

MIDDLE EAST LEPIDOPTERA, XXXIII¹: SOME NEW LASIOCAMPIDAE, NOCTUIDAE, GEOMETRIDAE AND LIMACODIDAE

by E. P. WILTSHIRE, London

Of the recently studied forms here described as new, I took one myself years ago in Kurdistan, N. Irak; but the others were kindly sent to me by recent collectors in the Middle East; these include Lepidoptera found by expeditions to Turkey in 1969 and S. Iran in 1972 by Dr. F. Kasy and the Expedition of the Naturhistorisches Museum, Vienna. Besides the three countries mentioned, forms from the Lebanon, Saudi Arabia and Trucial Oman (S.E. Arabia) are also described. The most important of these discoveries is, perhaps, a new species of *Deltopera* JANSE, a Limacodid genus hitherto known only from S. Africa and monotypic. Although S.W. Arabia has proved to contain a certain number of African elements (e.g. the Noctuid genus *Asplenina* HAMPSON), the discovery in S.E. Arabia of another, not yet recorded from S.W. Arabia, is remarkable. It doubtless, however, indicates that further exploration in these regions should prove fruitful.

FAMILY: LASIOCAMPIDAE

Eriogaster amygdali WILTSHIRE *talhouki* n. ssp.

(Pl. I, figs. 1 a, b; ♂ gen. Pl. II, fig. 1)

(*Eriogaster amygdali* WILTSHIRE, 1941, Journ. Bombay nat. Hist. Soc. 42: 76-77: ♂ figs. 7 & 8; for ♀, see WILTSHIRE, 1952, Bull. Soc. Fouad Ent. 36: 191, Pl. fig. 9).

This new form from the Bekaa plain is known from an almond-orchard in the Lebanon, but may well occur also in Syria; it differs from the nominotypical form from Fars (S.W. Iran) and Kurdistan (N. Irak) by its paler coloration and weaker markings.

♂ antenna, entirely brown, not with whitish shaft as in *amygdali*; fore-wing, cell-spot, not clear and white as in *amygdali*; postmedian fascia, absent, not light purple brown as in *amygdali*; marginal field, concolorous, pale yellow-brown, not, as in *amygdali*, frequently purple-brown suffused.

♀ antenna, shaft paler brown than pectinations, the contrast being less than in *amygdali*; fore-wing cell-spot, similar to that of *amygdali*; post-median fascia, more diffuse less sharp and dark than in *amygdali*; ground-colour, pale yellow-brown, not light purple-brown as in *amygdali*; thorax and hind-wing, pale yellow-brown, not light purple-brown as in *amygdali*.

1 No. XXXII in this series, diagnosing some Eremic Tribes of Noctuidae Quadrifinae, is appearing in the Journal of Bombay Nat. Hist. Soc. shortly. No. XXXI, dealing with Sudan Noctuidae, appeared in Mitt. Münch. ent. Ges. 63 (1974).

I illustrate the ♂ genitalia of this new race; they agree perfectly with those of topotypical *E.amygdali* from Fars (Prep.1783) in coll.m. What seems to be another subspecies of *amygdali* occurs in Afghanistan, but I leave this to others to discuss.

Holotype ♂ (Prep.1772), also 3 paratype ♂, and 2 paratype ♀, all: Lebanon, Rayak, ex larva, *Prunus amygdalus*, 3.xi.1973 (Talhouk) in coll. Wiltshire; similar exs. in coll. Talhouk, Beirut.

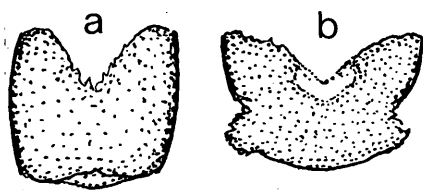
Autosphyla henkei arabica n. ssp.

(Pl.I, fig. 2; ♂ gen. Text-fig. 1 b & Pl.II, fig. 2)

[*Bombyx henkei* STAUDINGER, 1879, Ent. Zeit. Stettin, 45: 318]

[*Eriogaster henkei* (STAUDINGER) GRÜNBERG-SEITZ, 1913, 2: 155, Pl. 24]

This species varies considerably both in its typical (S. Russian - Central Asian) forms and its Arabian forms; in both subspecies there are examples with broad pure white oblique bands on the fore-wing upper-side on either side of the oblique brownish median band, and an ochreous-white costal suffusion, and also forms where the proximal of these white bands is absent and the distal reduced (Pl.I, fig. 2); in these darker forms the aspect is of a grey-brown moth with whitish oblique post-median band, veins and cell-spot. In coloration, therefore, the Arabian subspecies is hardly to be distinguished; however, the ♂ ventral plate (7th sternite) differs and on the basis of this character the Arabian forms deserve to be considered at least a new subspecies.



Text-fig. 1. Plate of 7th sternite of abdomen.
a. *Autosphyla henkei* (STGR.) ♂ (Syr Daria).
b. *Autosphyla henkei arabica* n. ssp. (Trucial Oman).

