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Middle East Lepidoptera[1]), XX.

A third contribution to the Fauna of Afghanistan.

by E. P. WILTSHIRE

The present article continues the series on Afghanistan of which the immediately preceding appeared in Beitr. naturk. Forsch. SWDeutschl. Bd. XIX, pp. 337–371. It deals with the families *Cymatophoridae* and *Geometridae*, particularly the latter. In addition an appendix to the *Hypeninae* (*Noctuidae*) appears at the beginning.

The material here discussed is the same as that in the previous article, namely the captures of Dr. AMSEL, EBERT, KLAPPERICH, etc.; however, while awaiting publication of the manuscript, the author has studied further Afghan material taken by Mrs. E. VARTIAN and Dr. KASY of Vienna. An entirely separate series of articles on this material is appearing. It will only by necessary to mention here those examples of their captures which can be added to the typical material of new forms of which the descriptions had already been prepared, from material caught by Drs. AMSEL, etc. In some cases these additions were of great value, permitting a better understanding of the new forms. In view of these additions and also of the lapse of time since the previous acticle, I give again the explanation of the abbreviated names of collectors and Museums and other abbreviations used in this article:

A = Dr. H. G. AMSEL.
BMG = British Museum Geometridae (series of genitalia-preparations).
E = Herr G. EBERT.
EW = E. P. WILTSHIRE.
G = Mme Roman GHIRSHMAN.
JR = Jutta RÖHRE.
K = H. KLAPPERICH.
K & V = Dr. KASY & Mme E. VARTIAN.
NMW = Naturhistorisches Museum Wien.
R = RICHTER.
WB = praeparavit WILTSHIRE for Museum Berlin (genitalia preparations).
WBS = ditto for coll. BRANDT, Natural History Museum Stockholm.
WM = ditto for Zoologische Sammlung, München.
WW = ditto for Naturhistorisches Museum Wien.
ZM = Zoologische Sammlung des Bayerischen Staates München.

Though the material is mainly from Afghanistan, this article will prove of wider usefulness, contributing to the knowledge both of the Palearctic fauna in the Middle East and to that of the fauna of India and Pakistan, particularly the Kashmir.

It seems worth mentioning here, in a prominent place, that under the genus *Alcis* will be found the description of a most unusual mosaic gynandromorph, and its bisexual genitalia illustrated (Pl. 25 f. 63.)

[1]) Recent articles in this series appeared or will appear as follows: —
XVI. Journ. Bombay Nat. Hist. Soc. *58*, 608—631, 1961.
XVII. Mitt. des Ent. Ges. Basel n. f. *14* / J. Nov. — Dez. 151—153, 1964.
XVIII. A review of the genus *Pericyma* and neighbouring genera (in press at München.)
XIX. Some new *Jaspidiinae* and *Catocalinae* from Sudan in the Munich Zoological Museum. (in press at München.)

Family: NOCTUIDAE (Appendix).

Corrigenda and addenda to Middle East Lepidoptera XV (Afghan Lep. Pt. 2.) (This journal, XIX, H. 3.)

(i) p. 343, 1.47 (under *Porphyrinia striantula* sp.n.)

For "shorter" READ: — "equal to, or slightly longer".

(ii) p. 355:

For "*Raparna*(?) *leda* H.-S." READ: —

Raparna conicephala STGR. ab. *humida* (forma nova).

The study of further material and structural comparisons of both sexes of *Raparna* forms from Turkey, Persia and Arabia, have convinced me that this Afghan form is distinct from *leda* H.-S. *Raparna leda* is larger (Span.: — 24 mm.) the 3rd segment of palp is slightly shorter in proportion, the scales on the frons more upstanding, and the fore-wing post-median fascia broader and clearer; the ♀ genitalia also differ, the *ductus* in *leda* widening proximally, while that of *conicephala* is cylindrical.

Raparna conicephala appears in Afghanistan in two forms: —

(i) a plain yellow form, corresponding to f. *luteoflaveola* TUR., of which the type is not available for inspection, and which I suspect is only a "dry" aberration of *conicephala*. Similar plain yellow forms of this species which I have examined are: —

1 ♀, (Prep. WM. 186), AFGHANISTAN, Sarobi, 6. IX. 61, E. (coll. ZM.)

1 ♂, (Prep. 1281), IRAN, nr. Tehran, 15. VI. 39, EW.

1 ♂, 1 ♀, (Prep. 363), W. ARABIA, (♂) Lith, 11. III. 43; (♀) Ashaira, 30. I. 48.

(ii) ab. *humida* (forma nova): thorax and fore-wing, uniformly olive-brown, in some lights with a pinkish tinge towards the costa; with complete grey markings as in typical *conicephala*; hind-wing, grey, more infuscated terminad. Span: — 19 mm.

Types: — holo-type, ♀, AFGHANISTAN, Nuristan, Basgul-valley, 1100 m., 6. IV. 53, K. (ZM).

para-type, ♀, (Prep. 1279) AFGHANISTAN, Sarobi, 1100 m., 23. V. 61, E. (col. EW).

Whether this new form represents in Afghanistan a seasonal form, appearing only in early summer, with the plain yellow form repressenting the midsummer and autumnal broods, only further material can shew, but it seems possible.

Raparna erubescens B.-H. *grisescens* subsp. n. (Pl. IV, Fig. 54)

Larger, both wings more infuscated and clearly marked, than the typical race of N.-W. Africa, and less reddish. The pattern-elements correspond, however, exactly. Span.: 32 mm.

Holo-type: ♂, (Prep. WM. 200) AFGHANISTAN, Sarobi, 7. V. 61, E (ZM).

Somewhat intermediate between this and the typical is a ♀ from S.-W. ARABIA, Hejaz, Wadi Yemeniya, 29. I. 47 (Leg. Middle-East Anti-locust Units) in coll. EW. Span: 30 mm. (The span of the typical form is 22 mm. in the Plate, see Iris *24*, Pl. 3.) The fore-wing is rosy ochreous, more clearly marked than the typical, but less so than in *grisescens*; hind-wings, less white than the typical. Until more material from all three localities is available it is difficult to be certain whether there are here three, two, or one subspecies, and whether *grisescens* is a true subspecies or perhaps only a seasonal form.

Addendum to. p. 356 and Key to Plates.:

Pl. IV f. 43 has the valid name of *Rhynchodontodes transcaspica* BRANDT (described as a form of *ravalis* in Mitt. Münch. Ent. Ges. J. XXXI. H. 3. p. 857, 1941). Further material shews that this form is not purely seasonal but appears, e. g. at Sarobi, alongside the normal *revolutalis*, Z., from which it does not differ genitaliter.

Family: CYMATOPHORIDAE

Cymatophora orbicularis MOORE

2 ex., Nuristan, Basbgul-valley, 1100—1200 m., 9. IV. 53, K.

Family: GEOMETRIDAE

The material before me contains no representative of the first two sub-families, *Brephinae* and *Oenochrominae*, but the remaining four are well represented, with many new spe-

cies. An interesting representative of the *Oenochrominae*, *Uliolepis pilosa* WARREN was in fact described from Afghanistan (see SEITZ, vol. IV), but no further example of it has been taken.

Sub-family: HEMITHEINAE.

Pingasa lahayei multispurcata PROUT
Kunar-valley, Asmar, 800 m., 3. IV. 53, K.

Gnophosema palumba maleki BRANDT
Nuristan, Bashgul-valley, 1100 m., 6. V. 53, K.

Hemithea costipunctata WARREN
An olive green species with white-pointed margins and costa with mauve specks. 3 ex., Bashgul-valley, 9. IV., 3. V., 9. V. 53, K. (Prep. 1059).

Chlorissa pulmentaria GN.
A number of examples taken at Herat are very faded and damaged by mites; the Pul-i-chomri example is better-coloured, and the genitalia being intact enabled a definite identification. 5 ex., Herat, 970 m., IV-V. 56, A. (Prep. WM 135); 1 ex., Pul-i-chomri, 700 m., 28. V. 56, A. (Prep. WM 137, Pl. VI, Fig. 1). There are also two smaller, whiter (very faded?) ♀♀, Herat, 15. V. 56, A, which probably belong here.

Chlorissa gelida BUTLER
This series is very variable in colour; one or two have faded to whitish; the brightest is blue-green, with clear white crosslines; the costa is whitish in all; it is a larger species than the preceding. The genitalia (Prep. 1097 (Pl. VI, Fig. 2) indicate relationship rather with *Hemistola* than *Chlorissa pulmentaria*; these genera should probably be revised on a basis of male genitalia.

Herat, 15 & 25. IV. 56, A.: 2 ♂♂ (Prep. WM. 144); Gulbahar, 1 ♀, 26. IX. 57, J. R;. Nuristan, Bashgul-valley, 3 ex., 14 & 20. IV. 53, K.; Paghman Mts., 1 ♂, (Prep. 1097) (Pl. VI, Fig. 2), 2400 m., 2. VII. 52, K.

Microloxia indecretata WKR.
Somewhat similar to *M.herbaria* HÜBN., the better-known species, but larger; it is a more Eastern species and seems common and widespread in S. E. Iran and Afghanistan, without reaching S. W. Iran or the Persian Gulf; these two regions are respectively the home of *M.polemia* PROUT (Pl. VI., Fig. 4, male genitalia) and *M.herbaria*, which last inhabits Bahrain, possibly its eastern limit.

Nuristan, 32 ex., Bashgul-valley and Kutiau, 1100 & 1450 m., v. 53, K.; Kabul-River, 2 ex., Sarobi ,900 m., 12. VI. 52, K.; & Tangi-i-Gharub, 1600 m., (Prep. 1004, Pl. VI, Fig. 3), 21. VIII. 52, K.; Kunar-valley, 1 ex., Asmar, 3. IV. 53, K.

The genitalia of *herbaria* and *indecretata* shew close affinity; those, gowever, of *polemia* seem closer related to *C.pulmentaria*.

Aglossochloris radiata WKR.
Thick white angular cross-lines on a bright green fore-wing characterise this unmistakeable genus. Seven examples from Nuristan agree perfectly with my own Kashmir example taken at Kanzalwan, Goorais, 14. VI. 42: — Bashgul-valley, 6—24. V. 53, 5 ex., K.; 1 worn example, VII. 53, K.; Achmede Dewane, 1 ex., 26. VII. 52, K.

Thalera fimbrialis SCOP.
This well-known dull green moth with purple-chequered fringes and angularly indented hind-wing margin is represented by some rather faded examples from Nuristan: Achmede Dewane, 2700 m., 23.—28. VII. 52, K.

Hemistola fletcheri PROUT.
Bright green, with oblique white cell-spots, and smaller than the preceding. Nuristan, Achmede Dewane, 2700 m., 1 ♂ (Prep. 1007) (Genitalia Pl. VI, Fig. 5), 26. VII. 52, K.

Hemistola detracta WKR.

Dull green, with faint white markings, the fascia being fine, denticulate and curving; the second generation is smaller and is represented by 1 ♂ (Prep. 1138) (Pl. VI, Fig. 6) from Kabul, IX. 43, G.; the first brood by 3 ♀♀ from Nuristan, Bashgul-valley, 1200 m., 10 & 20. VI. 53, K.

Sub-family: STERRHINAE.

Sterrha elongaria RAMB.
Pul-i-chomri, 2 ex., (Prep. WM. 132), 28. V. 62, A.

Sterrha dimidiata HUFN. *subsp. delictata* PROUT.
Herat, 1 ♂ (Prep. WM. 133), 5. V. 56, A.

Sterrha sartharia STGR.
Herat, 15 & 25. IV. 56, A., 4 ex., (Prep. WM. 134), A.

Sterrha rufaria HÜBN.
1 ♀ with body missing, presumably this species: Pul-i-chomri, 700 m., 5. vi. 56, A.

Sterrha degeneraria HÜBN. *subsp. erschoffi* CHRIST.
1 ♂, Badakhshan, 1600 m., Barak 29. VII. 57, E.

Sterrha mesodela PROUT
Nuristan, 4 exs: Kutiau, 1550 m., 7, 12, & 14. V. 53, K. (3 exs.); Bashgul-valley, 1200 m., 1—12. V. 53, 1 ♂ (Prep. 1094), and 26 others, K.

Sterrha tornipunctaria sp. n. (Plate V, Fig. 66)

A new species resembling and closely related to *S.illustris* Brandt, distinguished from it by two extra black spots on its forewing and the less contrasted marginal field; also by the genitalia.

♂ antenna, ciliated, the cilia being well-spaced and twice as long as the breadth of the shaft.

Tongue, developed; face, black; palp, black-scaled.

Rest of head, antenna and thorax yellowish white.

Fore-wing, whitish with ochreous brown freckling and the following conspicuous black spots, of which the first and last are lacking in *illustris*: one costal spot at beginning of basal fascia which is obsolete and indicated by a few black scales; a subcostal spot on the similar ante-median fascia, on the radial nervure; a cell-spot; a tornal spot at the hind-margin on the similar submarginal line. Fringe, whitish.

Hind-wing, coloured like fore-wing, but with a shade more ochreous-brown; ante-median line, heavily shaded with black scales; a black cell-spot; the post-median fascia is fine and is indicated by but a few black scales; the marginal area and fringe also contain a few black scales.

Fore-wing under-side, with wide black basal suffusion. A black cell-spot is also present on the under-side of both wings.

Span: 10 mm.

Male genitalia: close to *S.illustris* BRANDT, but the valves are less setose, and the aedeagus has internally a larger, less clearly demarcated, more diffuse scobinate field. (See Pl. VI, Figs. 7, 8 for both.)

Holo-type: ♂, (Prep. WM. 130) Sarobi, 1100 m., 2. IX. 57, W. (In coll. Bavarian State, Muenchen.) (= ZM).

Sterrha forsteri sp. n. (Pl. V, Fig. 71)

This species resembles *Scopula adelpharia* PÜNG., though less yellowish; besides the generic structural difference, it differs therefrom in altogether lacking black terminal spots and in its less pure black cell-spot. Structurally is seems close to *Sterrha sordidior* WILTS. and is best placed in the *microptera* group.

Face, black; frons and thorax, whitish ochreous. Palp, light brownish. Tongue, developed.

Antenna, of ♂, finely ciliated, the cilia being about 3/2 as long the breadth of the shaft; of ♀, shortly setose-ciliate.

Fore-wing, pale ochreous grey, sometimes with a rusty tint; antemedian and median fasciae, faint greyish; cell-spot, blackish; postmedian fascia, more strongly marked than the others, hardly denticulate, slightly bent out at the cell and in at nervure 1; termen, an interrupted faint brownish line; marginal area, slightly grey-suffused, divided by a pale submarginal line; fringe, concolorous.

Hind-wing, with similar pattern and colouring, but marginal area more grey.

Underside, both wings, similar to upper-side, but markings weaker.

Span: 16—20 mm.

Genitalia, ♂: aedeagus, comparatively short, thick and massive, containing a broad heavily-chitined, slightly tapering, bluntpointed cornutus, of almost equal length; the valves, uncus, vinculum and rest of the tail-parts are comparatively small, weakly chitined and uncharacterised. (Fig. 9.)

♀: the bursa resembles that of *St.mimetes* BRANDT being long-oval, longitudinally folded, heavily chitined, and lined internally from end to end with internal spines; it differs as follows; the proximal end, or bottom of the bursa is produced into a black finger like blunt point, not far from which the bursa is widened by a spineless and unchitined bay, quite lacking in others of the *microptera* group; the internal spines are also stronger than those of *mimetes* and though numerous are less frequent on one side than the other; the ductus bursa is sclerotised and cylindrical, being narrower at the neck of the bursa than at the ostium; it is short, and only slightly narrower than the neck of the bursa. (Pl. VII, Fig. 10).

Holo-type: ♂, and 3 para-type ♀♀, Paghman Mts., 3000 m., 28. VIII. 53, K. (coll. K. or EW).

Allo-type: ♀, and 2 ♂♂ para-types and 4 ♀♀, Nuristan, Achmede Dewane, 2700 m., Bashgul-valley, 23. VII. 52, K. (coll. K. or EW. or ZM.) (Prep. 1164). Also 82 paratypes, Paghman Mts. & Nuristan, K. & V., NMW.

Sterrha sps. ? There are also five ♀♀ which cannot be identified, being in poor condition and without corresponding ♂♂. (a) whiter forms with rather straight linear markings: Pul-i-chomri, 28. V. 56, A. Kamdahar, 8. V. 57, E. (b) smikier, smaller forms: Kamdesh, VIII. 56, A.

Brachyglossina chaspia BRANDT

Kunar-valley, Asmar, 900 m., 3. IV. 53, K., 1 ♀; Kabul-River, Tang-i-Gharuh, 1600 m., 21. VIII. 52, K., 5 ♀♀.

Scopula (*subgenus Eucidalia*) *amseli* sp. n. (Pl. V, Fig. 58)

This new species rather resembles *Sc. beckeraria* LED., from which its male antenna and legs and genitalia readily distinguish it; in fact it is not closely related to that species at all; the less denticulate post-median on the upper side, almost without points on the nervures, and the clearermarked underside, are perhaps an easier criterion therefrom.

Frons, blackish brown; vertex, bone-white.

♂ antenna, with long bushy fascicles of cilia.

♀ antenna, slightly setose, serrate.

♂ hind tibia with one pair of spurs, less short and hairy than in *beckeraria*; ♀ hind-tibia two pairs of spurs.

Hind-wing neuration: 6 & 7 connate from cell-corner.

Fore-wing, light brown, almost pinkish, and powdered with grey; three spots on the costa mark the beginning of the antemedian, median, and post-median fasciae; the first of these is usually quite obsolete. The median fascia or shade passes close distally to the sooty cell-spot, being bent on the cell and on nervure 1; its course is smoother, less wavy than of *beckeraria*, and it is smoky, diffuse; the post-median fascia is only slightly denticulate and never black-specked on the nervures. There is a variable, wide, grey submarginal shade, usually divided by a paler irregular submarginal line from the grey terminal area; the termen has a chequered appearance, being marked in eight fine black streaks, the apical of which

curves round onto the costa. Fringe, pale pinkish brown. The hindwing is similarly marked to the fore-wing except for the apex.

Under-side, light pinkish brown, increasingly infuscated with grey towards the termen; the cell-spots are less blackish than on the upper-side, the ante-median fascia is indicated on neither fore nor hind-wing, but the median and post-median fasciae are distinctly outlined in grey. Fringe, pale brown.

Span: 21—25 mm.

According to the ♂ genitalia and certain other characters this species belongs to STERNECK's Group I of the subgenus *Eucidalia* and may provisionally be placed near *annubiata* STGR°. (which is larger, with less bushy antenna) and *ansulata* CHR. which it does not closely resemble.

♂ genitalia (Pl. VII, Fig. 11): with undeveloped uncus and symmetrical valves; the valve is membranous, finger-like; fibula, somewhat anvil-shaped or conical, depending on position, not black but slightly more sclerotised ventrally. Aedeagus, rather short, tapering and sclerotised distally, with two cornuti the larger measuring about $^1/_4$ of its length. Cerata arms undeveloped; mappa, not incised; cerata base, convex with two shoulders.

♀ genitalia, with anterior apophyses shorter than posterior, and with ductus cylindrically sclerotised at the ostium for only half its length. Bursa, sclerotised in a cape-like patch on either side of the neck of the ductus and with a long signum appearing proximally to the patch and nearly reaching the bottom (proximal end).

Holo-type: ♂, Prep. 1127, IRAN, Northern Fars, Quli Kush Pass near Dehbid, 8000 ft., 8. VI. 40, EW. (in coll. EW).

Allo-type: ♀, Prep. WM. 131 (L), AFGHANISTAN, Gulbahar, 1700 m., 21. V. 56, A. (ZM.)

Para-Types: four other ♂♂, same data as holo-type (coll. mea) and ♂, Prep. WM. 131 (R), same data as allotype; other para-types from AFGHANISTAN are labelled: Pul-i-chomri, 700 m., 28. V. & 5. VI. 56, A (ZM), and Gulbahar 25. VI. 56, A. (ZM).

Scopula (*subg. Eucidalia*) *danieli* sp. n. (Pl. V, Fig. 60)

This handsome new species is variable but very distinct in appearance. It may be placed near *transcaspica* PROUT and *submutata* TR. in STERNECK's group III; the latter flies with it.

Frons, whitish towards clypeus, browner above; vertex, whitish; collar, dark brown.

Antenna, segments 4—8, blackish-scaled above. ♂, with fascicles of cilia, the longest being three times as long as the shaft; ♀, with short cilia.

Palp, short, sickle-shaped, broadened with adpressed scales.

Tongue, developed.

Hind tibia of ♂, with one pair of spurs, tarsus about same lenght as tibia.

Fore-wing, narrower than *submutata*, with rounded apex, usually with white ground-colour as far as marginal field, scantily powdered with black scales, and with post-median fascia always wellmarked. Ante-median fascia sometimes obsolete, especially in second brood, but where present, parallel to post-median fascia and more black-suffused. Cell-spots, clear, black. Post-median fascia, a single, clear brown line, angled on cell, only slightly wavy, fairly straight in course from the cell. It is narrowly separated from the broad slate-grey submarginal shade; the latter has a sharp irregular distal edge, where the pale ground-colour intervenes before the termen, which consists of (a) a proximal, diffuse brown shade, (b) a finer white line, and (c) a very fine black slightly wavy line. Fringe, light brown.

Hind-wing, similar to fore-wing, the termen is not wavy, which affords a ready criterion for this species from the immediately following, with which it flies.

Under-side, milky, hardly marked.

A striking first-generation ♀ with a strongly infuscated median area may be referred to as ab. *mediobrunnea* ab. nov. (Pl. V, Fig. 68).

Span: (of *mediobrunnea*) 26 mm.; of others, 19—22 mm.

♂ genitalia: — (see Pl. VII, Fig. 12). Uncus, with two short, inconspicuous, triangular, setose socii; valve finger-like setose membranous; fibula finger-like twice as thick as valve, rounded sclerotised but transparent setose externally. Aedeagus of moderate thickness,

tapering slightly, rather irregularly sclerotised distally and with a small cornutus in the vesica. Mappa roughly oval; cerata arms assymmetrical, the left long and thick with a fine terminal spine, the right short, rounded, aborted; base of cerata, convex.

Holo-type ♂, (Prep. 950), and allo-type ♀, Nuristan, Bashgul-valley, 1150 m. ♂; 9. V. 53, ♀: — 14. IV. 53, 5. (in colls. K & EW).

Para-types, 2 ♀♀ (gen. aest.) Sarobi, 1100 m., 28. VI. & 3. VII. 56, A. (ZM).

Also 2 paratypes, Nuristan, K & V., NMW.

ab. *mediobrunnea*, holo-type: ♀, Asmar, Kunar-valley, 900 m., 3. IV. 53, K.

Scopula submutata Tr.

Nuristan, Bashgul-valley, 1—11. V. 53, K. 4 exs., (Prep. 1037).

Scopula kashmirensis Moore

The Afghan race seems less strongly marked than that of the Kashmir, to judge by an example of the latter which I took at Srinagar in 1942 and whose genitalia agree perfectly; however, I refrain from naming it, not having enough material of both.

Sarobi, 900 m., on Kabul River, 12. VI. 52, K.; Sarobi, 1 ♂ (Prep. WM. 109) 28. VI. 56, A.; Nuristan, Bashgul-valley, 1 ♂ (Prep. 1084), 3. V. 53, K.

Scopula)?) *halimodendrata* Erschl.

In the absence of a ♂, this determination must remain doubtful, though probable. 1 ♀, Pul-i-chomri, 5. VI. 56, A.

Scopula eberti sp. n. (Pl. V, Fig. 59)

This large, grey, boldly marked species, may be placed provisionally near *turbidaria* Hübn., to which, in pattern, it comes closest though very different in colour, i. e. in Sterneck's group IV of the subgenus *Eucidalia*, pending the discovery and examination of the genitalia of the ♂. Its circled cell-spots are unique.

Frons, black; tongue, well developed. Vertex, whitish; collar, brown.

Palp, first two segments pale brown laterally with sooty scales laterally above; third segment, sooty.

Antenna (♀), simple.

Thorax, pale grey, mixed with sooty scales.

