, Gorob mine, Hoffnung, Homeb, Kalkfontein, 15 Mls. SSE. Karasburg, Noachabeb, Okahandja, Olifants R., Onguma, Nr. Onseepkans, Otavifontein, Otjikoko, Otjitamba, Sesriem Canyon, 9 Mls. SSW. Sesriem, Windhoek, Zarisfarm, 61♂, 62♀; (BMNH, NMB, JAWL, RTAS, TMP). Angola: Dondo, Rocadas, 3 Mls. N. Santa Clara, 2♂, 2♀; (BMNH). Equatorial Guinea: Fernando Po, 2♀ (BMNH). Nigeria: Bacita, Ilesha, 100 Mls. N. Lokoja, Makurdi, Zaria, Zungeru, 12♂, 6♀; (BMNH, RMNH). Niger: Aderbissinat, 157 Km. NE. Agadez, Anambara Creek, Zinder, 7♂, 10♀; (BMNH). Bourkina Fasso: Vallee Kou, Mane,

2♀, (BMNH). Ghana: Accra, 1♂, 1♀ (BMNH). Senegal: Kaolack, Sedhiou, 18♂, 21♀; (BMNH, MNHN, TMP).

Diagnosis. — Externally distinguishable from the other *Euchromius* species with a double fascia in having a less strongly produced frons (fig. 21). In male genitalia it differs from *E. mythus, E. tanalis* and *E. matador* in having a very broad cucullus with basal dentation. In female genitalia *E. ocelleus* differs from *E. mythus, E. tanalis* and *E. geminus* in having two large signa whereas the other species have a small and a large signum. *E. ocelleus* lacks the ear-shaped projections of the ostium present in *E. matador*.

External characters (fig. 21). — Width 13-26 mm. Frons produced forward, with small point, creamy white to light brown, no ventral ridge; vertex creamy white; labial palp two and a half to three, sides white at base, becoming light brown, creamy white from above and below; maxillary palp, creamy white to light brown; antenna creamy white. Thorax light brown to brown; patagia light brown to brown; tegulae light brown to brown, evenly mottled. Forewing, groundcolour creamy white, densely suffused with ochreous to dark brown scales, posterior area sometimes with yellowish spot; medial fascia double, arched to nearly straight, running to one-sixth of the dorsum; subterminal line ochreous to light brown, usually about midway between terminal dots and termination of posterior area; area adjacent to terminal dots white; nine or eight black terminal dots, formula 2-2-3-2 or 2-2-3-1; fringes shiny, creamy white with two brown lines. Hindwing creamy white to grey-brown, no subterminal fascia, termen darkly bordered; fringes creamy white with brownish line (not always clear).

Tergite VIII (fig. 32). — Sclerite normally sclerotized, posterior part rectangular, stalk short, broad, anterior part convex.

Male genitalia (fig. 58). — Uncus normal, slightly bent, tapering to pointed tip; gnathos longer, with two dorsal thorns, terminal part long, lightly sclerotized; tegumen without appendix angularis; sacculus narrow, processus of sacculus absent, processus basalis large, broad, provided with strong dorsally bent spine, arising from middle of blade, two processi inferiores valvae, both rounded, at base of processus basalis, cucullus very broad, bent upward, dorsal edge finely dentate in basal half; juxta V-shaped, lightly sclerotized; vinculum long; aedoeagus very long, slender, three groups of cornuti, one of which consists of a double row.

Female genitalia (fig. 76). — Papillae anales normal; membrane of tergite VIII without sclerotization; ostium small; ductus bursae long, for most part sclerotized with minute cornuti; ductus seminalis narrow; bursa copulatrix

normal, two large signa.

Ecology. — This species does not show particular restrictions to a certain type of vegetation or climate. It can be found in humid temperate zones as well as in hot dry areas. Specimens have been caught up to 1850 m altitude. In the southern countries of Africa the flight-period is from October to April. In East Africa there seem to be two separate periods: November-February and June-July. In West Africa specimens have been caught from November until March. The given data on the flight-periods can have been influenced by the time of year collectors tend to visit Africa. *E. ocelleus* may turn out to have a more extended or another, separate flight-period in certain areas as more data become available. For comment on the larvae see under Introduction.

This species is certain to migrate since several specimens have been caught as far as 50 miles off the coast, but also human transport may have contributed to its widespread distribution.

Distribution (fig. 90). — This is the most widespread species of the genus, found throughout Africa except in the tropical rainforests. The distribution outside Africa will be discussed in a later paper. Localities in the following countries have been omitted from fig. 90: Mauretania, Morocco, Algeria, Tunesia, Libya, Sudan and Egypt.

Remarks. — The central cornutus consists of a variable number of spines, one to five.

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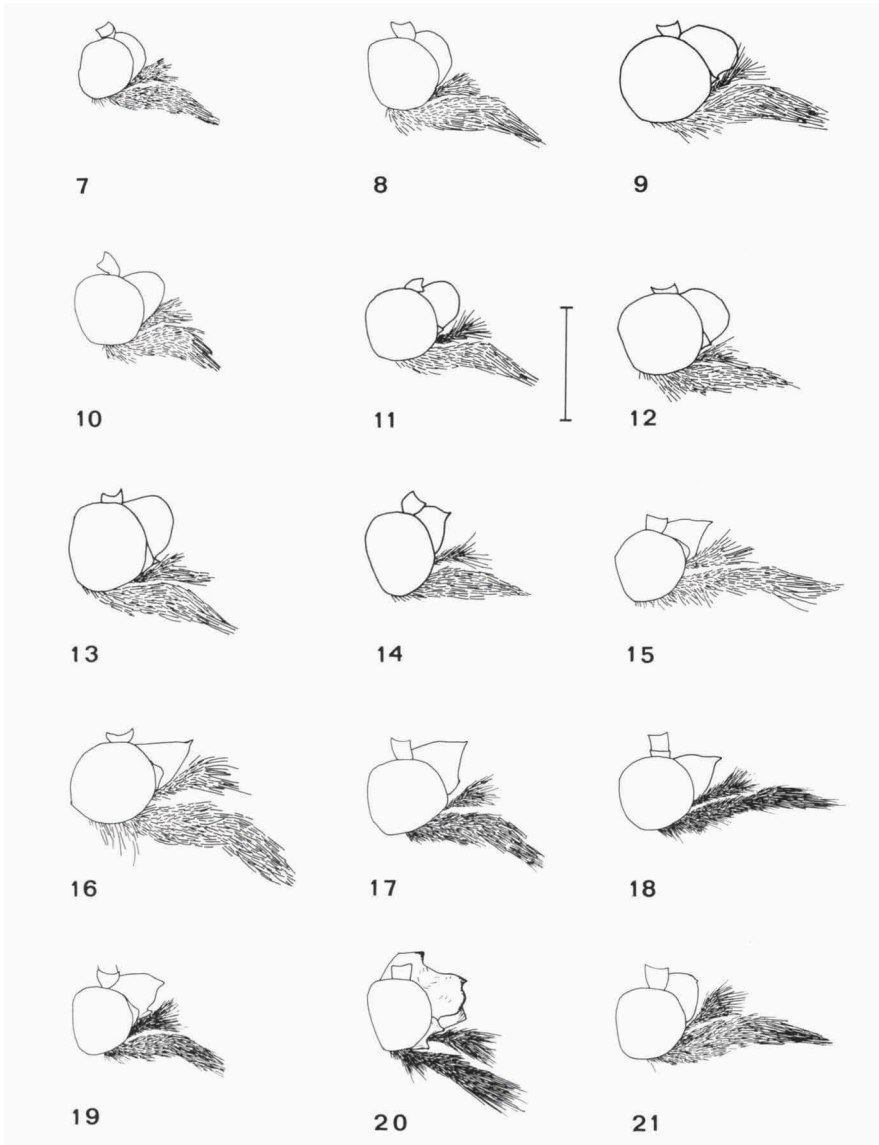
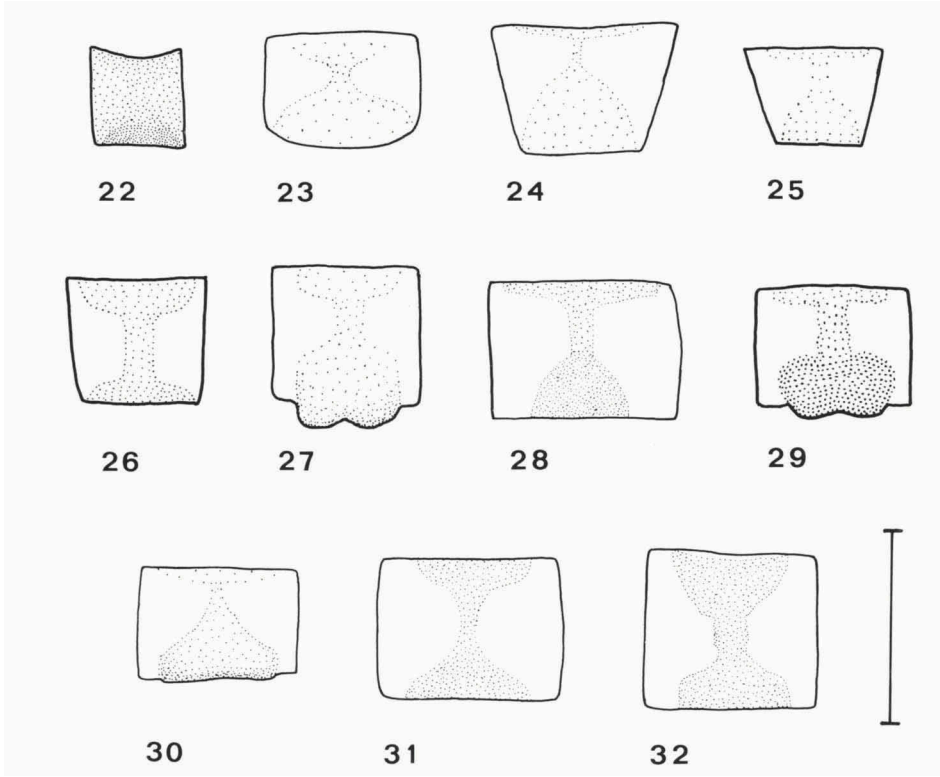
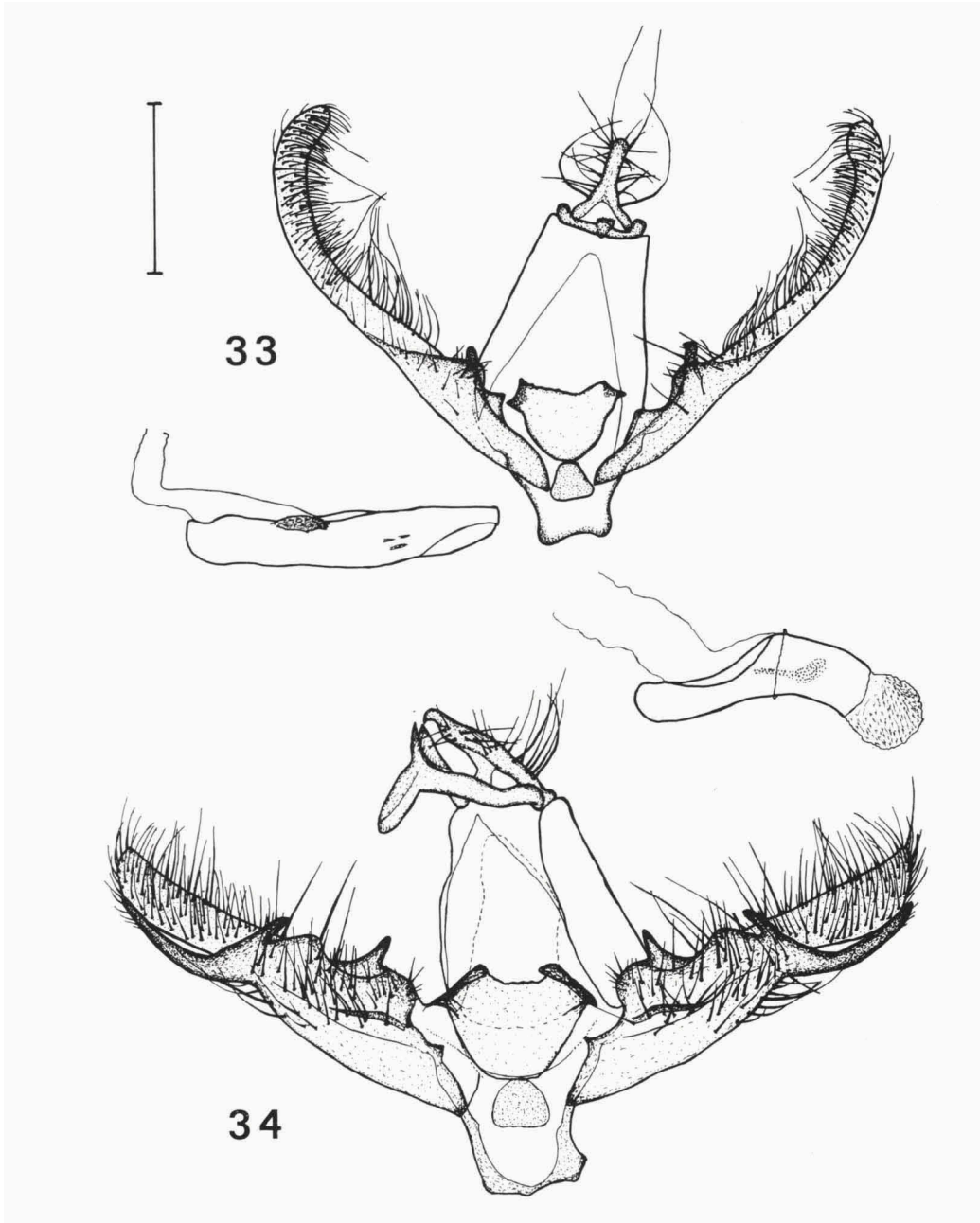