The plate on this sternite (Text-fig. 1 a) in an example from Syr-Daria (Prep. BMNH 19 of 1973) which I have examined, is straight laterally, and almost perfect square, except for a deep V-form caudal excavation; if anything the plate is longer from back to front; whereas in the Arabian form (Text-fig. 1 b & Pl. II, fig. 2) it is excavated on three sides, the caudal excavation being shallower and the plate is wider than long (I have examined two males, one from Oman, the other Saudi Arabia).

Holotype ♂ (Prep. 1779): Trucial Oman, near Idhn, 5.xii.1972 (leg. Gallagher) in coll. Wiltshire; paratype ♂ (Prep. BMNH 1973/22): Saudi Arabia, Towaiq, 20.xii.1931 (Ht. St. J. Philby) in coll. British Museum Nat. History.

The species of *Autosphyla* RAMBUR, 1866 (Catalogue systematique des Lépidoptères de l'Andalousie: 354) appeared in GRÜNBERG-SEITZ II: 54-55 under *Eriogaster* and may be distinguished from one another as follows:

1. Fore-wing, whitish cell-spot distally linked to whitish veins *henkei* STGR.
- Fore-wing, whitish cell-spot not linked distally to whitish veins 2
2. Pale basal patch with brown centre, appearing like an angled basal line, covering fore-wing veins R, M & CU *acanthophylli* CHRISTOPH
- Whitish basal streak of fore-wing without brown centre and placed on veins R & M only *neogena* FISCH. WALD.

FAMILY: NOCTUIDAE

Discestra trifolii HUFN. *latemarginata* n. ssp.

(Pl. I, figs. 5a,b)

The very strongly marked hind-wing upper-side and both wings under-side distinguish this form from others of this widespread and variable species. The hind-wing upper-side colour is yellowish ochreous, infuscated towards the base and the anal margin; there is also a heavy fuscous crescent on the disc, followed first by a fine denticulate post-median line and secondly by a wide, dark fuscous marginal band more clear-cut than in other races; the only paler relief in this dark border is a fine comma-shaped window of the ground-colour near the termen at nervure 2. The whitish fringe contrasts strikingly with the rest of the hind-wing upper-side.

The fore-wing upper-side is also, if less, distinctive, being yellowish in ground colour, but heavily powdered with dark grey. The claviform stigma is strongly marked; the orbicular, weak and inconspicuous, thus differing from subsp. *farkasii*; the reniform dark and strongly grey-clouded. In most examples the fine submarginal line is yellow and contrasts with the rather monotonous brownish colouring of the fore-wing upper-side; the fringe is brown.

Both wings under-sides, strongly marked: on the fore-wing the dark reniform stigma stands out strongly isolated in a pale field, followed by the brown submarginal area which is crossed by the pale nervures and less intensely fuscous than the corresponding dark hind-wing border. Fore-wing fringe, brown chequered with darker brown, but hind-wing fringe white as on upper-side. Discal spot of hind-wing more isolated than on the upper-side, as the ochreous ground-colour is more extensive on the under-side.

Span: 30-31 mm.

Holotype ♂, 8.vi.1969, 2000 m., Zigana Pass, Pontic Mts., Turkey. Paratypes: 2 more exs., similarly labelled. Holotype and one paratype in Naturhistorisches Museum, Vienna, one paratype in coll. Wiltshire, London.

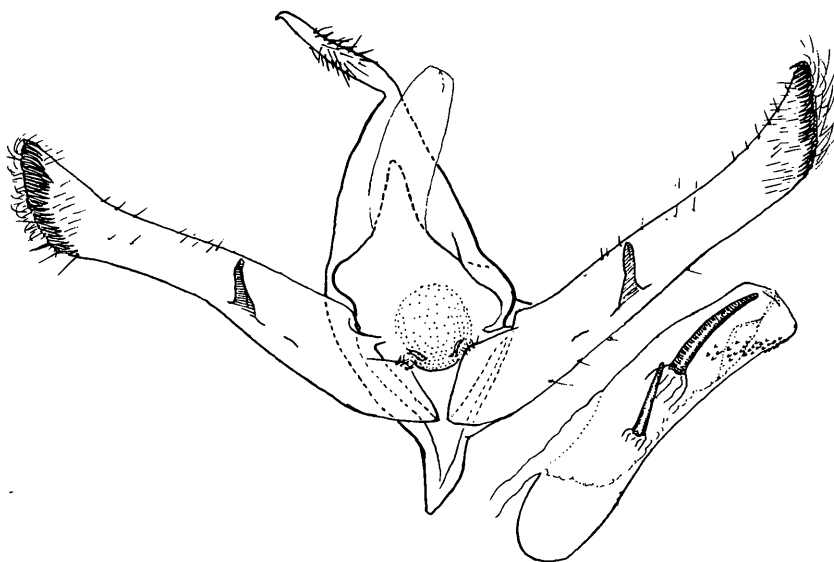
Cucullia kasyi n. sp.