Fore-wing, with single areole, grey-white, mixed with sooty scales, and appearing speckled grey, with blackish cross-lines and shades very clearly marked as follows: — ante-median fascia, bent in an acute angle at cell, the lower part being parallel to the post-median fascia; cell-spot, between the two, a fine dark point in the centre of a cleark dark circle. Post-median fascia, slightly wavy, smoky grey, deepened to black at costa and on the main nervures, finely angled on nervures 4 & 5. Between this and the next line the ground colour is clearer grey than elsewhere on the wing. Sub-marginal line, fine, black, denticulate, closely followed by a diffuse submarginal dark grey shade which starts near the apex. Between hist shade and the almost straight black termen is a clear grey narrow field. Fringe, smoky.

Hind-wing, similarly marked but with the black circle round the cell-spot wider in diameter; the post-median fascia joins it instead of running, as on the fore-wing, distally clear of it; also the termen of the hind-wing is indented between nervures 4 & 5.

Under-side, both wings, similar, but the cell-spots lack the circles characteristic of the upper-side, and are linear, alligned approximately at right angles to the costa. Span: 28 mm.

Holo-type, ♀: Sarobi, 1100 m., 9. VI. 57, E. (ZM).

Paratypes: 1 ♀, Zentral-Afghanistan Deh-Zangi, Hammer leg.; 2600 m

7 ♀♀, Khurd-Kabul, SO. v. Kabul, 17./18. VI. 1965, 1900 m, K & V leg.

Scopula (*subg. Ustocidalia*) sp. (Pl. VII, Fig. 13)

I refrain from naming the rather anomalous species of which only one very rubbed male (Prep. 1144) is to hand. The genitalia of this are shewn in the accompanying figure (Pl. VII, Fig. 13).

The blackened fibula (F) is thicker than that of most *Ustocidalia* which might indicate the genus *Glossotrophia* but the short bristly socii are not typical of that. The antenna is scantily setose, the cilia being half the breadth of the shaft in length. Span: 18 mm. 1 ex., E. Afghanistan, Tang-i-Gharuh, on Kabul River, 1600 m., 21. VIII. 52, K.

Scopula actuaria WALKER *subsp. sheljuzhkoi* ssp. n. (Pl. V, Fig. 63)

This form is provisionally introduced as a subspecies of Walker's species but may well be distinct. Superficially it rather resembles *Sc.ochroleucaria* H. S. but is slightly smaller with shorter ciliation of antenna; the genitalia are quite different, and it may be placed in STERNECK's group VI of the subgenus *Ustocidalia*, by reason of the cerata base and mappa form.

♂ antenna, with fascicles of cilia as long as the shaft-breadth.

Hind-tibia of ♂, tufted and hairy, without spurs; tarsus, short.

Fore-wing, pale ochreous-grey, marked with darker grey as in *ochroleucaria* H. S. but post-medium fascia fainter and median shade more complete, though diffuse. Cell spots, clear, black.

Span: 17 mm.

♂ genitalia, socii broad, especially at base, membranous, subtriangular; valve, membranous, finger-like; fibula, as in *ochroleucaria*, hook-like, sclerotised, black. Cerata arms, both equally developed; thick, of moderate length. Base of cerata, produced proximally in a tongue-like flap (see Pl. VII, Fig. 14).

Holo- and para-types: ♂♂, (Prep. 1043) Nuristan, Bashgul-valley, 1100—1200, 6 & 20. IV. 53, K. (coll. K.)

Scopula (subg. *Ustocidalia*) *froitzheimi* sp. n. (Pl. V, Fig. 72)

This large new species is best introduced near *ignobilis* WARREN in STERNECK's Group VI, though larger than that.

Palp, mixed light and dark brown.

♂ antenna, with cilia slightly longer than the shaft-breadth.

Frons, black; vertex, light buff; collar, brown; patagia and tegulae, creamy white.

♂ hind tibia, with 1 pair of spurs, smooth, of same length as tarsus.

Rest of thorax, abdomen, and upper-side of both wings, of a pale ochreous grey ground colour, the wings freckeled with dusty brownish grey. The cross-lines are grey-brown, the cell-spots blackish-brown, small but distinct.

Fore-wing; ante-median fascia often absolete, but when complete vague and thickened at costa and hind-margin, and outwardly angled close to costa, inward bent just above nervure 1; median shade, faint, diffuse, proceeding from a rather vague costal spot similar to those of the ante- and post-median fasciae, situated closer to the latter and roughly parallel to it, passing distally about 1 mm. from the cell-spot; post-median fascia, composed of linked crescents between the nervures, sometimes with blackish points or denticulations on the latter. A pale wavy submarginal line runs through a dusty grey submarginal area. Termen, an interrupted fine black line, proximal to a pinkish-ochreous fringe-base; fringes, greyer.

Hind-wing, similarly marked, except that the median shade passes closer to the cell-spot, avoiding it by a semi-circular proximal detour.

Underside, both wings, paler, less grey-dusted, glossier, similarly but less strongly marked than upper-side, the lines being less sharp and smokier.

Span: 30—34 mm.

♂ genitalia (Pl. VII, Fig. 15): socii, long, smooth, finger-like; value, membranous, finger-like but fairly thick and round-tipped, slightly setose; fibula, a black sclerotised hook; aedeagus, without cornutus; cerata-arms assymmetrical, one undeveloped, the other of average length; base of cerata, not produced proximally, merely convex; mappa, convex.

It is remarkable that among so many males, no female was taken.

Holo-type and 63 para-types, ♂♂: (Prep. 1086), Badakhshan, Sarekanda 4100 m., 29. VII-1. VIII. 53, K. (coll. K. & EW.). Also, 1 ♂ (Prep. WM. 147), Khinsch-i-Andarab, 3500 to 4000 m., 26. VII. 51, E. (ZM).

Scopula beckeraria LED. (Pl. V, Figs. 67, 70)

There seems to be a distinct cline with more strongly marked greyer forms in the extreme east, perhaps corresponding to the moister biotopes; however, it is remarkable that there is a structural difference between these two extremes; the character which shews variation being the octavals (male genitalia, cerata) (see Figs. 16—18). The forms from Herat are like those of Iran both in appearance and structure; the forms from the Kabul district and Paghman mountains are rather intermediate in appearance, resembling somewhat those from Nuristan.

Herat, Gulbahar, and Pul-i-chomri, 28. V. 56, (Prep. WM. 136) (Pl. VII, Fig. 18) (genitalia of form illustrated by STERNECK). Plate V, Fig. 67)

Paghman Mts., 1 ex., 3000 m., 28. VII. 53, K.

1 ex., Ferusch Tagan, 1900 m., 25. IX. 52, K.

5 ex., Kabul district, 1740 m., 18—19. VIII. 53, K., 29. VI. 52, K. (Prep. 1148) (Pl. VII, Fig. 17).

1 ex., Darufulun nr. Kabul, 1800 m., 11. VIII. 53, K.

1 ex., Asmar, 900 m., 3. IV. 53, K.

c. 50 ex., (darker form) (Prep. 1146) (Pl. VII, Fig. 16), Nuristan, Bashgul-valley, 1100 m., 9. VI. to 2. V. 53, K. (Plate V, Fig. 70)

Genus *Glossotrophia*.

The forms of this genus flying in Afghanistan are rather confusing. Two species can readily be distinguished among the males, on the character of the hind-tibia, but the females are less easily sorted out, and I am not sure how many species there may be among them; possibly four altogether. As will be seen from SEITZ-PROUT and STERNECK, specific distinctions rest more on structure than on wing-pattern in this genus, and I need therefore make no apology for introducing a new species based principally on the former.

Glossotrophia eurata PROUT (Pl. V, Fig. 56)

There are often only two costal spots on the fore-wing, the costa usually not being blackened at the start of the sub-terminal line; in forms where the median shade is strongly marked there are three costal spots. The male hind tibia has a pair of terminal spurs. Cerata arms of male assymmetrical, as illustrated in fig. 19. (For ♀, see fig. 21).

Kabul district, 1740 m., ♂ (Prep. 1167 R.) & 4 ♂♂ 4, 5 & 12. V. 52, K., & 1 ♂, (Prep. 1167 L.) 18. VI. 53, K.

Kabul, 1800 m., 1 ♂, 7. V. 57, E.

Kabul, Tang-i-Saidan, 1750 m., 27. V. 52, K.

Paghman Mts., 2300 m., 1 ♂ & 1 ♀ (Prep. 1170) 25. VI. 52, K.

Asmar. Kunar-valley, 900 m., 2 ♂♂, 3. iv. 53, K., 1 ♀ (Prep. 1167) & 8 ♀♀. K.

Tang-i-Gharuh, 1 ♀, Prep. 945, a rather small pale form, doubtless summer brood, resembling the next species superficially.

Nuristan, Kutiau, 2 ♂♂, 1550 m., and 2 ♀♀, 14. V. 53, K.

Nuristan, Bashgul-valley, 1100 m., etc., 2 ♂♂ (Prep. 906) 11. & 30. IV. 53, K., & 6 other ♂♂ 14. IV. 53, K & 20. IV. 53, K.; also 7 ♀♀.

Glossotrophia ghirshmani sp. n. (Pl. V, Fig. 57)

This new species can only be distinguished with certainty from others in the genus on structural grounds; it is variable but may may usually be distinguished fromthe foregoing in wing-pattern by its paler, neater appearance and by the costal black spots, numbering four; the first three of these, marking the start of the ante-median median and post-median lines, are widely spaced, but the fourth, marking the start of the subterminal, follows closely on the third and is mid-way between it and the apex.

Tongue, very long; frons, white below, black-brown above.

Antenna, ♂, each segment cylindrical, with two rows of cilia springing direct from the shaft; cilia longer than breadth of shaft; ♀, with very short cilia.

Hind-tibia of ♂, with one terminal spur only.

Genitalia of ♂, with well-developed, symmetrical cerata-arms (see fig. 20); of ♀, see fig. 22.

Though too much reliance should not be placed on wing-pattern, it may also be mentioned that the median shade is thick and well-marked and usually strongly angled outside the cellspot on the fore-wing and the post-median fascia is there also strongly bent out, but smoothly, not angularly; the cell-spots are rather weakly defined, especially on the hind-wing.

Span: 20—26 mm.

Named after Mme. GHIRSHMAN, wife of the French archeologist, who was the first captor of this new species, at least in the material here under consideration.

Holo type, ♂, Pr. 1165, Kabul, 15. VII. 43, G. (coll. EW.)

Allo-type, ♀, Pr. 1168, Nuristan, Kutiau, 1550 m., 14. v. 53, K. (coll. K.)

Para-types: ♂♂, Pul-i-chomri, 700 m., 2 ex., 28. V. 56 & 5. VI. 56, A., ZM.; Ghorband-valley, 1900 m., 26. VIII. 52, K., (Pr. 1173); ♀♀, Kabul district, 1740 m., 16. V. 52, K.; Sarobi, 1100 m., 3. VII. 56, A. (ZM). Also 2 paratype ♀♀, Paghman Mts., K. & V., NMW.

In the absence of corresponding males, the identification of the following forms of *Glossotrophia* must remain doubtful (the wing-pattern also does not well match that of the species indicated genitaliter): —

3 ♀♀, (genitalia agree with those of topo-typical *chalcographata* BRDT. from S. Iran.): Sarobi, 2 ♀♀, 12. VI. 52, K. (Pr. 1169), & 21. IX. 57 (Prep. WM. 146) E. Asmar, Kunar-valley, 3. IV. 53, Pr. 1172, K. (Fig. 23). 1 ♀, (genitalia agree with those of Persian *semitata* PROUT): Kandahar, 950 m., Prep. WM. 145, 10. V. 57, E. (ZM). (Pl. IX, Fig. 24).

Problepsis ocellata FRIV.

Apparently only in the east; the form is indistinguishable from that of the Mediterranean basin, despite the vast intervening area where the species is not known to occur.

3 ex., Asmar, Kunar-valley, 900 m., 3. IV. 53, K.

8 ex., Bashgul-valley, 1100—1200 m., 4. IV.—3. V. 53, K.

Genus *Rhodostrophia.*

This genus is rich in species, many of them unusually closely related to one another, in Afghanistan; as a whole they are dull in colouring and weak in markings.

Rhodostrophia adauctata STGR.

Although the forewing outer margin is concave, which is said to characterise *meonaria* GN., a single male from Paghman Mts., (Prep. 944), 3400 m., 7. VIII. 53, K., can safely be placed under this name; it is a rosy form. Its genitalia perfectly match those (Pr. WB. 9.) of a para-type of *adauctata* from Margelan, kindly loaned by Dr. ALBERTI of Berlin; this specimen has the outer margin straight, and is a rosy form with post-median fascia strongly out-bulging below the cell; hind-wing with very weak post-median and subterminal lines. The post-median fascia of the fore-wing is strongly rosy. The genitalia (see Pl. IX, Fig. 25, 26) have a rather long stretch of valve-costa scobinated: in some positions the scobination is vertical.

I am informed by Mr. D. S. FLETCHER that the type of *Rhodostrophia meonaria* GUENEE is in the British Museum and on account of differences in pattern and slight differences in structure he would prefer to keep it as a distinct species from the others in the group here dealt with.

Rhodostrophia borealis SWIN.

Described as a subspecies of *cinerascens* MOORE, this species also comes close to *adauctata* STGR. In the material before me this species is represented by a single female kindly identified for me by Mr. D. S. FLETCHER in 1960. This sex is smaller than the male, and the example is rosy and well-marked. The female genitalia are more robust than those of the following species (Prep. 1159). As for the male genitalia, I am able to illustrate those of the lectotype from Kulu in the British Museum (Prep. BM. Geom. 4244) (Fig. 27). The flap-like process or finger on the costa of the valve is dorsally scobinate, distinguishing it from *adauctata* and *cinerascens.*

Nuristan, Achmede Dewane, 1 ♀, (Prep. 1160), 23. VII. 52, K.

Rhodostrophia anjumana sp. n. (Pl. V, Fig. 64)

Very close to *R.dissoluta* PROUT, differing in the male genitalia and usually in the more truly parallel course of the fore-wing's two outer fasciae.

Antenna, of ♂, bipectinate; of ♀, slightly setose.

Fore-wing, yellow-grey, with brownish markings variable in intensity and completeness, as follows: an ante-median fascia, bent outwards on the cell and between nervures 1 & 2; a clear seldom elongated cell-spot; a wavy post-median fascia, undulating proximally between the nervures and bent outwards on nervure 3, inwards between nervures 1 & 2; and a submarginal fascia, often denticulate on nervures 4—7 and running parallel to the post-median; enclosed between these two fasciae is a usually darker brown band-like area which is hardly narrower at the hind-margin than the costa (cf. in *dissoluta* type it is distinctly narrower).

Hind-wing, with cell-spot faint or absent, and the two outer fasciae sometimes fairly clearly marked but more often less distinct than on fore-wing.

Under-side, fainter marked than upper-side, glossier and more yellow-tinged.

Span: 27—34 mm.

Male genitalia (Pl. X, Figs. 29, 30): closely related to *adaustata* STGR. and *cinerascens* MRE. (Pl. X, Fig. 28) but distinguished from them and from *dissoluta* PROUT in the round, tongue-like, not disc-formed or dilated, tip of the fibula or ventral process of the valve; the finger-like dorsal process is as in *cinerascens* MOORE, i. e. less scobinated than in *meonaria* GN. and *adauctata* STGR. The genitalia of *anjumana* also differ from those of *cinerascens* in being proportionately smaller.

The specimens from Sarekanda are on the average slightly more strongly marked than those from Anjuman and approach *excellens* PROUT as illustrated in SEITZ IV Supplement; a weaker-marked form from Anjuman is illustrated in Fig. 64.

Holo-type, ♂, Prep. 949 (right), and 10 ♂♂ paratypes, (Preps. 949 (left) & 1158), Anjuman-Pass, 4200 m., 12 & 13. VIII. 52, K. (colls. K. & EW.)

Allo-type, ♀, (Prep. 1159), and 8 ♂♂ para-types (Prep. 1092), Badakhshan, Sarekanda, 4200 m., 31. VIII. & 1. VIII. 52, K. (colls. K., E. W., & B. M.)

Rhodostrophia pleonasma sp. n. (Pl. V, Fig. 61)

Superficially like *adauctata* STGR., but genitaliter quite different, being rather in the *praecisaria* STGR. group, which is repressented by a number of species in Afghanistan. The outer margin of the fore-wing is more rounded, the wing less pointed, its ground-colour more brownish, less rosy than that of *adauctata*, although when a longer series is obtained these colour differences may be shewn to be inconstant.

Palp, laterally rosy; frons, slightly rosy.

Antenna of male, bipectinated.

Male hind-tibia, with three spurs (as in the fore-going and immediately following species).

Fore-wing, light brown, with rosy costa; ante-median fascia and cell-spot, lacking. Post-median fascia, purplish-brown, strongly marked, not reaching costa, beginning parallel to outer margin near cell, strongly incurved on nervures 3 & 2, then out-curved to reach the hind-margin at right angles.

Hind-wing, paler, with post-median fascia indicated near anal border, and with slightly browner subterminal area.

Under-side, both wings, scantily marked, paler, with a slight rosy tinge on the fore-wing cell and costa.

Span: 33 mm.

The ♂ genitalia entirely lack the disc-tipped fibula characterising the *adauctata* group; ventral border of valve, widely doubled over up to near the middle of the distal border which is densely spinose both sides of the curve; the costa is smoother, but with a smooth nose-like projection bearing a few setae on the interior. For other details, see Pl. X, Fig. 31.

Holo-type: 1 ♂, (Prep. 942) Badakhshan, Sarekanda, 31. VII. 52, K. (coll. K).

Rhodostrophia froitzheimi sp. n. (Pl. X, Fig. 32)

Closely related to the fore-going new species, but larger and more pointed-winged, differing also genitaliter somewhat. The post-median fascia is more distal and although wavy, runs roughly parallel to the termen. The unique type is unfortunately rather rubbed and damaged.

Palp, very short, light brown. Frons, rosy brown.

♂ antenna, bipectinated; ♂ hind-tibia, with three spurs.

Fore-wing, comparatively long, almost falcate, with costa arched before apex and outer margin straight, almost concave, at a very obtuse angle to the hind margin, light brown with rosy costa and fringe; ante-median fascia and cell-spot, obsolete or lacking; post-median fascia, faint, grey, wavy, oblique to hind-margin but roughly parallel to termen, slightly incurved below nervure 2.

Hind-wing, paler, weakly marked.

Span: 41 mm.

♂ genitalia, similar to *pleonasma* in general form, but the ventral border of the valve is more narrowly doubled over, and its distal border is only spinose along its ventral half; that border's dorsal half is smooth and projects dorsally; the costa has a smaller, rather irregularly-shaped, setose process.

Holo-type: ♂, (Prep. 1081), N. E. Afghanistan, Anjuman-Pass, 4200 m., 12. VIII. 52, K. (Coll. K.)

Rhodostrophia abscisaria BRANDT *subsp. chlorotica* subsp. n. (Pl. V, Fig. 62)

Unfortunately the first generation of this form has not been taken so that there exists a doubt as to the real difference between it and the typical; however, probably it is a good subspecies. I am grateful to HANSON of the Swedish Natural History Museum for the loan of BRANDT's type of *abscisaria* from Kuh-i-Binalud, Khorassan, and for permission to examine its genitalia and those of other BRANDT types.

Smaller, less marked, paler, more grey-white, than the typical.

Span: 22 mm. (The type of *abscisaria* has a span of 26 mm.)

Holo-type, ♂ (Prep. 952) Hindu-Kush, Ejan, Salang-valley, 11. X. 52, K.

The ♂ genitalia (see Pl. XI, Fig. 34) are identical with those of typical *abscisaria* (Pl. X Fig. 33); they differ from those of the two preceding species, and resemble the following species, in having a fine pollex instead of a wider-based process on the valve-costa.

Rhodostrophia praecisaria STGT. (Pl. V, Fig. 69)

The one example of the first generation measures 31 mm and is larger than the numerous second-brood examples; all are of a pleasant yellow-brown colour with clearer markings than any of the foregoing, being perhaps only possible to confuse with some *Scopula* species, especially *Scopula froitzheimi* sp. n. described above. Curiously, the second brood specimens are all ♀♀. The first brood male perfectly matches, in pattern the SEITZ Vol. IV figure of *praecisaria* (Pl. 3 misprinted "*badiaria*"); its cell-spot is darker than in the 2nd generation ♀♀ and also than in *abscisaria* BRANDT type. The male genitalia, figured on Pl. XI, fig. 36, are close to those of *abscisaria*, but differ in the scobination of the costa behind the pollex; the costa is unscobinated at that point in *abscisaria*.

Paghman Mts., 2300, 1 ♂ (Prep. 1017) 20. V. 52, K. (gen. I); 8 ♀♀.

ditto, 3000 m., 28. VIII. 53, K.

Kabul district, 1740 m., 2 ♀♀, 17. IX. 52, K.

Bahmian, Hazaradjat, 2500 m., 1 ♀, 28. VIII. 52, K.

I take this opportunity of illustrating the male genitalia of *Rhodostrophia furialis* BRANDT type from Kuh-i-Binalud, though this was not in the Afghan material submitted to me, (Pl. XI, Fig. 36). It appears to be intermediate between the *praecisaria* group and the next species. Neither of these have the fibula, which characterises the *adaustata* group, nor the costal pollex or other process, characteristic of the *praecisaraia* group.

Rhodostrophia nubifera BRANDT subsp. *klapperichi* subsp. n. (Pl. V, Fig. 65)

The typical form of this species was also described from Kuh-i-Binalud, Khorassan; a transitional race seems to inhabit the region of Herat. The new subspecies, from further east, resembles *R.peripheres* PROUT extraordinarily but its genitalia shew that it belongs rather to *nubifera*; they differ very slightly, but this can be considered racial.

The ♂ fore-wing differs from the typical by the paler ground colour replacing the grey clouding over the whole or nearly the whole wing; in extreme forms the only dark element of the pattern left outstanding is the grey proximal edging of the post-median facia. Some ♀♀ also share this general colour-tendency, but others, e. g. two ♀♀ from Gulbahar, have the fore-wing of a deep orange-brown mixed with grey, just as in the typical *peripheres* PROUT from the Elburz and Alvand mountains in North and Central Iran.

Span: 19—32 mm. (Some of the autumnal ♂♂ are very small.)

♂ genitalia: These are generally similar to those of typical *nubifera* (Prep. WBS. 3, Pl. XI, Fig. 37) but differ slightly in the longer field of spines on the valvula.

The genitalia of *R.peripheres* PROUT are also illustrated (Pl. XI, Fig. 38) as a previous figure which I gave of it in "Middle East Lepidoptera X" (Bull. Soc. Fouad I. Entom. *33*, 1949, p. 364, Fig. 14) is unsatisfactory. The genitalia of *R.cuprinaria* CHRIST., with which *peripheres* and this race of *nubifera* have been confused, were illustrated satisfactorily *ibidem* (see also STERNECK); bit it may be mentioned that Fig. 16, p. 365 *ibidem* representing a form resembling *peripheres* from the Yezd mountains may well be a distinct, undescribed species, as the valve-tip is smooth, not serrate.

Holo-type of *klapperichi*: ♂, (Prep. 946) Nuristan, Bashgul-valley, 1200 m., 3. v. 53, K. (coll. K.)

Allo-type: ♀, E. Afghanistan, Jebel Seratch, Kodaman, 13. x. 62, K. (coll. mea).

Para-types: ♂, (Prep. WM. 126), (span: 19 mm.) Sarobi, 20. IX. 57, W. (ZM.); ♂ (Prep. 941) & ♀, same place and date as allo-type, ♂ in coll. mea & ♀ in coll. K.; ♂ (Prep. 1033) Ghorband-valley, 1900 m., 26. VIII. 52, K. (coll. K.); 2 ♀♀ (dark forms) Gulbahar, 1700 m., 13 & 14. VII. 57, J. R. (ZM); ♀, Gulbahar, 2. IX. 56, A. (ZM). Also 150 paratypes from near Kabul and Nuristan, K. & V., NMW.

1 ♂, 3 ♀♀, Sarobi, 15.—22. IX. 1957, E., 1 ♀, Sarobi, 20. VI. 1957, Mrs. Dr. WEGNER, 1 ♂, 4 ♀♀, same place, O. HAMMER leg.

Rhodostrophia oxyntis PROUT.

Herat, 2 ♀♀, 5. V. 56, A.: ♀ Kabul, 1740 m., 19. V. 52, K.

Rhodostrophia sps. indeterminable:

2 ♂♂ without abdomen, rather rubbed, and consequently indeterminable, are labelled:
(i) Badakhshan, Khinch-i-Andarab, 23. VII. 57, E.
(ii) Herat, 970 m., 5. V. 56, A. (determined by Herr SHELJUZHKO as:
"(?) *terrestraria*"; this may be correct, but I am not at all sure.

