

A C T A Z O O L O G I C A  
C R A C O V I E N S I A

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**Studies on *Cochylidae* (Lepidoptera). Part VII. Revision of the group "*Lozopera* STEPH." of the Genus *Aethes* BILLB.**

(89 text-figs.)

**Materiały do znajomości *Cochylidae* (Lepidoptera). Część VII. Rewizja grupy „*Lozopera* STEPH.” rodzaju *Aethes* BILLB.**

**Материалы к познанию *Cochylidae* (Lepidoptera). Часть VII. Критический просмотр группы „*Lozopera* STEPH.” рода *Aethes* BILLB.**

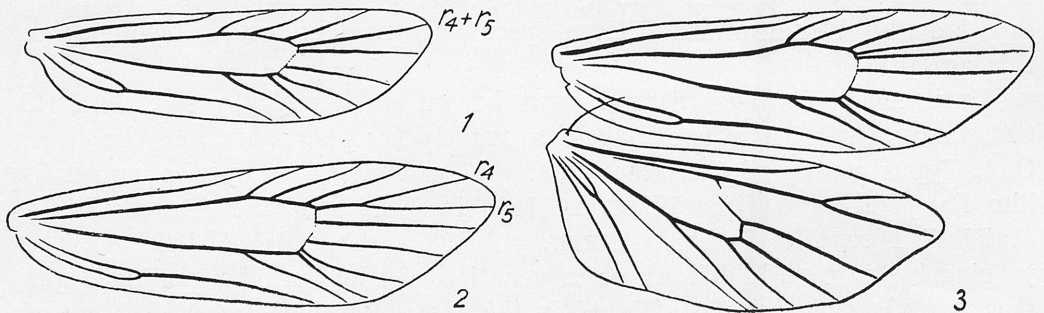
The genus *Lozopera* was established by STEPHENS in 1829. The first species was described by FABRICIUS in 1871 under the name *Pyralis francillana*. FERNALD (1908) considered *Pyralis francillana* F. as the type of this genus. In the late years of XIX century many new species have been described, especially by WALSINGHAM. Fifteen species are now known as belonging to this group.

Until 1960, *Lozopera* STEPH., was known as a valid genus. In 1943 OBRAZTSOV divided it in two subgenera, namely *Lozopera* s. str. and *Coecaethes* OBR. Typus generis of *Coecaethes* OBR. was an undescribed species named by him *Lozopera mauritanica* WALS. In 1960 in „The genera of Palaerctic *Cochylidae*” I consider *Lozopera* STEPH. only as a subgenus of *Aethes* BILLB., judging by no generic differences in venation of wings and in genitalia. Also OBRAZTSOV'S subgenus was affirmed in the above mentioned work. I discussed typus subgeneris cited by OBRAZTSOV, namely *Lozopera mauritanica* WALS. Male genitalia of this species are really distinct from those in a group of specimens allied to *L. francillana* (F.). After examination of several types of species belonging in this group I consider, that OBRAZTSOV'S „*mauritanica*” is a new species. It belongs in *Lozopera francillana* — group, and therefore OBRAZTSOV'S subgenus must be sunk as a synonym of subgenus *Lozopera* STEPH. To *Coecaethes* OBRAZTSOV belonged two other species, namely *Aethes* (*Lozop.*) *flagellana* (DUP.) and *Ae.* (*Lozop.*) *beatricella* (WALS.), however, only in *Ae.*

*beatricella* (WALS.) is the ventral part of the introitus vaginae pocket-shaped. The male of this species does not show any generic or subgeneric features, distinct from *Lozopera* STEPH. In place of name *Coecaethes* RAZ. NEC OBR. I give new name *Cirriaethes* NOM. NOV. with typus generis *Lozopera mauritanica* WALS. Characteristics of it is given on page 414.

Characteristics of the group „*Lozopera* STEPH.” (subgenera *Lozopera* STEPH. and *Cirriaethes* NOM. NOV.):

Palpi of a normal *Aethes*-shape. Forewing narrow, elongate; in male more broadened towards the end than in female. Costal margin in most cases feebly arched outwards, or nearly straight. Apex pointed or slightly rounded; termen oblique, straight or convex. Venation as in species of genus *Aethes* BILLB., however, many authors have stated, veins  $r_4-r_5$  in fore wing of „*Lozopera*” are stalked, separate in „*Phalonia*” (= *Aethes* BILLB.). In my mentioned publication (1960) I wrote, veins  $r_4-r_5$  in *Lozopera*-group arise from one point. Now, I have examined numerous material and I consider that venation is not of great value in the taxonomy of this group. In *Aethes francillana* (F.) and *Ae. beatricella* (WALS.) the characteristic veins  $r_4-r_5$  are stalked. In *Ae. deaurana* (PEYER.) length of stalk of  $r_4-r_5$  is variable. Usually it reaches one-fourth of the length of  $r_5$ , however, in some specimens it is one-sixth only. In a male paratype of *Ae. tornella* (WALS.)  $r_4-r_5$  are stalked to one-third of the length of  $r_5$ , in another paratype (female) these veins commence separately. In *Ae. rubiginosa* (WALS.)  $r_4-r_5$  are stalked to two-thirds, however, in some cases they are completely coalescent. At last, in *Ae. flaggelana* (DUP.), *Ae. bradleyi* sp. n., *Ae. vicinana* (MANN), *Ae. bilbaensis* (RÖSSL.),  $r_4-r_5$  run separately. Remaining veins as in *Aethes* BILLB. s. str. Venation of wings figured below (figs. 1—3).



Figs. 1—3. Venation of wings: 1 — *Aethes rubiginosa* (WALS.), 2 — *Ae. francillana* (F.), 3 — *Ae. flaggelana* (DUP.)

The features very characteristic of all species of this group are pattern and coloration of forewings: two fascias parallel to termen, ground colour usually yellow, pattern brownish.

Male genitalia of both subgenera are characterized by the shape of aedeagus. It is strongly developed, provided with projections. No cornuti in vesica present.

Female genitalia are characterized by large lamella vaginalis and its membranous connection with introitus vaginae. Bursa copulatrix widely sculptured, frequently with strongly sclerotized areas.

Variability. The shape of wings is rather constant. Ground colour and shape of pattern variable. Fascias often interrupted, or atrophied. The colour of pattern also variable in the individual species. In *Aethes flagellana* (DUP.) it is brownish-grey, brown, rusty or reddish. In dark coloured species as in *Ae. deaurana* (PEYER.) the differences are in more or less darkened central part of forewing. Variability of genitalia is very interesting. The shape of valva is changable during preparation. However, in some cases as, for instance, in *Ae. bilbaensis* (RÖSSL.) the caudal edge of the valva is shaped differently. Also the shape of the aedeagus and length of dents on projections of the aedeagus are variable [*Ae. flagellana* (DUP.)].

Biology. The species belonging in this group have one generation a year. Only in the Mediterranean Area some of them probably have second generation [*Aethes bilbaensis* (RÖSSL.)]. The moths appear chiefly in May, June and July. Larvae live in rolled leaves, among seeds, and afterwards in stems. Hibernation also in stems.

Larva lightly coloured; head, neck-shield and anal-shield darker than body. SWATSCHEK's diagnosis of larva of *Lozopera* (1958) is as follows: a single crown of hooks in abdominal foot. No bristle VI on 9th segment. On 1st to 7th abdominal segments three bristles of VIIth group, on 8th and 9th segments only one bristle of mentioned group. SWATSCHEK examined four species of subgenus *Lozopera* STEPH. related closely to each other in larval habit. They are: *Aethes francillana* (F.), *Ae. flagellana* (DUP.), *Ae. deaurana* (PEYER.) and *Ae. bilbaensis* (RÖSSL.). Unfortunately in his work there is no data on any species of subgenus *Cirriaethes* NOM. NOV.

Distribution: Palaearctic Region. Fauna of Asia and East Europe is known very poorly. In Europe most species occur in the south. In the Mediterranean Area live almost all the European species of this group. There are no species characteristic of Central Europe. Only in Finland occurs *Aethes* (*Cirriaethes*) *fennicana* (HER.). Good data on *Ae. dilucidana* (STEPH.) so far only from England, however, this species occurs probably also on the Continent. Only a few species are recorded from East Europe. I have examined *Ae. flagellana* (DUP.) and *Ae. bilbaensis* (RÖSSL.) from this region.

A table with number of species reported from Europe, South Europe, North Africa, Asia Minor and Central Asia is given below for comparison.

Subgenus	Europe	South Eur.	North Africa	Asia Mn. Near East	Central Asia	Total
<i>Lozopera</i>	8	7	6	6	2 (?3)	12 (?13)
<i>Cirriaethes</i>	3	2	1	1	—	3

**Subgenus: *Lozopera* STEPHENS**

Typus subgeneris: *Pyralis francillana* F.

Male genitalia. Valva broad, sacculus well developed, sometimes with characteristic projections on its basal edge. Central part of transtilla large, often concave or dentate posteriorly. Aedeagus strong, provided with processes.

Female genitalia. Lamella vaginalis very broad, in central portion sculptured. Introitus vaginae in most cases strongly sclerotized. Ductus bursae rather short. In bursa copulatrix sclerites and sculptures.

To this subgenus belong several species forming two groups. To the first group belong species with elongate, terminally dentate central part of transtilla and more or less developed ventral projection of sacculus. This projection is atrophied in *Ae. deaurana* (PEYER.), slightly visible in *Ae. flagellana* (DUP.) and *Ae. dilucidana* (STEPH.). In *Ae. speciosa* sp. n. projection is well developed and rounded and in *Ae. vicinana* (MANN) and *Ae. francillana* (F.) very large. In all mentioned species the shape of central part of transtilla is similar. To this group belongs also *Aethes kasyi* sp. n., as its female genitalia [related to those in *Ae. flagellana* (DUP.)] show. To the second group belong two species namely *Ae. beatricella* (WALS.) and *Ae. ferruginea* (WALS.). However, the female genitalia of these species are rather distinct from the rest of *Lozopera* species (pocket-shaped ventral part of introitus vaginae), male genitalia are of a normal *Lozopera*-character [only male genitalia of *Ae. beatricella* (WALS.) have been known until now, being rather similar to those in *Ae. deaurana* (PEYER.)]. Remaining species have genitalia a little different from above mentioned groups, and their systematic position in this subgenus, in comparison to other species of this subgenus is rather doubtful.

