

Entomofauna

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**New Geometridae from Africa,
with a list of additions to the
Lepidoptera Fauna of the Sudan
(Lepidoptera, Geometridae)**

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Abstract

Acidaliastis nilotica sp. n. and *Acidaliastis saharae* sp. n. from the Sudan and the Algerian Sahara respectively; also *Idaea remanei* sp. n. from the Sudan, and *Heterostegane boghensis* sp. n. from Nigeria and Mauretania, are described from material in the Zoologische Staatssammlung München and the British Museum of Natural History, London; a further list of species from the Sudan concludes the series of three articles on the *Noctuidae* and *Geometridae* from the Sudan now in the Zoologische Staatssammlung.

Zusammenfassung

Acidaliastis nilotica sp.n. aus dem Sudan und *Acidaliastis saharae* sp.n. aus der Algerischen Sahara werden beschrieben, desweiteren *Idaea remanei* sp.n. aus dem Su-

dan sowie *Heterostegane boghensis* sp.n. aus Nigeria und Mauretanien. Den Beschreibungen liegt Material der Zoologischen Staatssammlung München sowie des British Museum (Nat.Hist.), London, zu Grunde. Eine Auflistung von Arten aus dem Sudan beschließt diese Serie von drei Veröffentlichungen über die *Noctuidae* und *Geometridae* aus dem Sudan, die sich jetzt in der Zoologischen Staatssammlung München befinden.

Introduction

Studies have been pursued of the Geometrid and Noctuid material captured about twenty years ago in the Sudan by Dr. R. REMANE for the Zoological State Museum at Munich, of which the present author in 1973 & 1977 presented a partial account. The final lot of Lepidoptera had been augmented by a few moths taken by R.W. MEYER and DR. POLITZAR in Nigeria and Mauretania respectively.

The present article concludes the study of this Sudanese material as far as the author can take it; two new species are described and the list of species added. However the determinations of the moths from Nigeria and Mauretania are not listed hereunder, but one new species is described thence. An unrecognised new species in the British Museum (Natural History), London, was included in the type material, also a fourth new species from that collection only, taken in the Algerian Sahara.

The author wishes to acknowledge his thanks to the staff of the British Museum, Nat.Hist., for the help received, particularly Mr. D.S. FLETCHER.

Family *Geometridae*

Subfamily *Geometrinae*

Comibaena (?) *pulchra* (STAUDINGER, 1897) (Pl. fig. 1)

Kassala Province, Erkowit, 1000-1300 m., 2 ♂♂ (Span: 15 & 17 mm.) (Prep.WM.291), 25.vi.1962.

Authentic males of STAUDINGER's species have not been available for comparison. The Arabian specimens (see Pl.

fig.2) which I have recently studied are larger and more round-winged but are all females.

Chlorissa faustinata (MILLIERE, 1869)

Ed Damer, Hudeiba, 1 ♀, 23.iii.1962.

Hemidromodes affinis ROTHSCCHILD, 1915

Ed Damer, Hudeiba, 3 ♂♂ (Prep.WM.285), 21.xii.61, 18.iii.62, 7.viii.62 and 1 ♀, 21.xii.1961. Four bright green forms.

Acidaliastis nilotica sp. n.

(Plate figs.3, 4; Text figs.1, 2)

Bright green (Pl.fig.3) and dull straw-coloured forms (Pl.fig.4) of this new species fly side by side, being evidently neither seasonal forms nor local races. The latter form, with the first of the two oblique lines on the fore-wing hardly visible, might be mistaken for *Rhodometra sacraria* (LINNAEUS, 1767), but the more robust thorax, less slim abdomen, and more bipectinated antenna should induce a reappraisal and the placing in the above genus.

In some straw specimens the ante-median line is better marked and a third oblique line, in the submarginal area parallel to the termen, may also be detected. The species, and a smaller but distinct form from the Algerian Sahara, have hitherto stood in the BMNH (London) coll., first with PROUT's determination of *Acidaliastis subbrunnescens* PROUT, 1916, later as the South African species *Acidaliastis bicurvifera* PROUT, 1916, (illustrated in PROUT 1916, Pl.25, fig.8; PROUT 1930, Pl.5 and JANSE 1933-5, fig.3).