There is also a ♀ which cannot be determined: it is dull, dark brown, unmarked, rather rubbed, (Prep. 1162) and labelled: Central Afghanistan, Bahmian, Hazaradjat, 28. VIII. 52, K.

Subfamily: LARENTIINAE.

Ochodontia adustaria FISCH.-WALD.

1 ♀, Andarab-valley, Khinjan, 1240 m., 5. x. 52, K.

Rhodometra sacraria L.

2 ♂♂, Khinjan-valley, Ferusch-Tagan, 2100 m., 4. x. 52, K.
2 ♂♀, Kundus-valley, Doab, 1700 m., 21. IX. 52, K. (Prep. 1179).

Lythria purpuraria L.

1 ♂, f. *lutearia* Vill., Badakhshan, Schiva, high steppe, 2800 m., 7. VII. 53, K.

Scotopteryx (= *Ortholitha*) *sartata* ALPH.

15 ex., Badakhshan, Sarekanda, 4200 m., 31. VII. 53, K.

Stamnodes pauperaria subsp. divitiaria STGR.

1 ♀, Nuristan, Achmede Dewane, 2800 m., Bashgul-valley, 27. VII. 52, K.

The above specimen doubtless rightly belongs to the subspecies named above, being widely bordered on the upper-side with heavy smoky brown; the hind-wing is light brown beneath. The following examples seem to belong to paler, less strongly bordered forms, but they are in too a bad state, for a definite opinion on them to be expressed:

3 ♀, Badakhshan, Sarekanda, 4200 m., 31. VII. 53, K.
1 ♀, Badakhshan, Khinsch-i-Andarab, 2500-400 m., 26. VII. 57, E.

Lithostege flavicornata Z.

2 ♀, Kabul district, Tang-i-Saidan, 1760 m., 27. V. 52, K.
1 ♀, Bashgul-valley, 1200 m., 20. IV. 53, K.

Lithostege amseli sp. n. (Plate I, Fig. 3)

Not unlike *Lithostege amoenata* CHR. but smaller, greyer, neater; fore-wing shape, less elongated, with outer margin evenly curved, not angled on nervure 6.

Head and feet, pale grey; thorax, grey; abdomen, grey, darker dorsally.

Forewing, of almost the same shape as that of *L.usgentaria*; pale grey. Basal patch, obsolete. Ante median fascia, right-angled on the cell, consisting of three parallel white lines and a broader brown stripe separating the first from the second. The white lines are edged with darker grey, thickened to black near the costa and on the nervures, especially so the edge of the most distal of the three lines. Median area, pale grey, widest on the costa, where it occupies about half the length of the costa, narrowest between nervures 1 & 2, but only slightly wider on the hind margin. The outer edge of the median area is almost straight and runs roughly parallel with the outer margin; it is formed by the brown post-median line which is followed by a wide, dark grey submarginal band, also parallel to the outer margin, but containing a double white wavy line, the inner strand of which is clearer. The nervures are marked with black crossing the submarginal band but not these white lines. A white curved line, also parallel with the outer margin, edges the submarginal band and is separated from the blackish termen by a pale grey terminal or marginal area, extending from below a paler grey faintly defined sub-apical triangle. Fringes, white basad, chequered brown distally, opposite the nervures, and with a second white distal line parallel to the first.

Hind-wing, pale smoky brown, the cell-spot being a faint fuscous crescent, and the post-median fascia faintly paler, double. Termen and fringe, as on fore-wing but less strongly marked and chequered.

Under-side, fore-wing, brownish-grey, except for the pale submarginal area. Cell-spots, fuscous, rather indistinct. A white wavy submarginal line, edged with a strong dark grey proximal shade and a somewhat weaker brown distal shade, is clearest near the costa. Termen and fringe, as on upper-side. Hind-wing, brownish, with cell-spot a clear blackish point, and post-median fascia a clearly but finely infuscated dark line white-edged distally. Termen and fringe, as on upper-side of same wing.

Span: 23 mm.

Holo-type: ♂, Afghanistan, Herat, 970 m., 15. IV. 56, A (ZM).

Lithostege usgentaria CHRIST.

3 ex., N. W. Afghanistan, Herat, 970 m., 15. IV. 56, A.

Anaitis plagiata L.

2 ex., E. Afghanistan, Paghman Mts., 2300 m., 30. V. 52, K.

Oulobophera externata H.-S.

The Afghan form does not differ from that of Fars, S. W. Iran.

1 ♀, Kunar-valley, 900 m., 3. IV. 53, K.
10 ex., Nuristan, Bashgul-valley, 1100 m., 9. IV.—3. V. 53, K.

Calocalpe cervinalis SCOP.

1 ♀, Nuristan, Bashgul-valley, 1100 m., 9. iv. 53.

A very rubbed ♂, probably also belongs here, labelled: Paghman Mts., 28. VIII. 53, K. (taken with the following species).

Calocalpe alternata STGR.
2 rather rubbed ♀♀, Paghman Mts., 28. VIII. 53, K.

Cidaria fulvata subsp. distinctata STGR.
2 ex., E. Afghanistan, Paghman Mts., 3000 m., 28. VIII. 53, K.; 1 ex., same place, 2400 m., 8. vii. 52, K.
1 ex., Nuristan, Achmede Dewane, 2700 m., Bashgul-valley, 26. VII. 52, K.

Xanthorhoe mecoterma PROUT
1 ex., Nuristan, Bashgul-valley 1100 m., 14. iv. 53, K.

Xanthorhoe saturata GUEN. (det. D. S. FLETCHER).
1 ♂, (Prep. 1099), Jalalabad, 500 m., 30. III. 53, K.
3 ex., Nuristan, Bashgul-valley, 1,100 & 1,200 m., 11 & 20. IV. 53, K.

Nycterosea obstipata F.
1 ex., Kabul district, 1740 m., 17. IX. 52, K.
6 ex., Nuristan, Kutiau, 1450 m., 2. V. 53, K.
2 ex., Andarab-valley, Khinjan, 1240 m., 5. X. 52, K.
16 ex., Nuristan: Bashgul-valley, 1,100—1,200 m., 20. IV.—7. V. 53, K.; and 1 ex., Achmede Dewane, 2700 m., 23. VII. 52, K.

Entephria(?) ravaria LED. (det. D. S. FLETCHER)
4 ex., Sarekanda, 4200 m., 31. VII. 53, K.
2 ♂♂, Khinjan-valley, Do-Schak, 2500 m., 26. IX. 52.
Neotephria ramalaria FELDER (det. D. S. FLETCHER)
1 ♀, Nuristan, Achmede Dewane, 2700 m., 22. VII. 52, K.

Coenotephria apiciata STGR. (Pl. I, Figs. 6, 7)
I have now examined the genitalia of STAUDINGERS types (both sexes) from Achal-Tekke, Transcaucasia, and take this opportunity of illustrating them for comparison with other congeners, (Pl. XII, Fig. 39 & 40). Incidentally these studies have confirmed that my subspecies *pistacieti*, described in Bull. Soc. Fouad 1 Ent., *36* (1952) from Fars, S. W. Iran, indeed belongs, as suspected, to *apiciata*. In Afghanistan, as in Fars, the species is autumnal; in the former it flies together with a congener which is described hereunder as a new species. The latter is the more numerous in the material before me. *C.apiciata*'s span is 27—30 mm.
4 ex., Salang-valley, 2000 m., Ejan, 11. X. 52, K. (Prep. 1227).
3 ex., Andarab-valley, Khinjan, 1240 m., 25. IX. 52. K.
13 ex., (Preps. 1177 (Pl. XII, Fig. 41 & 43), 1195, 1199) Khinjan-valley, Ferusch-Tagan, 1900 to 2100 m., 25. IX.—4. X. 52, K.
3 ex., Khinjan-valley, Do-Shak, 2500 m., 26. IX. 52, K.
1 ♂ (Prep. 1091), Salang-valley, Qulatak, 9. X. 52. K.

Coenotephria triciliata sp. n. (Plate I, Fig. 4 & 5)

Generally smaller, the male with bushier antennae, the forewing with a narrower median area, than the preceding species. There are also genitalia differences in both sexes, as described below.

Male antenna, with cilia three or four times as long as the shaft breadth, whereas in *apiciata* they are twice as long.

Fore-wing more rounded, less pointed, and generally smaller than *apiciata*, coloration more greyish with less black, and forewing median area narrower; the ante-median fascia, also, is acutely angled on the costal nervure and two or three times before reaching nervure 1 where it is again acutely angled, whereas in *apiciata* it is usually not angled outward on the costal nervure but is merely outward angled twice before crossing nervure 1 where it may again be so angled, usually not acutely but at right angles. Span: 21—27 mm.

Male genitalia (Pl. XII, fig. 42): uncus shorter, blunter than *apiciata*; valve, weak, oval, undistinguished; the lobes near the anellus are short and weak, with two or three setae only, unlike *apiciata* where they each tipped with a long, strong, slightly curved spine and

a tuft of long hairs, the spine being longer than these and two-thirds the length of the valve-costa; aedeagus, a short tube, undistinguished.

The female genitalia (Pl. XII, fig. 42a.) can best be distinguished from those of *apiciata* by the form of the anterior apophyses; owing to the flexibility of the other parts, the other differences are difficult to detect in different preparations. In *apiciata* the anterior apophyses are kneed, though of course not actually articulated, near the origin, while in *triciliata* they are plain, tapering smoothly from the tergite to their tip.

Holo-type, ♂, and allo-type ♀ (Prep. 1197) and 37 para-types: Salang Valley, Ejan, 2000 m., 11. x. 52, K. (in coll. K.). Other para-types: ♂♀ (Preps. 1175 & 1197) same data, in coll. m. and ♂♀ (Preps. 1090 & 1198) Khinjan-valley, Do-Shak, 2500 m., 26. ix. 52, K. in coll. m. Other paratypes in coll. K. are: 3 ex., Khinjan-valley, Ferusch-Tagan, 1900—2100 m., 25. IX.—4. X. 52, K., and 10 ex., Do-Shak, as above.

Euphyia submarginata WARREN. (det. D. S. FLETCHER)
3 ex., Nuristan, Bashgul-valley, Achmede-Dewane, 2700 m., 23. VIII. 52, K.

Euphyia sintenisi STGR. (?)
1 ♀, Nuristan, Bashgul-valley, 1500 m., Kamu, 26. IV. 53, K.

Protorhoe unicata GN.
1 ♀, Herat, 5. v. 56, A.

Epirrhoe peribleta BRANDT
2 ex., (Prep. WM. 138) Herat, 970 m., 15. IV. 56, A.

Catarhoe arachne sp. n. (Pl. I, Fig. 8)

Close to *C. renodata* PÜNG., especially in aspect; but the fore-wing cell-spot is smaller and closer to the ante-median fascia; moreover the areole is double, which possibly will necessitate the creation of a new genus for it, or the amendment of the existing diagnosis of *Catarhoe*. ♂ antenna, almost simple, with very short cilia. Face, white, with adpressed scales. Hind-wing disco-cellular, almost straight.

Fore-wing, whitish, crossed by narrow purplish-brown bands widest and darkest at the costa; of these, the first, a basal patch, has its distal border right-angled on the cell, and followed by a whitish area slightly peppered with brown scales; the second, consists of three wavy, roughly parallel lines in a common brown band; the outermost line is strongly incurved below the cubital fold; the cell-spot, blackish and elongated, is placed on it where it crosses the cell; the median area, following on this, is white proximally, but infuscated distally; a reticulate, web-like, fine brown line (which suggested the name for the new species: arachne spider) begins at the costa in the middle of the median area, but at the hind-margin joins the post-median fascia; this fascia is deeply shaded proximally, the shadows forming the third band, which has a rather irregular course, being in-curved opposite the cell, and outward-angled on nervures 3 and 4. A pale submarginal area follows it, containing two wavy, double, fine, interrupted brown lines, followed by a subterminal brown shade which itself is traversed, from before the apex to the tornus, by a wavy white zigzag line. Termen, a series of fine black crescents.

Hind-wing, with corresponding markings and colouring, but less white, cell-spot fainter, post-median fascia with less pronounced dark distal edge.

Under-side, whitish, with grey cross-markings clear but fainter than upper-side.

Span: 24 mm.

Male genitalia (Pl. XII, Fig. 44).

The presence of two hairy anellus lobes distinguish *arachne* from *renodata*, which has a single calcar instead; also, while the tip of the valve-costa in *renodata* is tapering and produced, in *arachne* it is wavy and somewhat saddle-like.

Male antenna, almost simple, cilia very short.

Holo-type, ♂, (Prep. WM. 149), Pul-i-chomri, 700 m., 28. V. 56, A. (ZM). Also two larger para-types, Band-i-Amir, 3000 m., K. & V., NMW. These will be discussed elsewhere.

Eclipoptera postpallida PROUT *nuristana* subsp. n. (Pl. I, Fig. 9)

Larger than the typical, the richly-coloured fore-wing being variable; but in none of the types of the new race is the black median area crossed by two or even one white line as in SEITZ. IV. Suppt. Pl. 15 *postpallida*. The hind-wing is darker and more strongly marked, being infuscated with rosy grey up to the well-defined wavy grey post-median fascia, beyond which is a paler submarginal area with traces of other lines and shades.

Span: 33—38 mm.

For male genitalia, see Pl. XII, Fig. 45.

Holo-type, ♂, (Prep. 1093) Nuristan, Achmede-Dewane. 2700 m., Bashgul-valley, 22. VII. 52, K. (coll. K.)

Allo-type and two para-types, ♀♀, same place, 23 & 26. VII. 52, K. (coll. K. & EW).

Eclipoptera (?) *fastigata* PÜNG. (det. D. S. FLETCHER)
2 ex., Kabul, 3. VII. & VIII. 43, G.

Cataclysme riguata subsp. festivata STGR.
1 ♂, Badakhshan, Khinsh-i-Andarab, 3500—4000 m., 21. VII. 57, E.

Genus *Eupithecia*.

These were sent, to the best of my knowledge, to the late Herr Eduard Schutze for determination; they are now the subject of a study by Herr G. EBERT.

Gymnoscelis pumilata HÜBN.
1 ex., Nuristan, Bashgul-valley, 1200 m., 20. iv. 53, K.

Horisme nigrovitta WARREN (det. D. S. FLETCHER)
2 ♂♂, 3 ♀♀, Nuristan, Bashgul-valley, 1100—1150 m., 6. IV.—9. V. 53, K. (Prep. 1098). Besides the sexual dimorphism, there is a remarkable variation in size in the females, so that at first sight this short series do not appear to be all conspecific.

Sub-family; ENNOMINAE (GEOMETRINAE)

This large sub-family might well be subdivided into a number of distinct tribes or even subfamilies; however, I refrain from naming these groups separately in the present work, and choose to follow the order of WEHRLI-SEITZ Suppt., by and large.

Ligdia coctata GN.
9 ex., Nuristan; Bashgul-valley, 1100 m., 9. IV. 53, K., and Kunar-valley, Smar, 900 m., 3. IV. 53, K.

Heterobapta ejana WILTSHIRE 1961.
2 ex., Hindu-Kush, Salang-valley, Ejan, 2000 m., 11. X. 52, K.

Prometopidia arenosa WILTSHIRE 1961.
1 ♀, Nuristan, Bashgul-valley, 1500 m., 26. IV. 53, K.

Prometopidia conisaria HAMPS.
1 ♀, same place and date as preceding.

Lomographa mesonephele sp. n. (Pl. I, Figs. 11—13)

Face, yellow below, sienna-brown above.

Palp, vertex, thorax, abdomen, and legs, pale yellow.

Antenna, of ♂, serrate with bundles of cilia somewhat longer than breadth of shaft; of ♀, not serrate, very slightly ciliated.

Forewing, variable in marking, the typical having the pale median area much restricted by the proximad expansion of the post-median shade, composed of purple-grey scales on a pale yellow ground colour. An aberration most frequent in the second generation, which flies in midsummer, but also occurring in the larger spring generation, has no grey marks except two small post-median patches, the smaller close to the costa of the forewing, the larger opposite the cell; this may be called *obsoleta* ab.n. In better-marked forms, the follow-

ing purple-grey freckled markings are visible, but vary considerably in extent; a basal costal shade; a diffuse basal fascia; a diffuse ante-median fascia; a blackis,-brown linear cellspot, which is usually separated both from the ante-median and the post-median fascia or shade, but in heavier-marked forms is adjacent to the latter; this is the widest of the dark bands, and to some extent occupies the place of a median shade; it seldom reaches the costa and is widest near the cell and on nervures 3 & 3; the submarginal fascia or shade is fused with it near the cell but often distinct near the costa and hind margin; the terminal area is wide and pale with only a few scattered grey scales. In some examples the pale yellow ground colour is infused with sienna brown, especially in the median area; the termen is marked with fine purple grey dashes the between nervures in the typical form; in ab.*obsoleta* the cell-spot and termen are faint and rosy-orange, and the whole fore-wing is sparsely scattered with darker scales which fail to form distinct bands. In the typical form the hind-wing cell-spot is as on the forewing, but the grey bands are less complete, being darkest near the anal margin.

Span: 20—24 mm., the smallest forms being the midsummer and autumnal generations at 700 m., or 1100 m.

For the male genitalia, see fig. 46.

Types of typical form:
Holo-type, ♂, Nuristan, 1100 m., Bashgul-valley, 14. IV. 52, K. (coll. K.)
Allo-type, ♀, (Prep. 1141), same place, 6. IV. 52, K. (coll. EW.)
Para-type, ♂, (Prep. 1141), same place, 7. V. 52, K. (coll. EW.)
Para-types, 6 ex., same place, IV. & V. 52, K. (coll. K.);
Types of ab.*obsoleta:*
Holo-type: 1 ♀, Nuristan, Bashgul-valley, 14. IV. 53, K. (coll. K.).

Lomographa wiltshirei Ebert 1965 (Pl. I, Fig. 10)

A single ♀ (Prep. 1142) from Badakhshan, Faizabad, 1450 m., 7. VIII. 53, K. (in coll. K.) was provisionally considered by me as a new subspecies of *L.dalmataria* Gn., when first writing this manuscript. Further material including a ♂, from the same place, leg. E., enabled the latter to describe it in a recent article, making further discussion here unnecessary.

Opisthograptis provincialis Ob.
1 ♂, near, *f.emaculata* Graes., Nuristan, Kamu, 1500 m., Bashgul-valley, 28. IV. 53, K.

Peetula stramineata Moore
1 ♂, (Prep. 955), Khinjan-valley, Ferusch Tagan, 1900 m., 25. IX. 52, K.

Anonychia rostrifera Warren
1 ex., Nuristan, Kutiau, 1550 m., 4. v. 53, K.

Gonodontis muscularia Stgr.

Whether this race deserves describing cannot be said on the basis of so scanty a material. Central Asian examples of *muscularia* in the British Museum, which are not actually types but are probably typical, have been compared; the Afghan form has a greyer coloration but otherwise matches them well.

1 ♂, Prep. 930, Nuristan, Bashgul valley, 1100 m., 14. IV. 53, K.

Crocallis klapperichi Wiltshire 1961
1 ♀, Paghman Mts., 3000 m., 28. VIII. 53, K.
1 ♀, Badakhshan, Sarekanda, 4200 m., 31. VII. 53, K.

Scodiomima afghana Wiltshire 1961
7 ♂♂, Paghman Mts., 3000 m., 28. VIII. 59, K.

Semiothisa fuscomarginata Warren (det. D. S. Fletcher)
11 ex., Nuristan, Bashgul-valley, 1100—1300 m., 9. IV.—21. V. 53, K.
1 ex., Nuristan, Kutiau, 1450 m., 2. V. 53, K.
2 ex., (Prep. 1008), Kunar-valley, Asmar, 900 m., 3. IV. 53, K.

Semiothisa (*Diastictis*) *latifasciata* STGR.

2 ex., (Prep. 953), Nuristan, Bashgul-valley, Achmede Dewane, 2700 m., 28. VII. 52, K.

Tephrina klapperichi sp. n. (Plate I, Fig. 14, & Pl. II, Fig. 15.)

This new species, clearly distinct in genitalia, is variable; it is not easy to say what superficial characters would serve to separate it from of well-known species such as *pumicaria* LED. It is a good deal bigger than that species and less clearly marked than the Chinese form *tsekubia* WLI. It may be placed next to *catalaunaria* GN., to which its genitalia come closest.

Antenna of ♂, bipectinate to near tip, the last ten or eleven segments being merely serrate and setose.

Antenna of ♀, also bipectinate to a similar point, but less strongly so, and with the braches adpressed.

Fore-wing light grey brown freckled with darker, often suffused with darker purple grey either in the submarginal area, or less often over the whole wing; with cell spot large and distinct on fore-wing, usually less so on hind-wing.

Ante-median line, when clearly marked, oblique to costa and strongly angled on cell, otherwise fairly straight, and at right angles to hind margin; median shade, when marked, broader, straighter, and adjacent distally to the discal spot; post-median fascia, usually a pale line, with blackish-brown marks on the nervures, especially 2, 3, and 4, of the fore-wing, occasionally suffused with broad grey-brown band; it is closely followed by the submarginal fascia or shade, which when well-marked is broad, suffuse, and dark. Termen, with blackish intraneural marks. In lightly marked forms, only the cell-spot, and the blackish marks on the post-median fascia and termen are present. Hind-wing, marked in a manner corresponding to fore-wing. Under-side, both wings, more unicolorous, than the upper-side well-marked forms; cell-spots obsolete.

Span: 26—30 mm.

The male genitalia of this species (Pl. XIII, Fig. 47) shew some variation in the uncus and gnathos, and even the upper lobe of the valve; the latter is somewhat spatulate in Prep. 1013, more finger-like in the normal forms; from *catalaunaria* GN. (Prep. 1001) (Pl. XIII, Fig. 48) it can at once be distinguished by the finger-like termination of the lower or ventral lobe of the valve ('Valvula") of WEHRLI) which in *catalaunaria* is shorter, more triangular and terminates in a spine; WEHRLI moreover says that *murinaria* also has a terminal spine on the "valvula", longer than that of *catalaunaria* so the complete absence of this spine should at once distinguish the new Afghan species from both; in addition, the aedaegus of the new species contains a single, fairly long and stout cornutus, while that of *catalaunaria* has, instead, a small chitinous plate with an adjacent tuft-like field of minute spines. The male genitalia of *inconspicuaria* HÜBN. (= *pumicaria* LED.) (Lebanese example) are also illustrated (Pl. XIII, Fig. 49) (Prep. 1002); these are rather distinct from other *Tephrina*; the uncus is more pointed, and there are heavy spines along the distal ventral border of the upper lobe of the valve. The Acacia-feeding group of *Tephrina* (e. g. *disputaria*, *sublimbata* etc.,) all have a shorter "valvula" or lower lobe than the new species. These were well illustrated in RUNGS (1954); that article however omitted the rather distinct-looking *T.perviaria* LED., which is also associated with *Acacia*, and I therefore take this opportunity of illustrating its male genitalia (Prep. 1067, Pl. XIII, Fig. 50).

Holo-type: ♂, (Prep. 961), Nuristan, Bashgul-valley, 1200 m., 20. IV. 52, K. (coll. K.)

Allo-type, ♀, same place, 3. V. 53, K. (coll. K.)

Para-types: ♂ (Prep. 1014), Kunar-valley, Asmar, 3. IV. 53, K. (coll. EW); 3 ♂♂, Nuristan & 1 ♀, Paghman, (all. VII. 63, K. & V.) NMW. 2 ♂♂, (Prep. WM. 148), E. Afghanistan, Sarobi, 1100 m., 3. VII. 56, A., ZM.; 1 ♀, Kunar-valley, Asmar, (Prep. 1013) 3. IV. 53, K., (coll. EW.); 1 ♂, (Prep. 1006), Nuristan, Bashgul-valley, 1150 m., 1. V. 53, K., (coll. EW.); 4 ♂ & 4 ♀, same place, 14. IV.—19. V. 53, K., (coll. K.).

Genus: *Gnopharmia*.

This difficult genus is richly represented in Afghanistan, as indeed it is in both Iran and Central Asia. It proves necessary to describe as new all the forms, only two being pos-

sible to assign to previously named species as subspecies. I have been fortunate in being able to inspect both the moths and genitalia preparations of the late Dr. WEHRLI at Bonn, so that even if subsequent students disagree with the specific divisions which he introduced and which I follow, they will find that I am "in step" with him. In one case, however, namely that of *G.maculifera* STGR., of which I have examined the types from the Berlin Museum collection, and their genitalia, I disagreed with Dr. WEHRLI's determination of that species.

