BULLETIN ZOOLOGISCH MUSEUM



Vol. 4 no.8

14-II-1975

CAMPSOMERINAE (HYMENOPTERA, SCOLIIDAE) COLLECTED IN MALAWI (CENTRAL AFRICA) BETWEEN 1968 AND 1973

G. G. M. SCHULTEN

ABSTRACT

A collection of 301 Campsomerinae (Hymenoptera; Scoliidae) was made in Malawi (Central Africa) between 1968 - 1973. The specimens belong to 14 species, 10 subspecies and 4 formae, of which 5 species, 2 subspecies and 3 formae are new to the fauna of Malawi.

A description is given of two new species (Megameris soleatoides and Megameris malawiensis) and of one new forma (Campsomeriella caelebs forma epipygialis).

INTRODUCTION

According to the monograph on the African Campsomerinae by Betrem (1971) 16 species, 10 subspecies and 4 formae of Campsomerinae occur in Malawi of the approximately 80 species, 64 subspecies and 44 formae which till now have been described from Africa.

Almost all species mentioned in that monograph were collected by Dr. S.A. Neave around 1913 - 1914. His extensive collections are preserved in

the British Museum (Natural History). Most of his specimens come from the Southern Region of Malawi, especially from the lower slopes of Mt. Mulanje, the lake shore littoral, the Lake Chilwa plain and the Shire valley. Relatively few specimens came from the Central and Northern Regions.

Between 1968 - 1973, the present author and his wife, and Drs. and Mrs. H.R. Feyen (University of Malawi) collected 301 Campsomerinae in Malawi. Although collecting was done throughout the country, almost all Campsomerinae in the collection described here come from the Southern and Central Regions.

The specimens belong to 14 species, 10 subspecies and 4 formae of which 5 species, 2 subspecies and 3 formae are new to the fauna of Malawi. Two new species and one forma are described. The species collected are listed and discussed in the same sequence as in Betrem's monograph. For the localities mentioned in the present paper, see fig. 1.

Some years ago certain names of towns were changed, for instance Port Herald became Nsanje; Cholo became Thyolo, Mlanje became Mulanje and Fort Johnston was altered to Mangoche. The former names are mentioned in the monograph while in the present paper the new names are used.

The Campsomerinae which were collected by Neave on the slopes of Mt. Mulanje are labelled: Mt. Mlanje, Mlanje or Mlanje Boma. It is almost certain that all come from the lower slopes of Mt. Mulanje near Mulanje Boma at an altitude of 630 - 1400 m. Where necessary we refer to these localities simply as Mt. Mulanje, and altitudes are indicated where possible and necessary.

Species, subspecies and formae indicated with an asterisk are new to the fauna of Malawi. All specimens collected are kept in the Institute of Taxonomic Zoology (Zoölogisch Museum), Entomology Department, University of Amsterdam. For details on topography, climate, soils and vegetation of Malawi, see: Young & Brown, 1962; Brown & Young, 1964; Pike & Rimmington, 1965; Chapman & White, 1970; Stobbs (in preparation).

LIST OF SPECIES

Trielidini

- ☆ Trielis voiensis Betrem, 1971
- 1 6, Nkudzi Bay, 7-I-1972. A few specimens of this species have been collected previously in Tanzania and Kenya.

Crioscolia punctum (De Saussure, 1891).

2 d and 5 %, Nkudzi Bay, 9-IV-1972. This species was already known from the lower Shire valley, Mangoche and Karonga. It seems to prefer a hot, dry climate.

Campsomerini

Micromeriella hyalina insuperata Betrem & Bradley, 1971.

- 1 9, Cape Maclear, 7-V-1972. This subspecies was already known from Zomba and Lingadzi (Domira Bay). In the males several formae are distinguishable of which forma D has been recorded from Malawi. Our specimens belong to the following formae:
- * Micromeriella hyalina insuperata forma antennata (Klug, 1832).
- 1 d, Cape Maclear, 7-V-1972.

- ★ Micromeriella hyalina insuperata forma longinerva (Cameron, 1910).
- 6 d, Cape Maclear, **7-V-1972** (5); Nkhota Kota, 14-VII-1971.

Micromeriella hyalina insuperata is probably common along the lake shore but has also been found at higher altitudes (up to 940 m).