(Pl. I, fig. 3a; Larva Pl. I, figs. 3b,c; ♂ gen. Text-fig. 2)

A new species in the *C. verbasci*-group, generally resembling *C. lychnitis* RAMB. in colouring and wing-shape, but rather smaller in wing-span and other structures, with smokier grey under-side, bred from a larva marked distinctly from others in the group, described and illustrated here.

Antenna of ♂, simple, ochreous-brown with whitish dorsal scales on early segments. Tongue, developed. Palp, ochreous below, infuscated above. Pectus with long, pale rosy-grey hairs. Fore-legs, tibia with rosy grey hairs, tarsi more whitish. Mid-tibia with long fuscous hairs above, ochreous below; mid-tarsi brown. Hind-tibia, with long rosy grey hairs, hind-tarsi greyish and fuscous. Thoracic hood, grey-brown inclining to ochreous, infuscated above. Abdomen, ochreous brown with fuscous dorsal suffusion.

Fore-wing, ground-colour ochreous-brown in the median field, extensively rosy-whitish below the cell from base to outer margin; costal area, densely and rather uniformly



Text-fig. 2. *Cucullia kasyi* n. sp. ♂ genitalia.

infuscated, with a slatey-grey speckled suffusion, not clearly marked until three fine, pale ochreous sub-apical spots; the start of each of the two main cross-lines is indicated by a vague darker brown oblique smudge hardly distinct from the costal infuscation. Orbicular stigma, absent; reniform, obsolete, much less traceable than in *lychnitis*. Of the two cross-lines, only the ante-median is traceable as it crosses the median area, a pale zig-zag line with very fine light brown edging; the post-median is similarly visible below nervure 2 only, and on the rest of the wing its course is marked by faint brown specks on the nervures. The pale whitish median cloud just before it and the fine white distal edging of this line near the hind margin are similar to those of many species in the group. The tornal markings consist of two fine white streaks in a dark brown band running from the middle of the outer margin to the ante-median line on the hind margin. The termen shows up as a fine whitish undulating line, distinct on the outer margin distally to this band but less clear towards the apex.

Hind-wing, grey-brown suffused with fuscous terminad, with the principal nervures marked darker brown; termen a pale wavy line; fringe, proximally brown, distally paler.

Under-side: fore-wing, suffused brown, paler suffused below the cell, with nervures infuscated, speckled with slatey grey and whitish scales along the costa and termen; hind-wing, more whitish except for a terminal suffused infuscation, and with the five main nervures distinctly infuscated. Termen, a fine line, clearly marked on both wings.

Span: 39 mm.

Genitalia of ♂: differing from those of *C. verbasci* in having valves not tapering, with broader corona and less prominent clavus; generally similar to those of *C. scrophulariae* D. & S., *barthae* BOURSIN, *minogenica* REBEL, *tropicarabica* WILTSHIRE, *macewani* WILTS., and *strigicosta* BOURSIN, but differing from them in various ways: the aedeagus is shorter and thinner than all of these, with the two cornuti less robust; the valves are

thinner than in *scrophulariae* and *macewani*; their corona is slightly less extensive than in *barthae*, and much less wide than in *minogenica* although the latter's valve is constricted before the corona more than in *kasyi*. The distal scobinations of the aedeagus are more prominent in *macewani* and *tropicarabica* than in *kasyi*.

N.B. *C. macewani* was taken at Sirjan in S. Iran by Dr. Kasy and is new for Iran; it has a more whitish or pale grey fore-wing than *kasyi*, while *tropicarabica* has a bluish fore-wing tinge not found in *kasyi*. These two were described from Arabia in Bull. Soc. Fouad Ent. 33:356-357, (1949).

Holotype ♂: e.l., *Celsia*, 9.iii.1973, Roodan, near Bander Abbas, S. Iran. (Exp. Mus. Vind.). In Naturhist. Museum, Vienna.

Larva: ground-colour whitish grey, with deep orange brown head. While clearly belonging to the "dorsal-X" type which characterises the southern *Scrophularia*-feeding members of the *verbasci*-group, the markings are most distinctive from all previously described species: the heavy black dorsal X marks entirely encircle a series of large subdorsal yellow spots on the abdominal segments, making a double series of subdorsal yellow black-encircled spots joined on each segment. Intersegmental narrow blackish transverse shades, with slight dorsal ornamentation, are also present. The thoracic black markings on segments 2 & 3 are heavy and encircle small yellowish dorsal, not subdorsal spots, and do not meet in front; segment 1, more lightly marked transversely with black, likewise abdominal segments 9 & 10. Viewed laterally the markings are equally distinctive, as a heavy black zigzag bar unites transversely the usual lateral markings, somewhat resembling a black W. The posterior and lowest of the two large black sublateral spots is however independent from the black bar on the thoracic somites and on some of the abdominal segments. The intersegmental shading is less strong laterally than dorsally. Feet, whitish, black-marked; thoracic feet, (?) yellowish. (Described from good colour transparencies made by Dr. Kasy).

Cucullia lychnitis RAMBUR *albicans* nom. nov.