***Aethes (Lozopera) rubiginea* (WALSINGHAM), comb. nov.**

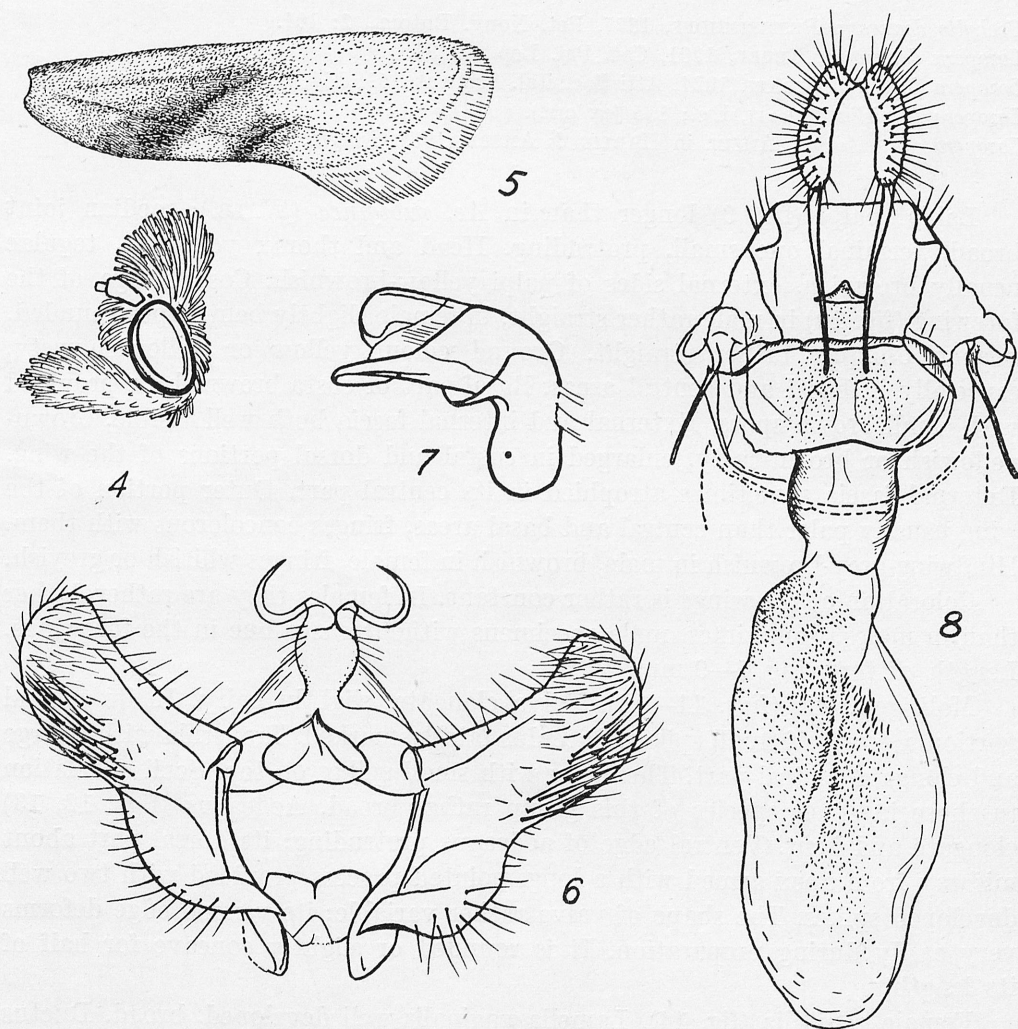
*Lozopera rubiginea* WALSINGHAM, 1903, Ent. mon. Mag., 39: 183.

Labial palpi (fig. 4) rather short, middle joint broadened distally, apical one slightly visible. Sides of palpi and head yellow-brownish, front yellow, thorax rusty-brownish. Costa in forewing (fig. 5) rather straight, for three-quarters of its length slightly concave, apex delicately protruding, termen oblique. Ground colour yellow, in the middle of the wing a little paler. Costa from base for half its length rusty darkened. Pattern rusty-brown. Internal fascia atrophied in costal area, rather large. External fascia narrower than internal one, atrophied in costal and central parts of the wing. Posterior area of the wing darkened rusty from base to external fascia. In terminal portion of the wing small pale spots. Fringes yellowish. Hindwing grey-brownish sometimes with grey veins and brownish peripheries. Fringes white-grey or whitish. Length of forewing about 7 mm.

The species under consideration is rather slightly variable. In some specimens I have found large, rusty-brown area converging proximal part of the forewing. In pale coloured specimens the thorax is yellow-brownish.

Male genitalia (figs. 6, 7). Valva large with distal part elongate and rounded. In the ventral part of valva are long, spine-like hairs. Saccus rounded, strongly sclerotized. Transtilla with broad, strongly sclerotized central part. The top is pointed. Socii long and thin. Aedeagus (fig. 7) broad and short and bent for half of its length. Ventral edge of aedeagus produced.

Female genitalia (fig. 8). Lamella vaginalis large, rather slightly sclerotized, sculptured in its central area. Introitus vaginae rather short, broad and strongly



Figs. 4—8. *Aethes (Lozopera) rubiginea* (WALS.): 4 — head, 5 — forewing, 6 — male genitalia (Tangier, Morocco, ex. 11. VI. 1902, G. Sl. 4037), 7 — aedeagus (G. Sl. 4037), 8 — female genitalia (Tangier, Morocco, 13. V. 1932, Stems *Thapsia* sp., G. Sl. 5390)

sclerotized. Ductus bursae very short. Bursa copulatrix elongate, without sclerites, sculptured in central and distal areas. Gonapophyses anteriores rather short. Gonapophyses posteriores about twice as long as gonapophyses anteriores.

Biology. In material examined I have found specimens bred from *Ferula communis* L. (from Algeria). WALSINGHAM obtained moths from the stems of *Thapsia* sp. (from Morocco). The imago appears in April (several specimens 7—13 April).

Distribution: North Africa (Algeria, Morocco).

*Aethes (Lozopera) deaurana* (PEYERIMHOFF), **comb. nov.**

*Cochylis deaurana* PEYERIMHOFF, 1877, Pet. Nouv. Entom., 2: 101.

*Lozopera deaurana*, REBEL, 1901, Cat. Pal. Lep., 2: 94.

*Lozopera fuscicella* TURATI, 1924, Atti Soc. ital. Sci. nat., 63: 154, pl. 5, fig. 50. **Synon. nov.**

*Lozopera fuscicella* TURATI, l. c.; 155 (ex err.).

*Lozopera mauritanica*, AMSEL in HARTIG & AMSEL, 1951, Fragm. ent., 1: 111, fig. 15.

Labial palpi (fig. 9) longer than in *Ae. rubiginosa* (WALS.); median joint broad, terminal one small, protruding. Head and thorax yellowish, tegulae usually brownish, external sides of palpi yellow-brownish. Costal edge of the forewing (fig. 10) in male rather straight, in female slightly bent. Apex rounded, termen oblique, rather straight. Ground colour yellow or yellowish-rusty, especially in basal and central areas. Basal part of costa brownish or provided with small brown spots. External and internal fascia both well visible, brown-yellowish or brown-rusty, enlarged in costal and dorsal portions of the wing. External fascia sometimes atrophied in its central part. Outer portion of the wing usually paler than central and basal areas, fringes concolorous with them. Hindwing grey-brownish in male, brownish in female, fringes whitish or greyish.

Coloration of the wings is rather constant. In females they are rather darker than in males. Sometimes, male specimens without rusty hue in the forewings. Length of forewing 7—9 mm.

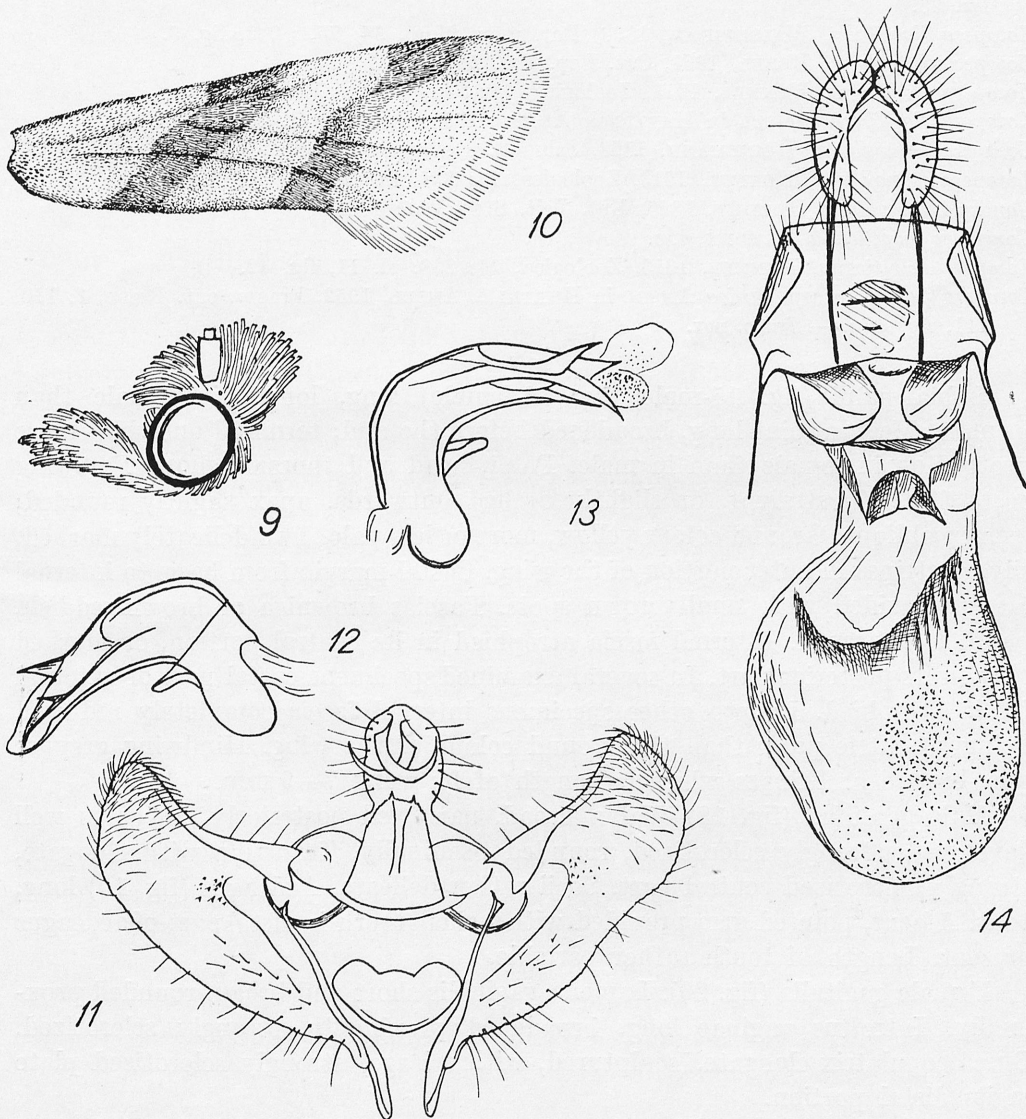
Male genitalia (figs. 11—13). Valva elongate, slightly hairy. In its central portion a group of small spikes. Sacculus faintly marked. Transtilla with a large and elongate central part. The latter with small spikes on top. Socii in relation to those in other species of this group rather broad. Aedeagus (figs. 12, 13) elongate and bent. Ventral edge of aedeagus protruding; its dorsal part about midway from apex armed with a long, pointed process provided with two well developed spikes. The shape of valva rather variable; its ventral edge deforms very easily during preparation. It is rounded or slightly concave for half of its length.

Female genitalia (fig. 14). Lamella vaginalis well developed, broad. Ductus bursae broad; bursa copulatrix rounded, large areas sculptured. Ductus bursae and bursa copulatrix strongly sclerotized in places. Gonapophyses posteriores longer than gonapophyses anteriores.