Gnopharmia objectaria STGR. *luxuriosa* subsp. n. (Pl. II, Figs. 18, 19)

This large and striking new form is unlike the forms hitherto assigned to this species, being larger and more richly coloured; typical *objectaria* from Transcaspia are much paler, sandy-whitish in colour; slightly redder than these are certain forms from Fars, S. W. Iran, placed to *objectaria* by WEHRLI as f.*cocandaria* ERSCH but these are less dark and rich than *luxuriosa*. In build and richness the new form certainly most recalls *rubraria* STGR. but differs genitaliter; in colouring it also resembles somewhat *irakensis* WLI., but differs similarly, and is also larger. Compared with *colchidaria* LED., the new form is redder and the ante-median area of the fore-wing certainly darker.

Fore-wing, pale biscuit freckled with brown grey basally and on the costa, and tinged with orange-red, of which a wide suffusion spreads below the cell to the ante-median fascia, and reappears, mixed with grey scales in the marginal area. Other parts, dappled with deep slate grey except for a clear pale biscuit apical patch.

Both fore- and hind-wing have an orange-red postmedian fascia, with darker spots.

The hind-wing is coloured like the fore-wing but the reddish suffusion is narrower, confined to the vicinity of the post-median fascia.

Both wings have black intraneural streaks along the termen, longest on the fore-wing between nervures 3, 4 and 5; the fringe, grey-brown with a fine pale streak at each nervure, is wavier on the hind-wing than the fore-wing, otherwise similar.

Under-side, whitish, grey-freckled, with well-contrasted, dark grey, wide but not always sharply-defined borders, in which the pale biscuit fore-wing apical patch is left clear; cell-spots, usually well defined on both wings, and fore-wing sometimes with post-median infuscated near the costa.

Span.: — 28—33 mm.

The genitalia (see Pl. XIII, Figs. 52 and 53) generally agree with those of other *objectaria* forms, or at least the male (WEHRLI did not study the female genitalia) but more heavily built; the uncus is more massive, the exterior thorn of the aedeagus stouter. Paler examples from Sarobi which I first considered as only doubtful *objectaria* forms, certainly not referable to *luxuriosa*, probably belong to the new species *sarobiana* EBERT 1965 (66), to which I refer readers. There was also a ♀ (Prep. WM. 152), Herat, 15. IV. 56, A., which resembles *luxuriosa* in size and wing-shape but not genitalia. It is left undetermined. It flew together with a smaller species, described below as new.

Holo-type, and allo-type, ♂♀, Nuristan, Bashgul-valley, 1100 m., 6. IV.—9. V. 53, K. (coll. K.)

Para-types: — ♂♀, (Prep. 1143) same place and date, K., (coll. EW.) 1 ♂, Prep. 939, Kutiau, 2. V. 53, K. (coll. K.); 14 ex. same place and date as holo-type, coll. K.

To the paratypes of true *luxuriosa* can now be added a couple ♂♀, Nuristan, nr. Barikot, VII. 63, K. & V., NMW.

The paler examples, probably *sarobiana*, are labelled: 1 ♂, (Prep. 927) Sarobi, 1100 m., 12. VI. 52, K., 1 ♂, Sarobi, 1100 m., 3. VII. 56, A., & ♂, (Prep. 1182) Bazarak Panchir-valley, 27. VIII. 52, K.

Gnopharmia inermis sp. n. (Plate II, Fig. 20, 21)

Superficially this resembles best the *degeneraria* STGR. forms from Askhabad which WEHRLI considers a race of *objectaria* STGR., but differs in being even less marked, and also genitaliter. Its small size, rather pointed wings, and very dull, uniform markings characterise this new species, in addition to its aedeagus without exterior thorn.

♂ antenna, strongly bipectinated except the 12—14 terminal segments, which are serrate-setose.

♀ antenna, slightly ciliate.

Frontal prominence, cylindrical, with a blunt conical front.

Palp, with third segment short and pointed, projecting in front of but below the prominence.

Fore-wing, pale buff heavily and rather uniformly suffused and dappled with grey. Sometimes the costa is left pale grey, with darker dapples, in the median area, but even here is often unicolorous; the apical whitish square, characteristic of other Afghan *Gnopharmia* species, is quite lacking and the two brown fasciae and median shade are rather indistinct; they are not much darker at the costa and the fore-wing consequently lacks the costal dark spots characteristic of *erema* WEHRLI and many other *Gnopharmiae*. The brownish black cell-spot is small and indistinct. Termen, with fine black spots between the nervures. Hind-wing, generally similar, the fasciae becoming darker towards the anal margin.

Under-side, slightly glossy whitish brown, freckled with grey, weakly and irregularly marked; the diffuse grey submarginal shade is the clearest feature on both wings and leaves a paler terminal field. Termen, pale, fringes, grey and brown checquered. Cell-spots, grey, diffuse, variable, sometimes not indicated.

Span: 25—28 mm.

Male genitalia, quite lacking the large exterior thorn or thorns of *degeneraria* or *erema* WEHRLI; there is one thorn, rather small and conical, placed ventrally on the sclerotised aedeagus sheath about 2/3 of the way from the entry of the *ductus seminis* and the extreme distal-ventral tip; very close to it are clustered two or three smaller thorns. A smaller and obscurely formed thorn is also placed ventrally near the extreme tip. The vesica contains a very small multiple cornutus. The two hooks on the sacculus of the valve are large and of roughly equal size, the proximal hook being if anything the larger; in *erema* the proximal one is distinctly smaller.

The female genitalia of this genus differ in the proportions of the ostium from species to species, and the figures (Pl. XIV, 55, 57) illustrate these differences better than any words. As in other *Semiothisinae* the signum varies individually in form.

Holo-type ♂, and allo-type ♀, Herat, 970 m., 15. IV. 56, A. (ZM).

Para-types: ♂♀ (Prep. 1136) same place, ♂ 5. V., ♀ 15. IV. 56, A. (in coll. EW); ♂ (Prep. WM. 153) same place, 15. IV. 56, A. (ZM).

Gnopharmia maculifera STGR. *bona sp. afghanistana* subsp. n. (Pl. II, Fig. 16)

In his revision of this genus in SEITZ IV Suppt., WEHRLI omitted mention of this form (*maculifera*), described by STAUDINGER from Samarkand in Iris V as a variety of *rubraria*. In coll. WEHRLI at Bonn two examples placed above the name *maculifera* do not correspond to the description and figures of STAUDINGER and WEHRLI never examined their genitalia. I have now seen the genitalia of the actual *maculifera* types from Samarkand and they are illustrated herewith (Pl. XIV, Figs. 56, 57). It is now quite clear that *maculifera* is a distinct species from *rubraria*.

The genitalia of an Afghan *Gnopharmia* form resembling STAUDINGER's figures of *maculifera* also agrees with the male genitalia of the type. As there are several slight differences I am here describing the Afghan form as a distinct race or subspecies, though this may prove to be illusory when more specimens have been taken. The differences may be only an individual variation.

The typical *maculifera* is a small, whitish, pointed-winged form, rather like *kasrumensis* WEHRLI. The Afghan form is even smaller and lacks the under-side cell-spot which characterises the typical. The fore-wing upper-side is dirty white, with grey and brown markings, consisting of a broad basal patch on the costa, brown grey, and thereafter four equally spaced brown-grey costal spots indicating the origin of the ante-median the median, the post-median fasciae and the submarginal shade; of these four cross-bands the last is the most complete, consisting of a nearly continuous irregular grey cloudy band not quite reaching the hind margin; the other fasciae are represented by widely interrupted brown spots on

the nervures; here and there is a little grey freckling, especially along the costa and near the outer margin; termen, a series of blackish intra-neural crescents. Hind-wing similar, but more uniformly grey freckled.

Under-side, both wings, cloudy whitish, marked with greyish as on the upper-side, but less distinctly.

Span: 25 mm.

Male genitalia, aedeagus with three slender external spines. Uncus, more tapering than in *erema* WEHRLI.

♂ antenna, bipectinated, except for the last 10 segments which are serrate-setose only.

Frons, sloping more than the proceeding species. Palp, small and hardly projecting beyond the frontal prominence.

Holo-type: ♂, (Prep. WM. 108, Pul-i-chomri, 700 m., 28. VI. 56, A. (ZM).

Gnopharmia eberti sp. n. (Plate II, Fig. 17)

This species is distinguished by its more contrasted under-side from the two preceeding and by the clearly-marked black cell-spots on both wings, both sides.

♂ Antenna, bipectinate except for the last 12 segments which are serrate-setose only.

Frons, with slightly sloping sub-cylindrical form and papillus in front; palp, projecting well beyond but below it.

Wing-shape, as in *afghanistana*, narrow and acute; both wings marked clearly with fine black cell-spots and with more extensive grey freckling than *afghanistana*; costal spots, irregularly placed and less strongly indicated, the post-median and submarginal being rather close together, the others comparatively distant. Fasciae, composed of fine, rather faint brown freckles, almost continuous; the post-median fascia is strongly in-curved below the cell; the submarginal shade is blue-grey, strongest and more blackish near the costa where it is adjacent to a small but clear whitish apical patch, widest and most bluish-grey as it crosses nervures 2 and 3.

Hind-wing, generally similar to fore-wing but more grey-freckled. Under-side, both wings, whitish, with blackish cell-spots clearly marked and a dark grey border, which leaves a small white apical patch on the fore-wing only, widest and straightest on the hind-wing, where it is bent once on nervure 5.

Span: 25 mm.

Male genitalia, aedeagus without large exterior thorns or even conical smaller thorns; instead, the right side has a few distal scobinations, widely spaced, distally on the sclerotised sheath; the vesica has a very small multiple cornutus. Sacculus of valve, with proximal hook larger than distal.

Holo-type, ♂, (Prep. WM. 110) (Pl. XIV, Fig. 59) South-west Afghanistan, 50 km. from Kandahar, Arghandab River, 1150 m., 23. V. 57, E. (ZM).

Acrobiston gen. n.

Genero-type (typical species) *A.aestivalis* sp. n. (described below).

The new genus in aspect combines certain characters of *Biston* and *Phaselia*, differing from the former in not having similar pattern on fore and hind wings. In structure, particularly male genitalia, it comes nearer to *Lycia hirtaria* or *Nyssia zonaria*, but in colouring and hairiness differs, being brighter coloured and less hirsute than these genera; also its fore-wing is rather more pointed than in them and *Biston*.

♂ antenna, bipectinated; palp very short; tongue, apparently absent; face hairy; frons, domed and shaggy but not long-haired.

Hind-tibia, with one pair of very small terminal spurs; other legs without spurs.

Fore-wing, with accessory cell; main cell, strongly concave between nervures 4 and 5; 8, 9 and 10 on a single stalk from the apical angle of the accessory cell, 10 coming away first; 7 is connate with these from the same angle. Hind-wing, with nervure 5 replaced by a strong fold, not a tubular vein; the disco-cellular is angled inward at the point where this fold crosses it. All nervures, separate from cell, but 9 anastomosed with cell for some distance.

Both wings with slightly wavy but not indented borders.

Male genitalia, of a primitive type, with single-tipped thick, hood-like, uncus plain gnathos; small juxta without furca; and plain membranous valves; the aedeagus is thick, with two cornuti in the typical species.

Acrobiston aestivalis sp. n. (Pl. II, Fig. 22)

Frons, whitish; antenna, grey, with whitish shaft. Thorax, whitish with grey-tipped dorsal hair-tufts and whitish tufts outside legs. Abdomen, yellow-brown above, white below, smooth; (see also generic characters above).

Fore-wing, whitish, peppered and dappled with ochreous grey, and with transverse markings accentuated by blackish; the white colouring appears principally in the median area below the cell and the submarginal area. Ante-median fascia, wavy, with three rounded outward angels but the basal area proximally of this is not much darkened as in *Phaselia*; the inward angles are less rounded, more acute and are situated on the two principal nervures (median and nervure 1); proximally more deeply shaded with ochreous-grey. Post-median fascia, undulate-denticulate, running in a fairly straight course from 3 mm. from the apex to 1 mm. from the tornus, more heavily shaded with ochreous grey distally. Termen, wavy, brown, with blackish points between the nervures.

Hind-wing, whitish, without cell-spot; the main markings are the post-median fascia and a stronger, wavy, terminal line; the former consist of a fine, pale brown line, infuscated on the nervures and slightly wavy, especially towards the costa; it is very slightly bent on nervure 6; the termen is as on the fore-wing; the costa, marginal area and anal vein are also faintly peppered with yellow-grey.

Under-side, both wings without fasciae, but peppered and dappled as upper-side, i. e. the fore-wing is less white than the hind-wing.

Span: 39 mm.

For male genitalia, see generic description above and Pl. XIV, Fig. 60.

Holo-type: 1 ♂, (Prep. 1076), Badakhshan, Anjuman, 2900 m., 9. VIII. 52, K. (coll. K.)

Also further ♂♂ para-types, somewhar darker tinted, from Bamian and Band-i-Amir, 3000 m.,) 30. & 31. VI. 63, K. & V., NMW.

Nychiodes antiquaria Stgr.

4 ♂♂, (Prep. 904); 7 ♀♀; Nuristan, Bashgul-valley, 1100 m., 4. IV. & 24. V. 53, K.

This is a variable series, on the whole rather dark and obscurely marked; the ♀♀ measure 46—51 mm., the ♂♂ 43—45 mm. The paler forms are the most variegated, having the dark median area contrasted with the red-brown post-median area; the former is here sometimes bordered with a faint whitish line; the wavy submarginal line is also whitish; but the obscure form is more common, with a sooty or slatey grey suffusion over the whole of both wings.

Phaselia narynaria Ob.

9 ♀♀, Nuristan, Bashgul-valley, 1100 m., IV. – V. 53, K.

Alcis andaraba Wll. (Pl. II, Fig. 23)

Besides the typical form, from Badakhshan, of which there males only, I class provisionally hereunder two races from other parts of Afghanistan of which only females are to hand. The genitalia of the two races agree but it is possible that what I here describe as two subspecies will in fact prove to be two good distinct species. The male genitalia match those of Wehrli's types.

(i) typical *andaraba* Wll. 9 ♂♂ (Preps. 1038 & 1186), Badakhshan, Sarekanda, 4200 m., 21.—31. VII. 53, K.; 2 ♂♂, Badakhshan, Anjuman Pass, 4200 m., 13. VIII. 52, K. These vary in span from 39—44 mm. (Pl. II, Fig. 23).

(ii) *fortior* subsp. n. A rather smaller but more strongly marked form, with under-side less pale, more clouded. Span: 35—38 mm. Holo-type, and six para-types, ♀♀, (Preps. 1185, 1188), Paghman Mts., 3000 m., 28. VIII. 53, K. (colls. K. & EW.) (Plate II, Fig. 24).

(iii) *dives* subsp. n. Larger, with under-side as in *fortior*, and upper-side characterised by a strong wavy black terminal line on both wings; resembling *songarica* Alph., except in the position of the costal spots; the only clear markings on the fore-wing upperside are

these costalspots and the whitish wavy submarginal line, and the termen. Under-side, marked with two cell-spots, cloudy brown, not very contrasted, but less pale and monotonous than typical *andaraba*. Span: 47 mm. Holo-type, ♀, (Prep. 1190), Nuristan, Achmede Dewane, 2770 m., 22. VII. 52, K. (coll. K.) (Pl. II, Fig. 27) (♀ genitalia, Pl. XIV, Fig. 61)

Alcis granitaria Moore *klapperichi* subsp. n. (Pl. II, Fig. 26)

This new race agrees genitaliter with Moore's type but differs in colouring, lacking the blue-grey shade of the Himalayan form.

Upper-side of both wings, ground-colour, whitish, heavily freckled with grey-brown except along a cloudy whitish bipartite band in the post-median area and at the fore-wing apex, along the submarginal field, and the hind-wing median area near the costa; except for these paler patches the submarginal area is deeply grey suffused. Four dark costal spots mark the beginning of the fore-wing ante-median, median, post-median and submarginal lines. The cell-spot is strong, blackish, in the form of a diffuse bar at right angle to the cell of the fore-wing, but smaller and more punctiform on the hind-wing. The fasciae are indistinct. Termen, both wings, a clear, wavy dark brown line. Fore-wing fringes, boldly chequered; hind-wing fringes, more concolorous grey.

Under-side, dull white, with cell-spots of both wings as on upper-side; fore-wing, basal and median areas slightly dappled with grey brown, costal spots here reduced in size and sometimes absent, except the submarginal spot which is strong and blackish, and is followed, after a white interval, by the blackish terminal shade, in which the squarish white apical patch stands out; this shade continues across the wing but is broken into two parts by another white patch larger than the apical and rather irregular in form, near nervures 4—6; the lower part of the shade or band near the tornus is linked by narrow blackish lines both to the upper part and to the median shade; hind-wing, grey terminal band, less complete, clearest and most continuous near the apex, and generally more widely freckled with lightish brown than on the fore-wing.

Span: — 38—42 mm.

The male genitalia, illustrated in Pl. XV, Fig. 62, share with *songarica* Alph. the character of a simple harpe in the form of a hook running towards the ventral border. But whereas in *songarica* there is an ampulla running from the base of this harpe for nearly half its length, as shewn in Albers 1949, f. 16, in *granitaria* it is absent, being replaced by a broad setose editum underlying the harpe. The furca arms are also different, being short, slender and symmetrical in *songarica* but assymmetrical in *granitaria*, the left one being shorter and wider-tipped than the right. Unfortunately Fig. 62 may mislead readers unless it is noted that the apparatus was upsidedown when mounted and this was overlooked until after the photograph was made; consequently the left side appears on the right, and vice-versa. The male genitalia thus disagree with those figured by Albers (ibidem) Fig. 8, which is probably actually an undescribed species from China, not *granitaria* as Albers supposed. I am indebted to Mr. D. S. Fletcher for pointing this out after examining the genitalia of Moore's type.

Female genitalia, with posterior apoophyses more than twice the length of the anterior; the latter are more spatulate. A spindle-shaped ventral plate is situated distally from the ostium. Like many other *Alcis* species, the ductus has a strongly sclerotised posterior section of funnel-like from, and a longer anterior section leading to the bursa and resembling folded drapery, but densely pitted. The bursa, again as in many *Alcis* forms, is very long; near the proximal end (fundus) are two fields of minute sclerotised spicules, situated one above the other on the same side of the bursa and extending laterally over a small segment of the circumference only.

Holo-type and para-type ♂♂, (Prep. WW. 147), AFGHANISTAN, Paghman Mts., 2200 m., 30 km. n. of Kabul, 28.—30. VII. 63, K. & V., also VII. 62, leg. Vartian. NMW.

Allo-type, ♀, (Prep. 1184), Paghman Mts., 3000 m., 28. VIII. 53, K. now in coll. Karlsruhe.

Para-type, ♀, Paghman Mts., 2200 m., 30 km. n. of Kabul, 28.—30. VII. 63, K. & V. NMW.

Alcis nuristana sp. n. (Plate II, Fig. 25)

Differs from the preceding by its more orange sandy fore-wing colouring, without cell-spots; under-side similar, but tornal submarginal cloud less extensive. The holo-type is a gynandromorph, with male antennae, female frenula, and complete female genitalia and part of male genitalia too.

Male antenna, bipectinate.

Upper-side, ground-colour whitish, freckled with sepia-brown; white post-median area, more extensive than in *klapperichi*; there is a characteristic orange powdering after the obsolete post-median fascia; costal spots, similar, but marginal and terminal field very different: there is no pale apical patch, nor larger pale patch lower down on the fore-wing; the pale submarginal line is more clearly marked, its zigzag course being intermittently accentuated with small proximal dark wedge-marks, the terminal field is brown-freckled fairly uniformly, and not darker than the basal field; the termen consists of faint, fine brown crescents, and is much less wavy than in *klapperichi*. On the hind-wing, the wavy pale submarginal line is clearer. Cell-spots are indistinct on both wings upper-side, if not quite absent; the hind-wing is freckled more brown than the fore-wing.

On the under-side, similar to *klapperichi* only near the fore-wing apex; the apical patch however is less clearly defined; lower down, the grey terminal band reappears after the pale patch as a small grey cloud which does not reach the tornus or hind-margin. The cell-spots are more distinct than on the upper side, but rather vaguely defined. There is hardly any grey terminal shade on the hind-wing.

Span: 40 mm.

As regards the genitalia, since the female parts are complete, except for the tips of the ovipositor lobes which are replaced by a bipartite male uncus, with part of male tegumen and right valve attached; it can, I think be assumed that the bursa, at least, is perfect and contains the specific characters which, in addition to the superficial ones described abovem, distinguish this species from *paghmana*. The posterior part of the bursa, close to the ostium, is not at all pitted or sclerotised; while the fundus contains, no plate-like signum, but two small narrow bands of minute spicules. As regards the rest of these extraordinary genitalia, the morphology is best considered as abnormal and not characteristic. I describe it below for its teratological interest excluding it from the specific characters.

Holo-type: ♂♀ (Prep. 1183) Nuristan, Achmede Dewane, 2700 m., 22. VII. 52, K. (coll. K.)

Description of gynadromorph.

The wings are symmetrically marked and shaped.

Both antennae, male. Both frenula, female.

Genitalia: male uncus, attached to long posterior female apophyses., bipartite. Right valve present, but probably abnormally short and compact. The costal sclerotisation is thicker at the end than in the nearest congeners; the ampulla is a large ear-shaped sclerotised plate, with its distal edge (the longest) almost straight; gnathos, furca, aedaegus, and left valve, absent or very rudimentary; instead, there appears to be a duplicate ostium, and ductus. Far removed from these, and situated proximal to the anterior apophyses which are shorter than those of *paghmana*, is the true ostium and ductus. The ductus is incompletely pitted and sclerotised. The bursa is elongated and membranous with signa in the fundus as described above. (See Pl. XV, Fig. 63).

Thus the gynandromorph is male on the first and last segments only, and female in between, that is, for the most part.

A somewhat similar, though not identical gynadromorph, was figured on Plate No. V, Ent. Rec. LII, 7.—8. 1940, p. 85, with an accompanying note by Baynes E. S. A. who quoted Dr. E. A. Cockayne as calling it "a somatic mosaic" which he said he presumed had arisen from a binucleate ovum. The species was *Diarsia festiva* and a drawing of the genitalia by W. H. T. Tams appeared as well as a photograph of the specimen. Almost the complete genitalia of both sexes were present.

Alcis trikotaria FELD. *limitropha* subsp. n. (Pl. II, Fig. 28)

Determined by Mr. D. S. FLETCHER of the British Museum as probably a subspecies of *trikotaria*, the name of this new form refers to the location of its habitat on the boundaries of Afghanistan and Pakistan. In aspect it is variable and somewhat resembles the SEITZ IV, Plate 20 figure of *iterata* BUTL. but with a dash of purer white on the post-median fascia about nervure 6. The fore-wing is, from the base to be median shade, rather uniformly suffused with deep brown, on which nevertheless the black ante-median and median lines stand out; the latter, when clear, differs from the figure of *iterata* in that there are two, not one, salients, near nervure 2; however, in three of the four types a brown suffusion obscures this character. Cell-spot, black, elongated, sometimes obsured by a dark suffusion. The pale greyish band between the median line and the post-median fascia is continuous from costa to hind-margin, with white high-lights here and there in some specimens, but in the female is interrupted between these white patches with sooty clouding. The area between the the post-median and termen is variable; it may be fairly uniformly deep brown with a pale marginal line alone outstanding, and that only near the tornus, or it may contain darker and lighter clouding. The termen is a series of black intrancural points connected by a finer, wavy black line; fringe with white points opposite the black terminal points and a wavy brown basal line chequered dark grey.

Hind-wing, much as in the figure of *iterata* referred to; cell-spot, sometimes present; border, very zigzag.

Under-side with blackish cell-spots clear and large, other markings, grey, consisting, on the fore-wing, of a suffusion from base to median line, and, following this, a white band, interrupted at the corner of the cell (nervures 3—5); the post-median fascia is a wavy dark line with a whitish distal edge; the submarginal shade is relieved by a pale apical patch and a larger one on the margin at nervures 3 and 4; these patches may be sharply or indistinctly defined; fringes, chequered; in some specimens, however, the fore-wing underside is less contrasted and more yellowish, freckled with purple-grey. In all examples, the hind-wing under-side is more yellowish and less contrasted than the fore-wing. The fine reticulate post-median line running close distally to the hind-wing cell-spot is well-marked, and there are grey parallel shades proximal and distal to it.