Micromeriella aureola bobi Betrem, 1971.

2 d, Limbe (Maone), 20-IV-1973; Mt. Soche, 19-XII-1970; 10 9, Mpatamanga, 15-V-1972; Limbe, 14-IX-1972 (2); Matope, 30-IV-1972, Cape Maclear, 7-V-1971 (2); Bunda, 25-XII-1970 (2), 1-I-1972; Lifupa (Kasungu), 16-VI-1972.

There are earlier records from Nsanje, the Lake Chilwa and lake shore areas and Mt. Mulanje. It is a common species which has been collected between 36 and 1200 m.

Megameris soleata soleata (Gerstaecker, 1871).

- 11 d, Chiromo, 16-II-1972; Kapachira falls, 25-V-1972; Mpatamanga, 15-V-1972; Mpyupyu hill (top), 2-III-1972, Likabula, 31-V-1972; Bunda 15-VI-1971; Salima (Grand Beach Hotel), 15-IV-1973 (3); Lifupa (Kasungu), 16-VI-1972 (2).
- 12 9 Mpatamanga, 15-V-1972 (6); Likangala river (Lake Chilwa), 18-XII-1973, 24-XII-1973; 29-XII-1972; Nkudzi Bay,7-I-1972; Cape Maclear, 4-IV-1970 (2).

This species has already been recorded from the lower Shire valley, the Lake Chilwa and lake shore areas, Mt. Mulanje, Zomba, Blantyre, Lilongwe and Mphunzi (near Dedza). It is a common species which has been found at altitudes between sea level and 1350 m.

☆ Megameris soleatoides sp. n.

Material.- Malawi: Chitala, 17-III-1970 (1 % holotype), collected by G.G.M. Schulten; Mpatamanga, 15-V-1972 (3 % paratypes); Limbe, Chancellor College, 18-VII-1968 (2 % paratypes); Salima, Grand Beach Hotel, 5-IV-1973 (2 % paratypes); Chitala, 17-III-1970 (% paratype).

Females of this new species resemble Megameris soleata soleata but can easily be distinguished by the yellow band on tergite 5 (4); the black oval lateral spots on tergite 3 (2); the shallow temporal groove and the smaller size.

Although the temporal groove of M. soleatoides is rather shallow, there is no doubt that this species belongs to the sectio Megameris.

The only representative of the sectio Canimeris, M. camens Betrem & Bradley, 1971, also has a shallow temporal groove but there is only one row of punctures in front of its occipital carina except medially. In addition, the impunctate area on the sides of pronotum behind the callosities is much smaller; the apical portion of the area horizontalis medialis is impunctate and the tubercle is larger; the longer spur of tibia III is not at all spatulate. The tergites of M. camens are also much more shiny than those of M. soleatoides.

In the 'Practical key to the species and subspecies of the tribe Campsomerini' of Betrem's monograph, M. soleatoides comes next to M. soleata soleata (p. 88).

Description.- ?. Black; mandibles brown-red; light yellow bands on tergites 2 (1) - 5 (4) and spots on sides of sternite 3 (2); black oval lateral spot on sides of tergite 3 (2); the yellow band of tergite 3 (2) is laterally incised in direction of lateral spots. Vestiture whitish yellow, apical three segments with black setae, but some whitish yellow setae on tergite 5 (4) near yellow band. Spurs of tibiae III piceous but apex lighter. Wings somewhat smoky, yellowish hyaline, veins dark brown.

Anterior margin of clypeus broader medially than laterally flat and broad on the side lobes; central portion of clypeus impunctate anteriorly but with some striae. Spatium frontale densely punctuate except for a small area between laminae frontalis. Large punctate area above scrobes; front short with widely spaced punctures especially next to ocelli and between these and the orbits (a little more punctate than in M. soleata soleata). Vertex with some widely spaced deep punctures, tempora with few punctures, posterior declivity of vertex punctate. Temporal groove shallow. Pronotum densely punctate except for its impunctate posterior margin and sides behind callosities, mesocutum widely punctate except medially; scutellum punctate except for its posterior margin, metanotum punctate except for its posterior margin. Mesapleura with sharp median crest, largely impunctate posteriorly, metapleura impunctate except for a few punctures above and in area near coxae III (less than in M. soleata soleata). Spurs of tibiae III slender, the

longer one spatulate. Area horizontalis medialis with rather deep punctures, transition between it and the area posterior medialis rounded, but with median acute projection. Area horizontalis lateralis impunctate except for crossband of punctures on its outer basal angle; spiracular areas impunctate, spiracular angles with a few punctures: lateral carina very high basally, on apex of outer side of area horizontalis lateralis and upper side of area posterior lateralis. Upper half of area posterior medialis widely punctate. Tergites dull, but more skiny than in M. soleata soleata; sternites shiny.