The straw form differs from *Acidaliastis bicurvifera* PROUT, 1916, in the less curving oblique lines on the fore-wing.

(i) Green form:

Antenna of ♂, with long brown pectinations and pale straw dorsal scales. Frons, orange-brown; vertex, pale straw. Thorax, dorsally green. Palps, short, orange-

brown. Pectus, fore and middle legs, orange-brown; hind legs, pale straw, with dilated tibia and two pairs of spurs.

Fore-wing, costa termen and fringe, pale brown; rest of upper-side, bright green, with or without a darker green oblique line, edged distally with white, and almost straight from apex to hind margin. Hind-wing, white, slightly green-tinged.

Under-side, whitish, with yellow costa in fore-wing, and (both wings) a pale green medial suffusion.

(ii) Straw form:

Head, as in green form. Thorax and fore-wing, straw-coloured, with two, sometimes three, grey-brown, hardly curved parallel lines running obliquely, the second from apex to hind-margin; the first and third lines, fainter and shorter, the first not reaching the costa, the third parallel to the light brown termen's slightly curved course. Fringe, whitish.

Under-side, whitish ochreous, darker costad, the first two lines traceable, greyish.

Span: 19 mm.

Genitalia of ♂, characterised by the short, curved, pointed cornutus, as illustrated. The valve is close to that of the species immediately following, but radically different from the complicated valve of *Acidaliastis subbrunnescens* PROUT, 1916, whose genitalia are also illustrated for comparison (fig.4). The latter species inhabits Somalia and Abyssinia, but not Rharis (Algerian Sahara) as stated by PROUT in SEITZ 16:48. The actual examples seen by PROUT have only now been examined genitally.

Holotype ♂ (green f.): Blue Nile Province, Wad Medani, (Prep.WM.294) 3.viii.62 (coll. Zoologische Staatssammlung München).

Paratype ♂ (green f.): (BM.Geo.Prep.9468), White Nile, Gondokora (W.E.REYMES-COLE) (coll. British Museum (Nat. Hist.), London).

Paratypes (straw form): ♂ Ed Damer, Hudeiba, 4.viii.62, (coll. Zoologische Staatssammlung München); ♂ (Prep.WBM.346) White Nile, lat. 12 11' N., (Capt. YARDLEY), (coll.

British Museum (Nat.Hist.), London).

Acidaliastis saharae sp. n.

(Plate fig.5, Text fig.3)

Of this new species, only pale brown specimens are to hand; they differ anatomically from and are slightly smaller than the fore-going. It is possible that green forms will eventually be found, probably depending on whether it inhabits an oasis or absolute desert.

Antenna of ♂, with shorter bipectinations than the fore-going. Frons, brown. Fore-wing more orange-brown than the fore-going, the fringe concolorous. Legs and fore-wing patterns similar.

Span: 13-14 mm.

Genitalia of ♂, characterised by the sharp, triangular cornutus, not curved as in the fore-going.

Holotype ♂ and two paratypes ♂, including Prep.wbm.345, all [Algerian Sahara] Rharis, 15.iv.1914, (G. von SCWEPENBURG), (coll. British Museum (Nat.Hist.), London).

Subfamily *Sterrhinae*

Idaea sordida (ROTHSCHILD,1913) ssp. *nili* (WILTSHIRE,1949)

Hudeiba 3 ♂♂ (incl. Prep.WM.287) two being taken on iii.62 and one vi.62.

Idaea sanctaria (STAUDINGER,1900) ssp. *crassisquama* (WARREN & ROTHSCHILD,1905)

Hudeiba, 1 ♂ 22.iii.62.

Idaea remanei sp. n.

(Plate fig.6; genitalia fig.5)

Habitus suggests this species might be related to *Idaea rusticata* sensu auctorum = *Idaea vulpinaria* HERICH-SCHÄFFER,1851 (Plate fig.6a); but its genitalia show its relationship is closer to *Idaea bura* (PROUT, 1932) of Kenya; to which it bears a habitus-similarity, but is stronger marked. From the two Palearctic species its straight clear ante-median line and complete post-

median line distinguish it, also its less white ground-colour.

Frons, black; antenna of ♀, short-ciliate; proboscis, developed. Fore-femora, light brown; other leg parts, light ochreous; hind tibia slightly longer than tarsus, with two terminal spurs, and slightly dilated below middle.