Span: 37—41 mm.

Male genitalia: — rather similar to those figured by ALBERS for *subrepandata* STGR. (Fig. 12) and *xenica* WLI. (Fig. 13), and also his Figs. 14 and 15, without agreeing exactly with any of them in harpe and juxta. The accompanying figure (Pl. XV, 64) illustrates its form best, and words are less useful.

Holo-type, ♂, Nuristan, Achmede-Dewane, 2700 m., 22. VII. 52, K. (coll. K.)

Allo-type, ♀, ditto, 26. VII. 52, K.

Para-types: ♂ (Prep. 1042), in coll. EW., and ♂ (Prep. 1083) in coll. K.; same place and date.

Alcis paghmana sp. n. (Pl. II, Fig. 29, Pl. III, Fig. 30)

A smaller species than the preceding, of a generally lighter grey colouring, and less well-marked cell-spots. According to Mr. D. S. FLETCHER of the British Museum, it must be placed next to *Alcis nudipennis* WARREN. The male genitalia also shew affinity to *xenica* WLI. from China, and in pattern it is generally similar to that, but the post-median fascia has a more oblique course making the median area wider at the costa and narrower at the hind-margin than in *xenica*; it also resembles the SEITZ IV. Plate 20 i figure of *admissaria* GN. but the genitalia disagree.

In the four Nuristan examples there is less contrast between the outer part of the median band and the rest of the fore-wing than there is in the holo-type from the Paghman Mts; the latter also has the median and ante-median lines fused and blackened from the cell to the hind-margin, unlike the four from Nuristan; however, a longer series from Paghman would doubtless exhibit variability. The holo-type is in fact a slightly stunted but very clearly marked example. The cell-spot is linear and black, and adjoins the second costal

spot, thereby becoming inconspicuous in some specimens; on the hind-wing the cell-spot is often absent.

Underside, fore-wing, differing from *limitropha* in not being grey-suffused on the basal half; both wings with cell-spots, marked but less strong than upper-side fore-wing; both wings of a generally whiter-grey colouring than upper-side.

Span: 32—36 mm.

Male genitalia (Pl. XV, Fig. 65); very close to ALBERS Fig. 13 (*xenica* WLI.) but the ventral projections from the harpe are longer and more fork-like.

Holo-type: ♂ (Prep. 1046) Paghman Mts., 2100 m., 14. VI. 53, K. (coll. K.)

Allo-type: ♀ (Prep. 1044 L.) and para-type ♀, Nuristan, Bashgul-valley, 1200 m., 14. & 20. IV. 53, K. (coll. K.)

Also 1 para-type, ♂, (Prep. 1044), same data as allo-type, in coll. EW.

Alcis shivae sp. n. (Pl. III, Fig. 31)

This species does not resemble *repandata* so much as *andaraba* WLI., but is smaller with cell-spot usually clearer on fore-wing, better delineation of fasciae, and under-side less pale and monotonous.

♂ antenna, bipectinate; ♀, slightly setose-ciliate.

Both wings, upper side, fairly uniformly coloured, a light brown roughly freckled with grey; but in some examples, the proximal half of the median field is more infuscated, in others (e. g. Prep. 1185) the distal half of the same field is slightly whiter. Except for the cell-spot, the fasciae are the darkest elements of the pattern, but in some examples even they they hardly stand out from the general freckling; the basal and submarginal areas are remarkably uniform, the latter with subterminal pale wavy line faint, its proximal grey shading also faint or obsolete. In the male holotype, both wings have the post-median fascia finely denticulate; in the ♀♀, this line is slightly thicker and smoother. From neither locality have both sexes been taken, unfortunately, so the possibility cannot be ruled out that we have here two distinct species. Both wings have the termen wavy, especially the hind-wing, with black intraneural points connected with a wavy brown line; in Prep. 1185 a white interrupted terminal line appears. Fringes, concolorous, greyer basad, sometimes slightly grey chequered.

Under-side, paler, less marked, sometimes freckled with brown grey, with cell-spots alone clear; costal spots, vaguely indicated with grey.

Span: 33—36 mm.

Male genitalia, differing those from of *Alcis andaraba* (Prep. 1038), in the form of the ventral projections from the harpe; in the larger species there are only two of these, of which the distal one nearly reaches the ventral margin of the valve, while in *shivae* (Prep. WM. 128) the projections are shorter, and the proximal one is replaced by four or five smaller thorn like ones. The uncus and gnathos also differ, as illustrated (Pl. XV, Fig. 66)

Holo-type, ♂, (Prep. WM. 128) Badakhshan, Shiva, 3200 m., 21. VII. 56, H. (coll. ZM).

Allo-type: ♀, Paghman Mts., 3000 m., 28. VIII. 53, K. (coll. K.)

Para-types: 3 ♀♀, (Prep. 1187), same as allo-type, (colls. K. & EW).

Ascotis selenaria SCHIFF. (det. D. S. FLETCHER)

These resemble f.*diana* HÜBN., and although their male genitalia do not exactly match those figured for this "subspecies" by ALBERS, it seems best to class them simply as above, assuming that a certain variability of structure exists.

2 ♂♂, Nuristan, Bashgul-valley, 14. IV. 53, K.

Ectropis deodarae PROUT (det. D. S. FLETCHER)

Despite the phenology and markings of this moth which would suggest that it might be an *Erannis*, the genitalia confirm that PROUT was right in putting it in *Ectropis*. It has the typical narrow, unarmed valve of the latter genus, but it is worth mentioning that this Himalayan species lacks the specialised scales or crista-hairs which characterise the European *Ectropis*; there are, indeed, long setae on the juxta but they do not have such peculiar tips.

There is also a vestigial gnathos, quite absent from the European representatives. It would appear that in Central Asia more primitive types of this genus survive.

1 ♂, Nuristan, Bashgul-valley, 6. IV. 53, K.; 1 ♂, Kunar-valley, Asmar, 3. IV. 53, K.

Contropis gen. nov.

This new genus will rank as a subgenus of *Boarmia* if one follows the Seitzian system. It should probably be placed next to *Ectropis* owing to its simple valve and juxta; however, the fore-wing neuration, head-parts and strong gnathos distinguish it from that genus or subgenus and give it something in common with *Lycia* which it also resembles in pattern, but not in build; nor is it vernal.

Typical species: *Contropis tagana* sp. n. (described below).

Generic characters:

Antenna of ♂, bipectinate to tip, each segment bearing one very long branch.

Palp, very short; tongue very reduced, if not lacking.

Frons, with adpressed scales, not rough as in *Ectropis*. Frontal dome, more bulging than *Ectropis*.

Thorax slender, clad with scales and hairs of moderate length; abdomen, slender, clad with short hairs.

Neuration: fore-wing, nervure 12, free; 11, 10, and 9, very crowded, with a flattened areole between 11 and 10; 9 and 8 on a long stalk, 7 coming away from the stalk at the areole and before 10; origin of 6 remote from 7. It thus has one more nervure than *Ectropis*, in which 11 and 10 are combined. Hind-wing, nervure 8 anastomosed to 7 until half way along cell; 7 forks from 6 before the disco-cellular; 5, represented by a strong fold.

Mid-tibia, with 1 pair of spurs; hind-tibia, with 2 paris.

In pattern, it differs from most "subgenera" of *Boarmia* in the almost straight and very oblique post-median fascia; it recalls *Lycia* or *Nyssia* but is not robust like them, nor hairy.

Male genitalia: valve, without harpe, with costa thickened, and terminating in a setose pad overlapping the tip, absent in *Ectropis*; wider than valve of *Ectropis*; uncus, strong, tapering, more angularly truncated than *Ectropis*, with a strong thick gnathos. Juxta, a simple large tube, open distal-dorsally, and without long setae or scales; aedeagus, sclerotised, tapering, shorter than *Ectropis*, open distal-dorsally for more than half its length, spoon-like; containing a slender, fairly long chitin-plate. Sacculus, short. No octavals.

If further species are discovered, some of these characters may prove of only specific validity.

Contropis tagana sp. n. (Pl. III, fig. 32)

Male antennal branches, black, very long, with pale cilia.

Face and frons, white.

Fore-wing, pale buff strongly freckled with grey-brown, the paler ground appearing clearest near the costa, post-median fascia and apex. Cell-spot, a small deep brown oval, sometimes confused in form. Only three cross-bands can be traced: an ante-median fascia represented by a deep brown costal spot, and by similar but smaller spots on the median and cubital nervures; a median shade, only represented by the infuscation of the two nervures just mentioned; and a post-median fascia, more connected than the others, consisting of a brown almost straight, oblique line, roughly parallel to the outer margin, except at the hind-margin where it turns outwards; the nervures are strongly and characteristically infuscated crossing this band. Other markings, indistinct.

Hind-wing, similarly coloured, if somewhat duller and greyer and less strongly marked; cell-spot, sometimes obsolete.

Under-side, both wings, smokily grey-freckled, weakly marked.

Span: 28—31 mm.

Male genitalia, see generic characters above; see also Pl. XV, Figs 67 & 67a.

Holo-type and para-type, ♂♂, (Prep. 1089): Khinjan-valley, Ferusch-Tagan, 1900 m., 25. IX. 52, K. (coll. K.). Also 1 ♂, Dasht-i-Nawar, 3150 m., K. & V., NMW.

Mannia oxygonaria PÜNG.

1 ♀, Badakhshan, Khinsch-i-Andarab, 3500—4000 m., 21. VII. 57, E.

Ctenognophos eolaria GN. (Pl. III, Fig. 33.)

1 ♂, (Prep. 959), Paghman Mts., 3400 m., 27. VIII. 53, K.
2 ♀♀, Nuristan, Achmede Dewane, 2700 m., 22. VII. 52, K.
1 ♀, Khinjan-valley, Ferusch-Tagan, 1900 m., 25. IX. 52, K.

Gnophos (subgenus Dicrognophos) klapperichi sp. n. (Pl. I, Fig. 1, 2 and Pl. IV, Fig. 43)

This boldly marked species can be distinguished from *gorgata* BRANDT and *chorista* WLI., next to which it should be placed, by the strongly out-curved post-median fascia on the fore-wing and by the black-veining on the under-side; also structurally. It varies in size remarkably.

Fore-wing, white, heavily freckled with olive-grey, the white ground only being clear on the costa, where the four olive-grey costal spots interrupt it. The costa is continuously freckled with dark olive-grey as far as the first costal spot, which is the commencement of the wavy, faintly defined ante-median fascia; the second costal spot is similarly the start of the median line, which is more sharply angled outwards, once at the cell-spot, and again between nervures 1 and 2. The cell-spot appears as a slightly darker spot in this line. From the third costal spot the post-median fascia first runs acutely out towards the margin, then returns forming a more or less sharp angle and then, sometimes tending to form intraneural undulations, to nervure 2, after which it is again outcurved, before reaching the hind-margin not far from the median line. The fourth costal spot is less outstanding and is the start of a less defined and broader, vaguer, grey-clouded, sometimes zigzag, distally pale-edged submarginal line. Termen, neither wavy nor clearly marked, but with very fine black intraneural points; fringe, grey.

Hind-wing, rather darker than fore-wing; ante-median fascia, obsolete, but other markings corresponding to fore-wing; post-median fascia, somewhat bent out after nervure 6. Termen, wavier than forewing.

Under-side, very characteristic, with whitish basal area reaching to post-median fascia, though crossed by the heavy but indistinctly defined median band; from the post-median fascia to the termen is a broad dark marginal band on which the small, square apical white patch, and a narrow oblong white patch between nervures 3 and 4 reach about half-way from the termen, and also an obsolete, less clearly marked pale tornal patch. The median nervure and its branches and sometimes the other nervures are strongly infuscated so that, even on the dark area, they stand out, but are less dark on the white than on that area.

Hind-wing under-side, similar to fore-wing, but apical patch less square and anal patch clearer than fore-wing tornal patch.

Span: 30—44 mm.

For genitalia, both sexes, see figs. 68 and 69.

Holo-type, ♀, Nuristan, Bashgul-valley, 1200 m., 8. V. 53, K. (coll. K.)

Allo-type, ♂, (Prep. WM. 115) (a small 2nd) generation example, span: 30 mm., Sarobi, 1100 m., 20. IX. 57, E. (ZM.)

Para-types: ♀, (Prep. 1096) Kabul-River, Tang-i-Gharuh, 21. VIII. 52, K. (coll. EW.); and 7 ♀♀, (Prep. 951), same as holo-type; also same place, 3. V. 53, K., and 1 ♀ same data as Prep. 1096. (coll. K.) 3 ♂♂, 5 ♀♀, Sarobi, 16.—21. IX. 1957, E., 1 ♂, 7 ♀♀, same place, O. HAMMER leg.

Also 1 ♀, Nuristan, nr. Barikot, VIII. 63, K. & V., NMW.

Gnophos (subg. Dysgnophos) difficillimus sp. n. (Plate III, Fig. 34, 35, 38)

Close to *difficilis* ALPH. but differing both in facies and genitalia.

Frons, rounded, almost flat.

♂ antenna, densely ciliated with ciliations shorter than width of shaft.

♀ antenna, ciliated, with ciliations much shorter than width of shaft.

Very variable in the clarity of the fore-wing, upper-side, fascia and stigmata and in the degree of clouding. Fore-wing cell-spot, sometimes a clear oval, more usually filled with a grey cloud. Borders, especially of hind-wing, very wavy.

Under-side, fairly contrasted but not sharply marked; the cell-spot and post-median fascia are indicated in diffuse grey on a pale yellow-grey ground, a broad but diffuse submarginal shade is usually more strongly defined and contains a few vague paler windows, one being apical, the two others being near the tornus, the larger of these being between nervures 3 and 4.

A longer series from the Paghman Mts., (end August), is more uniform than the remaining examples taken in September and October in the Khinjan and Salang valleys; only some of the latter however are well-preserved, others being badly rubbed. The Khinjan and Salang forms would seem to be clearer marked and paler than the Paghman forms. The male illustrated is from Do-Shak (Khinjan-valley) while the female is a typical Paghman form, of a sandy grey, cloudier aspect.

Male genitalia: I have examined the genitalia of *difficilis* ALPH. and *uniformis* STGR. in the WEHRLI collection at Bonn; the valve spine of the new species is finer, the acurate cornutus of the aedeagus is smaller, less developed, and the furca arms are longer and assymmetrical. The only difference between *difficilis* and *uniformis* that I could detect lay in the aedeagus; instead of an arcuate cornutus, *uniformis* had long curtain-like thickenings of the vesica.

As regards facies, *difficillimus*, as compared with examples of *difficilis* from Ak-su in coll. WEHRLI, is more narrow-winged and perhaps on the whole smaller, but otherwise very similar; both species may vary in colour somewhat, *difficilis* being the more yellowish on the whole. As compared with *uniformis* which WEHRLI places next to *difficilis*, *uniformis* is more weakly marked above than either *difficilis* or *difficillimus*; on the under-side, *uniformis* has the post-median fascia whiter than the rest of the wing and the cell-spot is marked on both wings. The new species' under-side thus resembles that of *uniformis* more than that of *difficilis* which is weakly marked, pale yellow-grey, but browner near the termen, with fore-wing cell-spot diffusely grey-marked and submarginal shade cloudily indicated; the post-median fascia of *difficilis* is very faint.

Span: — 27—32 mm.

Holo-type, ♂ (Prep. 963) and allo-type, ♀, Paghman Mts., 3000 m., 28. VIII. 53, K. (coll. K.)

Para-types: ♂, (Prep. 963) (Fig. 10) and 7 other exs., (Prep. 954) same data as holo-type, (colls. K. & EW.); ♂, (Prep. 947) Hindu-Kush, Do-Shak, Khinjan-valley, 2500 m., K. (coll. EW.); ♂, (Prep. 1192), Salang-valley, Qulatak, 1950 m., 9. X. 52, K. (coll. EW.); 2 ex., Ferusch-Tagan, Khinjan-valley, 1900 m., 25. IX. 52, K. (coll. K.); 1 ex., Hindu-Kush, Salang-valley, Walang 2520 m., 29. IX. 52, K. (coll. K.)

Also 4 beautiful ♂♂♀♀ of the typical race, Paghman Mts., 20.—22. VII. 63 (K. & V.) NMW., and two paler examples, Dasht-i-Nawar, 6. IX. 63 (K. & V.) NMW. The latter represent either a race or a seasonal form, it is impossible at present to decide which.

Gnophos (*subg. Organognophos*) *sibiriata* GN. *subsp. subclarilimbata* WEHRLI. (Plate III, Figs. 36, 39, Pl. IV, Fig. 44)

The Paghman forms agree well with typical *subclarilimbata* as illustrated in Ent. Zeits. Frankfurt a. M. XXXV, 7. 1921, except that on the underside the median nervure of the Afghan forms is not infuscated. It may be mentioned also that the underside markings vary in the intensity of the contrast (cf. figs. 39 and 44). These Afghan forms appear to be the westernmost examples of this species but are quite distinct from the more Westerly congeners *wanensis* WLI. and *assymmetra* WLI. The Khinjan valley form has a clearer-marked and paler upper side than the Paghman form. I would also mention that the frons dome is almost conical.

8 ♀♀, Paghman Mts., 27. VIII. 53. 3400 m., K.

1 ♀, Khinjan-valley, 26. IX. 52, K.

Gnophos (subg. *Euchrognophos*) *lineolaria* PÜNG. subsp. *naryna* WLI.

1 ♀, Badakhshan, Prov. Usnogan-Ailok, 3100 m., leg. Hentsch (Prep. WM. 157).

Gnophos amseli EBERT 1965 (Pl. III, Fig. 42)

I illustrate herewith the all-type ♀ (Prep. WM. 113) Sarobi, 1100 m., A. (ZM).

Span: — 29 mm.

Mention should also be made of two ♀♀ (Preps. WA. 105 and WE. 1.) United Arab Republic, South Sinai Mts., in coll. ALFIERI & coll. EFFLATOUN, Cairo, whose genitalia appears to agree with those of this Afghan female. However, until a comparison can be made between males of Sinai and Afghanistan, it would be premature to assert that *G. amseli* inhabits both countries. (These Sinai examples were referred to as doubtful *dubitarius* STGR. no. 316 in my list of Egyptian lepidoptera, Bull. Soc. Fouad 1 Ent. *33*, 1949, p. 425.)

Gnophos (*Rhipignophos* subg.) *vastarius* STGR. (Pl. IV, Figs. 45, 46, 49, 50)

The genitalia of the types of *vastarius* in Berlin were kindly depicted by Dr. HANNEMANN and agreed well with these. Compared with examples of *vastarius* from Issyk-kul in coll. WEHRLI, the Afghan forms are darker, being intermediate between the whitish sandy Issyk-kul *vastarius* forms and the larger darker grey forms from Mt. Binaloud, Khorassan which WEHRLI identified as "*pollinaria binaloudi*" BRANDT; but these of course are not conspecific.

17 ex., Paghman Mts., 3000 m., 28. VIII. 53, K. (Prep. 925).

A surprising darker-coloured form occurs in another part of the same mountain-range, and will be discussed elsewhere.

Gnophos (subg. *Rhipignophos*) *maledictus* sp. n. (Plate IV, Fig. 47, 48, 51, 52)

Somewhat smaller but very similar to the preceeding, *vastarius*, more strongly contrasted on the fore-wing upper-side; differing on the under-side and in the male genitalia. Even in the strongest marked *vastarius* forms the underside marginal band is never solid, uniformly dark as in this, the only window being the fore-wing apical patch. From *praestigiarius*, which it rather resembles on the under-side, the juxta is a decisive criterion, entirely lacking the long points described in SEITZ-WEHRLI.

♂ antenna, with ciliations slightly shorter than breadth of shaft, serrate; ♀, not-serrate, with short even cilia.

Fore-wing, as in *vastarius* but slightly more pointed and narrower, with median area darker, contrasting with the paler suffusion close distally to the post-median fascia, which also is stronger-marked. ♀ forewing, more sounded; however, the ♀ is not certainly conspecific.

Hind-wing, with corresponding markings, and margin sinuate.

Under-side, both wings, whitish as far as the broad dark marginal band but slightly smoky suffused except on a broad white band at the post-median fascia; the dark marginal band is relieved by an ill-defined apical yellowish patch and in some examples by very faint yellow clouding between nervures 2, 3 and 4. On the hind-wing there is no such relief and the band appears as a broad black crescent.

Span: 27—28 mm.

Male genitalia, (Pl. XVI, Fig. 72): differing from *vastarius* as follows: — gnathos, stronger; costal spines of valve, more numerous, six in number; juxta, funnel-shaped, not bifid; aedeagus, with caecum longer in proportion, main portion much thicker, with about twenty (not only six) cornuti; saccus, stouter.

Holo-type: ♂, Salang-valley, Aghelekan, 1900 m., 12. X. 52, K. (coll. K.)

Allo-type: ♀, Khinjan-valley, Ferusch-Tagan, 1900 m., 25. IX. 52, K. (coll. K.)

Para-types, ♂♂, Paghman Mts., 3000 m., 28. VIII. 53, K. (coll. K.)

Also 1 para-type, ♂, (Prep. 966) Paghman Mts., same date, K., (coll. EW.)

Gnophos (subg. *Chelegnophos*) *badakhshanus* sp. n. (Pl. III, Fig. 37, 41)

This new species differs from the two others in its subgenus by its more pointed fore-wing, bifurcate but simpler-formed aedeagus and simpler juxta. To that extent WEHRLI's generic diagnosis will require modification, and the three species can be grouped together simply on the basis of their bifurcate aedeagus, rather than multiply new names of sub-

genera. It is larger than *tholerarius* and has less rounded wings than *ravistriolarius*; the hind-wing of the latter species is proportionately larger.

Face, whitish to yellow-brown.

Both sexes antennae, with very short ciliations.

Hind-tibia, thickened, with two pairs of spurs.

Fore-wing rather darker freckled than *ravistriolarius* along the costa, less so along the marginal area. The intraneural black points along the termen, mentioned for *tholerarius* PÜNG., are obsolete in the new species. Fore-wing, much as described for *tholerarius* otherwise, but in the new species the cell-spot is truly central between the two fasciae on the fore-wing. These fasciae are twice as far apart on the costa as on the hind margin.

Under-side, glossy pale yellow-grey, weakly marked, with clear oval cell-spots white with faint yellow-grey edge.

Span: 33—37 mm.

Male genitalia, (Pl. XVI, Fig. 73): uncus and gnathos strongly sclerotised and developed both pointed; valve, sub-oval and ventrally membranous but costally sclerotised and extended into a strongly spinose finger; juxta, small, without furca; aedeagus, bifurcate, the blind limb starting near the caecum which is simple, and not projecting beyond the tip of the aedeagus proper; the latter is also sclerotised, while the blind limb describes a curve and is a simple tube with a round end, thus neither resembling a crab's claw, as described for *ravistriolarius*, nor having three points, as *tholerarius*. Saccus, prolonged proximally in a worm-like process, slightly thicker capitad.

Holo-type, ♂, (Prep. 948) Badakhshan, Sarekanda, 4200 m., 31. VII. 53, K. (coll. K.)

Allo-type, ♀, same data except date is 1. VIII. 53, K.

Para-types, 2 ♂♂ (Preps. 948, 964) Badakhshan, Anjuman-pass, 13. VIII. 52, K. (coll. EW); also 47 other ex. from same locality and a further 9 ex. from the locality of the holo-type, (all coll. K. except 1 ♀ coll. EW.)

Gnophos subg. *Acrognophos* subgenus n.

This new subgenus is distinguished from *Ellophos* BOISDUVAL by the narrower, more pointed fore-wing, the hind-wing emarginate between the radials, and the male genitalia without furca.

Typical species: *iveni* Ersch. (see SEITZ IV & IV Suppt. which put *iveni* in *Ellophos*.)

Now that a second species, closely related to *iveni*, has been discovered in Afghanistan, these two Central Asian species merit separation from the very dissimilar European *Ellophos*.

Gnophos (subg. *Acrognophos*) *boarmioides* sp. n. (Pl. IV, Fig. 53)

This striking new species may be distinguished from *iveni* ERSCH. by the straight, instead of rounded, course of the hind-wing fascia, and by the presence of several small fine cornuti on the male vesica, instead of one short thick cornutus as in *iveni*.