Length of body 21 - 23 mm, of wing 15 - 17 mm.

There is some colour variation in this species. One of the specimens from Limbe has in addition to the two lateral spots on tergite 3 (2) a central black spot. The paratype from Chitala has a tiny yellow posteromedial spot on the metanotum.

The male of M. soleatoides is unknown but is very likely similar to M. soleata soleata.

Megameris nigrocalcarata Betrem, 1971.

2 d, Bunda, 24-XII-1970 (2). In both specimens the yellow band on tergite 3 (2) is large and includes the lateral spots; tergite 6 (5) and the metanotum are black, and sternites 3 (2) - 6 (5) have large yellow spots on the sides.

This species was already known from Mt. Mulanje (690 m) and Nkhata Bay.

Betrem mentions specimens from Mt. Mulanje with a yellow band on tergite 6 (5). He also found some variation in the yellow spots on sternites 3 (2) - 6 (5), and in three specimens from the same locality there is a small yellow spot on the metanotum.

☆ Megameris malawiensis sp. n.

Material. - Malawi: Mpatamanga Gorge, 15-V-1972, collected by G.G.M. Schulten (1 o holotype); Kapachira falls, 25-V-1972 (2 o paratypes); Nkudzi Bay, 7-I-1972 (o paratype).

The males of this species resemble those of Megameris soleata soleata. They can however be easily distinguished by their black tibial spurs. Because of the rather pointed apices of the parameres and the black tibial spurs, M. malawiensis belongs to the subgenus Penimeris.

In Betrem's 'Practical key' M. malawiensis comes next to M. nigrocalcarata (p. 96).

Description. - d. Black with the following yellow markings: Clypeus at the sides; two large spots on median posterior margin of pronotum and a large and a small spot near tegulae; spot on tegulae and on hind corners of mesoscutum; three brown-yellow spots medially on scutellum; spot on fore and outer side coxae III; three short stripes apically on femora I; femora II apically yellow and femora III apically with short yellow line and small spot on the outer side; outer side of tibia I and II yellow; outer side of tibia III with a faint yellow line; hind margins of tergites 2 (1) - 6 (5) yellow; the yellow band is broadened medially on tergite 2 (1) and incised laterally by a knob-like projection of the black area on tergite 3 (2), the yellow band is broadened medially on tergite 4 (3); sternites 4 (3) - 5 (4) have narrow disjointed yellow bands; on 4 (3) the bands are almost united; sternite 6 (5) has lateral spots.

Tibial spurs III testaceous but apex lighter. Vestiture white but black to brown on last apical segments and white and black on sternite 7 (6). Wings hyaline, lightly fuscous along fore margin; veins dark brown.

Clypeus punctate at the sides. Spatium frontale densely punctate, central part of front almost impunctate but some deep punctures on lateral depression of front and on ocellar depression of posterior ocelli. Sinus ocularis widely punctate; vertex widely punctate; tempora impunctate. Pronotum densely punctate except for its impunctate posterior margin and the area near callosities; mesoscutum punctate; scutellum punctate, but impunctate posteriorly medially; metanotum punctate.

Mesapleura punctate; upper plate of metapleura has some widely spaced punctures above, lower plate of metapleura with widely spaced punctures. Tibial spurs III slender and blunt. Area horizontalis medialis punctate; transition between it and the area posterior medialis sharp. Area horizontalis lateralis punctate. Spiracular areas impunctate; spiracular angles punctate; lateral carina basally rather high. Area posterior medialis punctate.

Tergites and sternites shiny.

For genitalia see fig. 2.

Length of body 18-20 mm, of wing 14-15 mm.