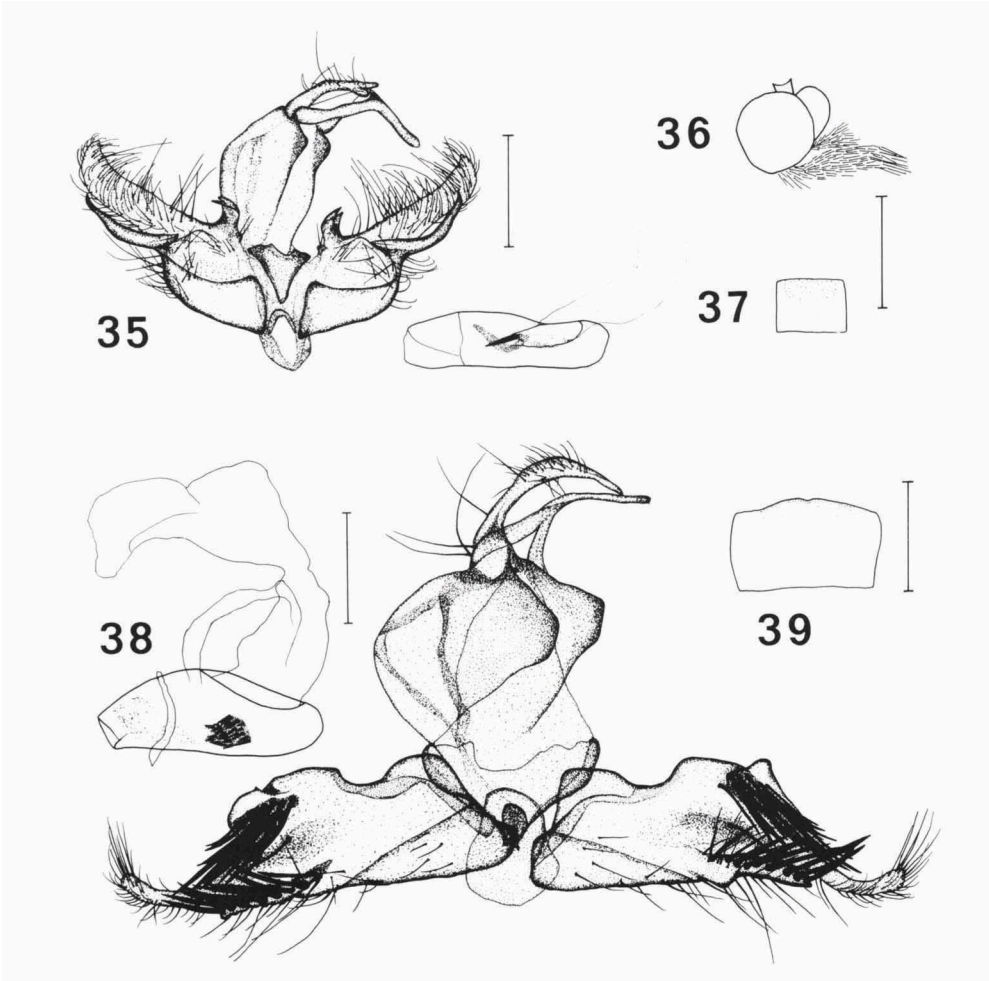
Fig. 7-21. Heads, lateral aspect, scales removed from frons. 7, *E. klimeschi*. 8, *E. discopis*. 9, *E. locustus*. 10, *E. nigrobasalis*. 11, *E. erum*. 12, *E. viettei*. 13, *E. hampsoni*. 14, *E. donum*. 15, *E. geminus*. 16, *E. tanalis*. 17, *E. mythus*. 18, *E. matador*. 19, *E. gnathosellus*. 20, *E. zephyrus*. 21, *E. ocelleus* . Scale 1 mm.



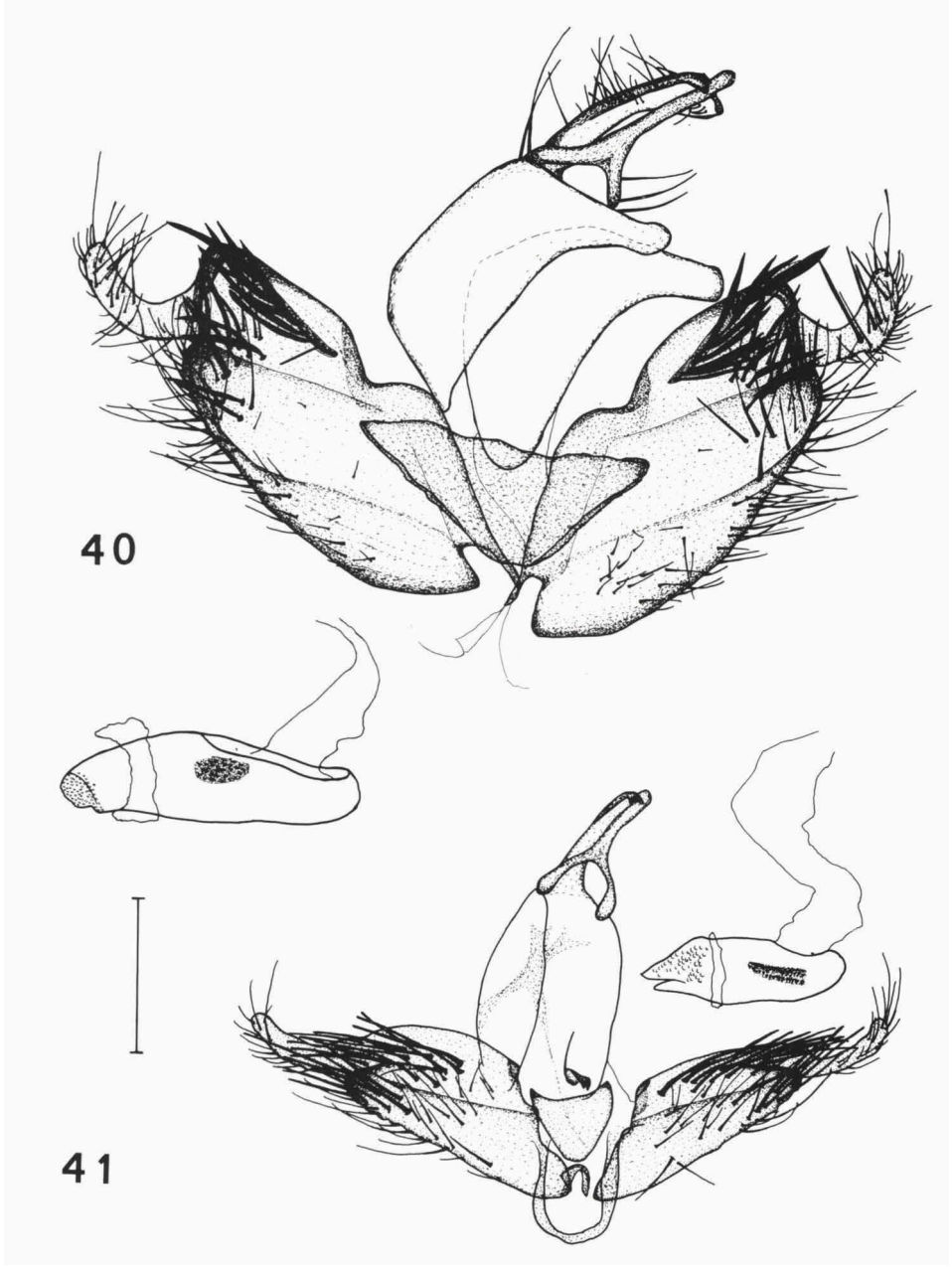
Figs. 22-32. ♂, sclerites of tergite VIII. 22, *E. klimeschi*, slide RS 122, Sawmills, Rhodesia. 23, *E. discopis*, slide RS 66, Pretoria. 24, *E. nigrobasalis*, holotype, slide RS 155, Pretoria. 25, *E. erum*, paratype, slide BM 17600, Haro-Ali. 26, *E. viettei*, slide BM 17543, Tibesti. 27, *E. tanalis*, holotype, slide BM 17482, Tana R., B.E. Africa. 28, *E. mythus*, slide RS 112, Bulawayo, S. Rhodesia. 29, *E. matador*, slide RS 106, Lubumbashi. 30, *E. gnathosellus*, paratype, slide RS 50, Bouitha, Cote D'Ivoire. 31, *E. zephyrus*, slide RS 42, Bouitha, Cote D'Ivoire. 32, *E. ocelleus*, slide RS 148, Gobabeb, S.W.A. Scale 1 mm.