Biology. The caterpillar lives on *Smyrniun alus-atrum* L. The moth appears in March, April and May (15. III — 9. V.).

Distribution. The species occurs probably throughout Mediterranean Area. So far it is known from southern France (Hyeres), Gibraltar, Yugoslavia (Split in Dalmatia), Algeria and Cyrenaica.

Comments. *Lozopera fuscicella* described in 1924 by TURATI is probably a synonym of the species under consideration. Its description and colour



Figs. 9—14. *Aethes (Lozopera) deaurana* (PEYER.). 9 — head, 10 — forewing, 11 — male genitalia (Gibraltar, ex. 15. IV. 1903, WALSM., G. Sl. 5402), 12 — aedeagus of the same specimen, 13 — aedeagus (El Bial Algiers, Algeria, 23. IV. 1893, EATON, G. Sl. 5398), 14 — female genitalia (Hyères, 2. V., G. Sl. 3848)

photograph agree with specimens of *Ae. deaurana* (PEYER.) from Algeria. Unfortunately I have had no opportunity to study the type of the species in question.

*Aethes (Lozopera) flagellana* (DUPONCHEL), **comb. nov.**

- Argyrolepis flagellana* DUPONCHEL, 1834, Hist. nat. Lép. France, 9: 441, pl. 259, fig. 6.  
*Cochyliis flagellana*, HERRICH-SCHÄFFER, 1851, Syst. Bearb. Schmett. Eur., 4: 182; Suppl., fig. 95.  
*Lozopera flagellana*, WALSINGHAM, 1898, Ent. mon. Mag., 34: 75, pl. 2, fig. 3.  
*Lozopera flagellana*, REBEL, 1901, Cat. Lep. Pal. 2: 94.  
*Lozopera flagellana*, KENNEL, 1913, Zoologica, 21: 238, pl. 11, fig. 42.  
*Lozopera flagellana*, AMSEL in HARTIG & AMSEL, 1951, Fragm. ent. 1: 111, fig. 12.  
*Lozopera francillana*, HEINEMANN, 1863, Schmett. Deutschl., 1: 80.  
*Lozopera francillana*, KENNEL, 1913, Zoologica, 21: 234, fig. 26.  
*Conchyliis eryngiana* HEYDEN, 1865, Ent. Zeit. Stett., 26: 100.  
*Conchyliis helveticana* HEYDEN, l. c.  
*Lozopera helveticana*, KENNEL, 1913, Zoologica, 21: 238, pl. 11, fig. 42.  
*Lozopera flagellana* ssp. *sardoa* AMSEL in HARTIG & AMSEL, 1952, Fragm. ent. Rome, 1: 110, 111, fig. 12a. — **Synon. nov.**

Labial palpi (fig. 15-male, fig. 16-female) long, longer in female than in male. Median joint long, broadened before the end; terminal one thin, more protruding in female than in male. Palpi, head and thorax yellow. Forewing costa (fig. 17) straight, or slightly arched outwards, apex slightly rounded; termen oblique. Ground colour yellow, more or less pale. Two delicately marked, silvery stripes in outer portion of the wing. Costal margin from basis to internal fascia provided with small brown spots. Fascias brownish or brown-reddish, parallel to termen. Internal fascia atrophied in its central portion, or marked only in its posterior part. In several examined specimens costal part of external fascia atrophied. In two other specimens internal fascia completely reduced. Fringes a little paler than the ground colour of the wing. Hindwing grey or grey-brownish. Fringes whitish. Length of forewing 7—9 mm.

Male genitalia (fig. 18). Valva broad, narrowed posteriorly. Sacculus well developed, strongly sclerotized, rounded terminally. Transtilla with elongate, strongly sclerotized central part. Socii rather delicate. Aedeagus (fig. 19) long, bent. A bent, pointed arm provided with a small tooth in distal part of aedeagus present. Length of tooth rather variable.

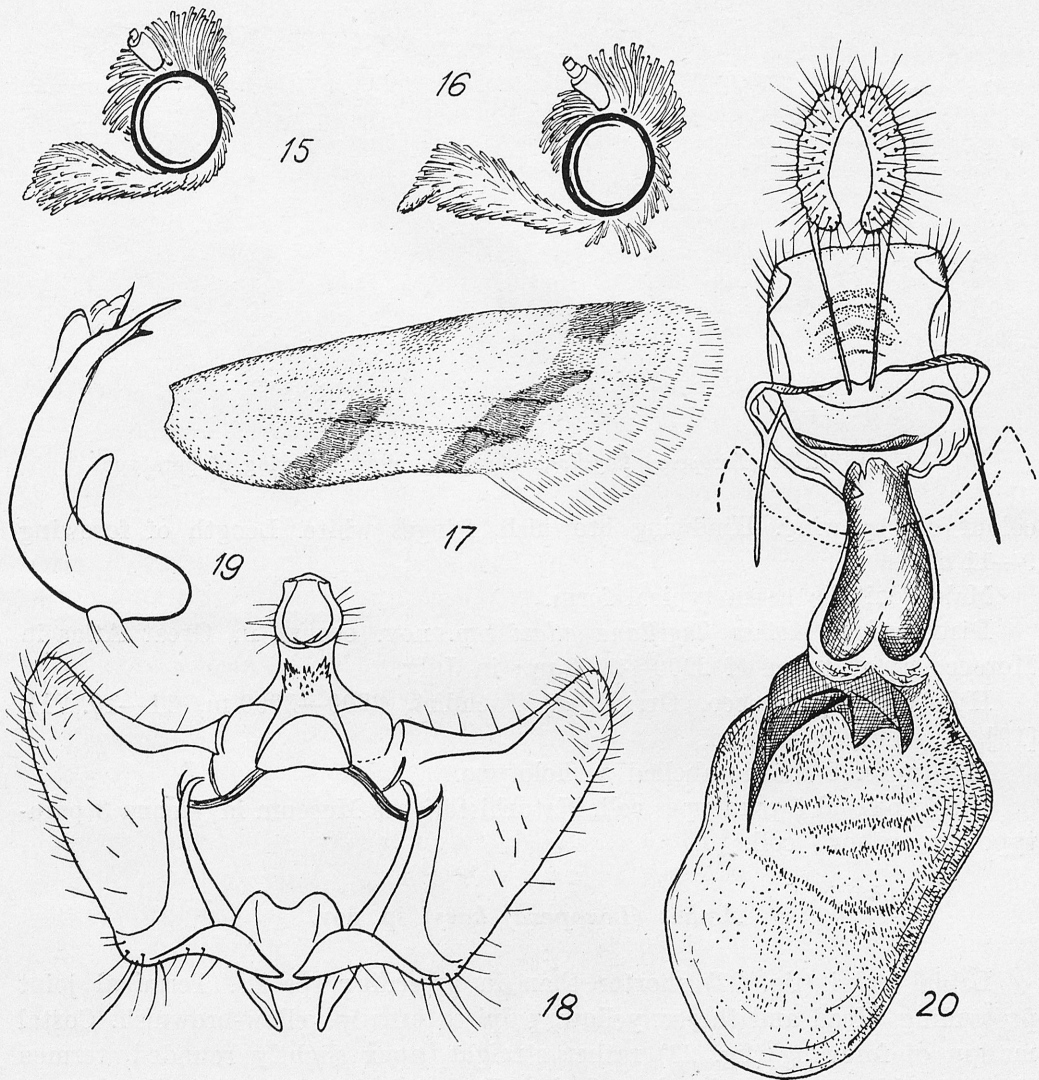
Female genitalia (fig. 20). Lamella vaginalis short and broad, rounded proximally. Introitus vaginae long, broadened proximally, strongly sclerotized. Bursa copulatrix elongate, sculptured, with a large, strongly sclerotized plate in its distal portion.

Biology. Larva brownish-white with darker dorsal line. Head dark-brown, neck-shield brownish. It lives in October and November in leaves and fruits of *Eryngium campestre* L. Hibernation and pupation in stems. The moth appears in June and July.



Distribution: South Europe (from Bilbao to Creta), Central Europe (South Germany, Silesia, Hungary), East Europe (Sarepta), Asia Minor (Ak-chechir), Near East (Becharré, North Lebanon).

Comments. I have investigated type of *Lozopera flagellana sardoa* AMSEL (female) and paratypes (two males). The coloration of forewing agrees with that in other specimens from Europe. I sink this subspecies to a synonym of the species under consideration.



Figs. 15—20. *Aethes (Lozopera) flagellana* (DUP.): 15 — head of male, 16 — head of female, 17 — forewing, 18 — male genitalia (Bilbao, 24. IV., coll. EPPESH, G. Sl. 4390), 19 — aedeagus of the same specimen, 20 — female genitalia (Speir, 25. VII. 1909, *Eryngium*, G. Sl. 4187)

**Ssp. *atlas* ssp. nov.**

Palpi, head, thorax and ground colour of forewing yellow-whitish. Costal margin of forewing (fig. 21) rather straight, apex pointed, termen straight, oblique. Small brownish spots on proximal part of costa. Pattern brownish-grey or grey. Internal fascia only in dorsal portion of wing. External fascia broadened in its dorsal part, atrophied in central portion of the wing. Two to six small brownish spots on termen. Fringes a little paler than the ground

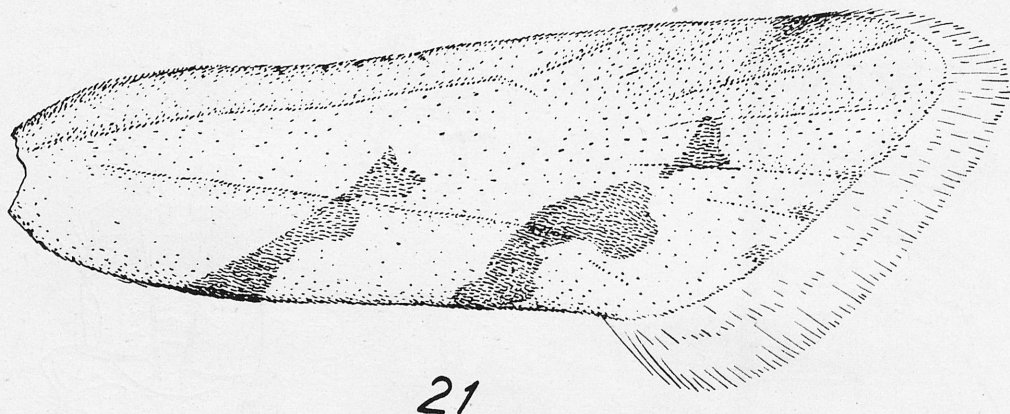


Fig. 21. *Aethes (Lozopera) flagellana atlas* ssp. nov., forewing of paratype

colour of the wing. Hindwing brownish, fringes white. Length of forewing 9—11 mm.

Male genitalia as in typical form.

Distribution. *Aethes flagellana atlas* ssp. nov. occurs in Great Atlas in Morocco at altitudes of 2200—2900 m.; in July.

Holotypus: „Marocco, Gr. Atlas, Tachdirt, 2200—2900 m, 11—19. VII. [19] 33, ZERNY” — male.

Paratypes: 8 males labelled as holotype.