There is some colour variation in this species. The paratype from Nkudzi Bay has a black scutellum and faint lateral spots on sternite 7 (6); coxa III has only one spot and femora I apically only two short stripes.

A very small specimen (length of body 15 mm, of wing 10 mm) which is excluded from the type series was collected at Kapachira falls (25-V-1972). It has a completely black pronotum, mesoscutum, scutellum and metanotum; sternite 4 (3) has a completely yellow band.

The female of this species is unknown.

Charimeris empeyi Betrem, 1971.

2 9 Chitala, 17-III-1970. There is one earlier record from the Northern Region (Mombera District).

Charimeris complicata Betrem, 1971.

1 d, Salima (Grand Beach Hotel), 15-IV-1973. Of this species only the holotype (from Mozambique) and one specimen from Lingadzi (Domira Bay) about 40 km north of Salima collected by Neave were known.

Cathimeris hymenaea (Gerstaecker, 1871).

4 9, Typical coloration. Likangala river (Lake Chilwa), 27-XI-1973; Limbe, 23-VI-1972; Cape Maclear, 18-IV-1973; Bunda, 24-XII-1970.

Cathimeris hymenaea bradleyana Betrem, 1971.

6 6, Kapachira falls, 25-V-1972; Mpatamanga, 22-III-1970; 15-V-1972. Zomba (side river of Mulunguzi stream), 10-XII-1973; Salima (lake shore), 26-VII-1968; Salima (Grand Beach Hotel), 15-IV-1973.

Cathimeris hymenaea and C. hymenaea bradleyana were already recorded from the lower Shire valley, the Lake Chilwa and lake shore areas and from Mt. Mulanje. It is a common species which has been recorded from altitudes between sea level and 1200 m.

Cathimeris lachesis lachesis (De Saussure, 1859).

14 d, Likangala river (Lake Chilwa), 25-V-1973; Zomba plateau (Mulunguzi stream), 6-II-1971, 11-III-1973; Zomba (side river of Mulunguzi stream), 29-XI-73 (4), 10-XII-73 (5); Mt. Soche, 10-XII-1970; Bunda, 24-XII-1970.

8 9, Likangala river (Lake Chilwa), 1-VII-1972; Zomba plateau (Mulunguzi stream), 25-X-1971; Limbe, 5-VI-1972, 10-VI-1972, 25-VI-1972; Blantyre, 7-VI-1970; Bunda, 24-XII-1970; Chelinda (Nyika plateau), 25-IX-72.

Cathimeris lachesis lachesis forma interrupta Betrem. 1971.

6 &, Zomba plateau (Mulunguzi stream), 6-II-1971, Queens View, 1-III-1970, Williams falls 29-III-1971; Zomba (side river of Mulunguzi stream), 10-XII-1973; Limbe (Maone), 28-IV-1973, 11-V-1973.

The subspecies *C. lachesis lachesis* and the forma *B* and *interrupta* were already recorded from Mt. Mulanje.

This subspecies probably occurs commonly at the higher altitudes (between 1200 and 2250 m).

- ★ Cathimeris masaica (Cameron, 1910).
- 5 9, Mpatamanga, 15-V-1972; Bunda, 16-I-1971; 1-I-1972; 24-XII-1970; 25-XII-1970. There are several records of this species from South and Eastern Africa.

Aureimeris fasciatella (Klug, 1832).

5 d. Kapachira falls, 7-XI-1970; Mpatamanga, 15-V-1972 (4). There are other records from the lower Shire Valley and lake shore area.

Aureimeris fasciatella arnoldi Betrem & Bradley, 1971.

- 4 9, Mpatamanga, 15-V-1972; Cape Maclear, 7-V-1971, Salima, 26-VII-1968 (2). There are other records from the lake shore area.
- A. fasciatella and A. fasciatella armoldi are probably not uncommon in areas below 510 m with a hot, dry climate.

Aureimeris spec. near A. basilewskyi Betrem, 1971.

1 9, Mt. Soche 19-III-1972. This specimen keys out as A. basilewskyi but there are some differences in colour and structure with the two specimens of this species which have been described by Betrem (1971). These specimens could not be studied.