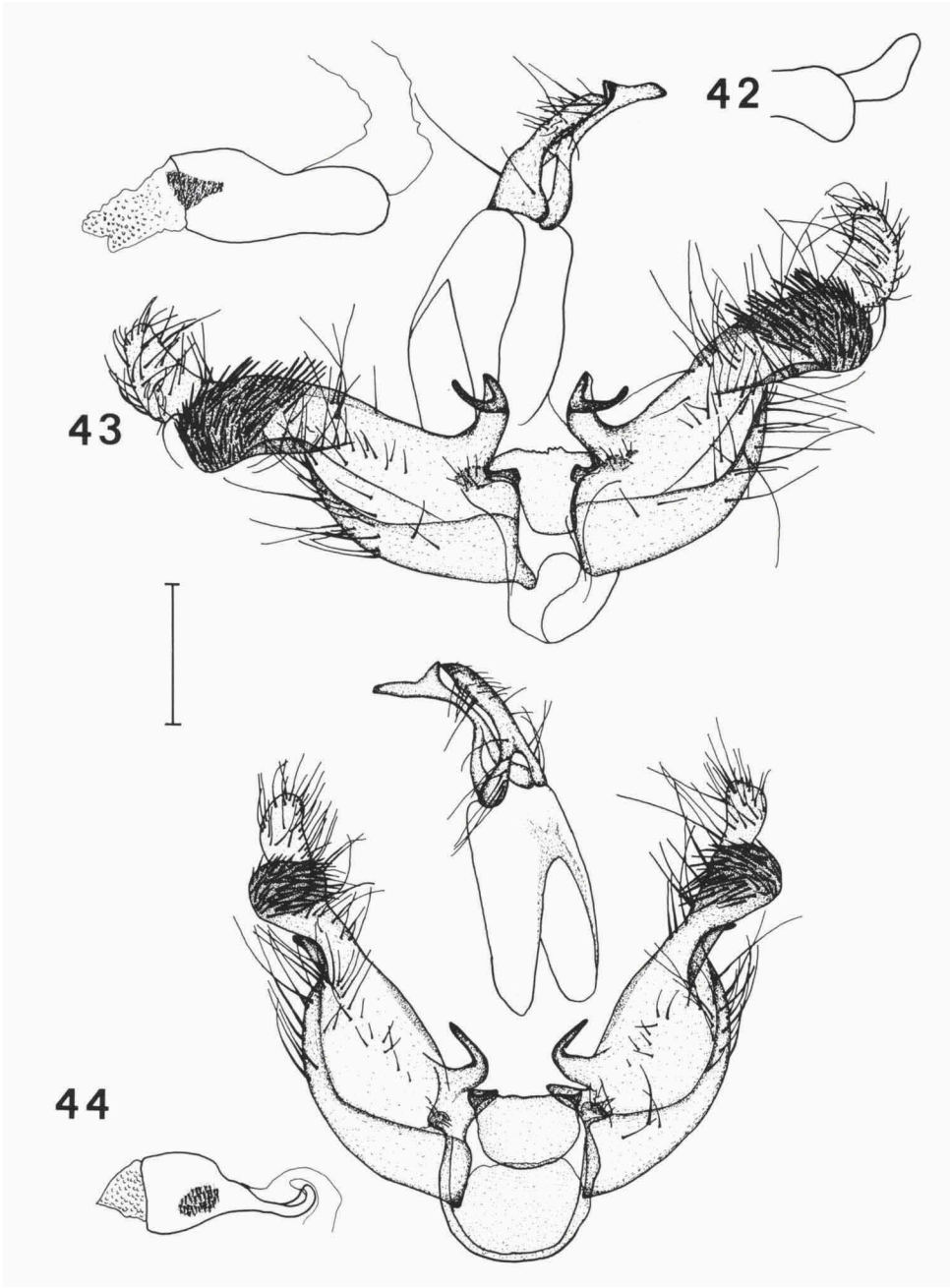
Figs. 33-34. Male genitalia; ventro-caudal aspect, valvae spread; aedoeagus separated lateral aspect. 33, *E. klimeschi*, slide RS 122, Sawmills, Rhodesia. 34, *E. discopis*, slide RS 124, Abachaub, S.W.A. Scale 0.5 mm.



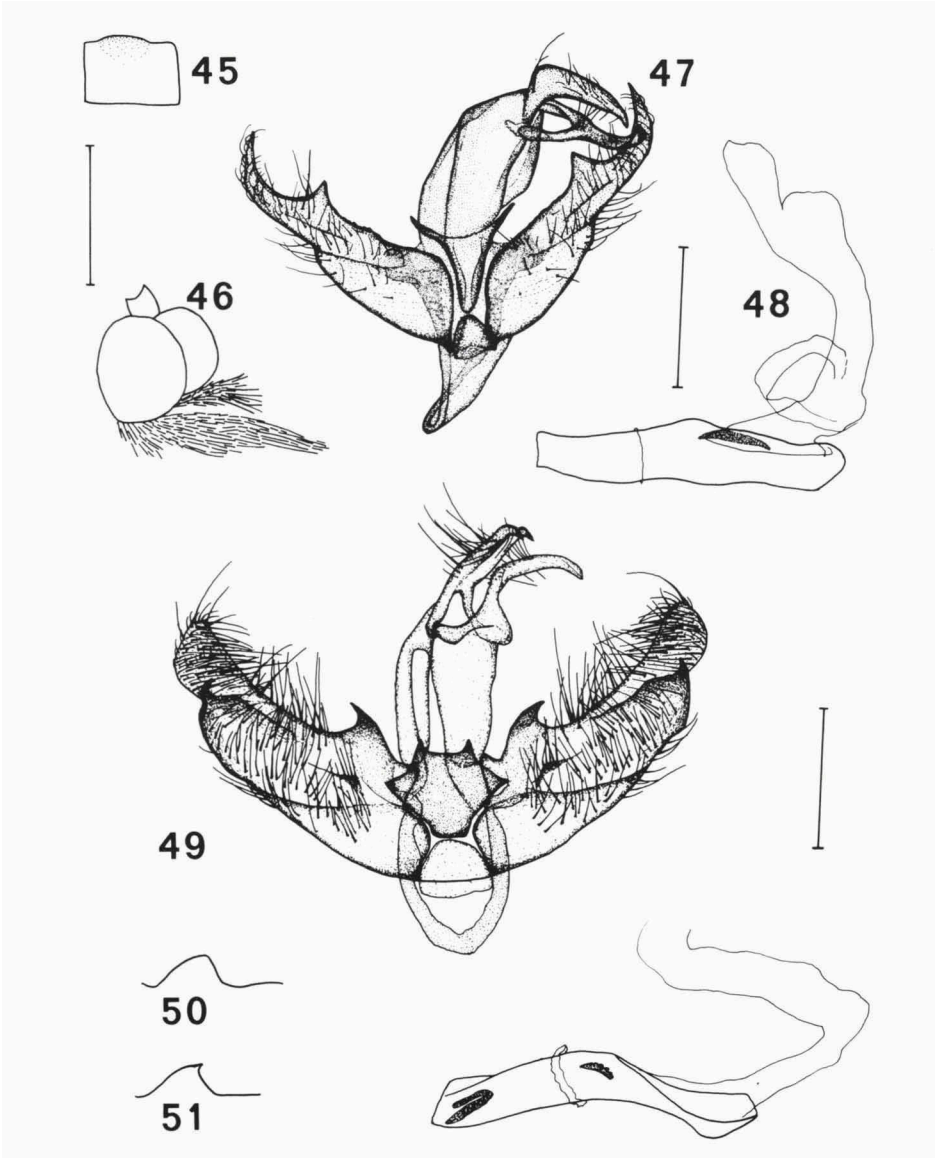
Figs. 35-39. 35, male genitalia; ventro-caudal aspect, valvae spread; aedoeagus separated, lateral aspect, *E. labellum*, paratype, slide RS 394 Samburu, Kenya. Scale 0.5 mm. 36, head *E. labellum*, lateral aspect, scales removed from frons. Scale 1 mm. 37, male sclerite of tergite VIII, *E. labellum*, paratype, slide RS 394, Samburu, Kenya. Scale 1 mm. 38, male genitalia; ventro-caudal aspect, valvae spread; aedoeagus separated, lateral aspect, *E. locustus*, paratype, slide RS 392, Tshinkolbwe, Zaire. Scale 0.5 mm. 39, male sclerite of tergite VIII, *E. locustus*, paratype, slide RS 391, Tshinkolbwe, Zaire. Scale 1 mm.



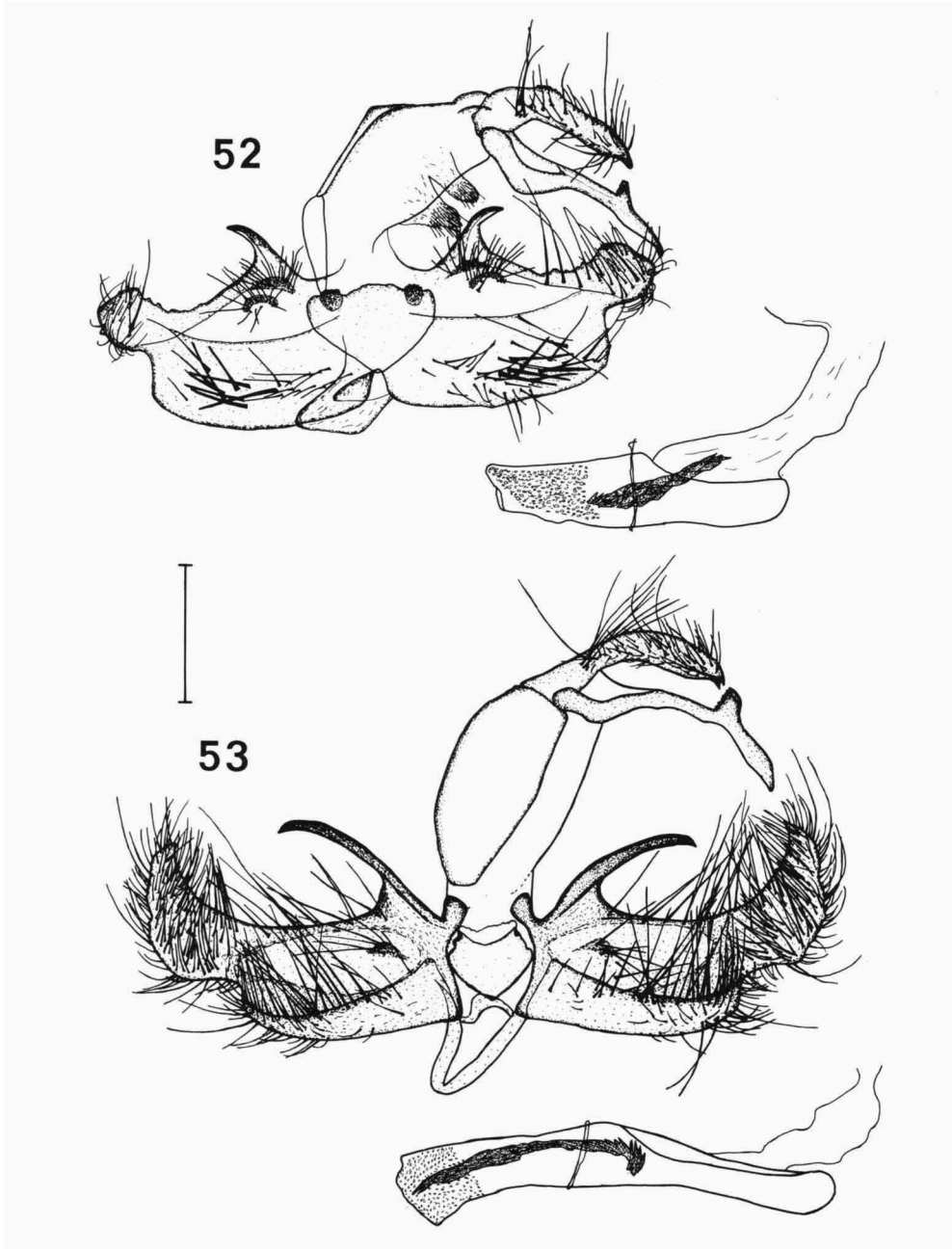
Figs. 40-41. Male genitalia; ventro-caudal aspect, valvae spread; aedoeagus separated, lateral aspect. 40, *E. nigrobasalis*, holotype, slide RS 155, Pretoria. 41, *E. erum*, paratype, slide BM 17600, Haro-Ali. Scale 0.5 mm.