Fore-wing, ochreous with strong fuscous pattern as follows: a slight sprinkling in the basal area; ante-median line, right-angled on the radial, then straight; median area, thickly sprinkled towards the angular median shade, leaving the cell spot encircled by a dark-edged circle; post-median line, denticulate, preceded by a clear ochreous fascia from costa to hind-margin parallel to the median shade; from the post-median, the submarginal fascia of paler grey and widest tornad, is separated by a narrow ochreous fascia; a wider, paler ochreous fascia precedes a fine fuscous subterminal line which does not reach the tornus. Termen, darker fuscous than the cross-lines, and interrupted at the nervures. Fringe, pale dirty ochreous.

Hind-wing upper-side, similarly marked and coloured to fore-wing except that the median area is less infuscated.

Under-sides, pale ochreous merked with fuscous cell-spots, post-median line, and termen; the latter, as on the upper side, both wings.

Span: 17 mm.

Genitalia of ♀, the ductus with sclerotised shoulders, as in *Idaea bura* (PROUT, 1932) (fig. 6), but bursa less spinose internally; it widens in similar pear-shaped form but leads into a well differntiated spherical chamber, which *Idaea bura* (PROUT, 1932) lacks.

Holotype ♀ (Prep.WM.290): Sudan, Kassala Province, Erkowit, 1000-1300 m., 21.vi.1962 (R. REMANE) (coll.Zoologische Staatssammlung München).

Scopula adelpharia (PÜNGELER, 1894) ssp. *pharaonis*
STERNECK, 1933

Hudeiba, 1 ♀, 8.viii.62.

Scopula minorata BOISDUVAL, 1833 ssp. *ochroleucaria*
(HERRICH-SCHÄFFER, 1847)

Wad Medani, 1 ♀, 2.viii.62.

Scopula addictaria (WALKER, 1861)

Erkowitz, 1 ♀, 18.iv.62.

Scopula nigrinotata (WARREN, 1897)

Erkowitz, 1 ♀, 21.vi.62.

Scopula mascula (BASTELBERGER, 1909)
(Plate fig. 10)

Hudeiba, 1 ♂, 1.iii.62.

Scopula donovani (DISTANT, 1892)

Wad Medani, 1 ♀, 3.vii.62.

Zygophyxia (?) *toquila* FLETCHER, 1978
(Plate fig. 9)

A species with rosy-fawn fore-wing with faint brown, rather straight, cross-lines on fore-wing. More material is needed.

Hudeiba, 1 ♂ (Prep.WM.293), 21.iii.62.

Subfamily *Ennominae*

Heterostegane serrata (FLETCHER, 1958)
(Plate fig. 7; genitalia fig. 7)

Wad Medani, 1 ♀, 31.i.62.

Heterostegane boghensis sp. n.
(Plate fig. 8; genitalia fig. 8)

Differing from both *Heterostegane minutissima* (SWINHOE, 1904) and *Heterostegane serrata* (FLETCHER, 1958) in genitalia; best distinguished in habitus by the fore-wing ground colour, contrasting with the neat, dark purplish, markings, of which the clearest is the submarginal line.

Antenna of ♂, with ciliations longer than shaft-width.

Head, orange-brown, frons, flat. Palp, minute; proboscis, small, fine. Thorax and abdomen, straw, mixed with ochreous.

Fore-wing and hind-wing upper sides, pale straw, clouded with deeper ochreous, and marked with purplish brown lines and freckles the freckling being continuous for the basal half of the fore-wing costa. In some examples the median cross-line is recognisable, though interrupted; in other forms only the submarginal is well defined, running from near the apex to the tornus, and widest on the costa and between M1 & M2 where it touches the termen; termen and fringe are concolorous. The same line is the best distinguished on the hind-wing also, but there is interrupted and fine.

Under-side, similar but less strongly marked, the submarginal purplish line alone standing out.

Span: 17 mm.

Genitalia of ♂, as illustrated, the aedeagus with a distal sclerotised process; the juxta, with a long tongue-shaped median process; the uncus, crown-shaped with pointed tip, lacking in *Heterostegane serrata* (FLETCHER, 1958), and less acute than in *Heterostegane minutissima* (SWINHOE, 1904). The valve shape is distinctive in all three of these species, the other two being also illustrated (figs. 7 & 9).