There are the following differences with the published descriptions: Flagellae completely black; spines of tibiae III light testaceous. For coloration of abdomen see fig. 3. Front has some widely spaced, deep punctures before anterior ocellus, area lateralis widely punctuate more densely on its upper posterior corner. Transition between area horizontalis medialis and area posterior medialis has a small median tubercle. A.

basilewskyi is only known by two females from Zaire.

Campsomeriella caelebs (Sichel, 1864).

- 30 d, Chiromo, 16-II-1972 (2); Kapachira falls, 25-V-1972; Mpatamanga, 15-V-1972 (6); Khanda river (Lake Chilwa), 31-XII-73 (3); Matope, 30-IV-1972; Nkudzi Bay, 9-IV-1972; Cape Maclear, 4-IV-1970; 7-V-1971 (3); Salima (lake shore), 26-VII-1968 (8), 25-X-1970 (2); Bunda, 15-VI-1971; Nkhota Kota, 14-XII-1971.
- 27 9, Mpatamanga, 15-V-1972 (2); Likabula, 8-III-1970; Chambe plateau (Mt. Mulanje), 1-VI-1972; Khanda river (Lake Chilwa), 31-XII-1973; Likangala river (Lake Chilwa), 4-XII-1973; Zomba plateau, 17-VII-1971; Limbe, 15-IV-1972, 16-V-1968, 4-XII-1971; Mt. Soche, 25-X-1970; Nkudzi Bay, 9-IV-1972; Cape Maclear, 4-IV-1970; Salima (lake shore), 15-I-1972, 15-IV-1973 (10), 26-VII-1968 (3).
- C. caelebs is a common species, which has been recorded from altitudes between sea level and 1800 m in various parts of the country. Betrem (1971) mentions a certain variability in the males. Two males collected in Ethiopia have an entirely black tergite 2 (1) and another specimen has a large median spot there. The epipygium is entirely black in all three specimens. In our collection 10 specimens have a large spot on tergite 2 (1); 14 specimens have only a faint spot and in 6 specimens this tergite is completely black. The epipygium in all specimens is red.
- ☆ Campsomeriella caelebs forma epipygialis nov.
- 3 d, Mpatamanga, 15-V-1972; Limbe (Chancellor College), 30-VI-1968; Cape Maclear, 7-V-1971. There are three specimens of *C. caelebs* with a dorsal apical large spot on tergite 2 (1), but their epipygium is black. A black epipygium is also found in *C. thoracica* forma epipygialis Betr. I believe that the colour of tergite 2 (1) varies from a red dorsal apical large spot to a completely black tergite 2 (1). The three specimens with the black epipygium are thought to belong to a different forma which, in analogy with *C. thoracica*, is called *C. caelebs* forma epipygialis.

Campsomeriella pseudocollaris Betrem, 1971.

2 9, Cape Maclear, 4-IV-1970. The setae on the head, mesoscutum and upper portion of the mesopleura are brownish white instead of grey white.

This colour variation is known from Rhodesia. C. pseudocollaris has once been collected previously on Mt. Mulanje.

Campsomeriella rubromarginata Betrem, 1971.

3 d, Cape Maclear, 4-IV-1970; Lake Chilwa, 1-VII-1972; Khanda river (Lake Chilwa), 31-XII-1973. This species has been collected previously on Mt. Mulanje.

Campsomeriella madonensis (Buysson, 1910).

- 5 9. Path near Mpyupyu hill, 18-V-1973; Khanda river (Lake Chilwa) 11-XII-1973 (2), 18-XII-1973, 24-XII-1973. There are earlier records from Chiromo and Mt. Mulanje.
- ★ Campsomeriella madonensis madonensis (Buysson, 1910).
- 15 d, Tibiae III black. Path near Mpyupyu hill, 18-V-1973 (3), Khanda river (Lake Chilwa), 11-XII -1973, 18-XII-1973 (7), 24-XII-1973 (2), 31-XII-1973 (2).
- 3 d, Tibiae III with a short yellow line. Likangala (Lake Chilwa), 25-V-1973; Khanda river (Lake Chilwa), 24-XII-1973, 31-XII-1973.

This subspecies has been recorded from Tanzania, Kenya, Uganda and Ruanda.

Campsomeriella madonensis sambiensis Betrem, 1971.

