

A NEW GENUS OF AFRICAN MEGASTIGMINAE
(HYMENOPTERA : CHALCIDOIDEA).

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KNOWLEDGE of the African Megastigminae is scanty as a long series of the group has not hitherto been studied. *Megastigmus somaliensis* Hussey has recently been described (1956) from specimens reared from seeds of *Juniperus procera* Hochstetter in British Somaliland, Abyssinia and Kenya, and *M. aculeatus* Swederus is known from seeds of *Rosa* spp. in French Somaliland (Milliron, 1949). *M. suspectus* var. *pinsapinis* Hoffmeyer, which Berland (1950) bred from seeds of *Cedrus atlantica* Marelli in the South of France, probably occurs in the native home of this host in the Atlas Mountains of Algeria and Morocco.

Through the kindness of the Trustees of the British Museum (Natural History) and the Director of the Commonwealth Institute of Entomology I have been able to examine some 200 specimens from various parts of Africa. The majority of these specimens were captured without reference to host so that it has often been impossible to decide which of the sexes were co-specific. The following descriptions are based on species submitted to the Commonwealth Institute of Entomology for identification and for which the host has been positively identified.

I acknowledge with thanks the helpful criticisms of Mr. R. D. Eady and Mr. G. J. Kerrich of the Commonwealth Institute of Entomology and am grateful to Mr. E. O. Pearson for information on Afrikaans local names.

***Eumegastigmus* gen. n.**

Milliron (1949 : 264) has defined a combination of characters by which *Megastigmus* may be separated from other genera in the subfamily. He was, however, only able to use the very inadequate descriptions by Girault for *Bootanomyia*, *Paramegastigmus*, *Epimegastigmus*, *Neomegastigmus*, and *Epibootania*. During the present study Mr. Riek, of the Australian Scientific Service, Canberra, who is working on a revision of the Australian Megastigminae, discussed the material and was kind enough to give me his provisional key to these genera and *Pulvilligera* Milliron.

Eumegastigmus resembles, in general form, the relatively long and thin *Paramegastigmus* from which it is distinguished by the fact that the axillae do not touch. According to Riek's provisional key, *Eumegastigmus* would be very close to the Australian *Megastigmus* and *Neomegastigmus* but it may be separated from both of these genera by the elongate thorax. The ratio of thoracic length (measured from the front of the mesopraescutum to the posterior margin of the scutellum) to breadth varies between 1.7–2.1 in *Eumegastigmus* but only 1.3–1.5 in *Megastigmus*. Other characteristics include the scarcely emarginate anterior flange of the pronotum and the fact that the length of the antennal scape is equal to the combined lengths of the pedicel, ring-joint and first two funicle segments. There

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are a pair of scutellar hairs posterior to the transverse line which, in some species, is so faint as to be detectable only by a change in surface sculpture. The male genitalia are of the form figured for *M. cupressi* by Mathur (1955), but the claspers have only three teeth.

Type species: *Eumegastigmus hypogea* sp. n. from Nairobi, Kenya.

It is interesting to observe that the hosts from which this new genus has been recorded are members of the Compositae and Anacardiaceae which, according to Sir Edward Salisbury, Director of the Royal Botanic Gardens, Kew, have a relatively high resin content. This suggests that *Eumegastigmus* is more closely related to the predominantly conifer infesting *Megastigmus* than to the Australian members of the sub-family which are largely parasitic.

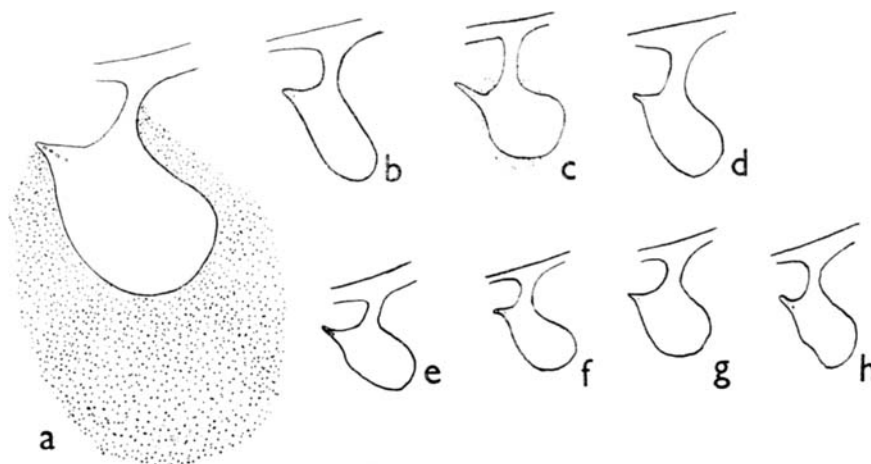


FIG. 1.—Stigma of (a) *Eumegastigmus hypogea* sp. n., ♂; (b) ditto, ♀; (c) *E. thomseni* sp. n., ♂; (d) ditto ♀; (e) *E. rhusi* sp. n., ♂; (f) ditto ♀; (g) *E. transvaalensis* sp. n. ♂, (h) ditto ♀. (All to same scale.)