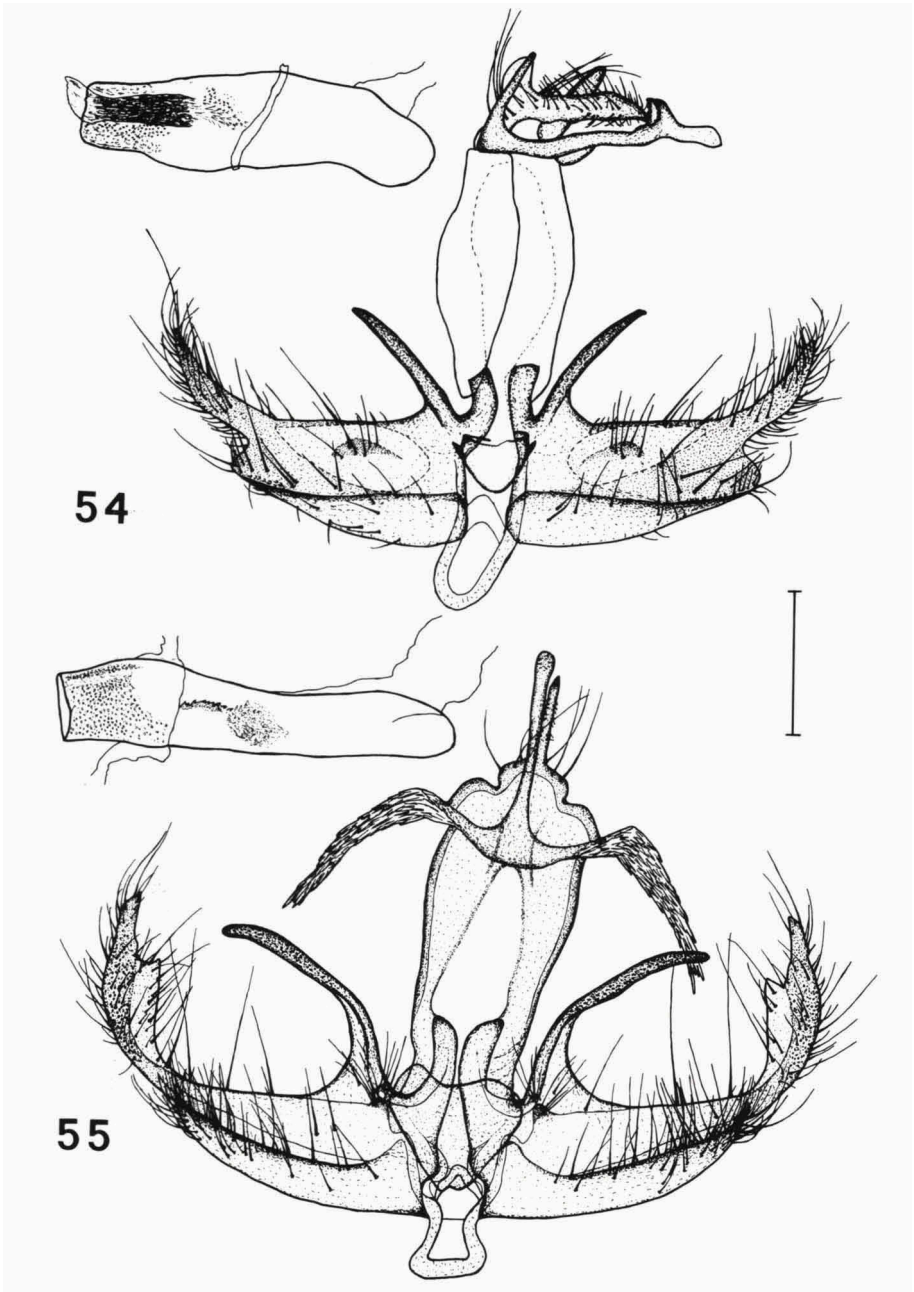
Figs. 42-44. Male genitalia; ventro-caudal aspect, valvae spread; aedoeagus separated, lateral aspect; cucullus. 42, *E. viettei*, holotype, slide BM 5091, Arabia, Hejaz. 43, *E. viettei*, slide BM 17434, Tibesti. 44, *E. hampsoni*, holotype, slide BM 5676, Azzal. Scale 0.5 mm.



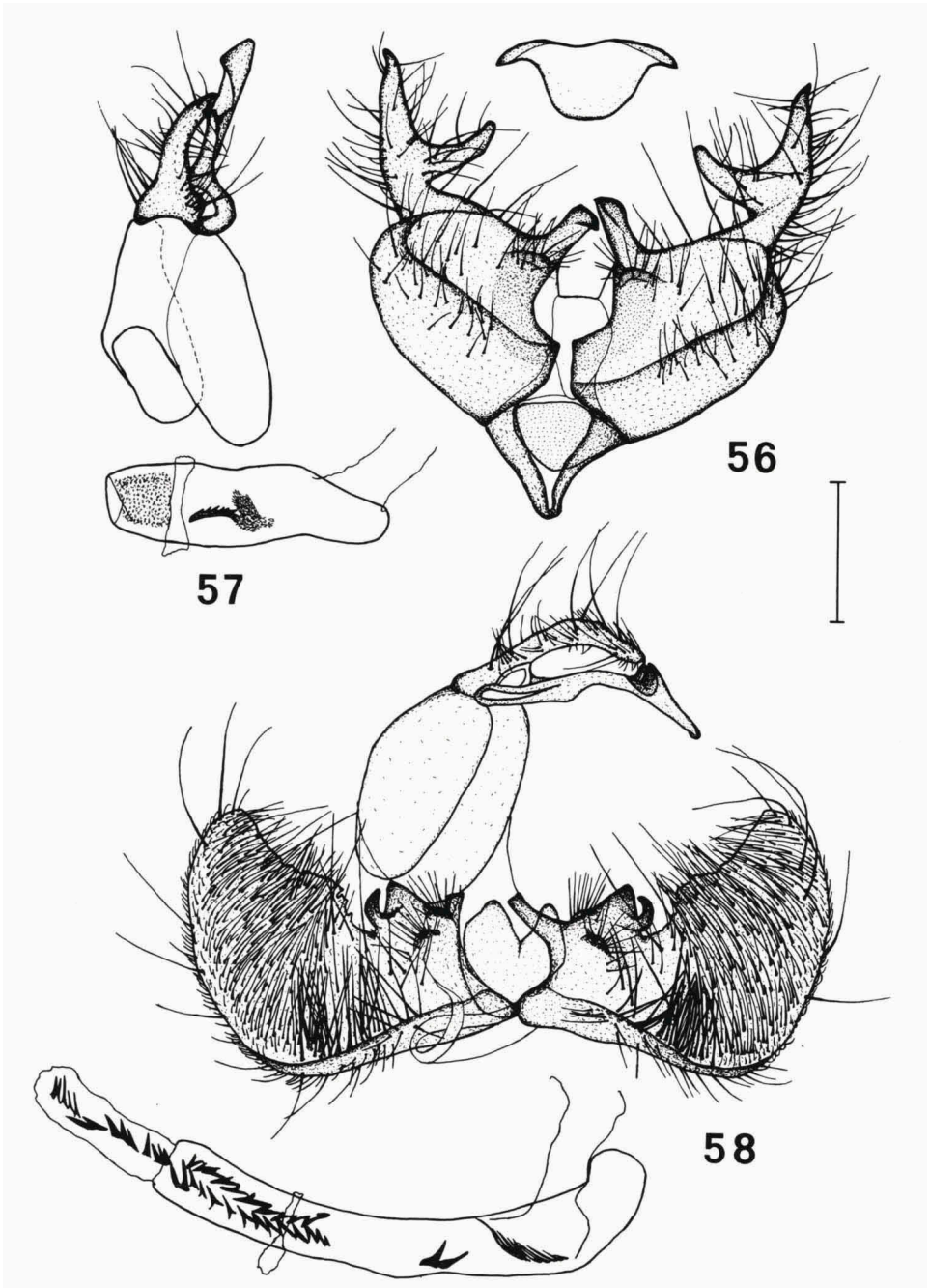
Figs. 45-51. 45, male, sclerite of tergite VIII, *E. aris*, holotype, slide RS 420, Samburu, Kenya. Scale 0.5 mm. 46, head *E. aris* lateral aspect, scales removed from frons. Scale 1 mm. 47, male genitalia; ventro caudal aspect, valvae spread, *E. aris*, holotype, slide RS 420, Samburu, Kenya. Scale 0.5 mm. 48, aedoeagus separated, lateral aspect, *E. aris*, paratype, slide RS 427, Samburu, Kenya. Scale 0.5 mm. 49, male genitalia; ventro-caudal aspect, valvae spread; aedoeagus separated, lateral aspect, *E. vinculellus*, slide RS 293, Periane, Hisp. processus basalis, lateral aspect; 50, *E. vinculellus*, slide RS 189, Sirjan, S.-Iran. 51, *E. vinculellus*, slide RS 305, Jericho, Jordanien. Scale 0.5 mm.