- 85 d, Tibiae III black. Path near Mpyupyu hill, 18-V-1973 (7); Likangala river (Lake Chilwa), 31-V-1973; Khanda river (Lake Chilwa), 18-XII-1973 (41); 24-XII-1973 (20), 31-XII-1973 (16).
- 4 d, Tibiae III with a short yellow line. Khanda river (Lake Chilwa), 18-XII-1973 (2), 24-XII-1973, 31-XII-1973.

Both colour forms are already known from Mangoche and the forma with the black tibia was also collected on Mt. Mulanje.

- \star Campsomeriella madonensis transvalensis (Cameron, 1910).
- 1 d, Khanda river (Lake Chilwa), 18-XII-1973. This subspecies has been collected east and south of Malawi. All specimens of *C. madonensis* and its subspecies were collected in the plain west of Lake Chilwa. The subspecies and colour forms mentioned above often occurred together in the same area of the plain, feeding on the flowers of *Nidorella auriculata* D.C.

The following species, subspecies and formae are known to occur in Malawi but were not collected.

Trielis nyasensis Betrem, 1971. Only two 9 of this species are known which were collected S.W. of Lake Chilwa on 12-I-1914.

Turbatimeris umtalensis Betrem, 1971. One specimen was collected around 1902 in the Mombera district (Northern Region). Other specimens were collected in Zambia, Rhodesia and South Africa.

Micromeriella hyalina insuperata forma D. Betrem, 1971. According to Betrem 1971, this forma is found in Malawi, Chad and Uganda.

Extrameris mansuefactoides mansuefactoides Betrem & Bradley, 1971. Two 9 are known from Mt. Mulanje (14-IV-1913) and one from Mozambique.

Extrameris neavei Betrem, 1971. On Mt. Mulanje 121 & were collected by Neave (III, IV-1913) and one at Njakwa. There is one other specimen known from Rhodesia (Salisbury).

Extrameris mlanjensis Betrem, 1971. Only the holotype (d) is known from Mt. Mulanje, (17-II-1913).

Megameris pseudofasciatipennis pseudofasciatipennis Betrem, 1971. Two 9 were collected on Mt. Mulanje (12-XII-1913) and one at Mangoche (1902). A few other specimens are known from Tanzania.

Cathimeris hymenaea bradleyana forma ugandae Betrem, 1971. This forma has been collected on Mt. Mulanje and at Mangoche and is recorded also from surrounding countries.

Cathimeris lachesis lachesis forma B. Betrem, 1971. This form was collected once on Mt. Mulanje.

Aureimeris africana (De Saussure, 1859). 36 9 and 17 6 were collected on Mt. Mulanje in 1913; 1 9 south west of Lake Chilwa and a 6 in the Ruo valley. Other records are from South Africa.

Aureimeris mansueta (Gerstaecker, 1857). There is one record from Chiromo and a few others from East and South Africa.

ACKNOWLEDGEMENTS

The author is much indebted to Dr. J.G. Betrem for his help with the identifications and to Miss J. van der Horst for drawing the figures.

REFERENCES

BETREM, J.G., 1971. The African Campsomerinae (Hymenoptera, Scoliidae). Mon. ned. ent. Ver., 6: 1-325.

BROWN, P. & A. YOUNG, 1964. The physical environment of Central Malawi: 1-93. (Govt. Printer, Zomba, Malawi).

CHAPMAN, J.D. & F. WHITE , 1970. The evergreen forests of Malawi: 1-190. (Commonwealth Forestry

Inst., Univ. Oxford).
PIKE, J.G. & G.T. RIMMINGTON, 1965. Malawi: a geographical study: 1-229. (Oxford Univ. Press, London).

STOBBS, A.R. (in preparation). The physical envi-

ronment of Southern Malawi.
YOUNG, A. & P. BROWN, 1962. The physical environment of Northern Nyasaland: 1-107. (Govt. Printer, Zomba, Malawi).

Dr. G.G.M. SCHULTEN

Former address: Chancellor College, University of

Malawi, Box 280, Zomba, Malawi.

Present address: Royal Tropical Institute, Department of Agricultural Research; Products Research Division; Entomology. Mauritskade 63, Amsterdam, The Netherlands.