Holotype and 5 paratypes coll. Naturhistorisches Museum in Vienna 3 paratypes in author's coll.

***Aethes (Lozopera) kasyi* sp. nov.**

Labial palpi (fig. 22) shorter than in preceding species. Terminal joint protruding. Head and thorax yellow, palpi externally yellow-brownish. Costal margin of forewing (fig. 23) rather straight, apex slightly rounded, termen straight, oblique. Ground colour dark yellow, costal spots and fascias brown-rusty. Fringes paler than the ground colour. Hindwing whitish in basal portion, brownish in remaining area. Fringes white. Length of forewing about 8 mm.

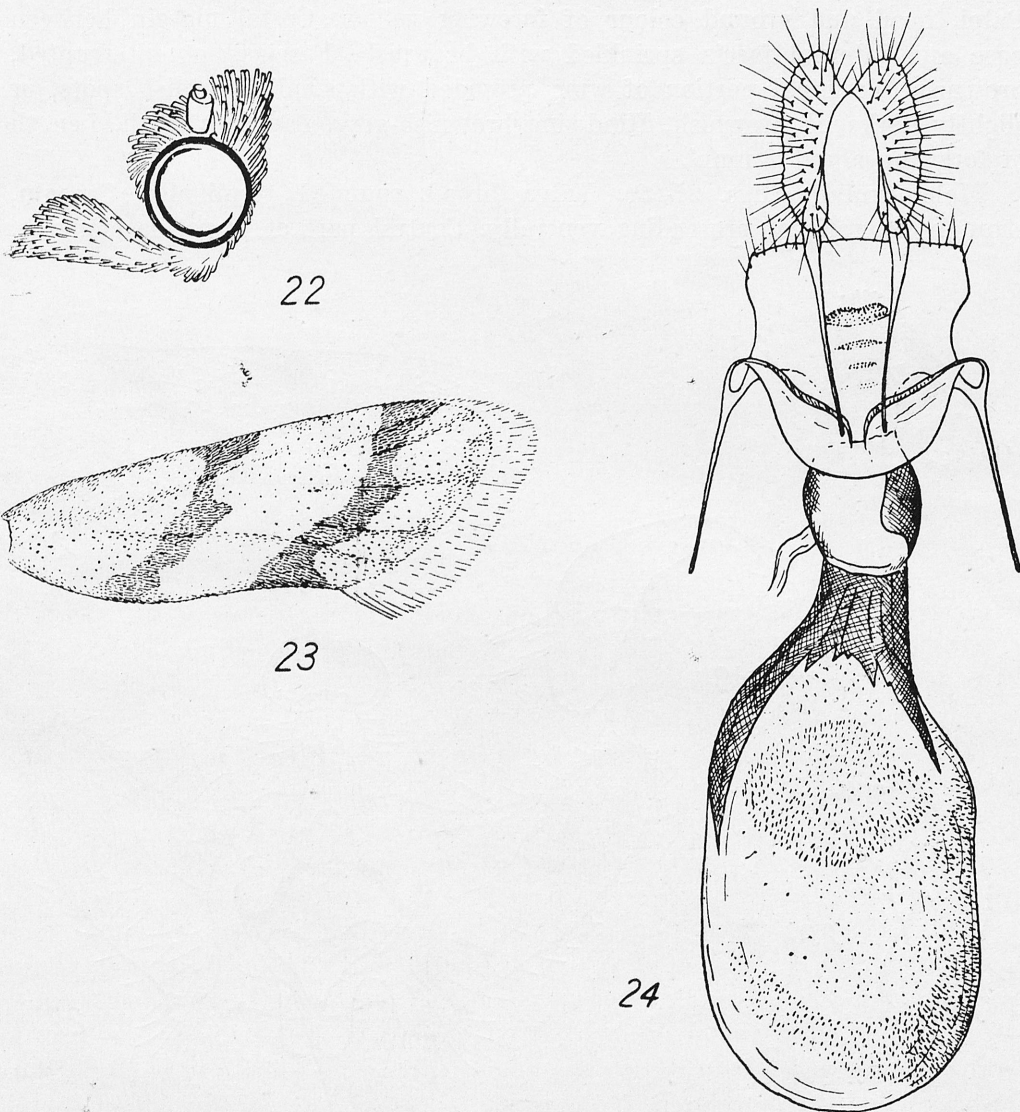
Female genitalia (fig. 24). Lamella vaginalis like that in *Aethes flagellana* (DUP.), however, more convex proximally. Introitus vaginae strongly sclerotized,

half the size of that in *Ae. flagellana* (DUP.). Ductus bursae and distal part of bursa copulatrix strongly sclerotized. Sculpturation of bursa well developed.

The male and biology of this new species are unknown till now. The type material comes from Macedonia (Yugoslavia). The species appears in May and June.

Holotype: „Drenovo bei Kavadar, Maced. oec., 20—30. V. 1957”, G.Sl.: 3717.

Paratypes: two females labelled as holotype (G.Sl: 3715 and 3716) coll. Naturhistorisches Museum in Vienna; one female: „Treskaschlucht W.v. Skopje,



Figs. 22—24. *Aethes (Lozopera) kasyi* sp. nov.: 22 — head, 23 — forewing, 24 — female genitalia (Drenovo bei Kavadar, 20—30. V. 1957, F. KASY, G. Sl. 3717, holotype)

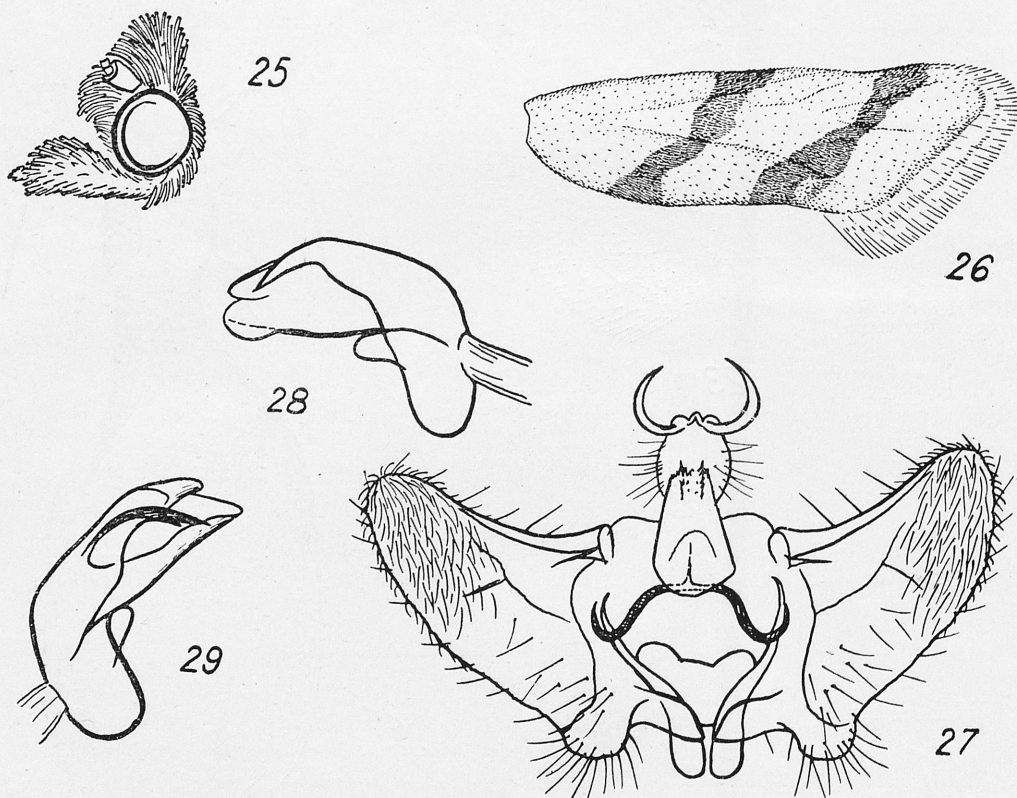
Macedonia, 20.—30. V. 1959, Dr. F. KASY" author's coll., one female „Macedonia, Doiran See, 1.—20. VI. 55", coll. K. BURMANN (Innsbruck).

I name this species in honour of Dr. F. KASY of Vienna.

*Aethes (Lozopera) speciosa* sp. nov.

Labial palpi (fig. 25) rather short, median joint broadened for half its length terminal one small, protruding. Costal margin of forewing (fig. 26) delicately arched in basal part, then straight; apex slightly protruding, termen oblique. Palpi, head and ground colour of forewing yellow. Costal margin between base and internal fascia sprinkled with brownish. Fascias not interrupted, brownish. Terminal portion of wing provided with small brownish spots, or slightly darkened brownish. Hindwing brownish-grey, fringes whitish. Length of forewing about 8 mm.

Male genitalia (figs. 27-29). Valva broad, rounded terminally. Saccu, strongly sclerotized, protruding ventrally. Central part of transtilla elongate,



Figs. 25—29. *Aethes (Lozopera) speciosa* sp. nov.: 25 — head, 26 — forewing, 27 — male genitalia (Taurus, BANG-HAAS, 1905, G. Sl. 3287, holotype), 28 — aedeagus of holotype, 29 — aedeagus of paratype

minutely dentate terminally. Socii of a normal *Lozopera*-shape. Aedeagus (figs. 28, 29) rather short, bent, provided with a pointed dorsal arm.

Female and biology so far unknown.

Holotypus: „Taurus, B.-HAAS, [18] 05", G.Sl. 3287 — coll. Naturhistorisches Museum in Vienna. Paratypes: „Zeitoon", G.Sl. 4128 — coll. Museum National d'Histoire Naturelle in Paris, and „Taurus, B.-HAAS, 05", G.Sl. 3288 in author's coll.

*Aethes (Lozopera) dilucidana* (STEPHENS)

*Lozopera dilucidana* STEPHENS, 1829, Syst. Cat.: 84 (nom. nud.).

?*Lozopera dilucidana*, HERRICH-SCHÄFFER, 1849, Eur. Schmett., 4: 37.

*Lozopera dilucidana* STEPHENS, 1852, List. Brit. Anim. Brit. Mus., 10: 84.

*Lozopera dilucidana*, STANTON, 1859, Manual, 2: 275.

*Lozopera dilucidana*, WILKINSON, 1859, Brit. Tortrs.: 311.

*Cochylis dilucidana*, RAGONOT, 1875, Ent. mon. Mag., 12: 88.

*Lozopera dilucidana*, MEYRICK, 1895, Handbook Brit. Lep., : 545.

*Lozopera dilucidana*, WALSHINGHAM, 1898, Ent. mon. Mag., 34: 76, pl. 2, fig. 6.

*Lozopera dilucidana*, REBEL, 1901, Cat. Pal. Lep., 2: 94.

*Lozopera dilucidana*, KENNEL, 1913, Zoologica, 21: 237, pl. 11, fig. 40.

*Aethes dilucidana*, PIERCE & METCALFE, 1922, Gen. Brit. Tortrs.: 33, pl. 12.

*Lozopera dilucidana*, AMSEL in HARTIG & AMSEL, 1951, Fragm. ent., 1: 111, fig. 17.