Eumegastigmus hypogea sp. n.

Female.

Length (mm.): Body 4.6; abdomen 1.7; ovipositor 1.9.

Vertex of head weakly convex with well defined transverse rugae; genal area with oblique rugae; occipital carina regularly rounded; posterior ocellar line 1.7 times ocell-occipital, ocellocular and lateral ocellar lines; malar space one-third height of compound eye; hairs on head sparse, stout and black but mostly pale on lower face. Pronotum with strong transverse rugae coarser than those on vertex, anterior flange well developed but weakly emarginate; mesopraescutum with coarse irregular transverse rugae posteriorly but finer anteriorly with a tendency to shagreening; parapsides with irregular transverse rugae often almost as coarse as on posterior part of mesopraescutum, especially near the notaulices; axillae finely obliquely rugose; scutellum basally truncate with two rows of 3-4 scutellar hairs, shagreened anterior to the fine transverse line and with fine oblique rugae behind; propodeum with a variably developed central depression towards hind margin and with coarse lateral rugae showing a tendency to be arranged in concentric circles, interstitial rugosity fine. Abdomen scarcely compressed laterally; ovipositor normally upcurved from the base.

Nine to eleven bristles on basal abscissa of the sub-marginal vein of the fore wing; stigma as in fig. 1b.

Colour : Generally yellow and black. Head yellow excepting genal suture, antennal scrobes and an area, including the ocelli, extending back to the occiput, which are black. Pronotum bright yellow, excepting medial dorsal black band which is narrower posteriorly; mesopraescutum yellow-brown with a dark medial dorsal band which is triangularly broadened anteriorly and extends on to the scutellum posteriorly; parapsides and axillae yellow-brown; scutellum with brown anterior central spot and longitudinal infuscation extending posteriorly; metanotum yellow; propodeum black medially with a narrow black line below meta-epimeron. All thoracic sutures black. Abdomen shining dark brown above, excluding segment 8 which is yellow-brown, paler below, tergites 4-7 with lateral paler areas extending up from below. Ovipositor valves black.

Male.

Length (mm.): 5.0.

Sculpture as in female but propodeum with lateral carinae as in fig. 2. Twelve submarginal bristles on fore wing, stigma as in fig. 1a. *Colour* : Yellow and black but proportions vary considerably. Head with face black and only clypeus and genal areas yellow; vertex yellow with a black patch around the ocelli; scrobes black, antennae brown above, yellow below. Prothorax yellow with central dorsal black longitudinal band widening posteriorly and with lateral areas black; mesopraescutum with longitudinal, dorsal band black; parapsides yellow-brown but black ventro-laterally; axillae similar; scutellum with central longitudinal black band wider behind the transverse line; metanotum yellow, propodeum entirely black. Legs with all coxae black, femora entirely yellow or almost entirely dark brown, rest of legs yellow. Abdominal segments 3-8 black, rest yellow apically, on tergites 6 and 7 the yellow bands are interrupted with black.

A very variable species in which some specimens show the following characters:

Female.—Depression formed by carinae on propodeum may be long and narrow or almost absent. Band on dorsal surface of pronotum almost absent or only red-brown. Mesopraescutum, outer angles of parapsides, axillae and scutellum can be entirely reddish-brown; lateral black line on meta-epimeron sometimes absent.

Male.—Head may be entirely yellow or the vertex black with only narrow bands around the compound eyes. Propodeum with black restricted to central triangular patch, broadest posteriorly, and along spiracular groove. Infuscation around stigma of fore wing very variable. Coxae may sometimes be yellow apically. Abdominal segments brown-black with segments 4-8 yellow laterally and the dark brown apical bands becoming lighter below.

KENYA: Nairobi, v.1937, bred from "Oil Seed", probably *Helianthus* sp. (Compositae).

Holotype ♀, allotype ♂, 3 ♀, 1 ♂ paratypes, in the British Museum (Natural History). 1 ♀ and 1 ♂ paratypes in author's collection.