Received 27 August 1974

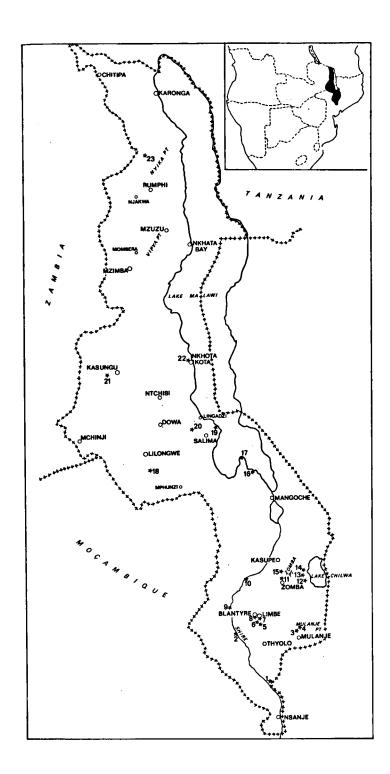


Fig. 1. A map of Malawi indicating the collecting localities, with indication of the height above sea level.

1, Chiromo 52 m; 2, Kapachira 108 m; 3, Likabula 825 m; 4, Chambe plateau (Mt. Mulanje) 1800 m; 5, Limbe 1190 m; 6, Mt. Soche 1200 m; 7, Limbe (Maone) 1190 m and Limbe (Chancellor College) 1170 m; 8, Blantyre 1200 m; 9, Mpatamanga (Gorge) 234 m; 10, Matope 450 m; 11 Zomba (side river of Mulunguzi stream) 1005 m; 12, Likangala river (Lake Chilwa) 640 m; 13, Mpyupyu hill 1059 m; 14, Khanda river (Lake Chilwa) 640 m; 15, Zomba plateau (Mulunguzi stream) 1650 m and Zombā plateau (Williams falls) 1740 m and Zomba plateau (Queen's View) 1800 m; 16, Nkudzi Bay 487 m; 17, Cape Maclear 487 m; 18, Bunda 750 m; 19, Salima (Grand Beach Hotel) 487 m and Salima (lake shore) 487 m; 20, Chitala 617 m; 21, Lifupa (Kasungu) 1021 m; 22, Nkhota Kota 487 m; 23, Chelinda (Nyika plateau) 2285 m.

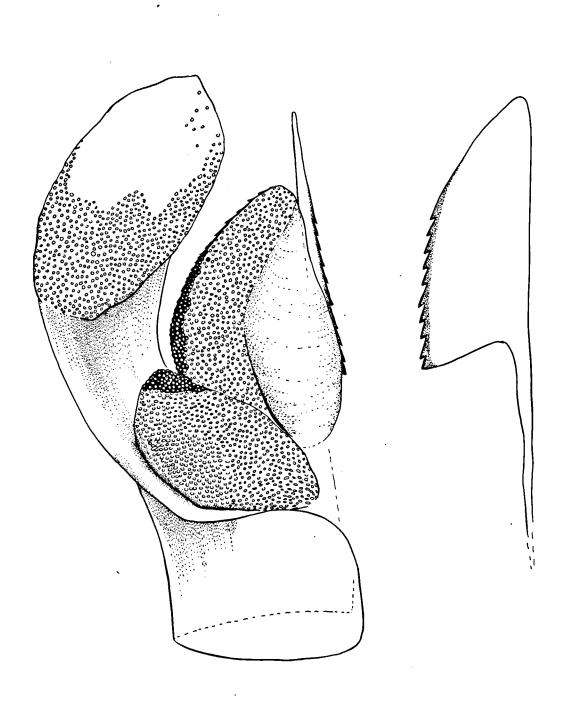


Fig. 2. The male genitalia of Megameris malawiensis sp. n.

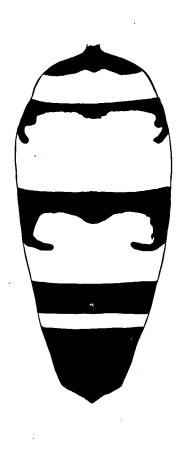


Fig. 3. The coloration of the tergites of Aureimeris spec. near A. basilewskyi Betrem, 1971.