Holotype ♂ (Prep.WM.277), Mauretania, Boghe, 18.i.1967 (Dr. POLITZAR); a paratype ♂ with similar label (both in coll. Zoologische Staatssammlung München); paratype ♂ (Prep.BMG.1710), Nigeria, Godam (12°N, 10°E), vi.1923 (BUXTON & LEWIS) (coll. Zoologische Staatssammlung München). Three ♀ examples placed with this male from the Gold Coast, N.Territory, (coll. British Museum (Nat. Hist.), London), are doubtfully conspecific.

***Exeliopsis* sp. near *amygdala* PROUT, 1938**

Prov. Kordofan, Kadugli, 1 ♀, 1.vii.1962.

***Semiothisa sudanata* (WARREN & ROTHSCILD, 1905)**

Hudeiba, 1 ♂, 17.ii.62 & 1 ♀, 15.iii.63.

Tephrina sublimbata BUTLER, 1884

Hudeiba, 1 ♀, 16.ii.62; 1 ♀, larger and better-marked, same date, is probably conspecific.

Tephrina (?) *pulinda* (WALKER, 1860) *deerraria* (WALKER, 1861)

Wad Medani, 1 ♂ (Prep.WM.283), 2.viii.62; the moth resembles *Tephrina perviaria* in habitus, but in genitalia matches well *deerraria* except that the uncus is pointed. This is perhaps an individual aberration.

Tephrina disputaria (GUENEE, 1858)

Hudeiba, 2♂♂ 1♀, ii. & v.62; also 1 ♀ 8.viii.62.

Lhommeia biskraria OBERTHÜR, 1886 f. *illituata* WARREN, 1897

Erkowitz, 1 ♀, 25.vi.62, a greenish form.

(?) *Zeuctoboarmia* probably *weneri* (REBEL, 1917)

Erkowitz, 2 ♀♀, the larger on 18.iv.62, the smaller 19.vi.62. HERBULOT (1981) has sunk the genus *Paracotis* to *Zeuctoboarmia* PROUT but without males of the above species from Sudan I cannot be sure this species agrees with HERBULOT's diagnosis.

Family *Noctuidae*

Cerynea limbobrunnea STAUDINGER,

Wad Medani, 1 ♂ (Pr.WM.288), 2.viii.62. A congeneric ♀ from Nigeria, Ogoja (leg. R.W. MEYER) proved to be *Cerynea thermesialis* WALKER (Prep.WM.289).

Entomogramma pardus GUENEE, 1852

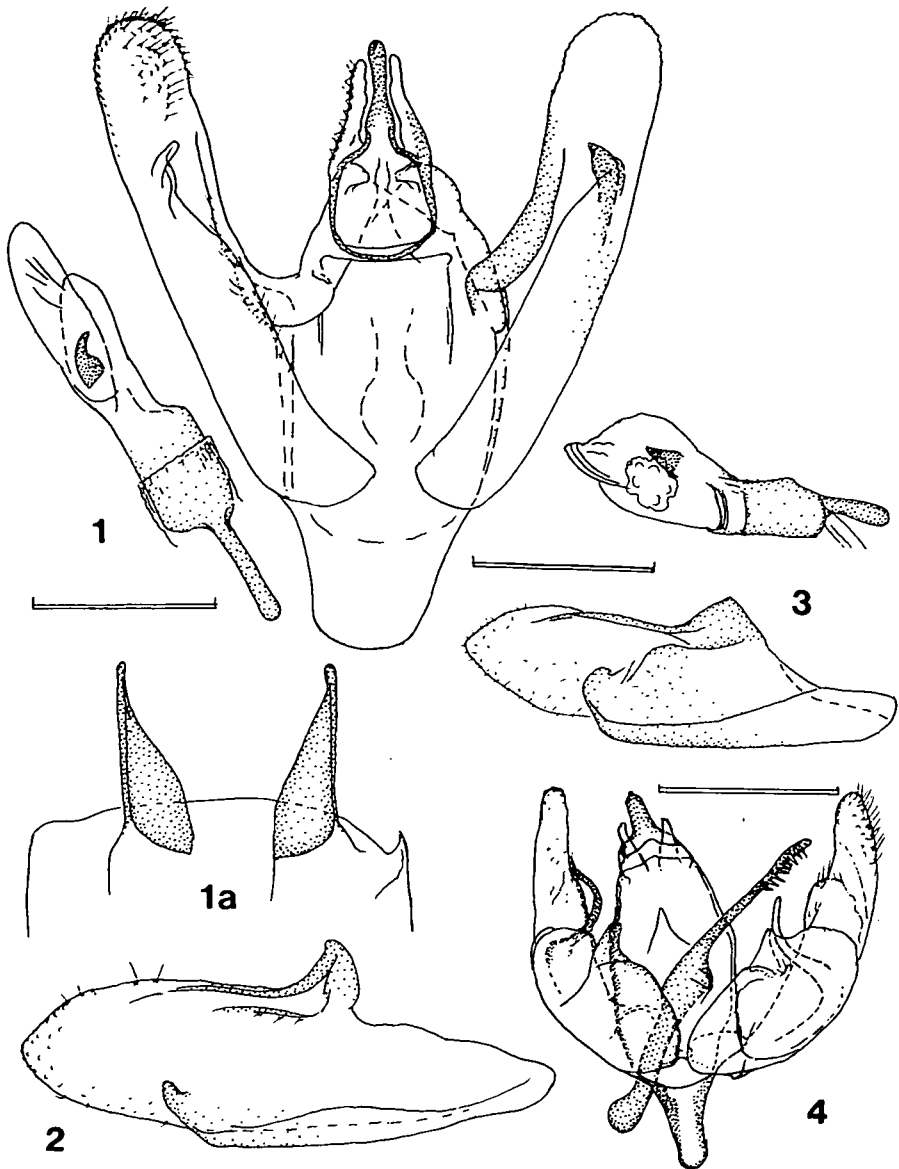
Wad Medani, 1 ♂, 3.viii.62.