(Corrigendum to Middle East Lepidoptera XXVIII, The Entom., 101:162, July 1968)

In naming the Lebanon race of *Cucullia lychnitis albescens* I had overlooked *Cucullia albescens* MOORE, 1881, and propose to call the Lebanese subspecies *albicans* nom. nov. (for *albescens* WILTS., 1968 nec. MOORE, 1881).

Oncocnemis fuscopicta n. sp.

(Pl. I, figs. 4a, b; ♂ gen. Text-fig. 3)

Close to *O. confusa* FREYER from which it may be distinguished by its coloration, particularly the much more blackish suffusion of the whole fore-wing and hind-wing border, and the blackish-spotted termen of both wings, and the longer ciliations of the male antenna.

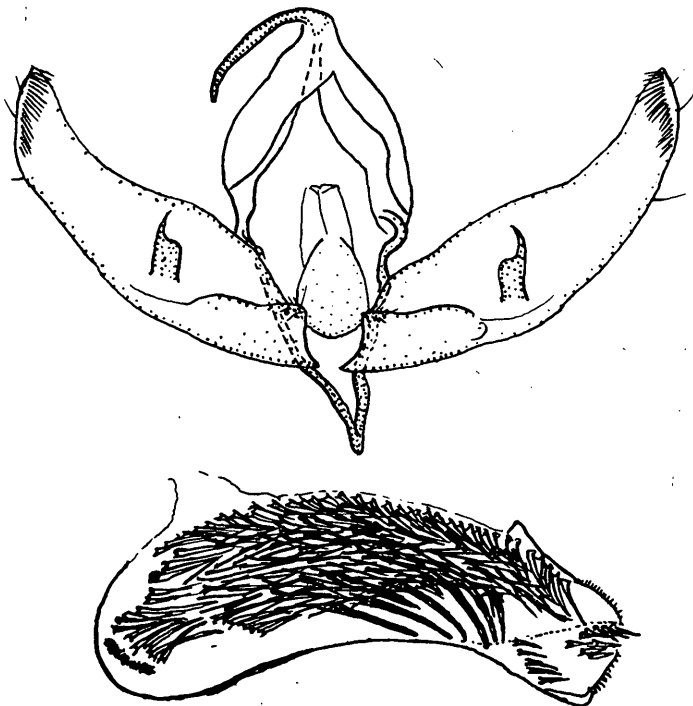
Frons, flat, with hairs and scales.

Antenna, ♂ with dorsal scaling and dense ventral ciliation as long as width of shaft; ♀, simple.

Proboscis developed.

Head, thorax and fore-wing, whitish ochreous mixed with dark fuscous. Head and thorax thickly clad with hairs and scales, abdomen, smooth and pale grey mixed with a few fuscous scales.

Fore-wing, pale ochreous, heavily powdered with dark fuscous, concentrated along the costa in five suffused blackish patches and in a blackish median shade close to the hind margin. Cross-lines, pale, edged with fuscous on either side, running as in *O. confusa* FRR. the post-median's distal edging being blacker; the submarginal pale line less clear than in *confusa*. Along the termen a series of seven intraneural dark spots proximally ringed by a pale ochreous denticulated line; termen, pale ochreous; fringe, whitish, finely grey-chequered. In *confusa* the terminal spots, at best, are represented by a series of fine circumflex lines, discernible with a lens.



Text-fig. 3. *Oncocnemis fuscipicta* n.sp. ♂ genitalia.

Hind-wing, whitish based, with broad fuscous border and a series of similar ringed dark spots on the termen, less strong than on fore-wing; fringe, whitish, not chequered.

Undersides, both wings, whitish with broad fuscous border and fuscous terminal dots. The post-median fascia is not traceable as in *confusa*, whose underside coloration is less whitish.

Span: 26-37 mm.

Genitalia of ♂: of the same general type as other *Oncocnemis*, gracefully curved and tapering, with moderate corona, the harpe being situated at the end of the moderate