***Eumegastigmus thomseni* sp. n.**

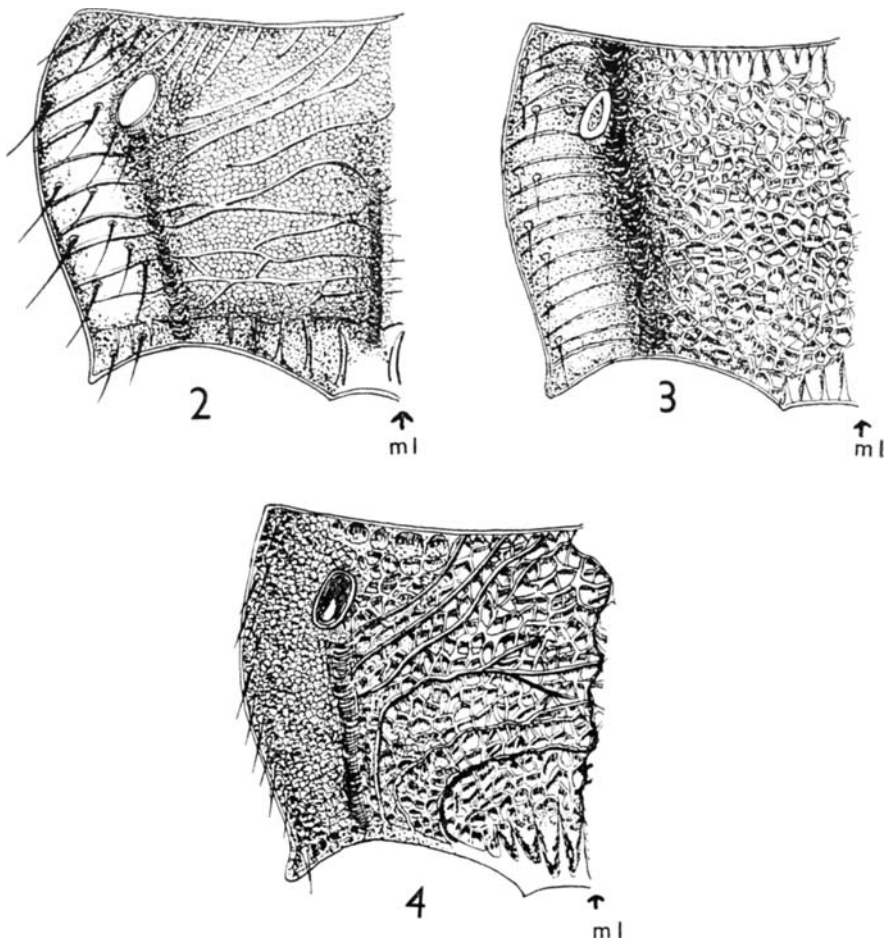
Female.

Length (mm.): Body 3.2-5.0; abdomen 1.2-1.5; ovipositor 1.5-1.7.

Vertex weakly convex with transverse rugae circularly oblique before ocelli; genal area with fine oblique rugae; occipital carina sharp, evenly rounded; hairs on head sparse, dark and coarse but on face and cheeks pale, denser, and becoming longer towards mouth; posterior ocellar line 1.7 times ocellocular and lateral ocellar lines and 1.4 times ocelloccipital line; malar space half height of compound eye. Pronotum with transverse rugae coarser than those on vertex, anterior flange strongly developed but weakly emarginate; mesopraescutum and parapsides transversely rugose (as on vertex) but finer anteriorly especially on mesopraescutum; axillae finely obliquely rugose and almost contiguous before the scutellum which is rounded anteriorly; scutellum finely transversely shagreened

anterior to the ill-defined transverse line, similarly but longitudinally shagreened behind; scutellar hairs 3-4; propodeum irregularly and coarsely rugose with lateral transverse carinae similar to *E. hypogea* (fig. 2), spiracular groove well defined. Abdomen laterally compressed, ovipositor very sharply upturned from base.

Ten to twelve bristles on basal abscissa of sub-marginal vein of fore wing; stigma as in fig. 1d.



FIGS. 2-4.—Propodeum of (2) *Eumegastigmus hypogea* sp. n. ♂; (3) *E. rhusi* sp. n. ♀; (4) *E. transvaalensis* sp. n. ♀.

Colour: Yellow-brown. Face yellow; area around ocelli, central portions of meso-praescutum, scutellum and anterior angles of parapsides darker yellow-brown; propodeum black mid-dorsally. Abdominal tergites 3-7 yellow-brown to black above, paler below, apical segments paler yellow-brown. In some specimens the epimeral groove on propodeum is black.

Male.

Length (mm.): 3.5-4.0.

Ten to eleven bristles on basal abscissa of submarginal vein of fore wing; stigma as fig. 1c.

Surface sculpture as in female.