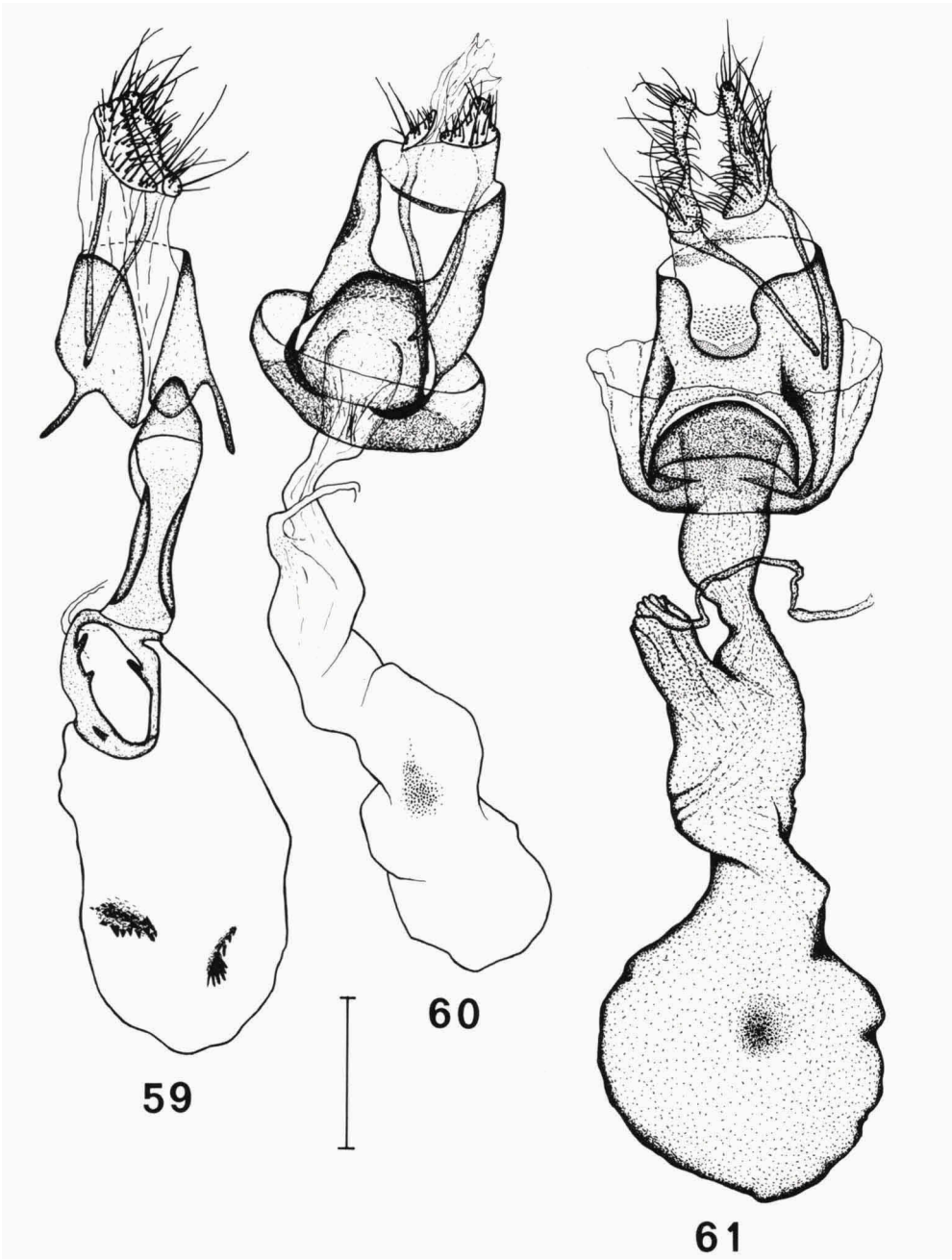
Figs. 52-53. Male genitalia; ventro-caudal aspect, valvae spread; aedoeagus separated, lateral aspect. 52, *E. tanalis*, holotype, slide BM 17482, Tana R., B.E. Africa. 53, *E. mythus*, slide RS 112, Bulawayo, S. Rhodesia. Scale 0.5 mm.



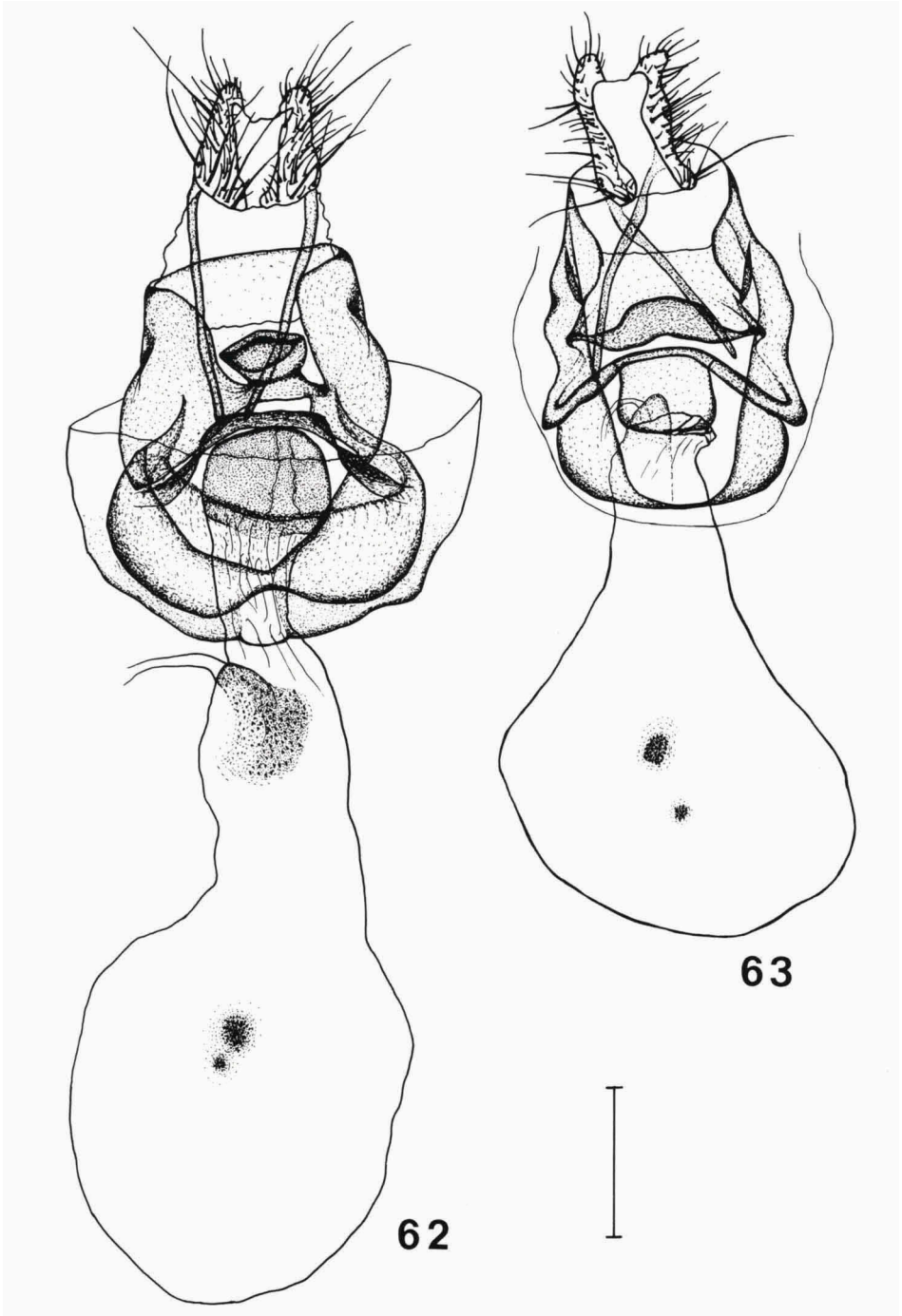
Figs. 54-55. Male genitalia; ventro-caudal aspect, valvae spread; aedoeagus separated lateral aspect. 54. *E. matador*, slide RS 107, Lubumbashi. 55, *E. gnathosellus*, holotype, slide RS 101, Degbezere, Cote d'Ivoire. Scale 0.5 mm.



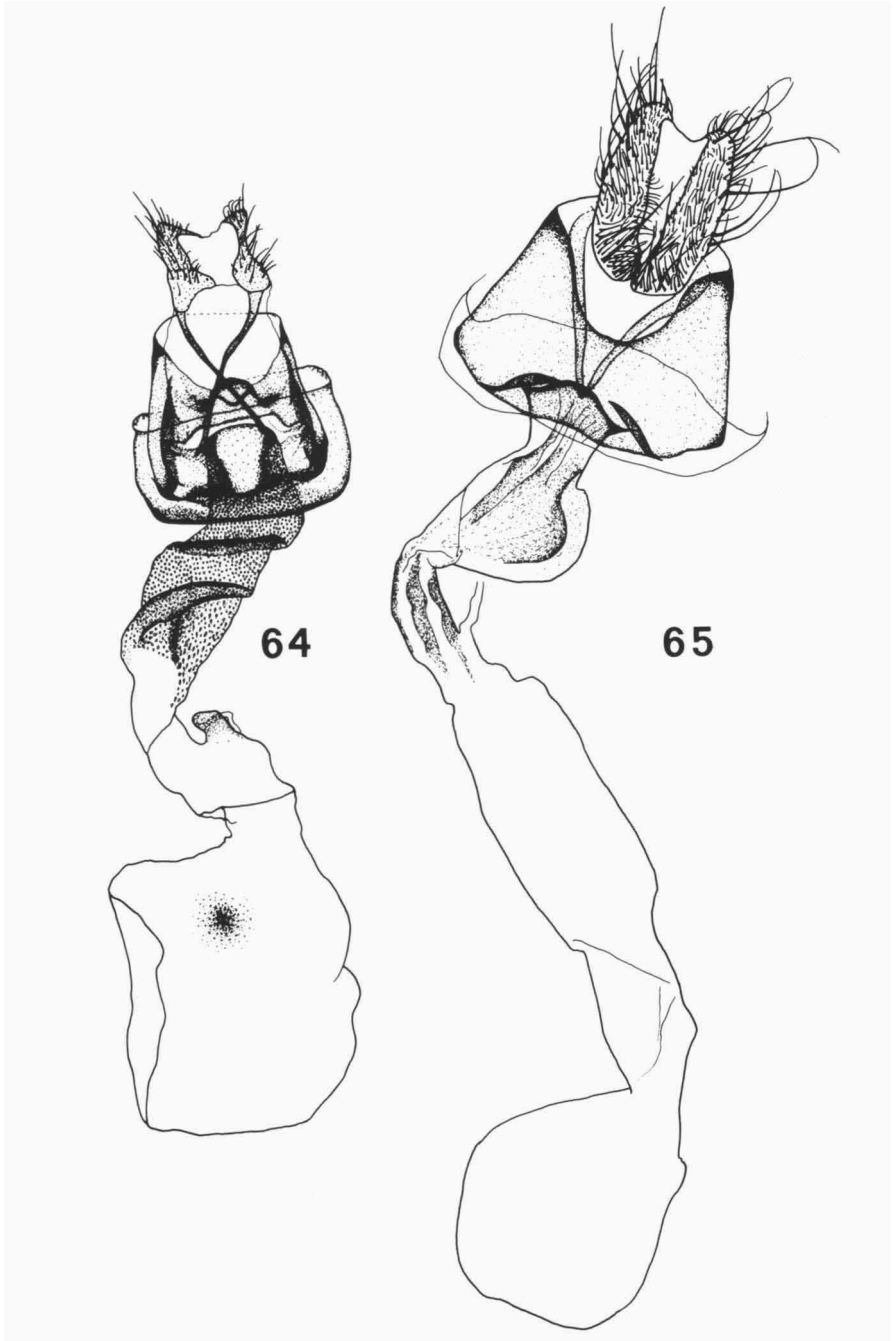
Figs. 56-58. Male genitalia; ventro-caudal aspect, valvae spread; aedoeagus separated, lateral aspect; juxta separated, ventro-caudal aspect. 56, *E. zephyrus*, slide RS 43, Bouitha, Cote D'Ivoire. 57, *E. zephyrus*, slide RS 44, Bouafle, Cote D'Ivoire. 58, *E. ocelleus*, slide RS 148, Gobabeb, S.W.A. Scale 0.5 mm.