♂ antenna, strongly bipectinate to tip.

Fore-wing, buff densely freckled ochreous brown, all markings indistinct; a brown oval cell-spot is more or less clear in some examples; submarginal line, pale, wavy, obsolete. Fringe, concolorous.

Hind-wing, similar but paler, and with post-median fascia straight and usually quite distinct towards anal margin; cell-spot rarely indicated.

Under-side, similar to upper-side but paler and hind-wing usually with fine cell-spot.

Span: 35—42 mm.

Male genitalia (Pl. XVI, Fig. 74): valve, simple and symmetrical, with one spined arm at base of costa; uncus, setose, rather blunt, weak; gnathos, strong, scythe-formed; transtilla, broad; juxta, without furca or setae; aedeagus, rather short and tapering, with slight distal scobination; vesica, with a few small cornuti.

Holo-type and 24 paratypes, all ♂♂, (Preps. 1040 & 1189): Badakhshan, Sarekanda, 4100—4200 m., 29. VII.—1. VIII. 53, K. (coll. K. & EW).

Also 1 ♂, (Prep. WM. 150) Badakhshan, Shiva, 3200 m., 22. VII. 56, H. (ZM), a headless, worn specimen.

The absence of any ♀♀ is noteworthy; this sex is probably apterous as in *iveni* and *Ellophos*.

Dyscia malatyana WARN.

Probably two distinct subspecies of this moth inhabit Afghanistan, but owing to rather poor condition I cannot name the more northerlly race.

(a) 2 ♀♀, Herat, 970 m., 15. IV. & 5. V. 56, A.

(b) 10 ♀♀ (Prep. 928), subsp. *theodoraria* WARN., Nuristan, Bashgul-valley, 1100 m., 9. IV. & 9. V. 53, K.

Aspitates stchurovski ERSCH. (det. D. S. FLETCHER) (= *Aspilates stschurovskyi* auctm.) 1 ♂, Badakhshan, Sarekanda, 3600 m., 23. VII. 53, K.

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Adress of author:

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Plate I

(E. P. Wiltshire, Middle East Lepidoptera, XX)

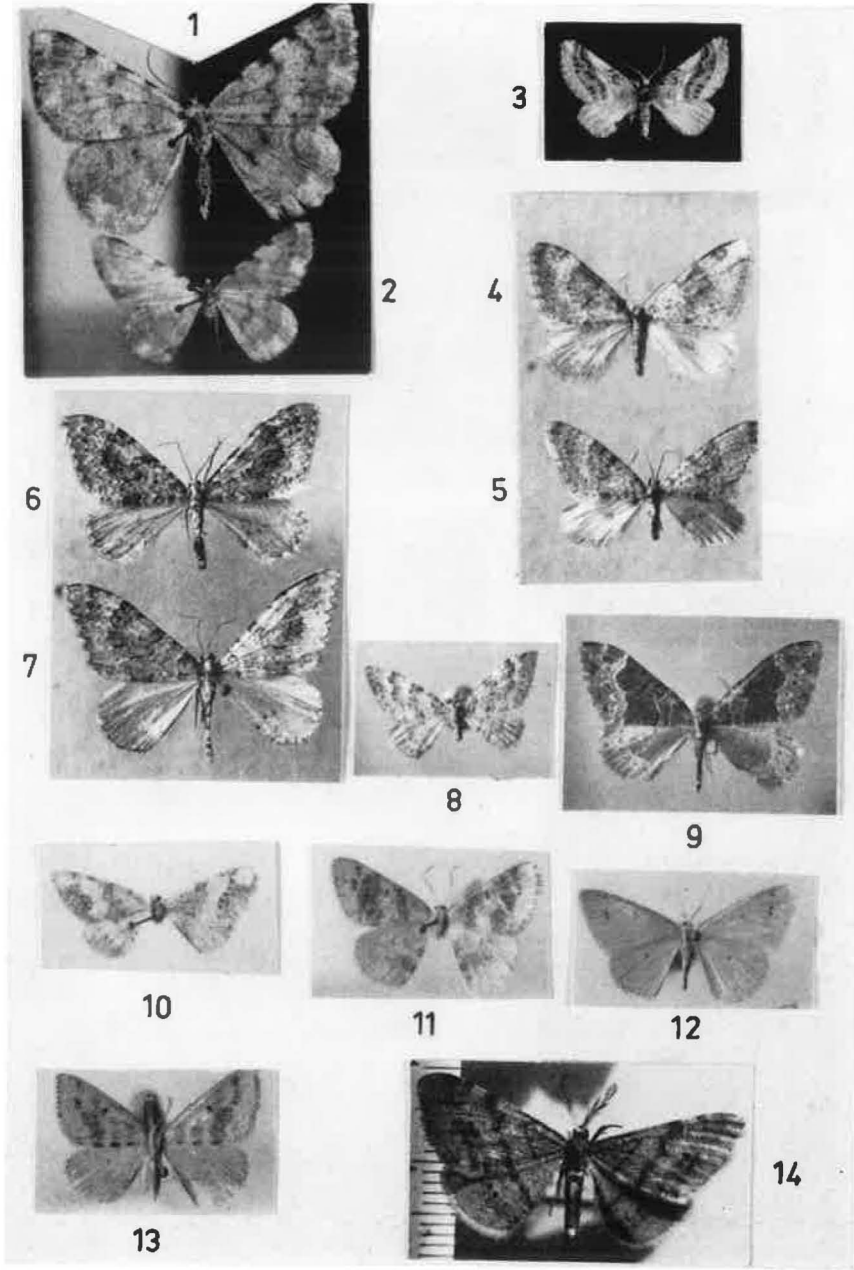


Plate II

(E. P. Wiltshire, Middle East Lepidoptera, XX)

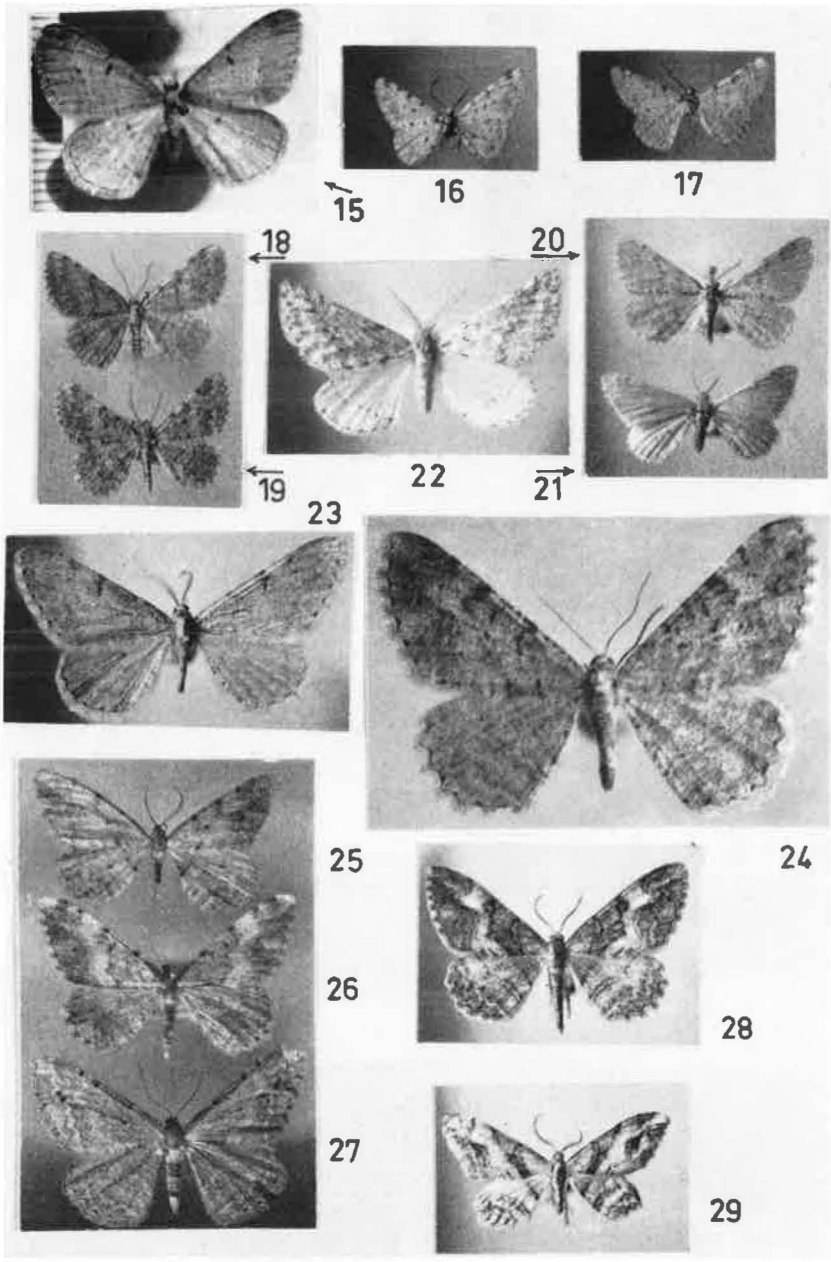


Plate III

(E. P. WILTSHIRE, Middle East Lepidoptera, XX)

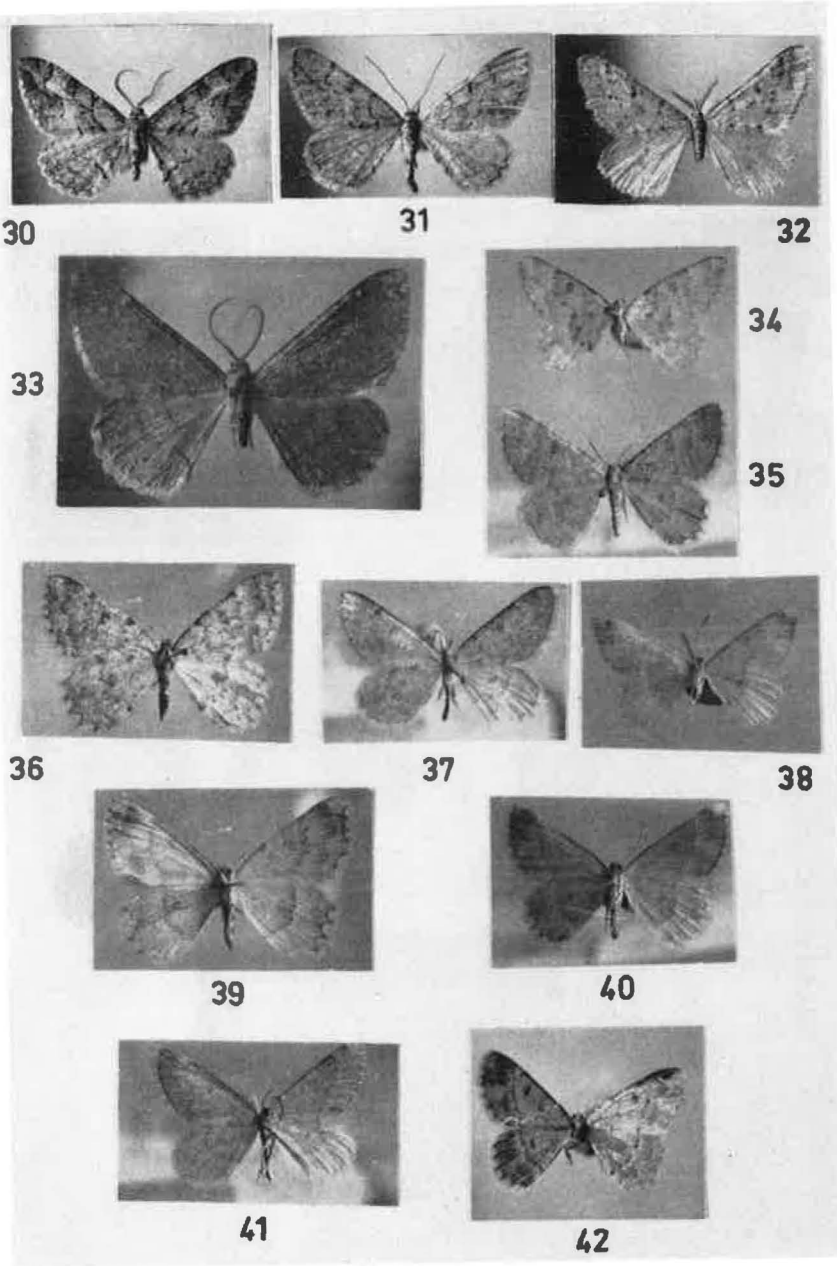


Plate IV

(E. P. Wiltshire, Middle East Lepidoptera, XX)

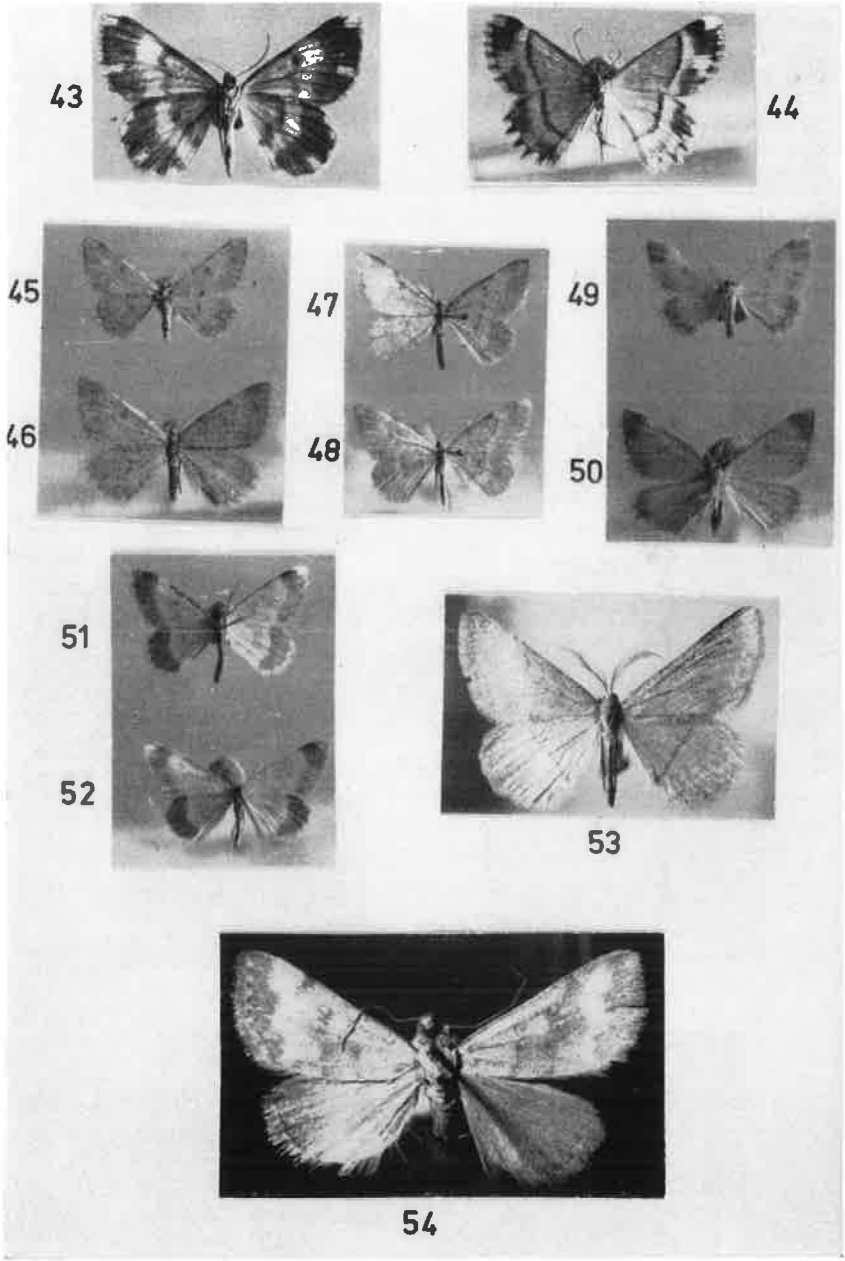


Plate V

(E. P. Wiltshire, Middle East Lepidoptera, XX)

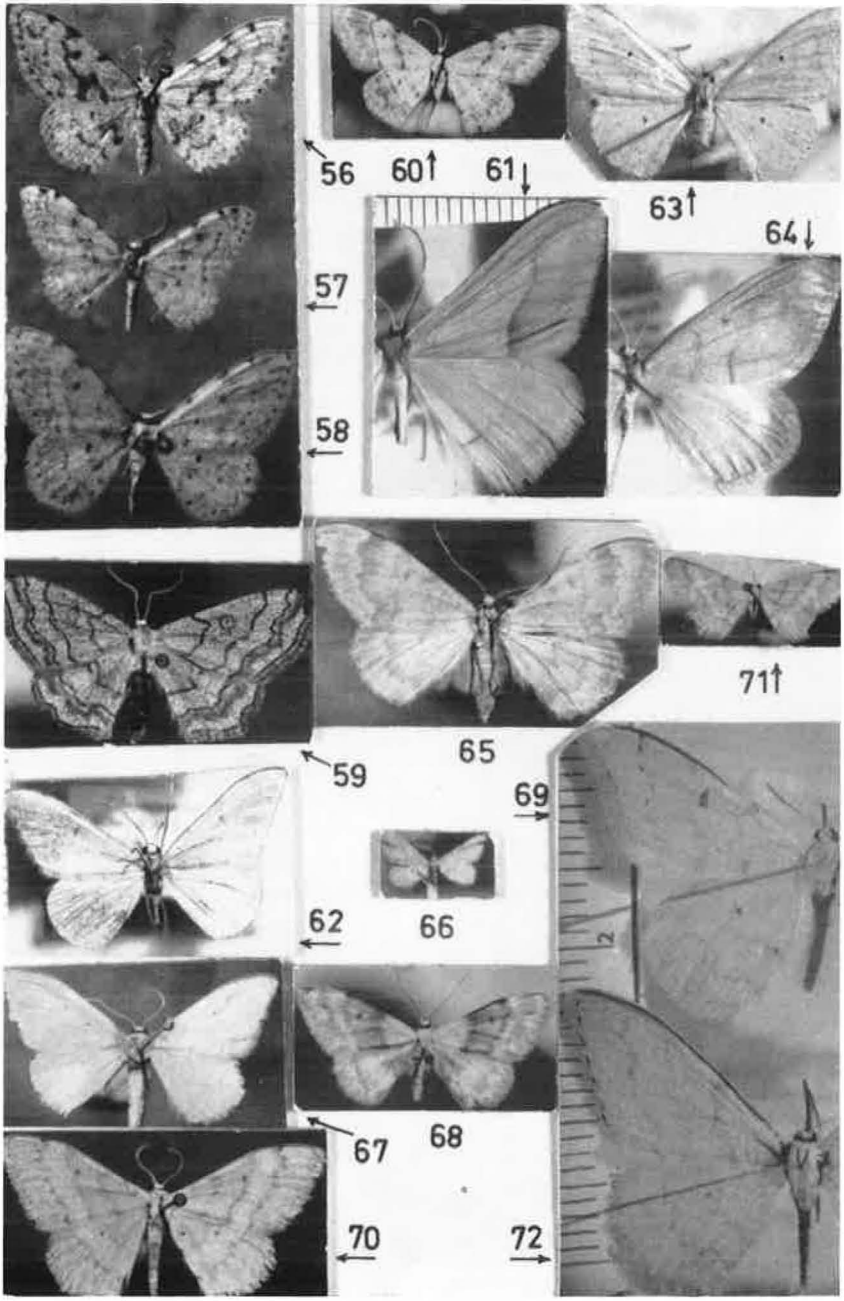


Plate VI

(E. P. Wiltshire, Middle East Lepidoptera, XX)

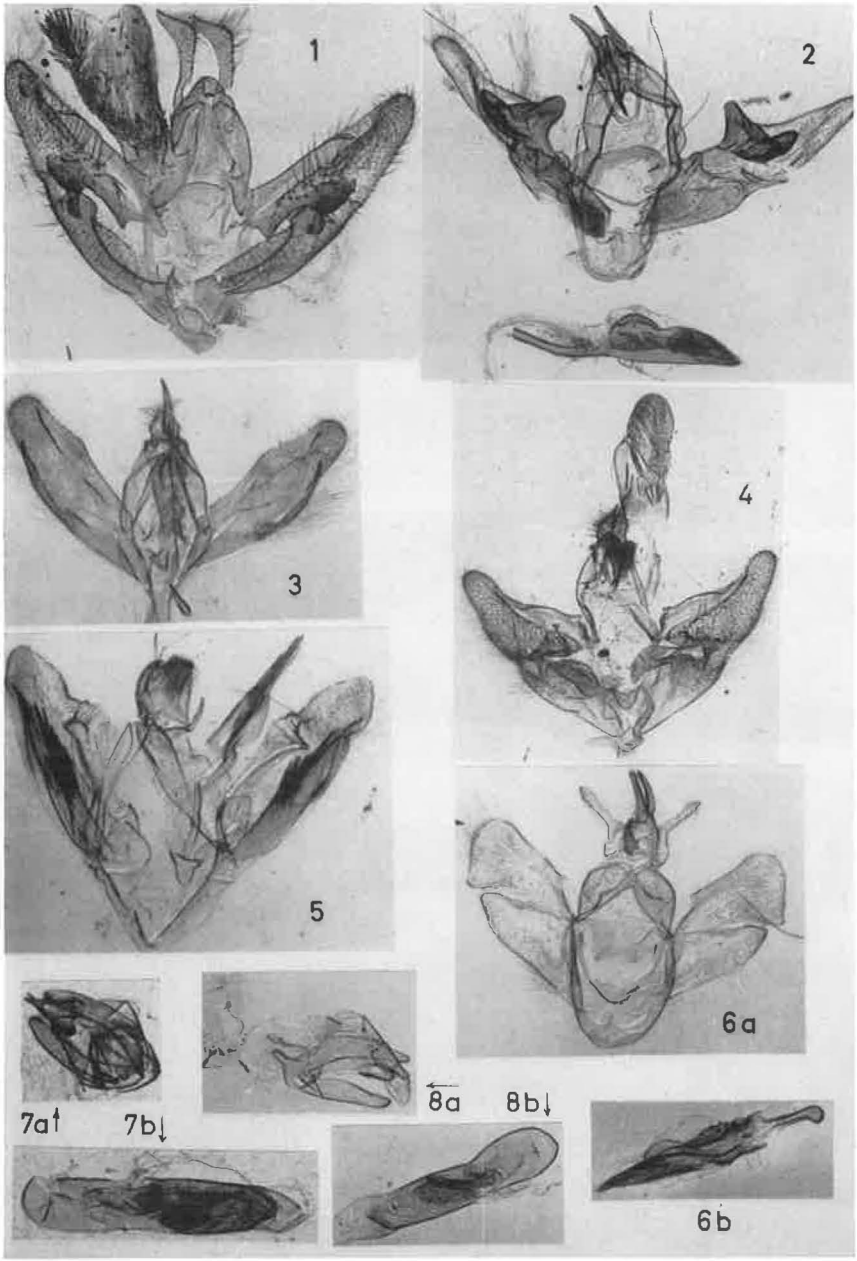


Plate VII

(E. P. Wiltshire, Middle East Lepidoptera, XX)