*Aethes (Lozopera) dilucidana*, RAZOWSKI, 1960, Pol. Pis. ent., 30: 307.

*Lozopera francillana* var., STEPHENS, 1834, Ill. Brit. Het., Haust., 4: 189.

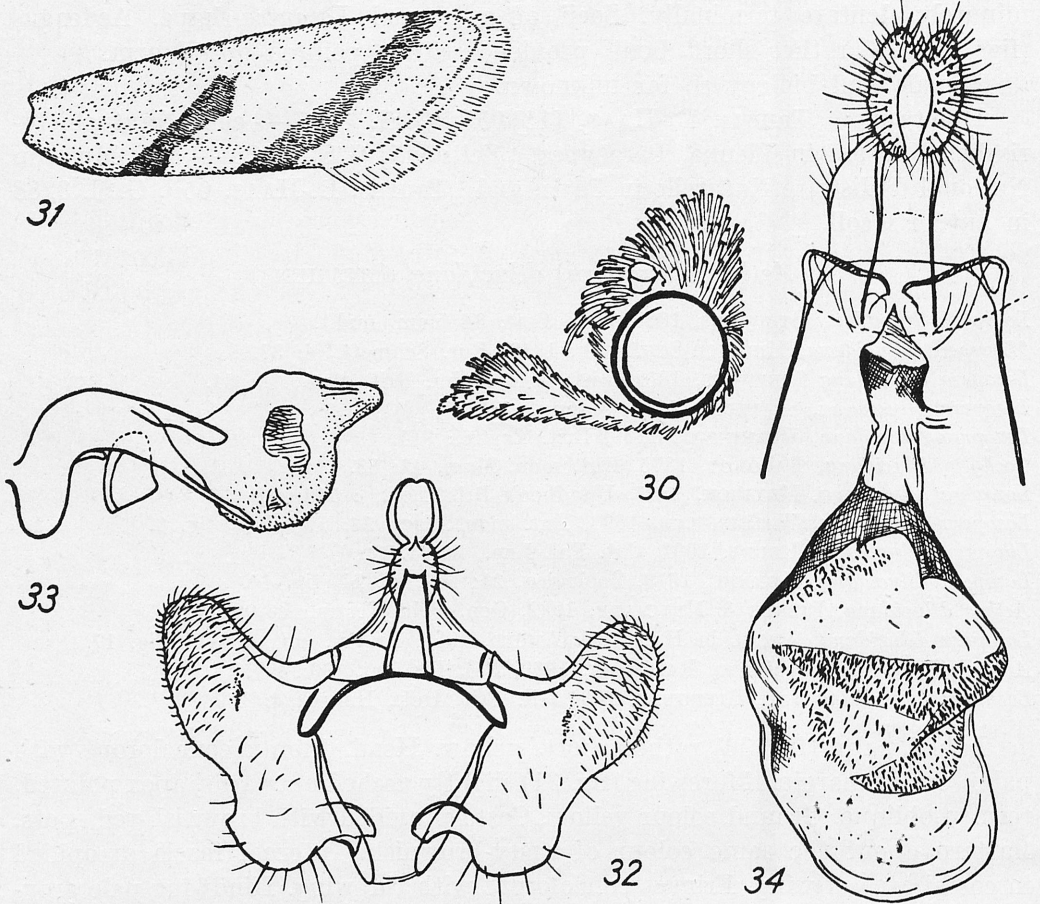
Labial palpi (fig. 30) rather short, yellow. Head, thorax concolorous with palpi. Costal margin of forewing (fig. 31) slightly arched outwards, apex pointed, termen oblique. Ground colour yellow. Costa provided with brownish-red spots. Pattern about the same colour of rusty-brownish. Internal fascia atrophied in costal area of wing. Fringes concolorous with the wing. Hindwing pale grey-brownish; fringes whitish. Length of forewing 7 mm.

Male genitalia (figs. 32, 33). Valva very broad, slightly curved dorsad. Sacculus well sclerotized, rounded. Central part of transtilla rather short, dentate terminally. Aedeagus (fig. 33) slightly bent, uniformly broadened throughout; pointed terminally.

Female genitalia (fig. 34). Lamella vaginalis broad, sculptured in median portion. Ductus bursae rather thin, well sclerotized. Bursa rounded, widely sculptured on peripheries, with a characteristic bilobed, strongly sclerotized plate in its distal portion. Another, more slightly sclerotized area in its central part.

Biology. Body of larva white-yellow, head and two spots on neck-shield black. It lives from August among fruits, afterwards in stems of *Peucedanum sativum* S. WATS., *Pastinaca sativa* L. and *Heracleum sphondylium* L. Hibernation in stems (after WALSHINGHAM and KENNEL).

Distribution. All data on the distribution of *Ae. dilucidana* (STEPH.) are rather uncertain. The specimens reported from South Europe belong to other species, chiefly to *Ae. flagellana* (DUP.). Only the data on this species from England are certain. The moth appears in June and July.



Figs. 30—34. *Aethes (Lozopera) dilucidana* (STEPH.): 30 — head, 31 — forewing, 32 — male genitalia (Merton, Norfolk, 20. V., ex. l., 21. VII. 1860, DURANT, G. Sl. 5407), 33 — aedeagus of the same specimen, 34 — female genitalia (England, 1890, ex. VAUGHAN coll., G. Sl. 5410)

*Aethes (Lozopera) vicinana* (MANN)

*Cochylis vicinana* MANN, 1859, Wien. ent. Monats.: 3: 167.

*Lozopera vicinana*, REBEL, 1901, Cat. Pal. Lep., 2: 94.

*Lozopera vicinana*, KENNEL, 1913, Zoologica, 21: 235, pl. 11, fig. 43.

*Aethes (Lozopera) vicinana*, RAZOWSKI, 1960, Pol. Pis. ent., 30: 307.

*Conchylis unicolor*, BAKER, 1885, Ent. mon. Mag., 21: 268. — *Synon. nov.*

*Lozopera flagellana* ?ab. *unicolor*, REBEL, 1901, Cat. Pal. Lep., 2: 94.

*Lozopera unicolor*, KENNEL, 1913, Zoologica, 21: 238, pl. 11, fig. 44.

Labial palpi (fig. 35) shorter than in preceding species. Terminal joint concealed in hairs of the middle one. Palpi, head and thorax yellowish. Costal margin of forewing (fig. 36) slightly curved outwards in basal part, for three-quarters of its length slightly concave. Tergites oblique, apex rounded. Ground

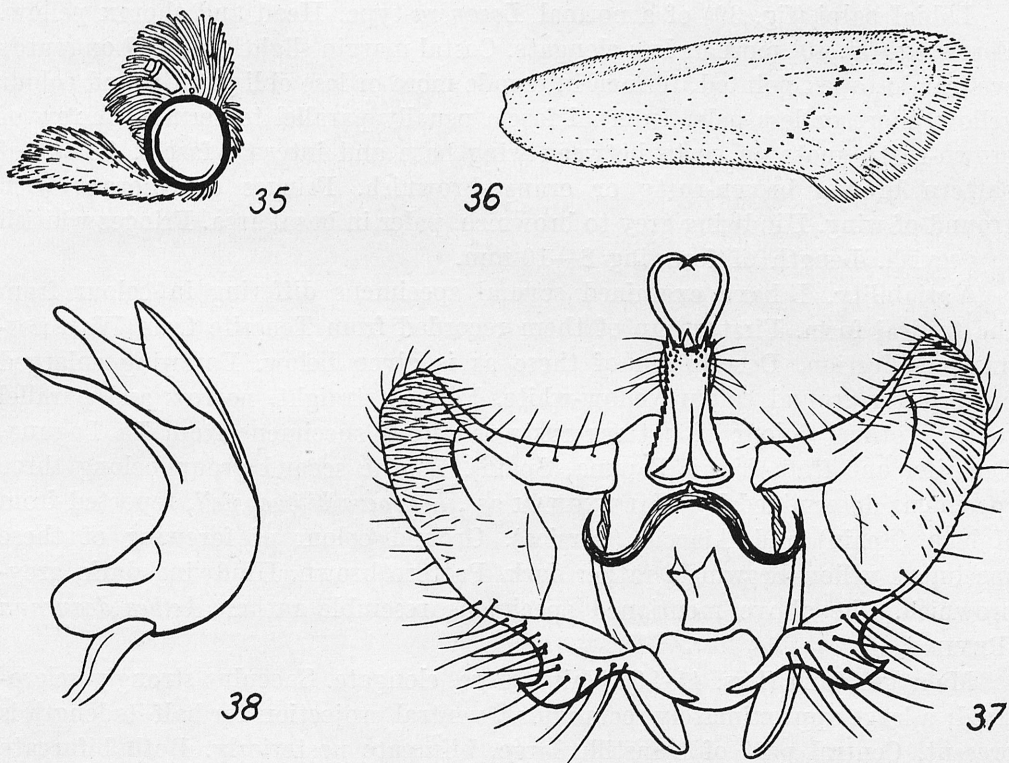
colour of the wing a little paler than thorax, delicately sprinkled with yellow-brownish. Basal portion of costal margin provided with very small brownish spost. Internal fascia completely atrophied, external one only as a row of small brownish spots. Fringes paler than the wing ground. Hindwing white-brownish in its basal portion, brownish in peripheries. Fringes white. Length of forewing 7—8 mm.

Male genitalia (fig. 37, 38). Valva broad; sacculus short, provided with a large ventral projection. The end of this projection bent and pointed. Central part of transtilla elongate, dentate terminally. Socii rather long. Aedeagus (fig. 38) large, bent. One large, flat process and another one slender present in aedeagus.

Female and biology so far unknown.

Distribution: Europe (Sicily), North Africa (Constantine).

Comments. *Conchylis unicolor* BAKER has hitherto been considered by many workers as a good species. However, KENNEL (1913) supposed it to be a unicolorous form of *Aethes flagellana* (DUP.). I have examined types of both *Conchylis unicolor* BAKER and *Cochylis vicinana* MANN and I have found that the genitalia of the two are identical. I hereby sink *Conchylis unicolor* BAKER as a synonym of the species under consideration.