Figs. 59-61. Female genitalia; ventral aspect. 59, *E. klimeschi*, slide RS 154, Tanzania, Sibwesa. 60, *E. discopis*, slide RS 125, Messina. 61, *E. labellum* holotype, slide RS 393, Kenya, Samburu. Scale 0.5 mm.



Figs. 62-63. Female genitalia; ventral aspect. 62, *E. locustus*, holotype, slide BM 12086, Zambia, Mbala. 63, *E. nigrobasalis*, paratype, slide RS 130, Pretoria. Scale 0.5 mm.



Figs. 64-65. Female genitalia; ventral aspect. 64, *E. erum*, holotype, slide RS 365, Kenya, Kargi. 65, *E. vinculellus*, slide RS 193, Marokko, Goundafa. Scale 0.5 mm.

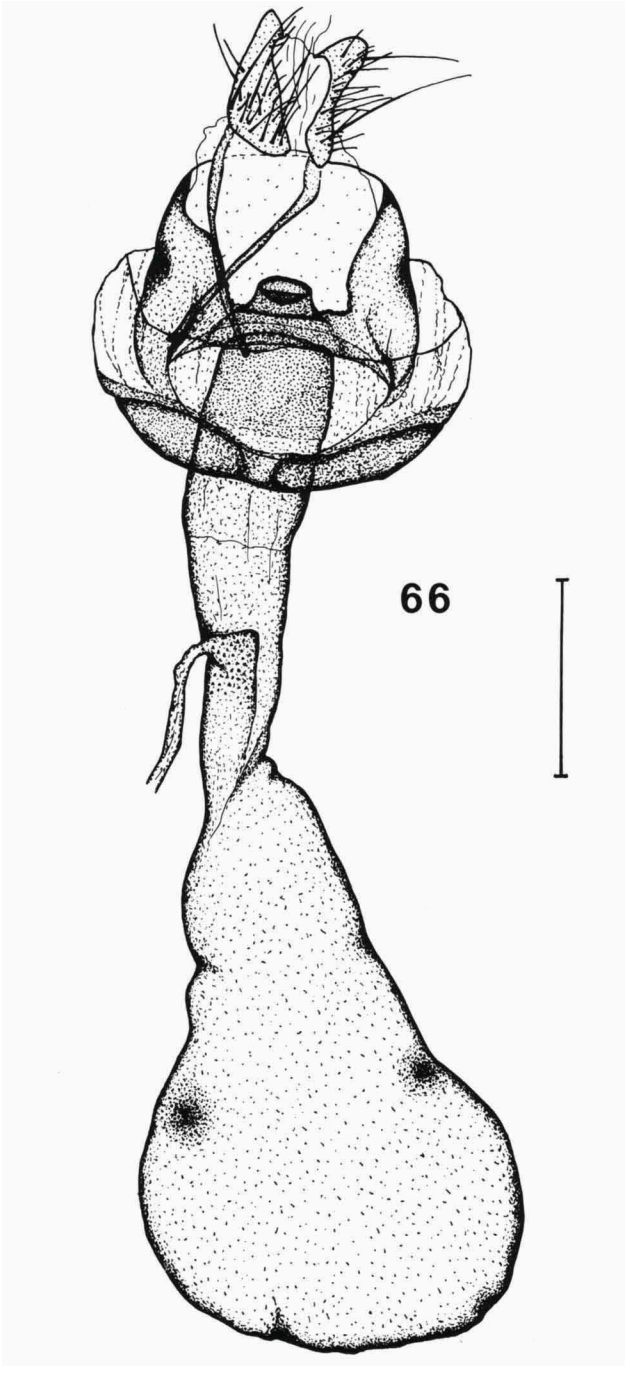
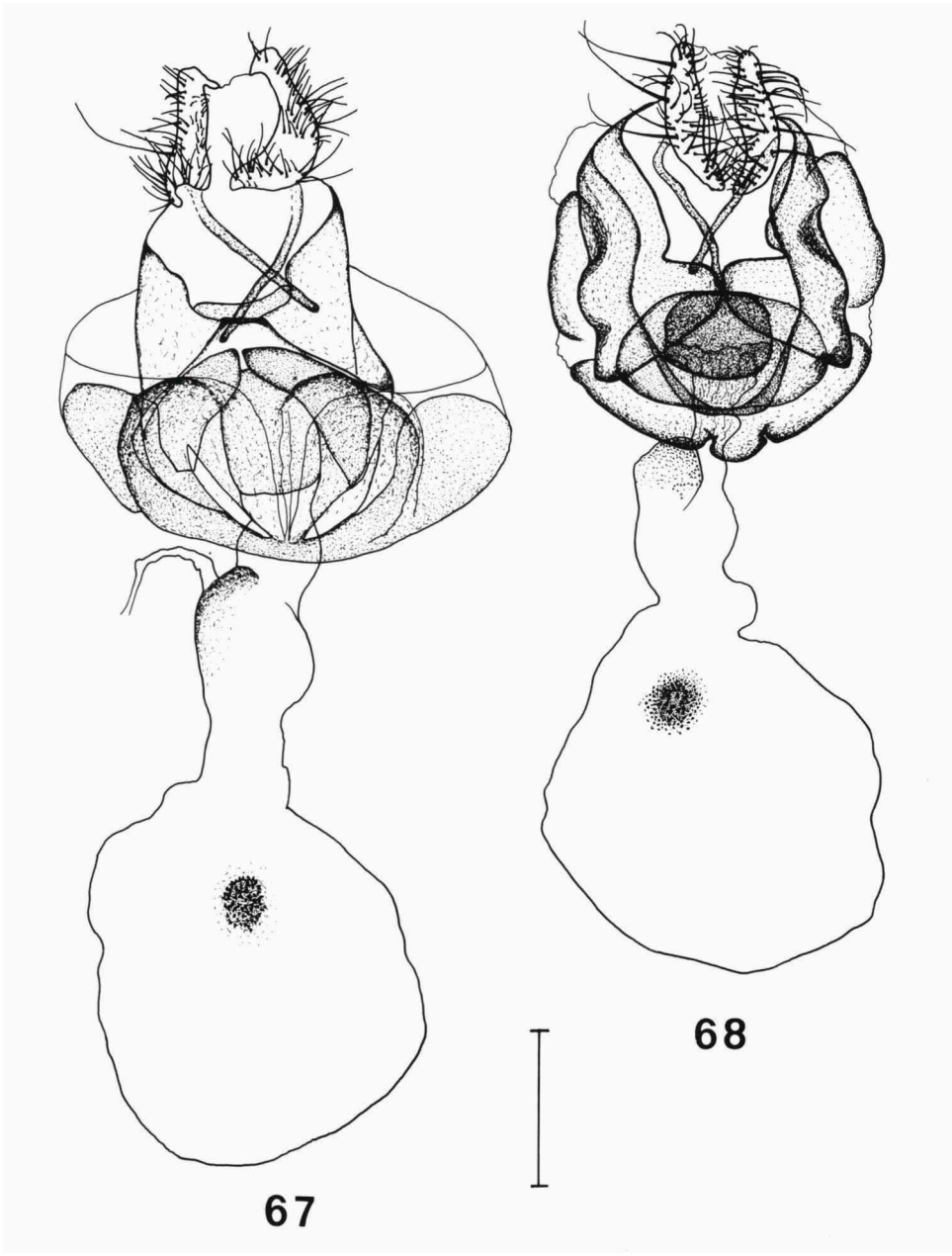
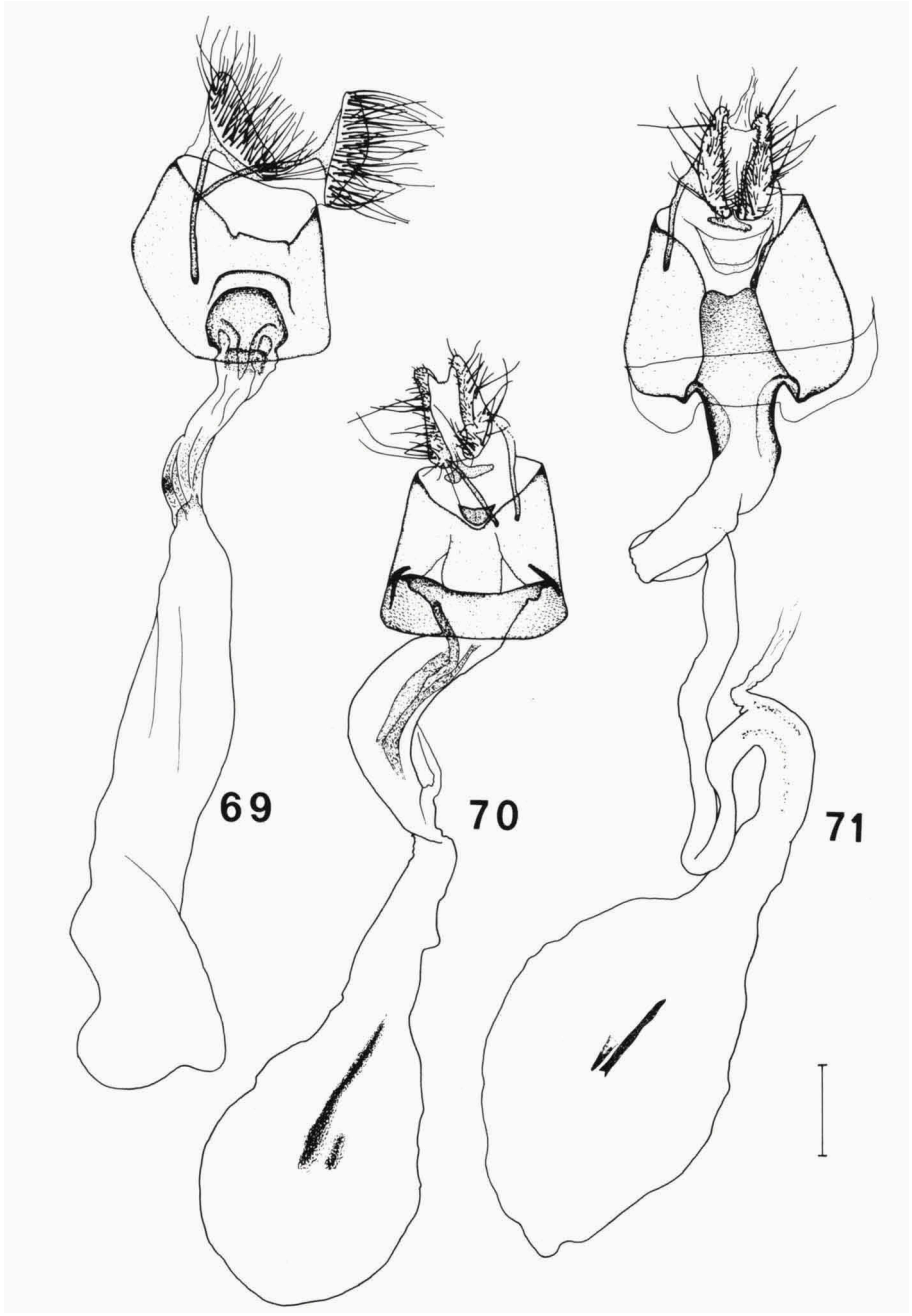