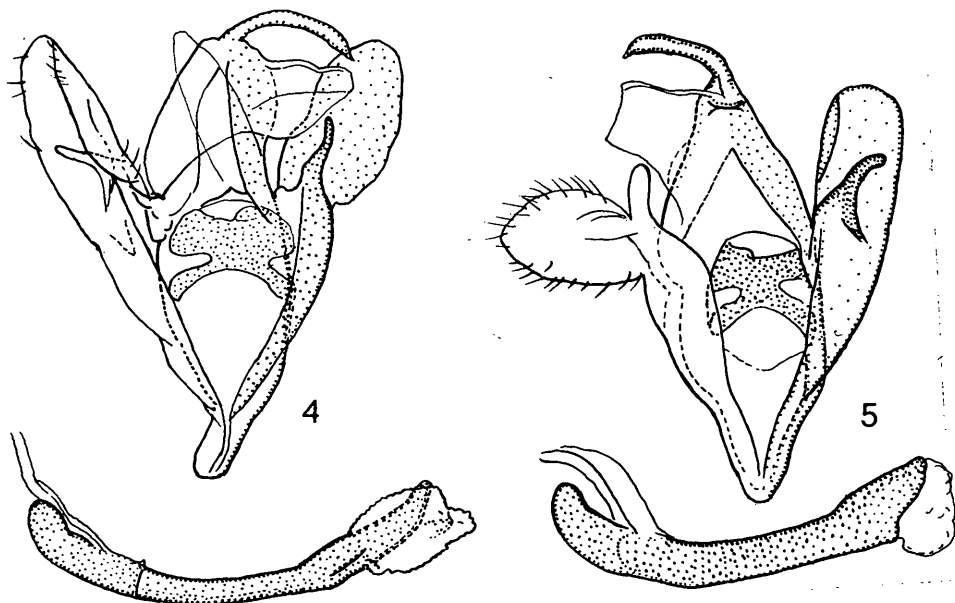
sacculus, nearly medial-ventrally, shaped as a closed fist with pointing index-finger, the latter being a fine dorsally-directed spine. Aedeagus thick, vesica densely armed with long cornuti, almost completely filling the aedeagus in normal position.

Holotype ♂, Prep. 701, and paratype ♀, both: Iraq, Kurdistan, Shaqlawa, 2500 ft., 13.x.1953 (leg. E. P. Wiltshire) in coll. E. P. Wiltshire on British Museum Nat. Hist., London; and paratype ♀, labelled: "to light trap, hostel, Shaqlawa, 23.ix.1971 (leg. Hadi)"; in coll. Min. Agriculture, Bagdad.

Anydrophila hoerhammeri BRANDT *kasyi* n. ssp.

(Pl. I, fig. 6; ♂ gen. Text-fig. 4)

Anydrophila hoerhammeri BRANDT, 1939, Ent. Rundsch. 56: 269 (♂ Gen. Text-fig. 5)



Text-fig. 4, 5: ♂ genitalia — 4. *Anydrophila hoerhammeri kasyi* n. ssp. (S. Iran); 5. *Anydrophila hoerhammeri* BRANDT, paratype (S.E. Iran)

This new form generally resembles the typical race from Bander Chahbahar (SE Iran) but is less robust and differs in habitus and genitalia as follows: Fore-wing markings, less distinct, the ante-median and post-median fasciae being interrupted and obsolete (complete and clearly zigzag in the typical); along the costa is a pale suffusion as far as the subapical shade, interrupted by the three proximal costal shades, and extending over the cell; the median area is less orange-suffused; the hind-wing's black markings broader and less clear-cut. Male genitalia: the harpes, uncus and aedeagus more slender than in the typical (cf. Text-figs. 4 & 5).

Holotype ♂, (Prep. WW. 321) S. Iran, 22 km. north of Bander Abbas, 9.iv.1972; paratype ♀, 18 km. n.e. of Bander Abbas; both leg. Exped. Mus. Vind. (F. Kasy), now in Naturhistorisches Museum, Vienna.

FAMILY: GEOMETRIDAE

Xanthorhoe rectifasciaria LED. *rectior* n. ssp.

(Pl. I, figs. 8a, b; ♂ gen. Pl. II, fig. 3)

Differs from the typical Transcaucasian race (figured in SEITZ IV Sup. Pl. 12b) by the broader, straighter, slatey-blackish median band, but is genitaliter close and may provisionally be considered a good subspecies. I have also compared the new form with a specimen labelled "Gurien 1870 Zimmerman don." loaned by the Naturhistorisches Museum, Vienna, which agrees with the above plate figure and with the North Iranian forms seen by PROUT.

The new race has a blacker median fore-wing band (this is lighter rosy brown in the typical); and the central light fascia of this band, though narrower below the cell-spot, is not reduced to nothing on the median nervure as in the example from Gurien, in which the two brown lines just touch without fusing below the cell-spot, thus closing the lilac-brown central fascia. The dark cell-spot itself, being placed in this central fascia, is less evident in the new race, it is smaller and more punctiform, whereas in the typical it is longer, linear, and at right angles to the costa, and clear and sharp. The twinned black intra-neutral terminal specks reach the fore-wing apex and even the sub-apical costa, but do not reach so far in the typical race, in which there are six pairs in the fore-wing and four on the hind-wing termen.

Holotype ♂ and paratype ♀, Turkey, Pontic Mts., north of Zigana Pass, 1500 m., 9.vi.1969 (leg. F. Kasy), both in Naturhistorisches Museum, Vienna; also ♂ (Prep. WW. 284), same date and place, in coll. Wiltshire.

Perizoma gigas n. sp.

(Pl. I, fig. 7; ♂ gen. Pl. II, fig. 4)

The largest *Perizoma*, reaching 31 mm. in span in the ♀; in habitus closest to *hydrata* TR. and *parahhydrata* ALBERTI, 1969 (Deutsch. ent. Zeit. N.F. 16(1-3): 200); much larger than the former and even slightly larger than the latter; the ♂ genitalia similar to *flavo-fasciata* THUN. but the habitus quite different, rather dark and uniform olive-brown with many clearly-marked wavy black cross-lines.