Figs. 35—38. *Aethes (Lozopera) vicinana* (MANN): 35 — head, 36 — forewing, 37 — male genitalia (lectotype of *unicolor* BAKER, Lambèse, Algeria, IV. 1884, G. Sl. 4042), 38 — aedeagus of the same specimen

*Aethes (Lozopera) francillana* (FABRICIUS)

- Pyralis francillana* FABRICIUS, 1794, Ent. syst., 3 (2): 264.  
*Tortrix francillana*, HAWORTH, 1811, Lepidopt. Brit.: 401.  
*Phalaena francillana*, DONOVAN, 1820, Nat. Hist. Ins.; 10, pl. 355, fig. 1.  
*Lozopera francillana*, STEPHENS, 1824, Ill. Het., Haust., 4: 189.  
*Lozopera francillana*, WOOD, 1839, Index Ent.: 169, pl. 37, fig. 1152.  
*Lozopera francillonana* WESTWOOD, 1845, Brit. Moths, 2: 177. Nom. emend.  
*Lozopera francillana*, WILKINSON, 1859, Brit. Tortrs.: 312, pl. 2, fig. 11.  
*Conchylis francillana*, SNELLEN, 1882, Vlind. Nederland, Microlep., 2 (1): 244.  
*Lozopera francillana*, MEYRICK, 1895, Handb. Brit. Lep.: 545.  
*Lozopera francillonana*, WALSINGHAM, 1898, Ent. mon. Mag., 34: 71, pl. 2, fig. 1.  
*Lozopera francillana*, REBEL, 1901, Cat. Pal. Lep., 2: 94.  
*Lozopera francillonana*, CHAPMAN, 1902, Proc. ent. Soc. Lond., 1902: XI.  
*Lozopera francillana*, KENNEL, 1913, Zoologica, 21: 232, pl. 11, fig. 32.  
*Lozopera ferulae*, MÜLLER-RUTZ, 1920, Mitt. ent. Zürich, 5: 337. **Synon. nov.**  
*Aethes francillonana*, PIERCE & METCALFE, 1922, Genit. Brit. Tortrs.: 32, pl. 12.  
*Lozopera francillana*, OBRAZTSOV, 1943, Mitt. münch. ent. Ges., 33: 99.  
*Lozopera francillana*, BENANDER, 1950, Svensk Insektf., 10: 52, fig. 7a.  
*Lozopera francillana*, AMSEL in HARTIG & AMSEL, 1951, Fragm. ent., 1: 111, fig. 13.  
*Aethes (Lozopera) francillana*, RAZOWSKI, 1960, Pol. Pis. ent., 30: 307, figs. 25, 49, 87, 131.

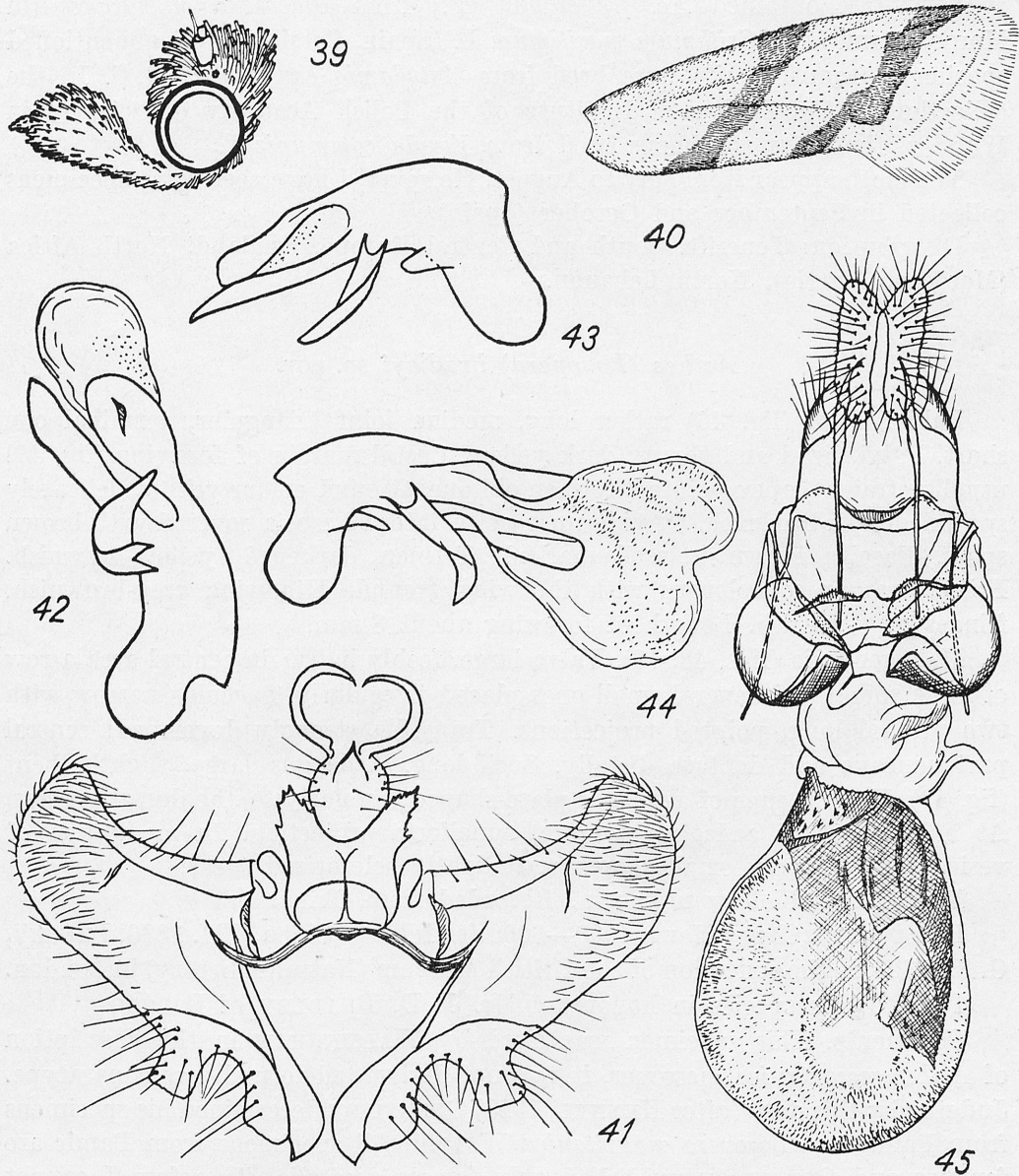
Labial palpi (fig. 39) of a normal *Lozopera*-type. Head and thorax yellow. Forewing (fig. 40) more or less elongate. Costal margin slightly arched outwards or straight, apex pointed, termen in female more or less oblique. Ground colour yellow, more or less pale. Internal fascia usually parallel to termen. A row of brown-rusty spots on costa between wing base and internal fascia. Colour of pattern brown, brown-rusty or orange-brownish. Fringes concolorous with ground of wing. Hindwing grey to brownish, paler in basal area. Fringes whitish to greyish. Length of forewing 8—10 mm.

Variability. I have examined several specimens differing in colour from the typical form. First group of them recorded from Tenerife from WALSINGHAM'S collection. Description of these as is given below. Forewing enlarged posteriorly, ground colour yellow-white. Fascias straight, narrow and parallel to each other. Colour of pattern rusty-red (four specimens from La Laguna, Tenerife, one from Sierra Espuna, Spain). To the second group belong three specimens determined by WALSINGHAM as „*Lozopera bilbaensis*”, reported from Malaga (Spain) and Ajaccio (Corsica). Ground colour of forewing of these specimens yellow-brownish, rather dark. Pattern brown. Hindwing dark, grey-brownish. The above mentioned specimens resemble rather *Aethes deaurana* (PEYER.).

Male genitalia (figs. 41-44). Valva large, elongate. Sacculus strongly sclerotized; a large approximately rectangular, ventral projection for half its length is present. Central part of transtilla large, bifurcate posteriorly. Both bifurcate parts are rather large, dentate. Socii long. Aedeagus (figs. 42-44) large, bent, with a long, pointed process in ventral portion. The shape of this process is variable and alters during preparation.



Female genitalia (fig. 45). Lamella vaginalis large, with two proximal rounded pockets. Ductus bursae membranous, very large. Bursa copulatrix sculptured, rounded proximally. A large sclerite in bursa present. Gonapophyses rather long.



Figs. 39—45. *Aethes (Lozopera) francillana* (F.): 39 — head, 40 — forewing, 41 — male genitalia (Ajaccio, Corsica, ex. 8. X. 1896, WALSINGHAM, G. Sl. 5389), 42 — aedeagus of the same specimen, 43 — aedeagus (Thiers, 22. V. 1957, G. Sl. 5405), 44 — aedeagus (Bajomar, Tenerife, ex. L., 12. VII. 1907, WALSINGHAM, G. Sl. 5404), 45 — female genitalia (Siracus, Sicily, WAGNER, 1-4. V. 1921, G. Sl. 4184)

**Biology.** Body of larva white-yellowish, head dark brown, anal-shield pale brownish. It lives in September in seeds, then in stems of *Eryngium campestre* L., *Daucus* L., *Pastinaca* L. and *Angelica silvestris* L. Hibernation in stems (KENNEL, 1913). In the examined material I have found new data on larval pabula. WALSINGHAM obtained *Ae. francillana* (F.) from *Placoselinum meoides* (in Morocco) and from *Crithmum maritimum* L. (Spain, Corsica). Above mentioned specimens from Tenerife were bred from *Astydamia canariensis* D. C. In the collection of the Zoological Institute of the Polish Academy of Sciences in Warsaw, there are specimens bred from *Ferula communis* L.

The moth appear from May to August. However, I have seen some specimens collected in September and October (Spain).

**Distribution:** Tenerife, South and Central Europe, England, North Africa (Morocco, Algeria), North Lebanon.

***Aethes (Lozopera) bradleyi* sp. nov.**

Labial palpi (fig. 46) rather long, median joint triangular, terminal one short. Palpi, head and thorax dark yellow. Costal margin of forewing (fig. 47) usually straight, apex pointed, termen oblique. Ground colour yellow, delicately sprinkled with brownish. Costa from base to internal fascia covered with brown spots. Fascias brownish, well marked. Termen darkened, yellow-brownish. Fringes rather concolorous with the wing ground. Hindwing grey-brownish, fringes grey-whitish. Length of forewing about 8 mm.

Male genitalia (figs. 48, 49). Valva large, feebly hairy; in central area a row of large spikes and several small ones placed irregularly. Sacculus narrow with two ventral long, pointed projections. Transtilla strongly developed; central part concave and dentate distally. Socii long. Aedeagus large, slightly bent (fig. 49). Ventral edge of aedeagus plate-shaped, similarly to the dorsal process. At half length of aedeagus a large, cuneiform projection. In membrana of vesica a lot of very small spikes and slightly sclerotized areas.

Female and biology unknown. Recorded from China.

Holotypus: „Chang Yang, 4000—6000 ft., Ichang, China, VII. 1886, LEECH”, G. Sl. 5397, in the collection of the British Museum (Natural History) in London.