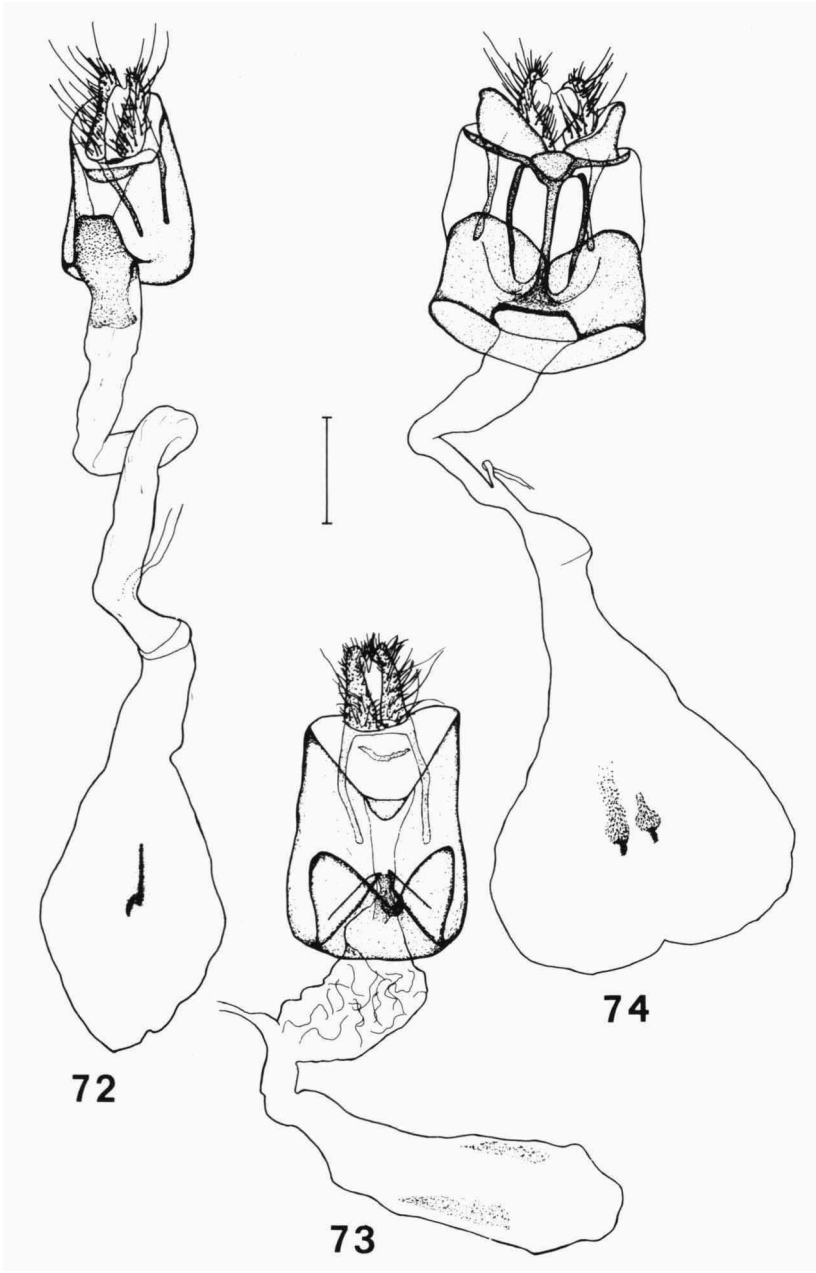
Fig. 66. Female genitalia; ventral aspect. 66, *E. aris*, paratype, slide RS 422, Samburu, Kenya. Scale 0.5 mm.



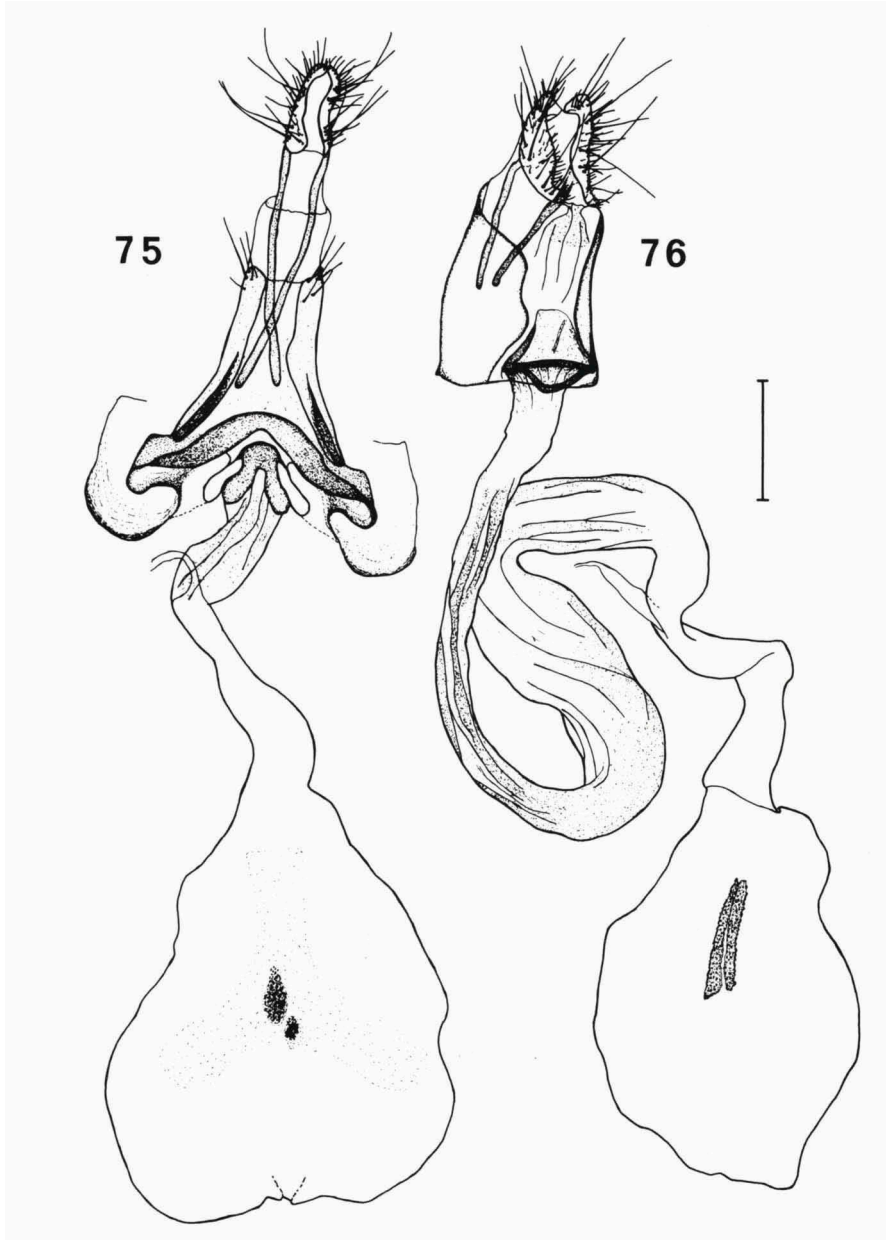
Figs. 67-68. Female genitalia; ventral aspect. 67, *E. viettei*, slide BM 17535, Tibesti. 68, *E. hampsoni*, paratype, slide BM 5099, Aouderas. Scale 0.5 mm.



Figs. 69-71. Female genitalia; ventral aspect. 69, *E. donum*, holotype, slide BM 12111, Haro-Ali. 70, *E. geminus*, holotype, slide BM 17483, Nairobi, B.E.A. 71, *E. tanalis*, paratype, slide BM 17481, Nairobi, B.E.A. Scale 0.5 mm.



Figs. 72-74. Female genitalia; ventral aspect. 72, *E. mythus*, slide RS 115, Abachaub, S.W.A. 73, *E. matador*, slide RS 108, Geleka. 74, *E. gnathosellus*, paratype, slide RS 132, Bouitha, Cote D'Ivoire. Scale 0.5 mm.



Figs. 75-76. Female genitalia; ventral aspect. 75, *E. zephyrus*, slide RS 131, Bouafle, Cote D'Ivoire. 76, *E. ocelleus*, slide RS 105, Egypt, Abu Simbel. Scale 0.5 mm.