Antenna of ♂ & ♀, simple, dorsally chequered with ochreous and fuscous scales, with very short down ventrally. Palp, short, fuscous and grey. Tongue, moderately developed. Frons, smooth; vertex, pale grey.

Fore-wing and thorax, grey brown, strongly infuscated; fore-wing with double areole; hind-wing disco-cellular, double angled, nervures 6 & 7 stalked.

Fore-wing, large, rounded, measuring in the ♀ 17 mm. from base to apex, while the same in hind-wing of same example measures only 13 mm.; grey-brown, more infuscated before ante-median line and in submarginal field than elsewhere, with olive tinted median area; cross-lines, black, clearly marked, strongly angled and blacker on the nervures. Blackish shades along the costa accompany the basal, ante-median, median and post-median cross-lines a short way; the post-median fascia, distal to the post-median line,

is whitish-grey infused near the costa; subterminal line, pale olive, wavy, regular, complete. Termen, a fine black interrupted line, with a black dot at each interruption; fringe grey-brown, chequered darker brown.

Hind-wing, paler than fore-wing, very weakly marked, except for termen, which is as on fore-wing. The fringe is similar but whitish distally.

Under-side, both wings, grey-brown with fine, clear termen as on upper-side, other markings rather faint, with darker clouds indicating the wavy post-median submarginal fascia; of fore-wing, costa with a fine dark post-median, and a wider, less dark, submarginal shade, the latter continuing but narrowing to the tornus.

Genitalia of ♂: transtilla with setose sphere as in *P. flavofasciata* THUNB., valves and juxta differently shaped (see Pl. II, fig. 4). The organ on the transtilla is omitted from ALBERTI's rather sketchy figure of *parahydrata*, but in any case the valve-shape appears to differ also, the costa being more convex in the new species and the sacculus being decorated with short transverse wrinkles.

Holotype ♂, allotype ♀, and 2 paratypes ♀, all Turkey, Pontic Mts., north of Zigana Pass, 1500 m., 9.vi.69 (dr. F. Kasy); in Naturhistorisches Museum Vienna, and one paratype in coll. Wiltshire, London.

FAMILY: LIMACODIDAE

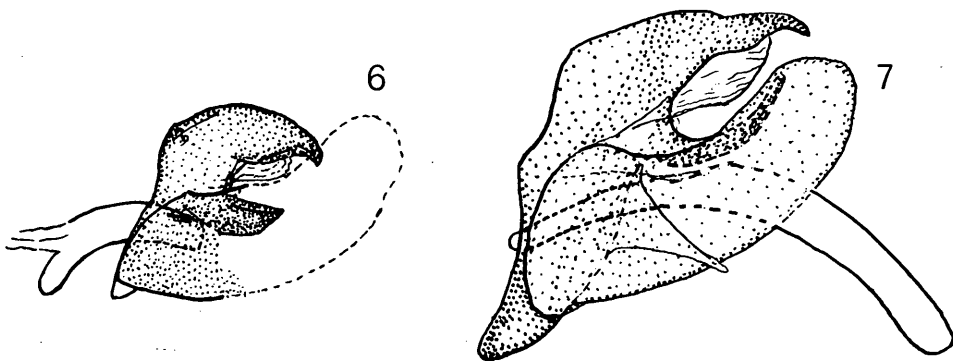
Deltopera omana n. sp.

(Pl. I, fig. 9; ♂ gen. Text-fig. 6)

Smaller, with more pointed fore-wing than *D. iphia* JANSE (♂ gen. Text-fig. 7) of S. Africa, the only previously known species of this genus; the fore-wings markings, moreover, are reduced and it differs from that species genitaliter also.

Span: 16 mm. (25 - 30 in *iphia*!).

Antenna of ♂, bipectinated; venation and other structure as in *Deltopera* (see JANSE: Moths of S. Africa: 86). Fore-wing, more pointed but similary coloured; grey, more whit-



Text-fig. 6, 7: ♂ genitalia. — 6. *Deltopera omana* n. sp., holotype; 7. *Deltopera iphia* JANSE (after JANSE 7: Pl. 20).

ish marginad, with oblique post-median fascia, slightly in-curved below cell, shewing clearly white with distal fuscous edging where it meets hind margin. The black sub-apical spot, conspicuous in *iphia*, is represented by a vague faint smudge. Termen, white, infuscated proximally. Hind-wing, smoky grey.

Genitalia of ♂, uncus and gnathos blunter, less tapering.

Holotype ♂, (Prep.1737), N. Oman, Wadi Sahtan, 2000 feet, northern foot of Jebel Akhdar, 10.iii. 1973 (Gallagher), in coll. Wiltshire, London.