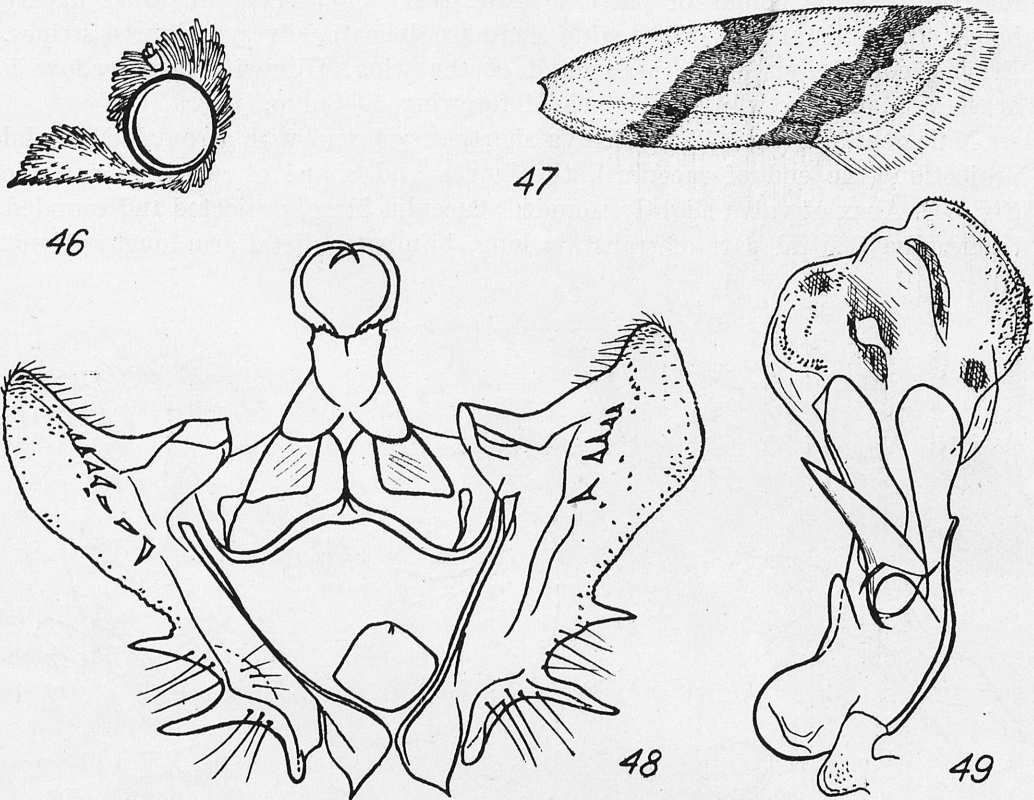
I name this species in honour of Mr. J. D. BRADLEY of London.

Comments. This specimen was cited by WALSINGHAM in the description of *Aethes mauritanica*, however, it was not designated formally as a paratype. Judging by this data (after KENNEL, 1913) OBRAZTSOV determined his specimens from Pamir as „*Lozopera mauritanica* WALS.”. All specimens from Pamir are females and OBRAZTSOV published only female genitalia. Therefore I cannot compare these with species under consideration. Remarks on OBRAZTSOV's specimens as given below.

Spec.?

*Lozopera mauritanica* OBRAZTSOV (NON WALSINGHAM), 1948, Mitt. münch. ent. Ges., 33: 99, fig. 11 (right).

Characteristics of female genitalia according to OBRAZTSOV'S figure: lamella vaginalis narrow, linked with membrana to introitus vaginae. Introitus long [as in *Ae. dilucidana* (STEPH.)], rounded proximally. Bursa elongate, in some places sculptured. In its distal portion there is a narrow, strongly sclerotized area.



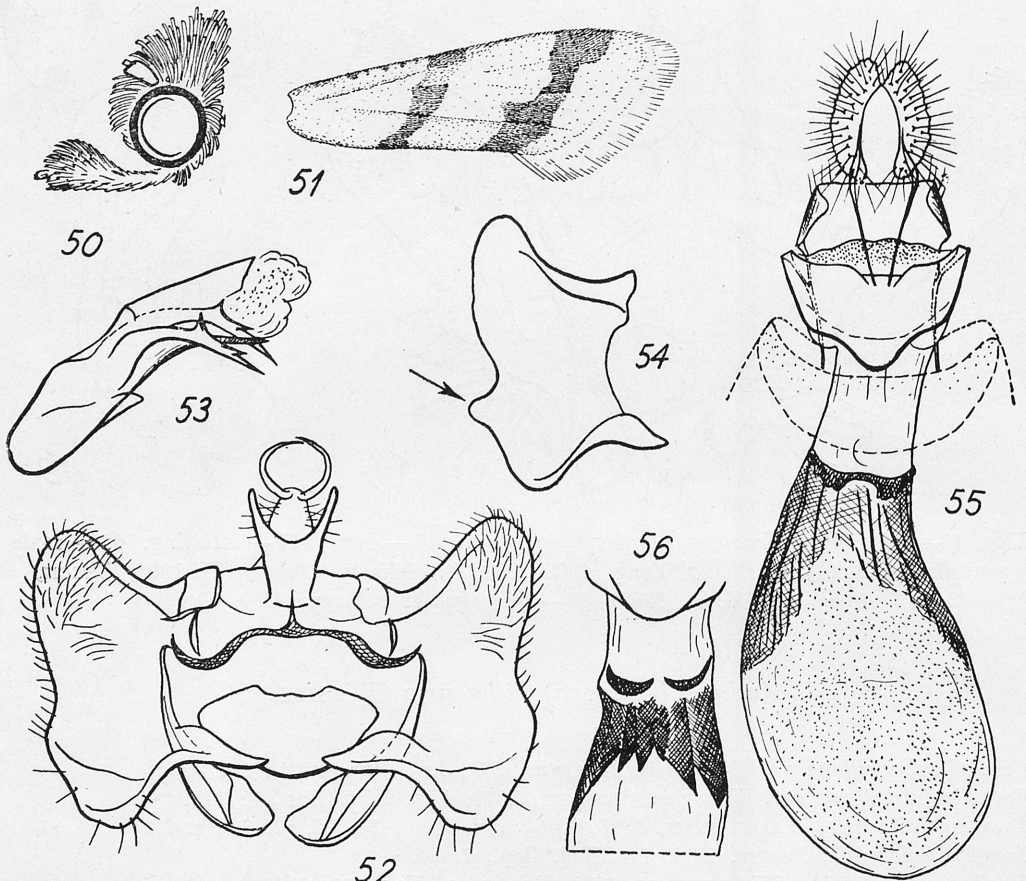
Figs. 46—49. *Aethes (Lozopera) bradleyi* sp. nov.: 46 — head, 47 — forewing, 48 — male genitalia of holotype (Chang Yang, 4000—6000 ft., Ichang, China, VII. 1886, LEECH, G. Sl. 5397), 49 — aedeagus of holotype

***Aethes (Lozopera) bilbaensis* (RÖSSLER)**

- Conchylis francillana* var. *bilbaensis* RÖSSLER, 1877, Ent. Ztg. Stett., **38**: 372.  
*Cochylis francillana* var. *bilbaensis*, SEEBOLD, 1879, Esp. Hist. Nat., **8**: 119.  
*Lozopera bilbaensis*, WALSINGHAM, 1898, Ent. mon. Mag., **34**: 72, pl. 2, fig. 2.  
*Lozopera bilbaensis*, REBEL, 1901, Cat. Pal. Lep., **2**: 94.  
*Phalonia loxopteroides* WALSINGHAM, 1903, Ent. mon. Mag., **39**: 184. **Synon. nov.**  
*Lozopera mediterranea* REBEL, 1906, Berl. ent. Z., **50**: 302.  
*Lozopera bilbaensis*, KENNEL, 1913, Zoologica, **21**: 235, pl. 11, fig. 33.  
*Lozopera bilbaensis*, AMSEL in HARTIG & AMSEL, 1952, Fragm. ent. Rome, **1**: 69, 111, fig. 16.  
*Aethes mediterranea*, RAZOWSKI, 1961, Zschr. wien. ent. Ges., **46**: 27 (as a **synon. of** *Ae. bilbaensis* (RÖSSL.)).

Lábial palpi (fig. 50) rather short, median joint broadened distally, terminal one very small. Palpi, head and thorax yellowish. Forewing narrow (fig. 51). Costal margin rather straight (or delicately arched outwards), apex pointed, termen oblique. Ground colour yellow, more or less pale. Costa between base and internal fascia brownish sprinkled. Fascias broad, internal sometimes interrupted. The colour of pattern brown-rusty or rusty, sometimes darkly bordered. In distal area of the wing there are delicate, silvery coloured stripes. Fringes concolorous with the ground of the wing. Hindwing grey-yellowish or greyish, fringes whitish. Length of forewing 5—7 mm.

Male genitalia (figs. 52-54). Valva short, very broad with a rounded, caudal projection (the end of sacculus), the length and shape of which is variable (fig. 54). Apex of valva slightly rounded. Sacculus large, projected and rounded terminally. Central part of transtilla long, bifurcate; distal arm long, without



Figs. 50—56. *Aethes (Lozopera) bilbaensis* (RÖSSL.): 50 — head, 51 — forewing, 52 — male genitalia (Zengg, DOBIASCH, 8. VI. 1914, G. Sl. 4392), 53 — aedeagus of the same specimen, 54 — valva (Hispania, prov. Madrid, IV. 1924, ESCALERA, G. Sl. 4406), 55 — female genitalia (Moravia, Eisgrub, 21. VII. 1922, G. Sl. 4177), 56 — a part of ductus bursae (type of *Phalonia lozopteroides* WALZ., G. Sl. 4043)

dentation. Socii small and thin. Aedeagus (fig. 53) slightly bent, ventrally projected and pointed. Two lateral slender and pointed arms in central part of aedeagus present.

Female genitalia (fig. 55-56). Lamella vaginalis large, well sclerotized, protruding and rounded proximally. Ductus bursae rather long, membranous. Bursa copulatrix elongate, sculptured. Its distal portion provided with a large, strongly sclerotized area, distal edge of which is very characteristic, bilobate. Gonapophyses rather short.

Biology. Larva so far unknown. The moths appear in May and June. Several specimens collected in September in Sicily probably belong to a second generation.

Distribution. *Aethes bilbaensis* (RÖSSL.) occurs in the Mediterranean area, however, I have seen specimens collected in Hungary (Almadi, Wespem in Central Hungary) and Moravia in Central Europe and in Sarepta in East Europe.

Comments. In 1952 AMSEL synonymized *Lozopera mediterranea* RBL. with species under consideration. In the Magyar Nemzeti Múzeum I have found paratypes of RÖSSLER'S species, genitalia of which agree with genitalia of the type of *Lozopera mediterranea* REBEL. I have examined also the type of *Phalonia loxopteroides* WALS. It is conspecific with *Ae. bilbaensis* (RÖSSL.) and must be sunk as a synonym of the species under consideration.

#### *Aethes (Lozopera) beatricella* (WALSINGHAM)

*Lozopera beatricella* WALSINGHAM, 1898, Ent. mon. Mag., 34: 75, pl. 2, fig. 5.

*Lozopera beatricella*, REBEL, 1901, Cat. Lep. Pal., 2: 94.

*Lozopera beatricella*, KENNEL, 1913, Zoologica, 21: 237, pl. 11, fig. 39.

*Aethes beatricella*, PIERCE & METCALFE, 1922, Genit. Brit. Tortrs.: 32, pl. 12.

? *Lozopera beatricella*, BENANDER, 1950, Svensk Insektf., 10: 52, fig. 7b.

*Lozopera beatricella*, AMSEL in HARTIG & AMSEL, 1951, Fragm. ent. 1: 111, fig. 14.

*Aethes (Lozopera) beatricella*, RAZOWSKI, 1960, Pol. Pis. ent., 30: 307.

Labial palpi (fig. 57) rather short yellowish externally yellow-brownish. Head and thorax yellow. Costal margin of the forewing (fig. 58) slightly arched outwards, apex delicately rounded, termen rather less oblique than in other species of the subgenus *Lozopera* STEPH. Ground colour of the wing yellow or white-yellow, costa between base and internal fascia brownish sprinkled. Pattern brownish, or brown slightly yellowed, usually intensively marked. Fringes concolorous with wing's ground. Hindwing brown-grey in the specimens intensely coloured, grey-brownish in pale ones. Fringes white-grey. Length of forewing about 7 mm.