Colour : Yellow-brown excepting darker diamond-shaped patch on scutellum and black triangular area on propodeum. Abdomen dark brown to blackish dorsally, on segments 3-8 yellow-brown gradually extending further up the posterior edge of successive segments, apical segments yellow-brown.

TRANSVAAL PROVINCE : Wolhuitensenskop, 12.i.20, from seeds of "Witharpuisbos" (*F. Thomsen*). The proper name of this host cannot be determined, but Mr. Pearson, of the Commonwealth Institute of Entomology, has suggested that it is possibly related to the so-called resin-bush *Heeria insignis* (Del) O. Ktze. (Anacardiaceae).

Holotype ♀, allotype ♂ and 3 ♀ paratypes in British Museum (Natural History). 1 ♀ and 1 ♂ paratypes in the author's collection.

***Eumegastigmus rhusi* sp. n.**

Female.

Length (mm.) : Body 2.4-2.7; abdomen 1.1; ovipositor 1.4.

Description as for *E. thomseni* excepting :

Head almost quadrate (ratio width/length of vertex 1.8 in *rhusi* but 3.5 in *thomseni*); posterior ocellar line twice ocellular and lateral ocellar lines; malar space one-third height of compound eye. Due to smaller size the surface sculpture appears finer than *thomseni*. Mesopraescutum and parapsides more uniformly transversely rugose, finer than rugae on pronotum; scutellar hairs 3; propodeum with lateral transverse rugae absent and sculpture finer (fig. 3).

Nine to ten bristles on basal abscissa of sub-marginal vein of fore wing; stigma as in fig. 1f.

Colour.—As *thomseni* but no black on spiracular groove and epimeron. Sometimes a black area around posterior ocelli.

Male.

Length (mm.) : 2.0-2.2.

Sculpture as in female. Stigma of fore wing as fig. 1e.

Nine to ten bristles on basal abscissa of sub-marginal vein of fore wing.

Colour.—As *thomseni* but propodeum with a dorsal triangular black area. Abdomen dark brown dorsally and yellow-brown below.

ORANGE FREE STATE : Bloemfontein 18.xii.1924, from seeds of *Rhus lancea* L. (Anacardiaceae). Labelled South Africa AcP3291 For. Dep. Div. Ent. Pretoria.

Holotype ♀, allotype ♂, and 2 ♀ and 3 ♂ paratypes in British Museum (Natural History). 1 ♀ and 1 ♂ paratype in author's collection.

***Eumegastigmus transvaalensis* sp. n.**

Female.

Length (mm.) : Body 3.1-3.4; abdomen 1.2-1.4; ovipositor 1.5-1.9.

Description as for *E. thomseni* excepting :

Occipital carina relatively weak, ratio length/breadth of vertex 3.0. Anterior portion of scutellum finely punctate and propodeal sculpture more coarse (fig. 4); scutellar hairs 3.

Nine to ten bristles on basal abscissa of sub-marginal vein of fore wing; stigma as in fig. 1h.

Colour : Pale yellow-brown. Dark brown areas around ocelli; head brownish above, paler below; face yellowish. Pronotum yellow with medial and lateral brown patches; central dorsal triangular area on mesopraescutum dark brown; scutellum same colour medially and behind, yellow anterio-laterally; dark brown to black medial triangular patch on propodeum.

Male.

Length (mm.): 2.3–2.9.

Propodeal sculpture as female but finer; scutellar hairs 3.

Nine to eleven bristles on basal abscissa of submarginal vein of fore wing; stigma as in fig. 1g.

Holotype ♀, 8 ♂ paratypes, TRANSVAAL: Pretoria, 9.v.1919, from seeds of *Schinus molle* L. (Anacardiaceae) (*F. Tooke*). Labelled South Africa AcP2175. Also 5 ♀, labelled South Africa AcP2057, from

TRANSVAAL: Rustenburg, 25.x.1919.

Types and paratypes in British Museum (Natural History). 1 ♀ and 1 ♂ in author's collection.

Key to species of *Eumegastigmus*.

Females.

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|---|--|-----------------------|
| 1 | Large species, body length about 5 mm. | 2 |
| | Small species, body length about 2.5 mm. | 3 |
| 2 | (1) Head with ocelli surrounded with black; thoracic dorsum with longitudinal black stripe | hypogaea |
| | Uniformly yellow-brown | thomsoni |
| 3 | (1) Propodeum with oblique carinae (fig. 4) | transvaalensis |
| | Propodeum uniformly finely punctate (fig. 3) | rhusi |

Males.

E. hypogaea and *E. thomsoni* separated as for females above.

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|---|--|-----------------------|
| 3 | (1) Propodeum uniformly punctate | rhusi |
| | Propodeum with two irregular dorsal longitudinal and faint oblique carinae | transvaalensis |

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