The unique type is unfortunately damaged, the mid and hind legs being lost, scales from the right fore- and hind-wings, and the tips of the valves being also missing. But the unusual fore-wing venation, with C_1 & C_2 stalked for $1/3$ of C_2 , facilitated the generic placing; the genus resembles a small geometrid moth and does not look like a typical Limacodid. A second expedition to the Jebel Akhdar, but made a month later in the year, in 1975, has unfortunately not produced any further material.

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EXPLANATION OF PLATE I

Fig. 1 *Eriogaster amygdali talhouki* n.ssp. — a. ♂, b. ♀. (natural size); Lebanon.

Fig. 2 *Autosphyla henkei arabica* n.ssp. — ♂ holotype (ca 1,5 x natural size); Oman.

Fig. 3 *Cucullia kasyi* n.sp. — a. ♂ holotype (ca 1,75 x natural size), b. Larva, dorsal view, c. Larva, lateral view; S. Iran.

Fig. 4 *Oncocnemis fuscipicta* n.sp. — 2 ♀ paratypes (ca 1,4 x natural size); N. Irak.

Fig. 5 *Discestra trifolii latemarginata* n.ssp. — a. ♂ holotype, b. ♀ paratype (ca 1,4 x natural size); Turkey.

Fig. 6 *Anydrophila hoerhammeri kasyi* n.ssp. — ♂ holotype (ca 1,3 x natural size); S. Iran.

Fig. 7 *Perizoma gigas* n.sp. — ♂ holotype (ca 1,2 x natural size); Turkey.

Fig. 8 *Xanthorhoe rectifasciaria rector* n.ssp. — a. ♂ holotype, b. ♀ paratype (ca 1,3 x natural size); Turkey.

Fig. 9 *Deltopera omana* n.sp. — ♂ holotype (ca 2 x natural size); Oman.