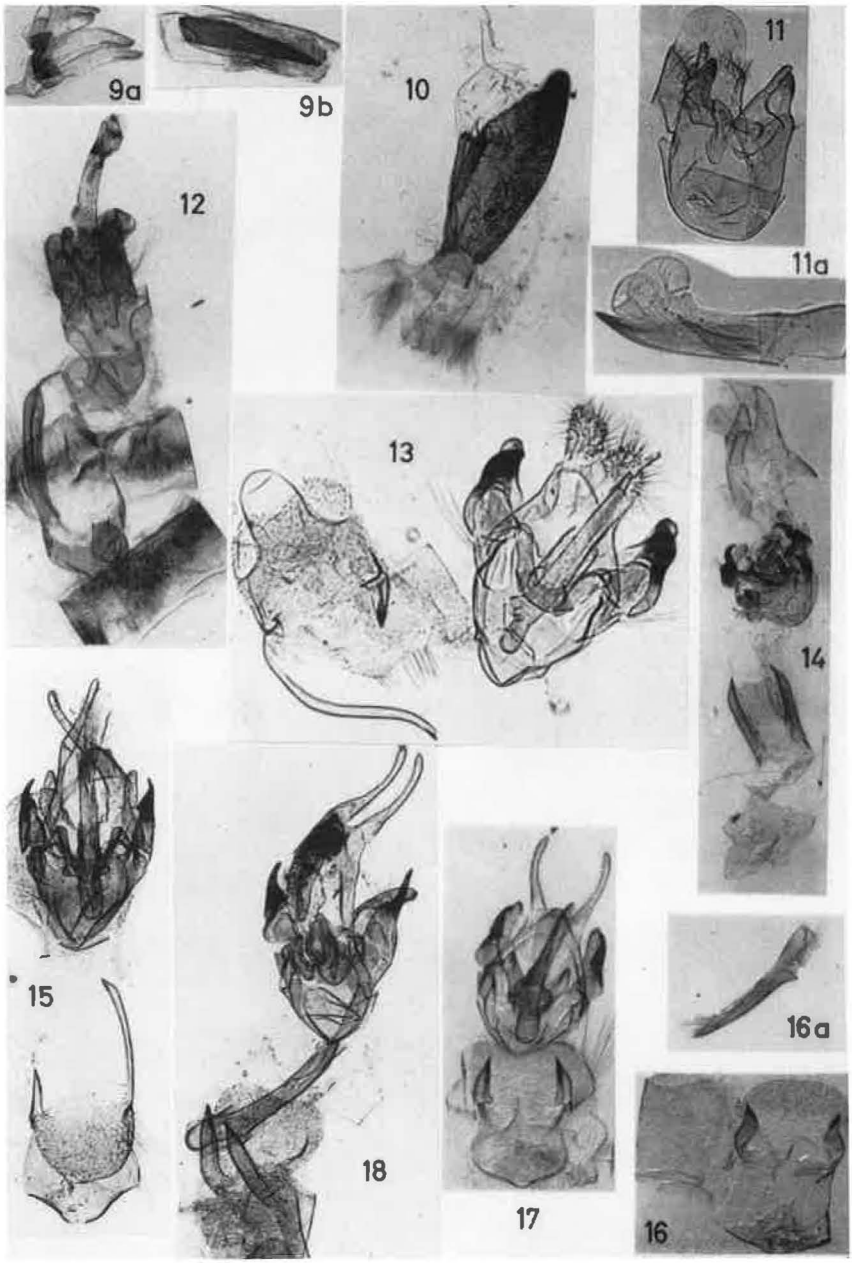


Plate VIII

(E. P. Wiltshire, Middle East Lepidoptera, XX)

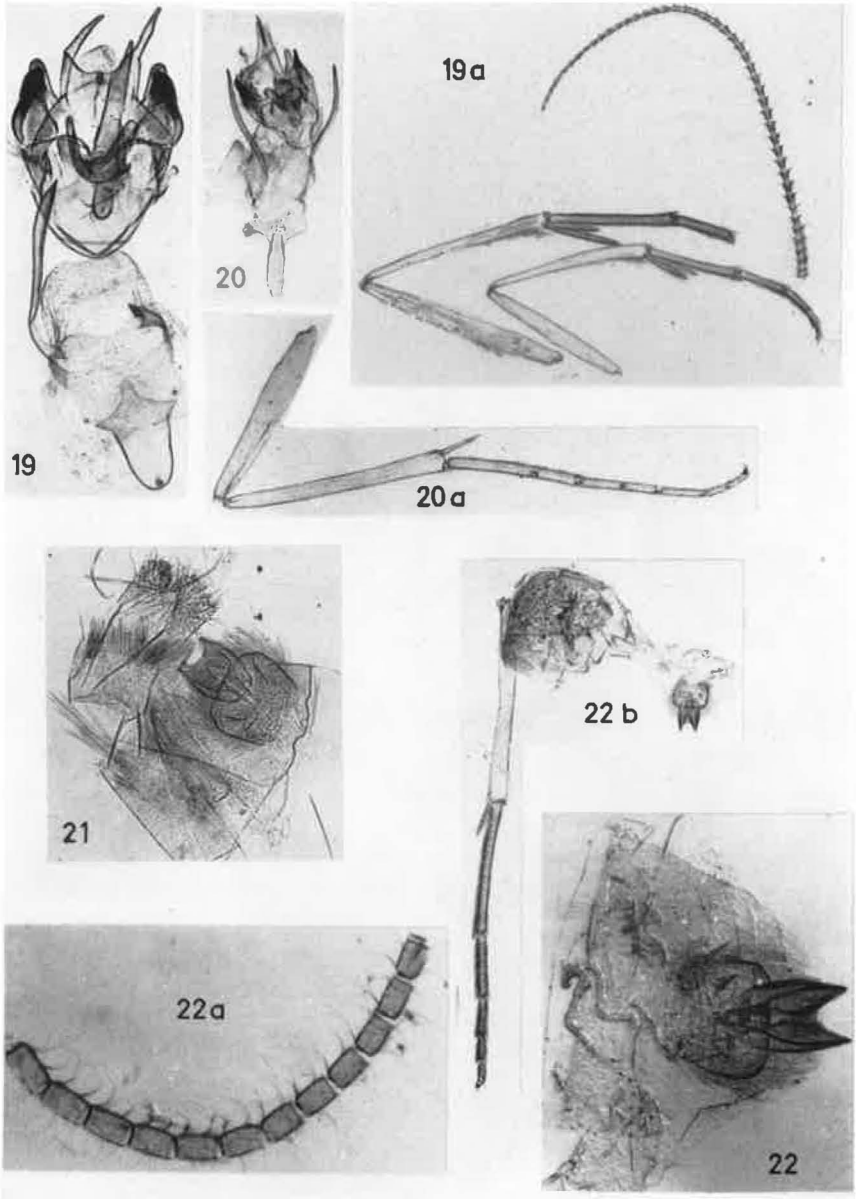


Plate IX

(E. P. Wiltshire, Middle East Lepidoptera, XX)

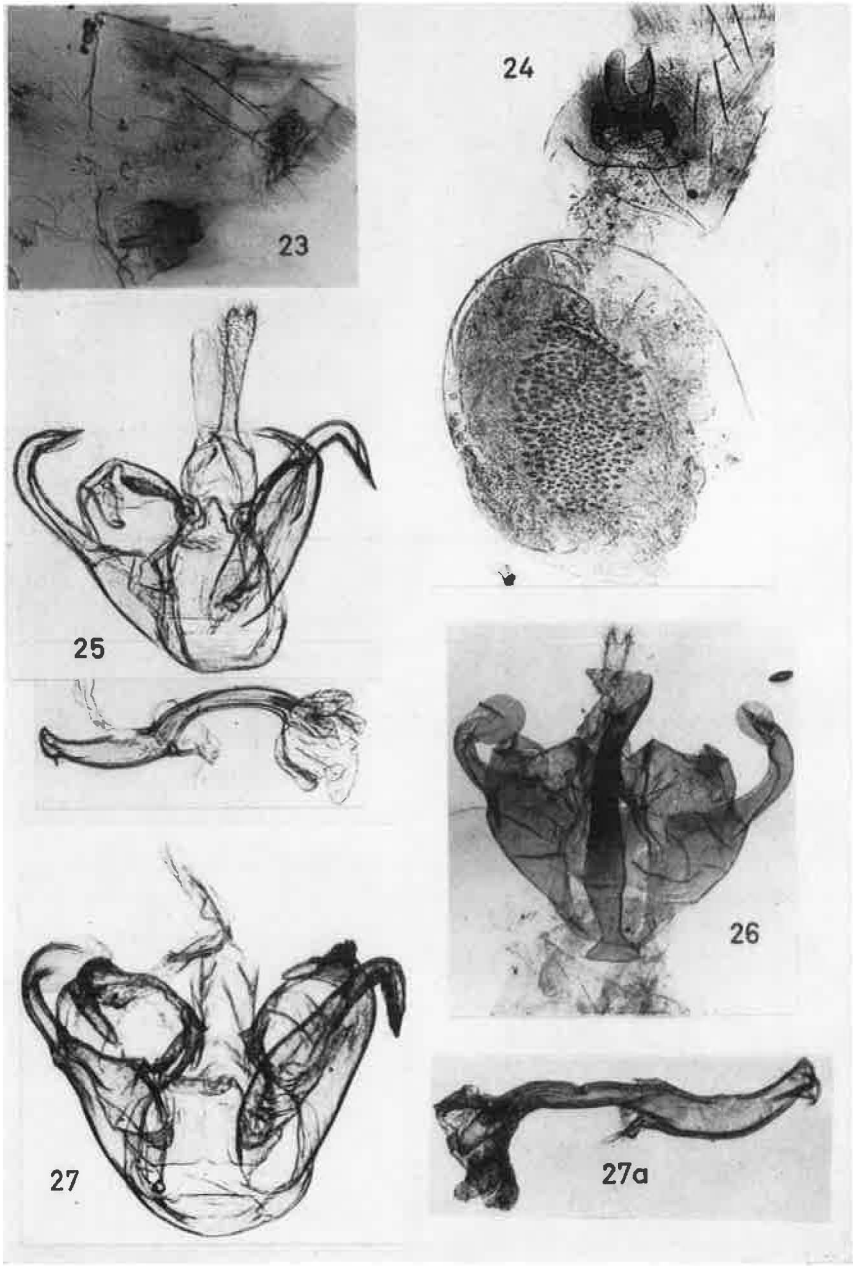
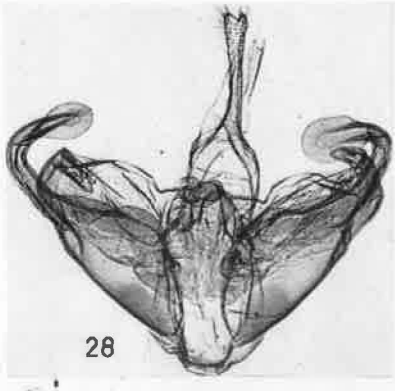
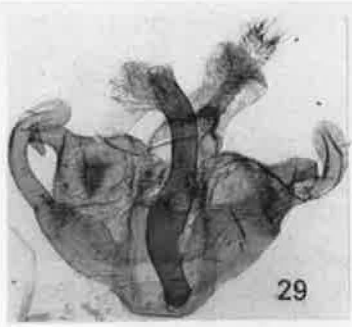
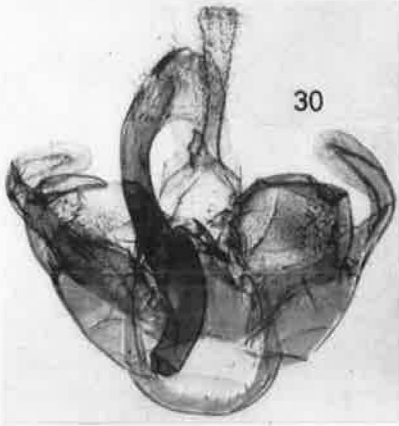


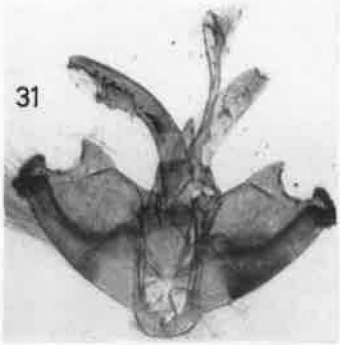
Plate X

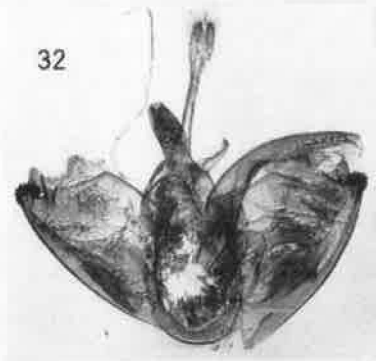
(E. P. Wiltshire, Middle East Lepidoptera, XX)











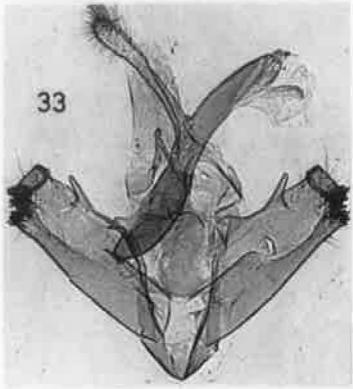


Plate XI

(E. P. Wiltshire, Middle East Lepidoptera, XX)

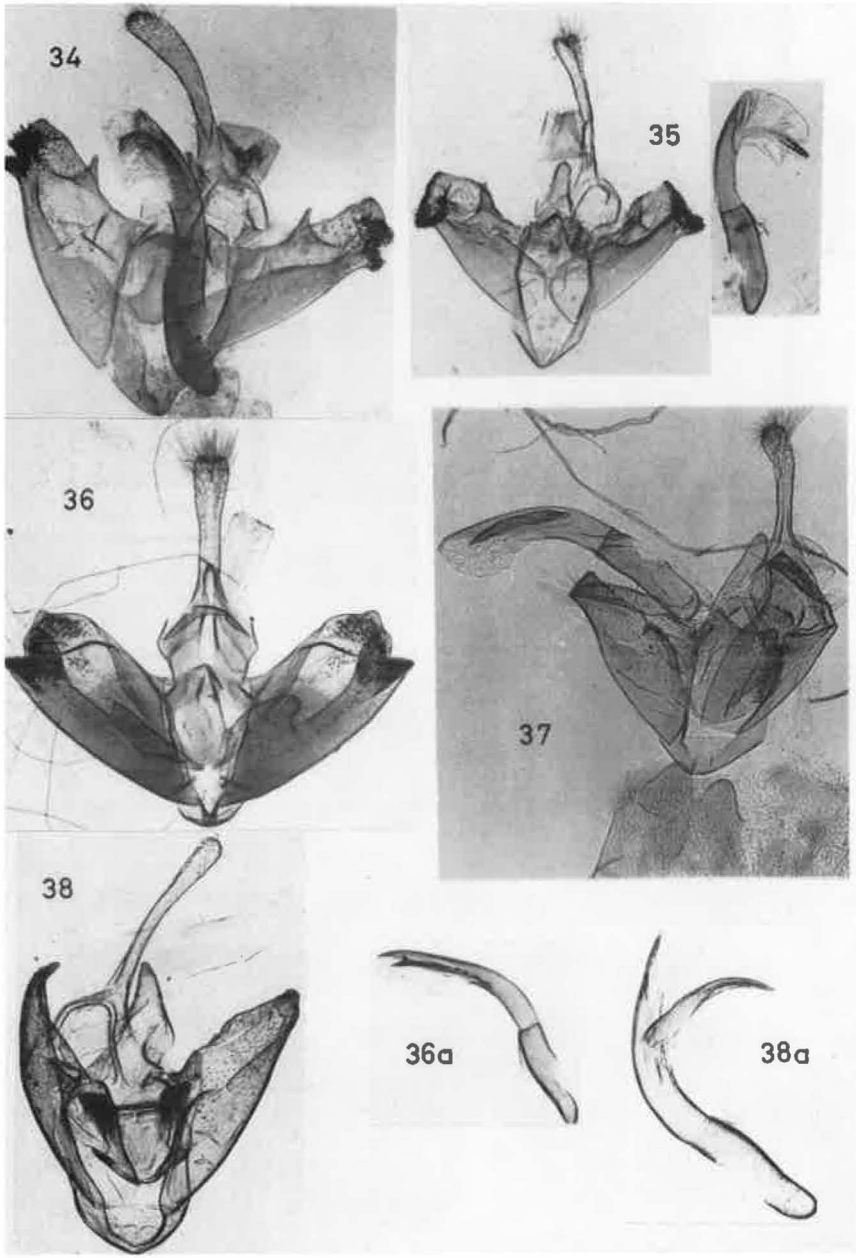


Plate XII

(E. P. Wiltshire. Middle East Lepidoptera, XX)

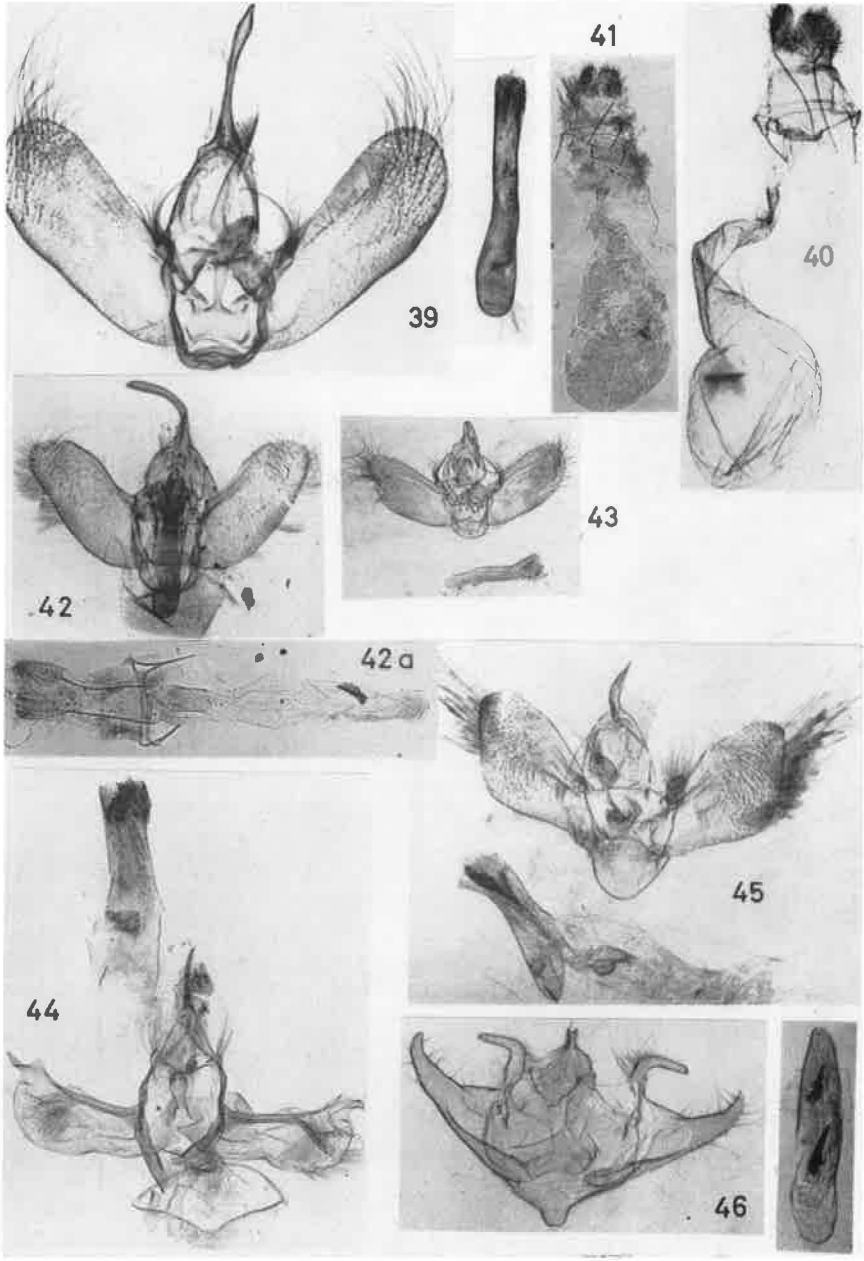


Plate XIII

(E. P. Wiltshire, Middle East Lepidoptera, XX)

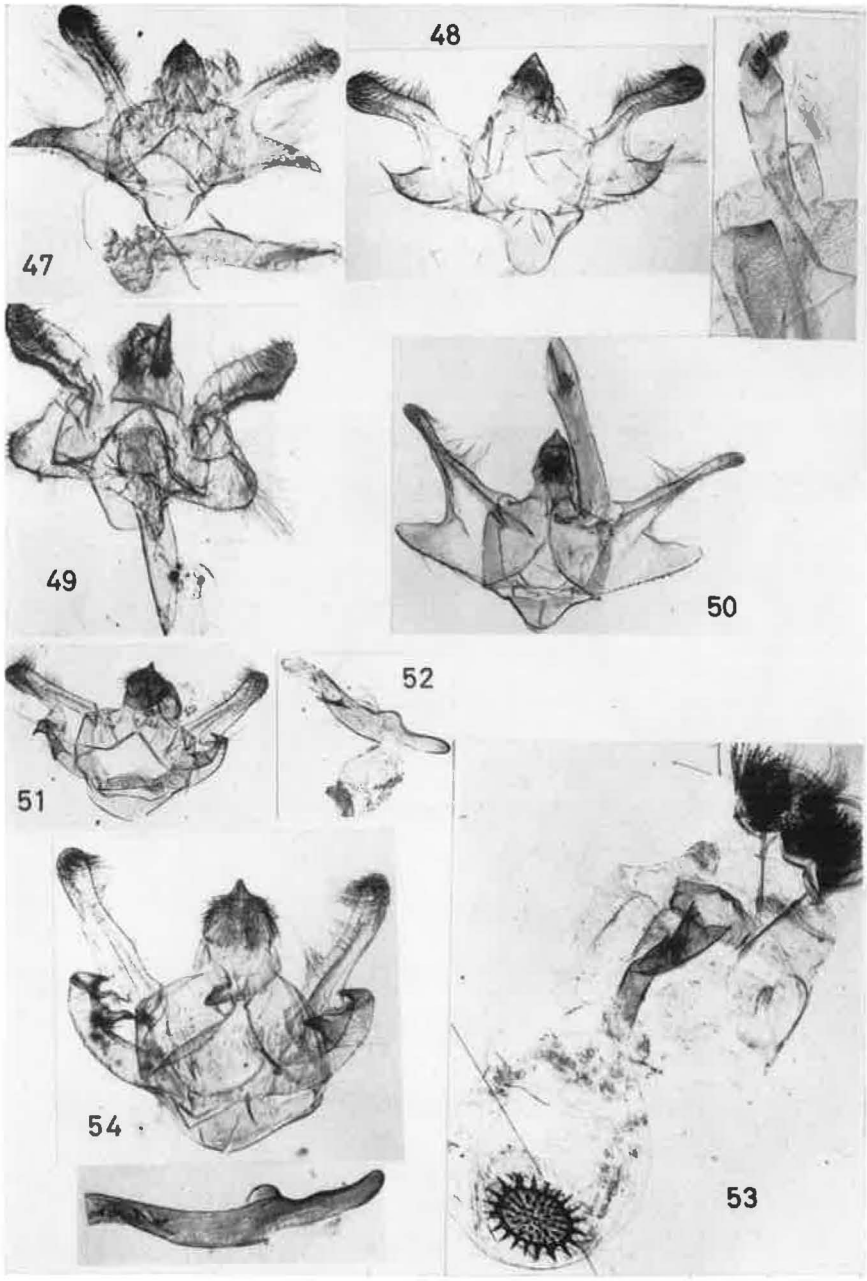


Plate XIV

(E. P. WILTSHIRE, Middle East Lepidoptera, XX)