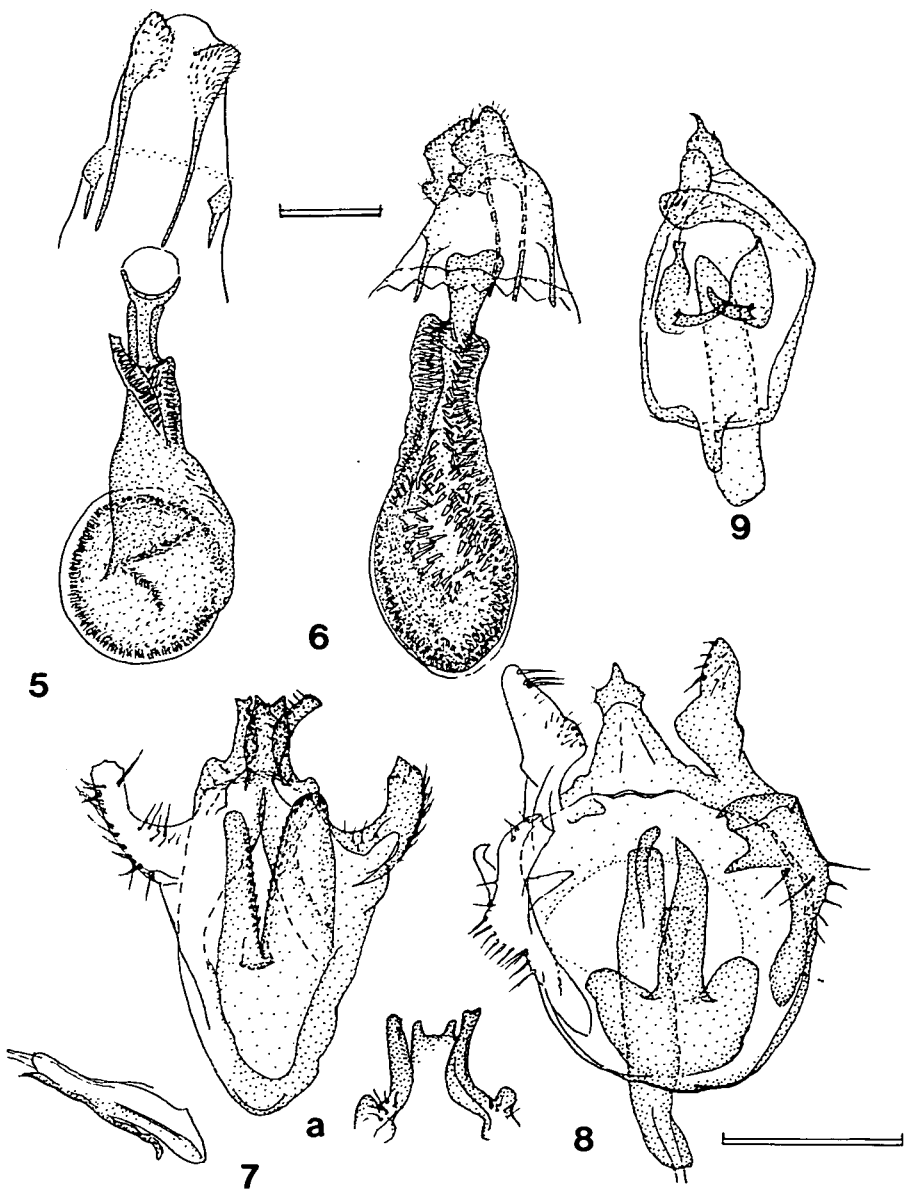
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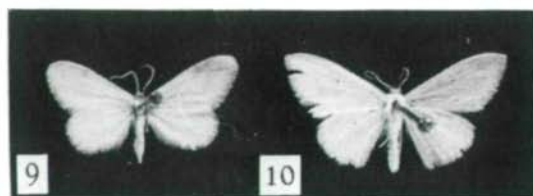
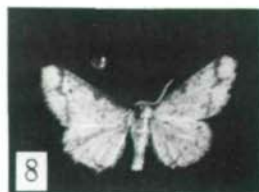
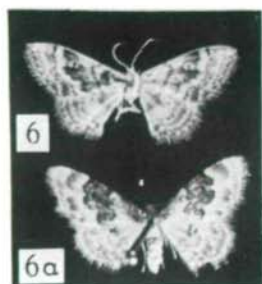
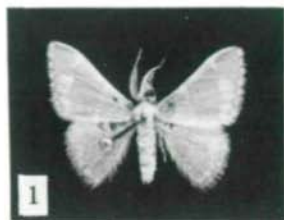
1. *Acidaliastis nilotica* sp.n. ♂ paratype (BMG.9468), genitalia with aedeagus separated. 1a: ditto, 8th sternite.
2. *Acidaliastis nilotica* sp.n. ♂ holotype (WM.294) left valve only, more open position.
3. *Acidaliastis saharae* sp.n. ♂ paratype (WBM.345), left valve & aedeagus.
4. *Acidaliastis subbrunnescens* PROUT, 1916, ♂ (BMG.9466) (Abyssinia) genitalia.
5. *Idaea remanei* sp.n. ♀ holotype genitalia (WM.290).
6. *Idaea bura* (PROUT,1932) ♀ (BMG.2900) (Kenya) genitalia.
7. *Heterostegane serrata* (FLETCHER,1958) ♂ paratype (BMG.1726) (Kenya) genitalia with aedeagus separated. 7a: different view of uncus (BMG.1733) same sp. (Arabia).
8. *Heterostegane boghensis* sp.n. ♂ paratype (BMG.1710) (Godam) genitalia.
9. *Heterostegane minutissima* (SWINHOE, 1904) ♂ genitalia (BMG.1703) (Abyssinia).

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1. *Comibaena* (?) *pulchra* (STAUDINGER,1897) ♂ (Sudan).
2. *Comibaena pulchra* (STAUDINGER,1897) ♀ (Arabia).
3. *Acidaliastis nilotica* sp.n. ♂ holotype (green form) (Sudan).
4. *Acidaliastis nilotica* sp.n. ♂ paratype (straw form) (Sudan).
5. *Acidaliastis saharae* sp.n. ♂ holotype (Algerian Sahara).
6. *Idaea remanei* sp.n. ♀ holotype (Sudan).
- 6a. *Idaea vulpinaria* (HERRICH-SCHÄFFER,1851) ♀ (Iran).
7. *Heterostegane serrata* (FLETCHER,1958) ♀ (Sudan).
8. *Heterostegane boghensis* sp.n. ♂ paratype (Mauretania).
9. *Zygophyxia* (?) *toquila* FLETCHER (Sudan).
10. *Scopula mascula* (BASTELBERGER) (Sudan).







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