PLATE I

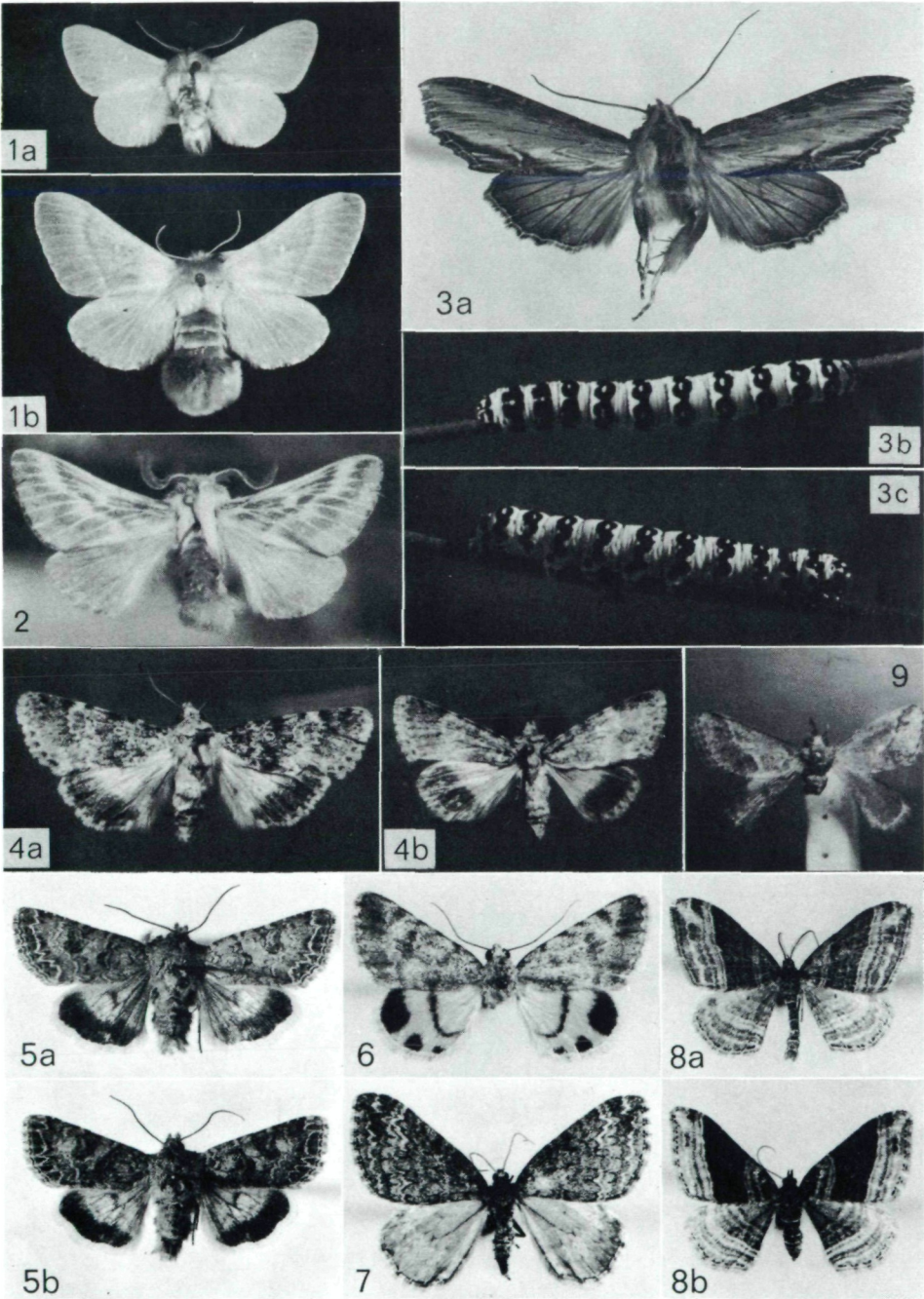


PLATE II

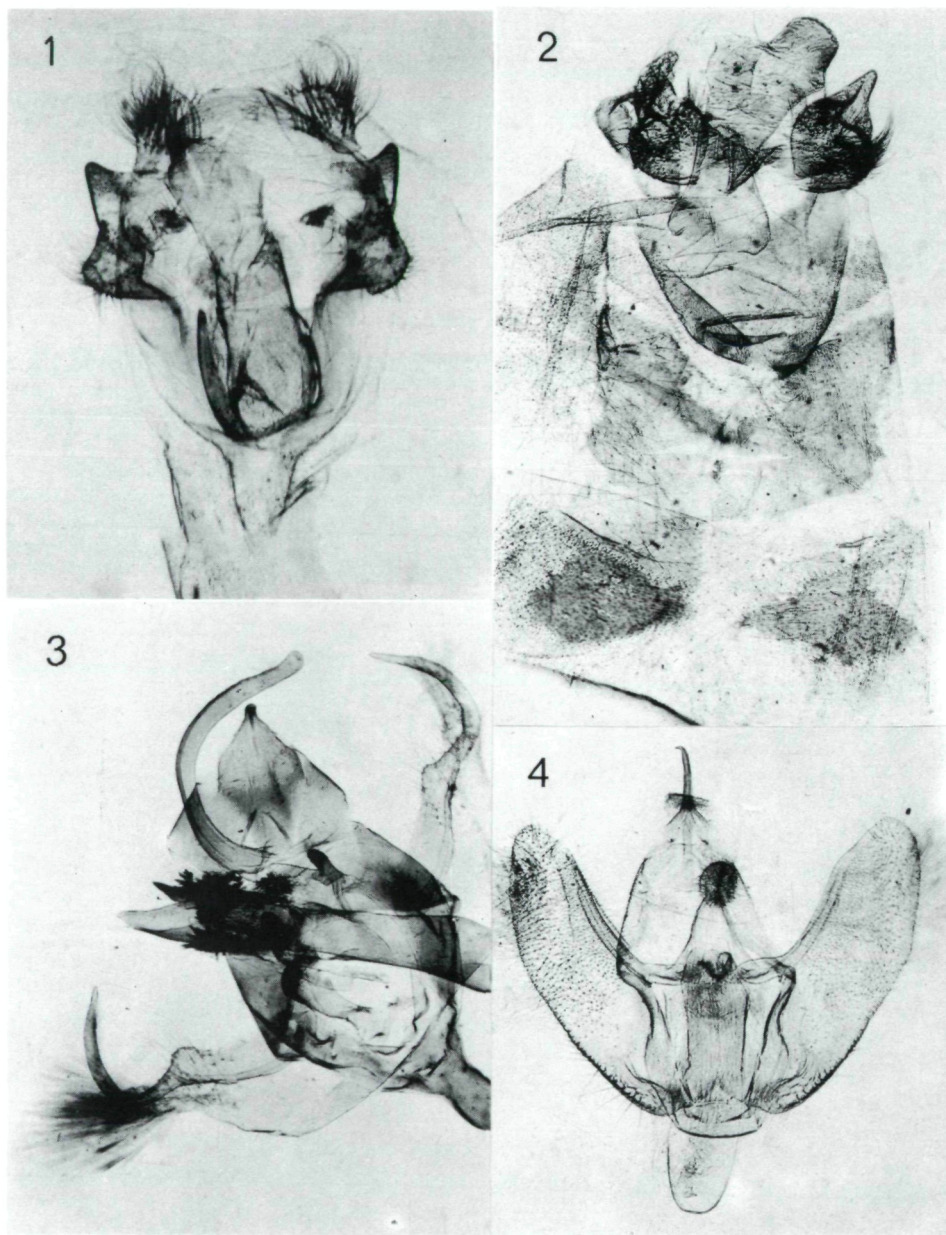


Fig. 1 *Eriogaster amygdali talhouki* n. ssp. — ♂ genitalia.

Fig. 2 *Autosphylla henkei arabica* n. ssp. — ♂ genitalia and abd. somites 6 & 7.

Fig. 3 *Xanthorhoe rectifasciaria rector* n. ssp. — ♂ genitalia.

Fig. 4 *Perizoma gigas* n. sp. — ♂ genitalia (Foto: E. Jäckh).

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Artikel/Article: [Middle East Lepidoptera, XXXIII: some new Lasiocampidae, Noctuidae, Geometridae and Limacodidae. 73-84](#)