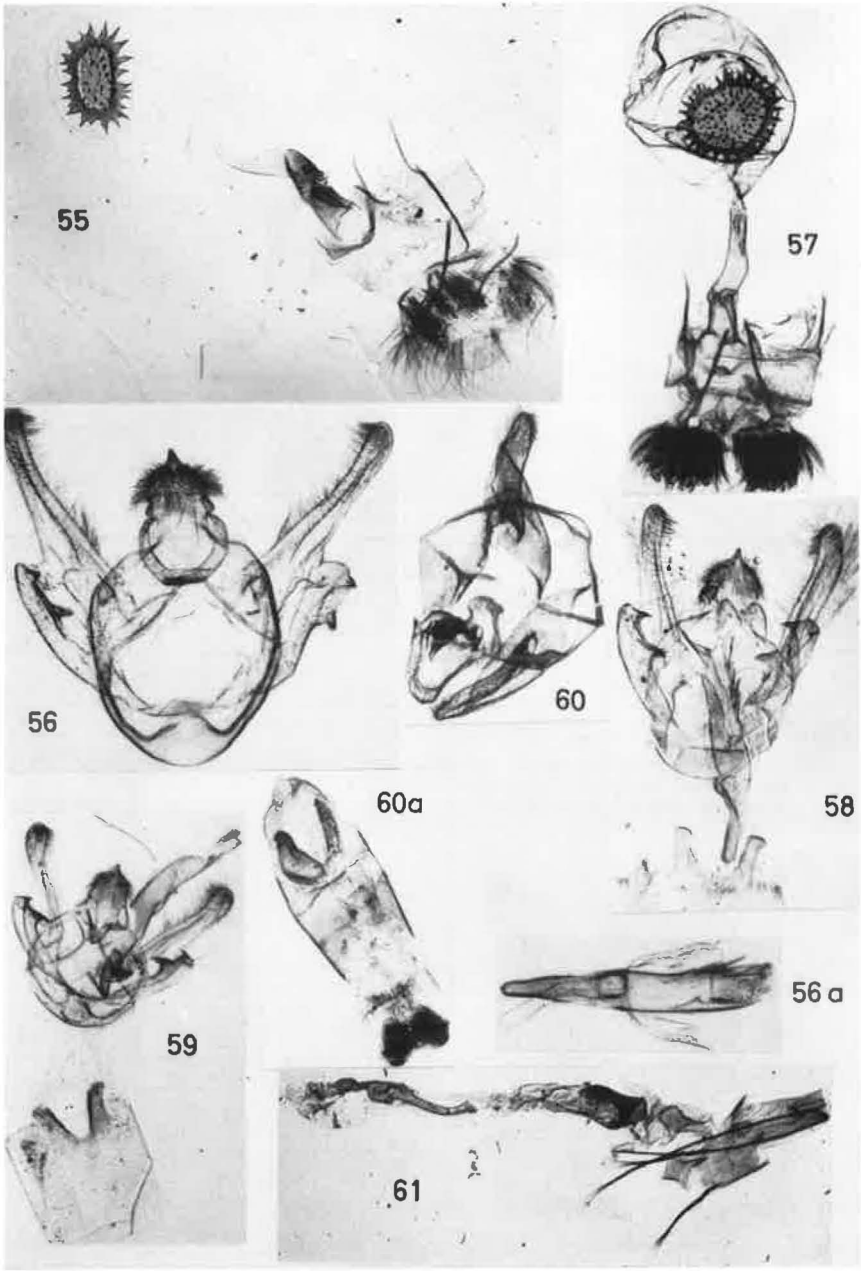


Plate XV

(E. P. Wiltshire, Middle East Lepidoptera, XX)

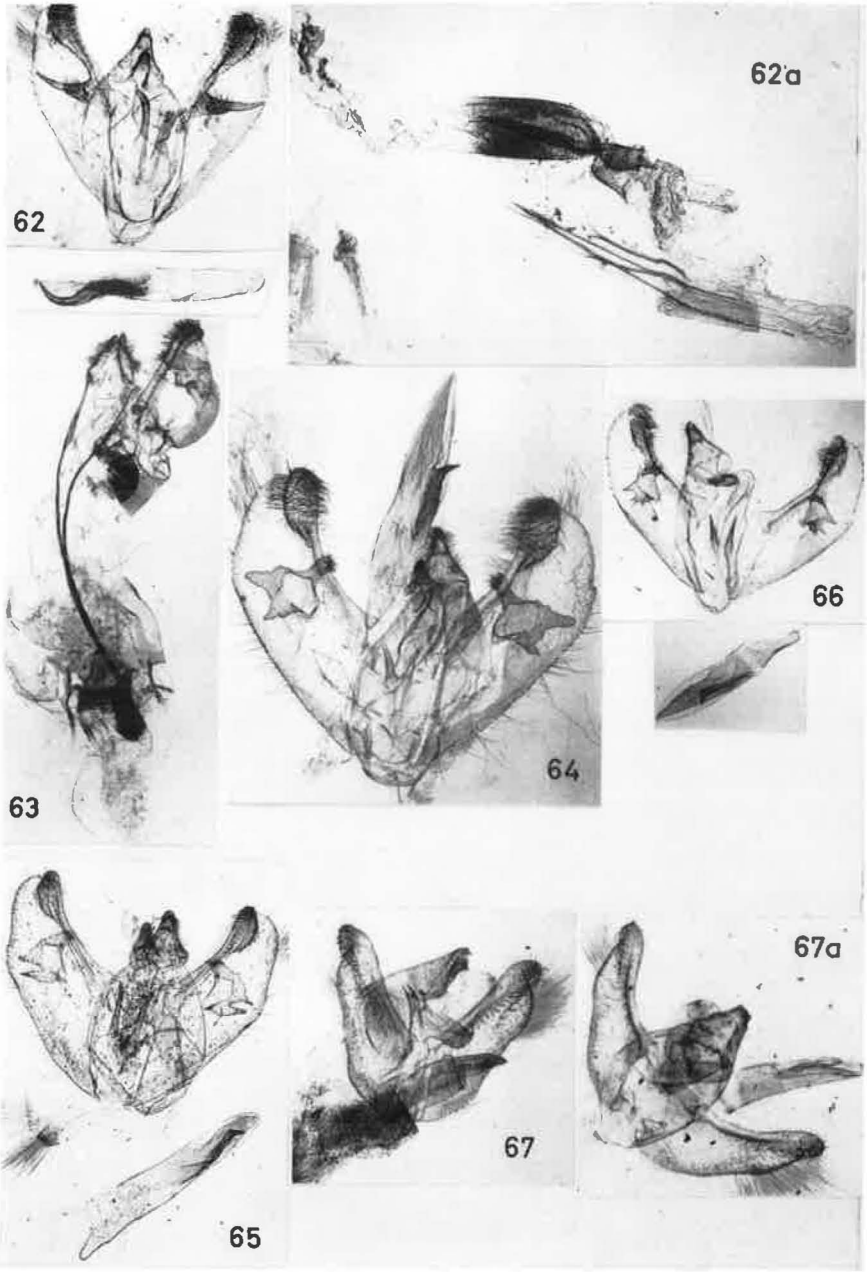


Plate XVI

(E. P. Wiltshire, Middle East Lepidoptera, XX)

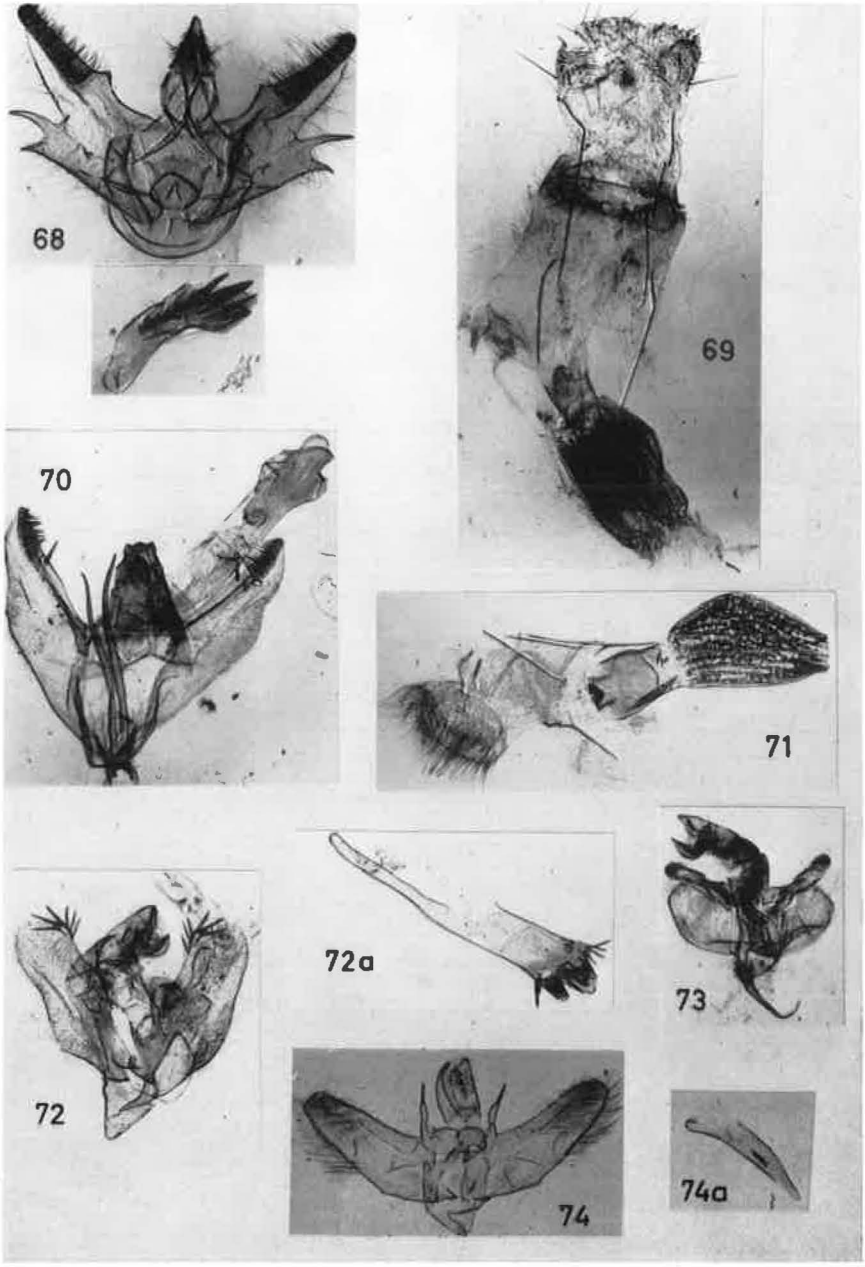


Plate I

Fig. 1 *Gnophos klapperichi* WILTSHIRE
Fig. 2 *Gnophos klapperichi* WILTSHIRE, gen. II.
Fig. 3 *Lithostege amseli* WILTSHIRE, Holotypus
Fig. 4 *Coenotephria triciliata* WILTSHIRE
Fig. 5 *Coenotephria triciliata* WILTSHIRE
Fig. 6 *Coenotephria apiciata* STAUDINGER
Fig. 7 *Coenotephria apiciata* STAUDINGER
Fig. 8 *Catarhoe arachne* WILTSHIRE
Fig. 9 *Eclipoptera postpallida nuristana* WILTSHIRE, ♀
Fig. 10 *Lomographa wiltshirei* EBERT
Fig. 11 *Lomographa mesonephele* WILTSHIRE
Fig. 12 *Lomographa mesonephele f.obsoleta* WILTSHIRE, Holotypus ♀
Fig. 13 *Lomographa mesonephele* WILTSHIRE
Fig. 14 *Tephrina klapperichi* WILTSHIRE
N. B. Fig. 14 is much enlarged; the others are more or less natural size, though not at a uniform scale.

Plate II

Fig. 15 *Tephrina klapperichi* WILTSHIRE, ♀
Fig. 16 *Gnopharmia maculifera afghanistana* WILTSHIRE, ♂
Fig. 17 *Gnopharmia eberti* WILTSHIRE
Fig. 18 *Gnopharmia objectaria luxuriosa* WILTSHIRE, ♀
Fig. 19 *Gnopharmia objectaria luxuriosa* WILTSHIRE ♀
Fig. 20 *Gnopharmia inermis* WILTSHIRE, ♂
Fig. 21 *Gnopharmia inermis* WILTSHIRE, ♀
Fig. 22 *Acrobiston aestivalis* WILTSHIRE, ♂
Fig. 23 *Alcis andaraba* WILTSHIRE, ♂
Fig. 24 *Alcis andaraba fortior* WILTSHIRE, ♀
Fig. 25 *Alcis nuristana* WILTSHIRE, gynandromorph
Fig. 26 *Alcis granitaria klapperichi* WILTSHIRE, Allotypus ♀
Fig. 27 *Alcis andaraba dives* WILTSHIRE, ♀
Fig. 28 *Alcis trikotaria limitropha* WILTSHIRE
Fig. 29 *Alcis paghmana* WILTSHIRE, Holotypus ♂
N. B. Figs. 15 and 24 are much enlarged; figs. 16—19, and 25—29 are reduced; figs. 20 and 24are slightly reduced; 22 and 23 are natural size.

Plate III

Fig. 30 *Alcis paghmana* WILTSHIRE, ♂, ex Nuristan, Paratypus
Fig. 31 *Alcis shivae* WILTSHIRE
Fig. 32 *Contropis tagana* WILTSHIRE, ♂
Fig. 33 *Ctenognophos eolaria* GN., ♂
Fig. 34 *Gnophos difficillimus* WILTSHIRE, Paratypus ♂, ex Do-Shak
Fig. 35 *Gnophos difficillimus* WILTSHIRE, Paratypus ♀, ex Paghman-Mts.
Fig. 36 *Gnophos sibiriata subclarilimbata* WEHRLI.
Fig. 37 *Gnophos badakhshanus* WILTSHIRE
Fig. 38 *Gnophos difficillimus* WILTSHIRE, underside of Fig. 34
Fig. 39 *Gnophos sibiriata subclarilimbata* WEHRLI, underside of Fig. 36
Fig. 40 *Gnophos difficillimus* WILTSHIRE, underside of Fig. 35
Fig. 41 *Gnophos badakhshanus* WILTSHIRE, underside of Fig. 37
Fig. 42 *Gnophos amseli* EBERT, ♀
N. B. Figs. 30, 31, 37, 41 and 42 are reduced; the others are natural size.

Plate IV

Fig. 43 *Gnophos klapperichi* WILTSHIRE, ♀, underside
Fig. 44 *Gnophos sibiriata subclarilimbata* WEHRLI, underside
Fig. 45 *Gnophos vastarius* STAUDINGER
Fig. 46 *Gnophos vastarius* STAUDINGER
Fig. 47 *Gnophos maledictus* WILTSHIRE
Fig. 48 *Gnophos maledictus* WILTSHIRE
Fig. 49 *Gnophos vastarius* STAUDINGER, underside
Fig. 50 *Gnophos vastarius* STAUDINGER, underside
Fig. 51 *Gnophos maledictus* WILTSHIRE, underside
Fig. 52 *Gnophos maledictus* WILTSHIRE, underside
Fig. 53 *Gnophos hoarmioides* WILTSHIRE, ♂
Fig. 54 *Raparna erubescens grisecens* WILTSHIRE, Holotypus
N. B. Fig. 54 is much enlarged; figs. 44 and 53 are natural size; the rest are reduced.

Plate V

Fig. 56 *Glossotrophia eurata* PROUT, ♂
Fig. 57 *Glossotrophia ghirshmani* WILTSHIRE, ♂
Fig. 58 *Scopula amseli* WILTSHIRE, ♀
Fig. 59 *Scopula eberti* WILTSHIRE, ♀
Fig. 60 *Scopula danieli* WILTSHIRE, ♂
Fig. 61 *Rhodostrophia pleonasma* WILTSHIRE, ♂
Fig. 62 *Rhodostrophia abscisaria chlorotica* WILTSHIRE, ♂
Fig. 63 *Scopula actuaria sheljuzhkoi* WILTSHIRE, ♂
Fig. 64 *Rhodostrophia anjumana* WILTSHIRE, ♂
Fig. 65 *Rhodostrophia nubifera klapperichi* WILTSHIRE, ♀
Fig. 66 *Sterrha tornipunctaria* WILTSHIRE, ♂
Fig. 67 *Scopula beckeraria* LED., ♂ (ex. Pul-i-Chomri)
Fig. 68 *Scopula danieli f. mediobrunnea* WILTSHIRE, ♀
Fig. 69 *Rhodostrophia praecisaria* STGR., ♂
Fig. 70 *Scopula beckeraria* LEDERERER, ♂, ex. Nuristan
Fig. 71 *Sterrha forsteri* WILTSHIRE, ♂
Fig. 72 *Scopula froitzheimi* WILTSHIRE, ♂
N. B. Fig. 66 is about natural size; the others are enlarged.

Plate VI

Fig. 1 *Chlorissa pulmentaria* GUENEE, Prep. WM 137, Pul-i-Chomri
Fig. 2 *Chlorissa gelida* BUTLER, Prep. WM 144, Herat
Fig. 3 *Microloxia indecretata* WALKER, Prep. 1004, Tang-i-Gharuh
Fig. 4 *Microloxia polemia* PROUT, Prep. WM 83, Iran, Shadegan
Fig. 5 *Hemistola fletcheri* PROUT, Prep. 1007, Nuristan
Fig. 6a *Hemistola detracta* WALKER, Prep. 1138, Kabul
Fig. 6b dto., Aedoeagus
Fig. 7a *Sterrha illustris* BRANDT, Prep. 436, Iran, Khorramshar
Fig. 7b dto., Aedoeagus
Fig. 8a *Sterha tornipunctaria* WILTSHIRE, Prep. WM 130, Sarobi
Fig. 8b dto., Aedoeagus

Plate VII

Fig. 9a *Sterrha forsteri* WILTSHIRE, Prep. 1164, Nuristan
Fig. 9b dto., Aedoeagus
Fig. 10 dto., ♀, Prep. 1164
Fig. 11 *Scopula amseli* WILTSHIRE, Prep. 1127, Iran, Quli Kush
Fig. 11a dto., Aedoeagus
Fig. 12 *Scopula danieli* WILTSHIRE, Prep. 950, Nuristan
Fig. 13 *Scopula sp.*?, Prep. 1144, Tang-i-Gharu
Fig. 14 *Scopula actuaria sheljuzhkoi* WILTSHIRE, Prep. 1043, Nuristan
Fig. 15 *Scopula froitzheimi* WILTSHIRE, Prep. WM 147, Badakhshan
Fig. 16 *Scopula beckeraria* LEDERER, 8. Tergit, Nuristan.
Fig. 16a *Scopula beckeraria* LEDERER, Aedoeagus
Fig. 17 *Scopula beckeraria* LEDERER, Prep. 1148, Kabul
Fig. 18 *Scopula beckeraria* LEDERER, Prep. WM 136, Pul-i-Chomri

Plate VIII

Fig. 19 *Glossotrophia eurata* PROUT, Prep. 1167, Kabul
Fig. 19a dto., legs and Antenna (♂)
Fig. 20 *Glossotrophia ghirshmani* WILTSHIRE, Prep. 1171, Ghorband-valley
Fig. 20a dto., leg.
Fig. 21 *Glossotrophia eurata* PROUT, ♀, Operculum, Prep. 1170, Paghman-Mts.
Fig. 22 *Glossotrophia ghirshmani* WILTSHIRE, Prep. 1168, (Operculum)
Fig. 22a dto., Antenna (♂)
Fig. 22b dto., leg (♂)

Plate IX

Fig. 23 *Glossotrophia sp.*? (operculum) Prep. 1169, Sarobi
Fig. 24 *Glossotrophia sp.*? (operculum) Prep. WM 145, Kandahar
Fig. 25 *Rhodostrophia adauctata* STAUDINGER, Typus, Prep. WB. 9, Margelan
Fig. 26 *Rhodostrophia adauctata* STAUDINGER, Prep. 944, Paghman Mts.
Fig. 27 *Rhodostrophia borealis* SWINHOE, Lecto-Typus, Prep. BMG 4244, Kulu
Fig. 27a dto., Aedoeagus

Plate X

Fig. 28 *Rhodostrophia cinerascens* MOORE, Topotypus, Prep. BMG. 4403, Goorais
Fig. 29 *Rhodostrophia anjumana* WILTSHIRE, Prep. 949, Anjuman-Pass
Fig. 30 dto., Prep. 1092, Sarekanda
Fig. 31 *Rhodostrophia pleonasma* WILTSHIRE, Prep. 942, Sarekanda
Fig. 32 *Rhodostrophia froitzheimi* WILTSHIRE, Prep. 1081, Anjuman-Paß
Fig. 33 *Rhodostrophia abscisaria* BRANDT, Prep. WBS 4, Iran, Khorassan

Plate XI

Fig. 34 *Rhodostrophia abscisaria chlorotica* WILTSHIRE, Prep. 952, Hindukush
Fig. 35 *Rhodostrophia praecisaria* STAUDINGER, Prep. 1017, Paghman-Mts.
Fig. 36 *Rhodostrophia furialis* BRANDT, Typus, Prep. WBS 16, Iran, Khorassan
Fig. 36b dto., Aedoeagus
Fig. 37 *Rhodostrophia nubifera* BRANDT, Prep. WBS 3, Iran, Khorassan
Fig. 38 *Rhodostrophia peripheres* PROUT, Prep. BMG 48-285, Iran, Elburz-Mts.
Fig. 38b dto., Aedoeagus

Plate XII

Fig. 39 *Coenotephria apiciata* STAUDINGER, Holotypus, ♂, Askhabad
Fig. 40 *Coenotephria apiciata* STAUDINGER, Allotypus ♀
Fig. 41 *Coenotephria apiciata* STAUDINGER, Prep. 1177, Afghanistan
Fig. 42 *Coenotephria triciliata* WILTSHIRE, Paratypus, ♂, Prep. 1175, Salang-valley
Fig. 42a dto., ♀, Prep. 1175
Fig. 43 *Coenotephria apiciata* STAUDINGER, Prep. 1177, Afghanistan
Fig. 44 *Catarrhoe arachne* WILTSHIRE, Holotypus, Prep. WM 149, Pul-i-Chomri
Fig. 45 *Eclipoptera postpallida nuristana* WILTSHIRE, Holotypus, Prep. 1093, Afghanistan, Achmede-Dewane
Fig. 46 *Lomogropha mesonephele* WILTSHIRE, Prep. WM 122, Paratypus, Sarobi

Plate XIII

Fig. 47 *Tephrina klapperichi*, Holotypus ♂, Prep. 961, Afghanistan, Bashgul-valley
Fig. 48 *Tephrina catalaunaria* GUENEE, Prep. 1001, Spain
Fig. 49 *Tephrina inconspicuaria* HÜBNER = *pumicaria* LEDERER ♂, Lebanon, Shweir, Prep. 1002
Fig. 50 *Tephrina perviaria* LEDERER, ♂, Bahrain, Prep. 1067
Fig. 51 *Gnopharmia objectaria luxuriosa* WILTSHIRE, Paratypus ♂, Prep. 939, Afghanistan, Kutiau
Fig. 52 dto., Aedoeagus
Fig. 53 dto., ♀, Paratypus
Fig. 54 *Gnopharmia inermis* WILTSHIRE, Paratypus ♂, Prep. 1136, Herat

Plate XIV

Fig. 55 *Gnopharmia inermis* WILTSHIRE, Paratypus ♀, Prep. 1136, Herat
Fig. 56 *Gnopharmia maculifera* STAUDINGER, Holotypus ♂, Samarkand, (B. Sp.)
Fig. 56a dto., Aedoegus
Fig. 57 dto., Allotypus ♀
Fig. 58 *Gnopharmia maculifera afghanistana* WILTSHIRE, Holotypus ♂, Puli-i-Chomir, Prep. WM 108
Fig. 59 *Gnopharmia eberti* WILTSHIRE, Holotypus ♂, Arghandab, Prep. WM 110
Fig. 60 *Acrobiston aestivalis* WILTSHIRE, Holotypus ♂, Badakhshan, Prep. 1076
Fig. 60a dto., Aedoeagus
Fig. 61 *Alcis andaraba dives* WILTSHIRE, Holotypus ♀, Nuristan, Prep. 1190

Plate XV

Fig. 62 *Alcis granitaria* MOORE, Kashmir, Tang-marg., Prep. 1194
Fig. 62a *Alcis granitaria klapperichi* WILTSHIRE, Holotypus ♀, Paghman-Mts., Prep. 1184
Fig. 63 *Alcis nuristana* WILTSHIRE, Holotypus, gynandromorph, Nuristan, Prep. 1183
Fig. 64 *Alcis tricotaria limitropha* WILTSHIRE, Paratypus ♂, Nuristan, Prep. 1083
Fig. 65 *Alcis paghmana* WILTSHIRE, Holotypus ♂, Paghman-Mts., Prep. 1046
Fig. 66 *Alcis shivae* WILTSHIRE, Holotypus ♂, Shiva, Prep. WM 128
Fig. 67 *Contropis tagana* WILTSHIRE, Holotypus ♂, Ferush-Tagan, Prep. 1089
Fig. 67a dto. Paratypus.

Plate XVI

Fig. 68 *Gnophos klapperichi* WILTSHIRE, Allotypus ♂, Sarobi, Prep. WM 115
Fig. 69 dto., Paratypus ♀, Tang-i-Gharu, Prep. 1096
Fig. 70 *Gnophos difficillimus* WILTSHIRE, Paratypus ♂, Paghman-Mts., Prep. 963
Fig. 71 *Gnophos amseli* EBERT, Holotypus ♀, Sarobi, Prep. WM. 113
Fig. 72 *Gnophos maledictus* WILTSHIRE, Paratypus ♂, Paghman Mts., Prep. 966
Fig. 72a dto., Aedoeagus
Fig. 73 *Gnophos badakhshanus* WILTSHIRE, Paratypus ♂, Anjuman-Paß, Prep. 964
Fig. 74 *Gnophos hoarmioides* WILTSHIRE, Paratypus ♂, Sarekanda, Prep. 1189
Fig. 74a dto., Aedoeagus