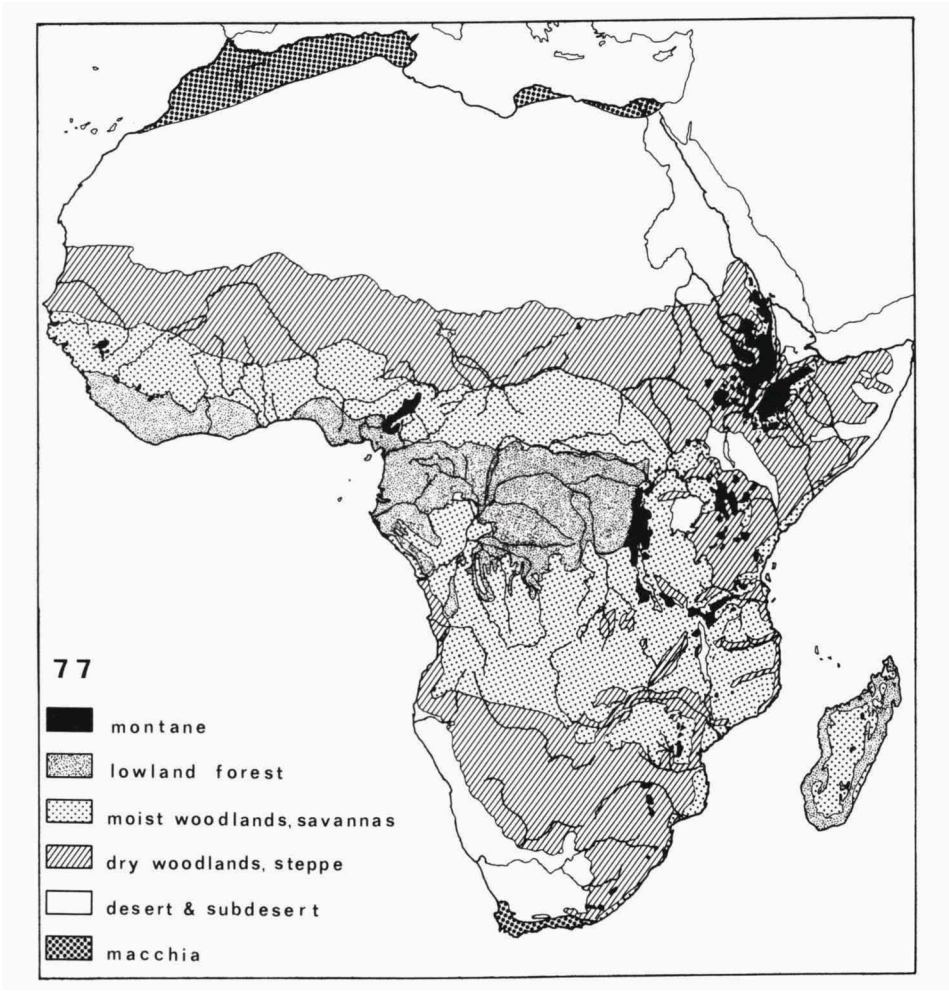
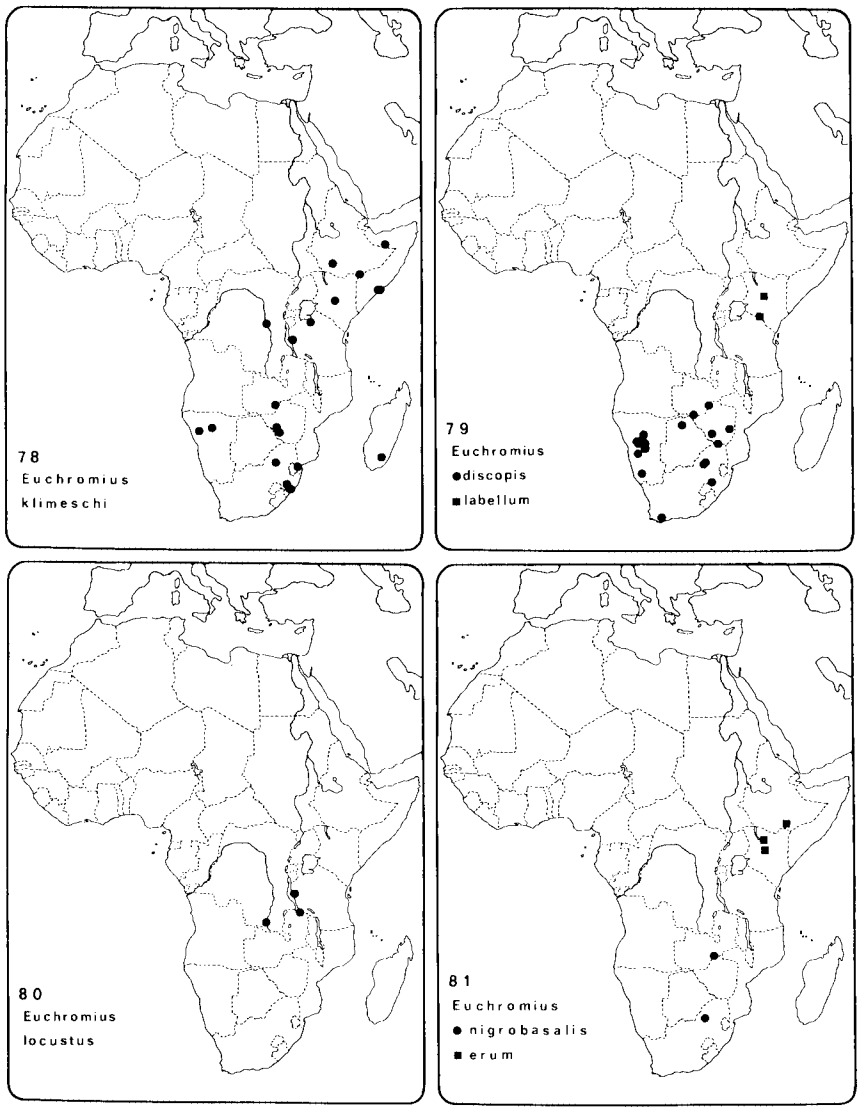
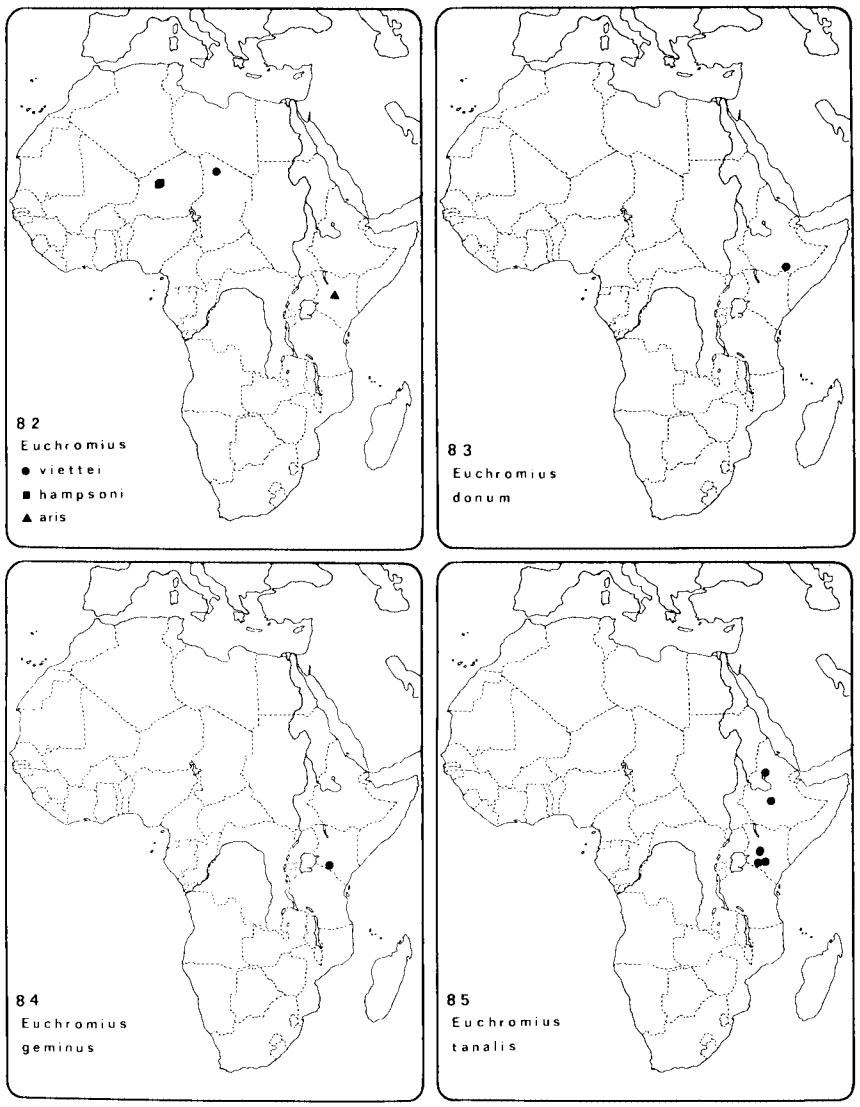


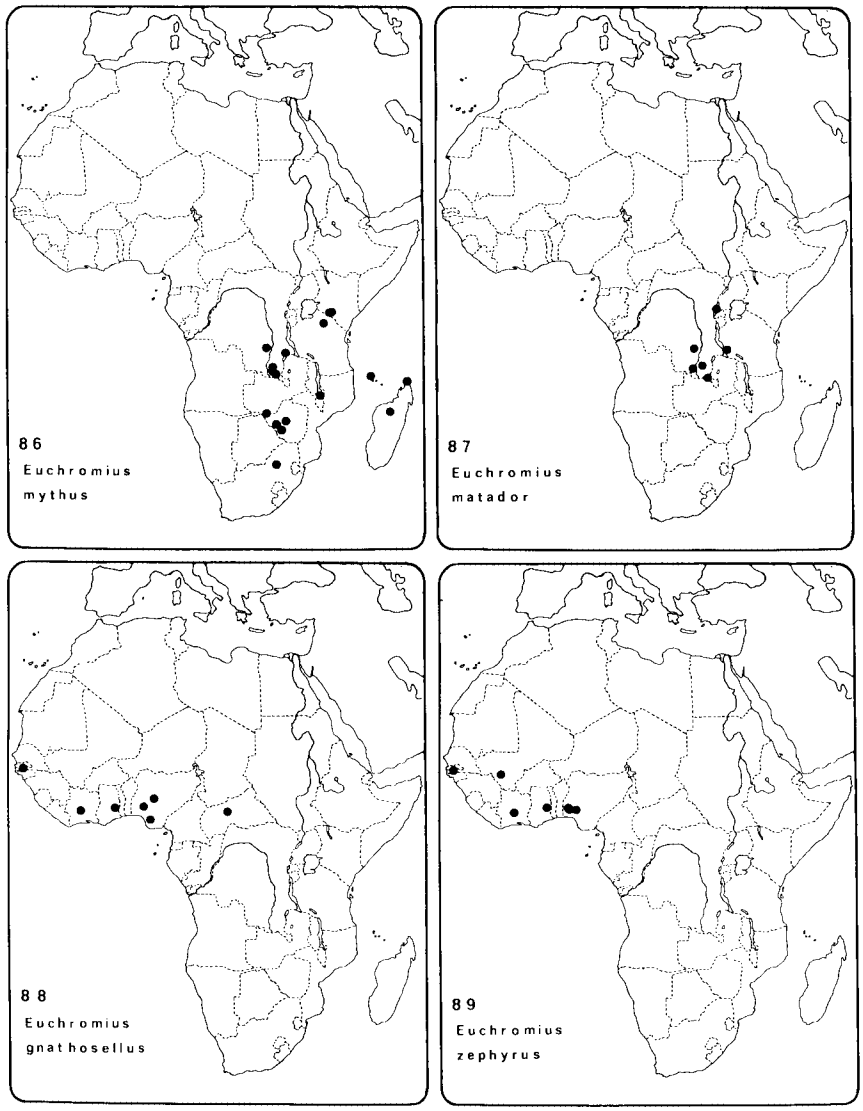
Fig. 77. African vegetation types (after map Oxford 4/63).



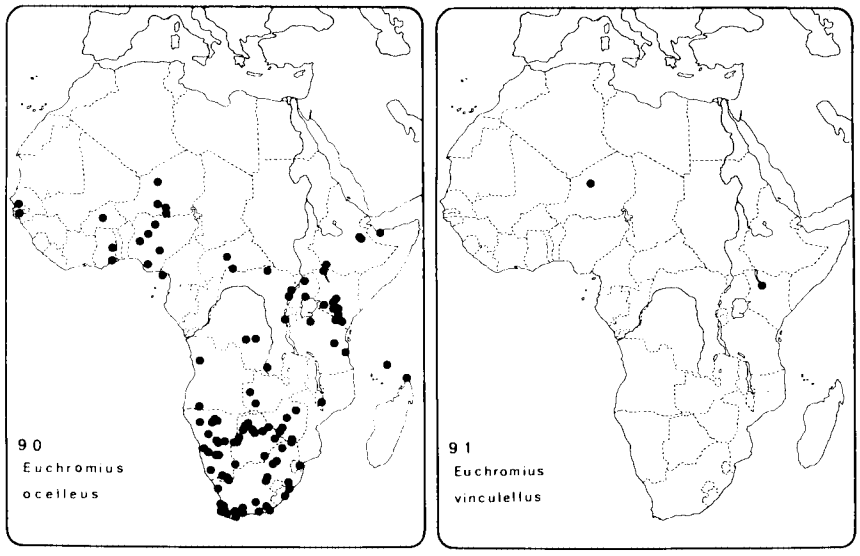
Figs. 78-81. Distribution maps: *E. klimeschi, E. discopis, E. labellum, E. locustus, E. nigrobasalis, E. erum.*



Figs. 82-85. Distribution maps: *E. viettei, E. hampsoni, E. aris, E. donum, E. geminus, E. tanalis.*



Figs. 86-89. Distribution maps: *E. mythus, E. matador, E. gnathosellus, E. zephyrus.*



Figs. 90-91. Distribution maps: *E. ocelleus, E. vinculellus*. Localities in the following countries have been omitted from figs. 90-91: Mauretania, Morocco, Algeria, Tunesia, Lybia, Sudan and Egypt.