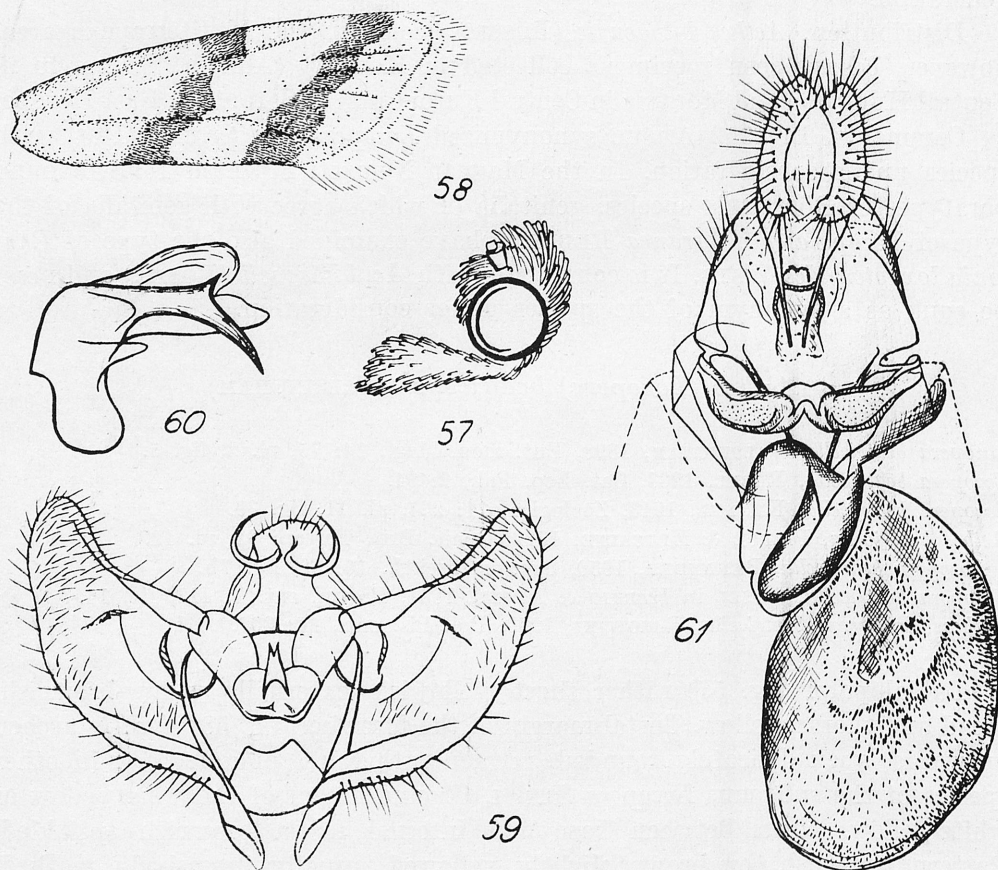
Male genitalia (figs. 59, 60). Valva large, elongate. Saccus rather narrow, without ventral projections. Central part of transtilla rounded, provided with dentate projections (central projection and two lateral). The shape and position of these projections seem variable owing to distortion in preparation. Socii rather thin. Aedeagus (fig. 60) strongly curved, broad basally. Its ventral termination

plate-shaped, narrowing to the end. At about half the length of aedeagus one very large, pointed, dentate lateral process.

Female genitalia (fig. 61). Lamella vaginalis sculptured in central areas of its symmetrical arms. Introitus of complicated shape, strongly sclerotized. Its ventral part elongate, pocket-shaped. Bursa copulatrix ovate, provided with sclerites and sculptures.

Biology. Larva in stems of *Pastinaca sativa* L. Moths appear in June and July.

Distribution. This species heretofore was known only from England (Suffolk, Leiston). In examined material I have found two specimens from Hortobágy (Hungary) and one from Bisina (Bosnia & Herzegovina).



Figs. 57—61. *Aethes (Lozopera) beatricella* (WALS.): 57 — head, 58 — forewing, 59 — male genitalia (Leiston, Suffolk, ex. 1. IV., G. Sl. 4040), 60 — aedeagus of the same specimen, 61 — female genitalia (Leiston, Suffolk, IV. 1880, G. Sl. 5396)

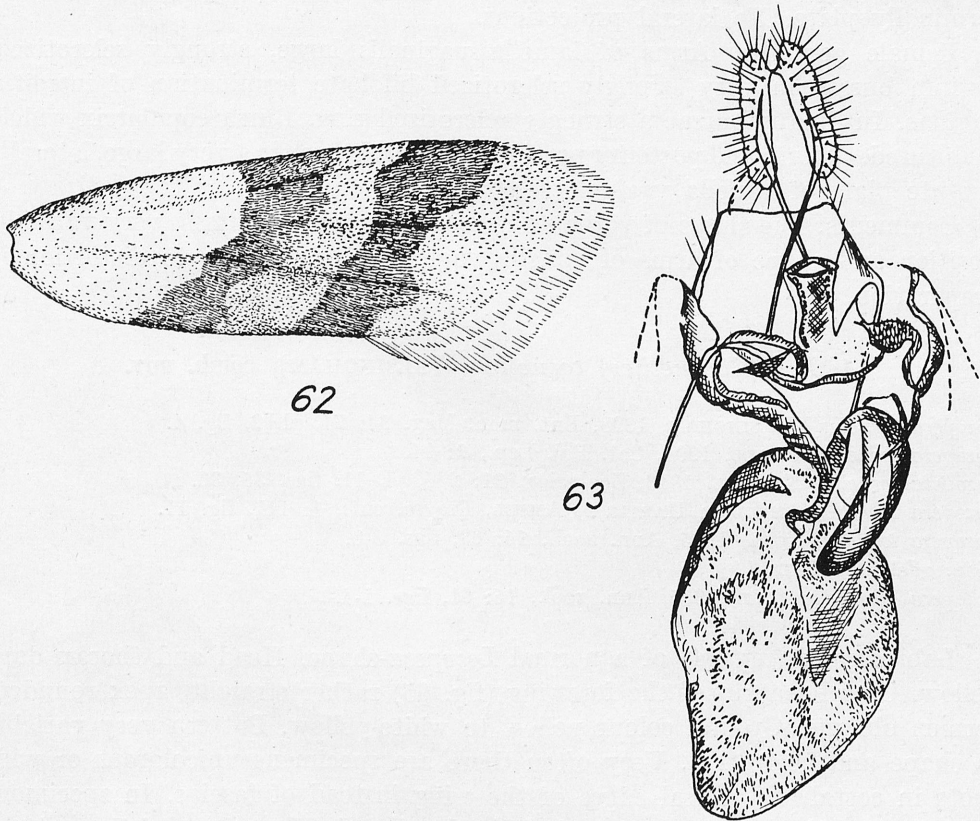
***Aethes (Lozopera) ferruginea* (WALSINGHAM), comb. nov.**

*Lozopera ferruginea* WALSINGHAM, 1900, Ann. Mag. nat. Hist., (7) 6: 444.

*Conchylis ferruginea*, REBEL, 1901, Cat. Pal. Lep., 2: 260.

*Lozopera ferruginea*, KENNEL, 1913, Zoologica, 21: 236, pl. 11, fig. 38.

Labial palpi, head and thorax yellow, tegulae brownish. Costal margin of the forewing (fig. 62) slightly arched outwards, apex rounded, termen like those in preceding species. Ground colour in antemedian portion of the wing pale yellow, in its outer area yellow. Ground colour between fascias yellow-brown with golden hue. Fascias large; external fascia larger than internal one. Pattern brown-rusty, sprinkled with brownish on base of costa. Fringes yellow. Hindwing brownish, fringes a little paler. Length of forewing about 11 mm.



Figs. 62—63. *Aethes (Lozopera) ferruginea* (WALS.): 62 — forewing, 63 — female genitalia (Haleb, G. Sl. 5931, holotype)

Female genitalia (fig. 63) very similar to those in preceding species, but gonapophyses posteriores in species under consideration are longer than in *Aethes beatricella* (WALS.).

Recorded from Haleb.

Comments. The genitalia of this and the previous species are only with difficulty distinguishable but the coloration of the wings is very different. In *Ae. beatricella* (WALS.) the ground colour of the forewing at most dark yellow, without brownish hue. In species under consideration the brown-rusty hue is strongly developed. *Ae. ferruginea* (WALS.) is rather similar to *Ae. deaurana* (PEYER.).

**Subgenus: *Cirriaethes* nom. nov.**

Typus subgeneris: *Lozopera mauritanica* WALS.

Basal part of valva in male genitalia broad, posterior portion more or less elongate, bisectad by a row of spines. Sacculus large, rounded terminally, without ventral processes. In its terminal portion it bears numerous spines like long hairs. Aedeagus ventrally protruding and pointed with dorsal, rounded terminally plate. No lateral projections.

Female genitalia. Arms of lamella vaginalis large, strongly sclerotized. Ostium bursae in very strongly sclerotized bilobate termination of introitus vaginae. In ductus bursae a strongly sclerotized ring. Bursa copulatrix widely sculptured. Ostium and posterior portion of ductus bursae in a very large, laterally dentate plate of lamella vaginalis.

Comments. The shape of valva and sacculus in male genitalia very variable. Position and shape of arms of lamella vaginalis differ owing to distortion in preparation.

***Aethes (Cirriaethes) tornella* (WALSINGHAM), comb. nov.**

*Lozopera tornella* WALSINGHAM, 1898, Ent. mon. Mag. **34**: 74, pl. 2, fig. 4.

*Lozopera tornella*, REBEL, 1901, Cat. Pal. Lep., **2**: 94.

*Lozopera tornella*, KENNEL, 1913, Zoologica, **21**: 235, pl. 11, figs. 35, 36.

*Lozopera tornella*, AMSEL in HARTIG & AMSEL, Fragm. ent., **1**: 111, fig. 11.

*Lozopera tornella*, TOLL, 1955, Ann. zool., **16**: 63, figs. 5-8.

?Sp. *adelaidae* TOLL

*Lozopera adelaidae* TOLL, 1955, Ann. zool., **16**: 61, figs. 1-4.

Labial palpi (fig. 64) of a normal *Lozopera*-shape. Head and thorax dark yellow. Costal margin of the forewing (fig. 65) rather straight, apex rounded, termen oblique. Ground colour yellow to white-yellow. Pattern very variable in shape and coloration. Very often there are specimens unicolorous or with spots in costal and dorsal edges of the wing instead of fascias. In specimens from Southn Europe the pattern is fully developed. The colour of the pattern is brown-yellowish to brownish. Fringes usually concolorous with ground. Hindwing grey to brown-greyish, fringes whitish to grey.

Male genitalia (figs. 67, 68, 70-75). Valva in its basal portion large, narrowed terminally. In upper part of valva a row of spikes. Sacculus large, rounded terminally, provided with spike-like hairs. Central part of transtilla broad, projecting terminally. Socii rather long. Aedeagus (fig. 68) bent, ventrally projecting and pointed.

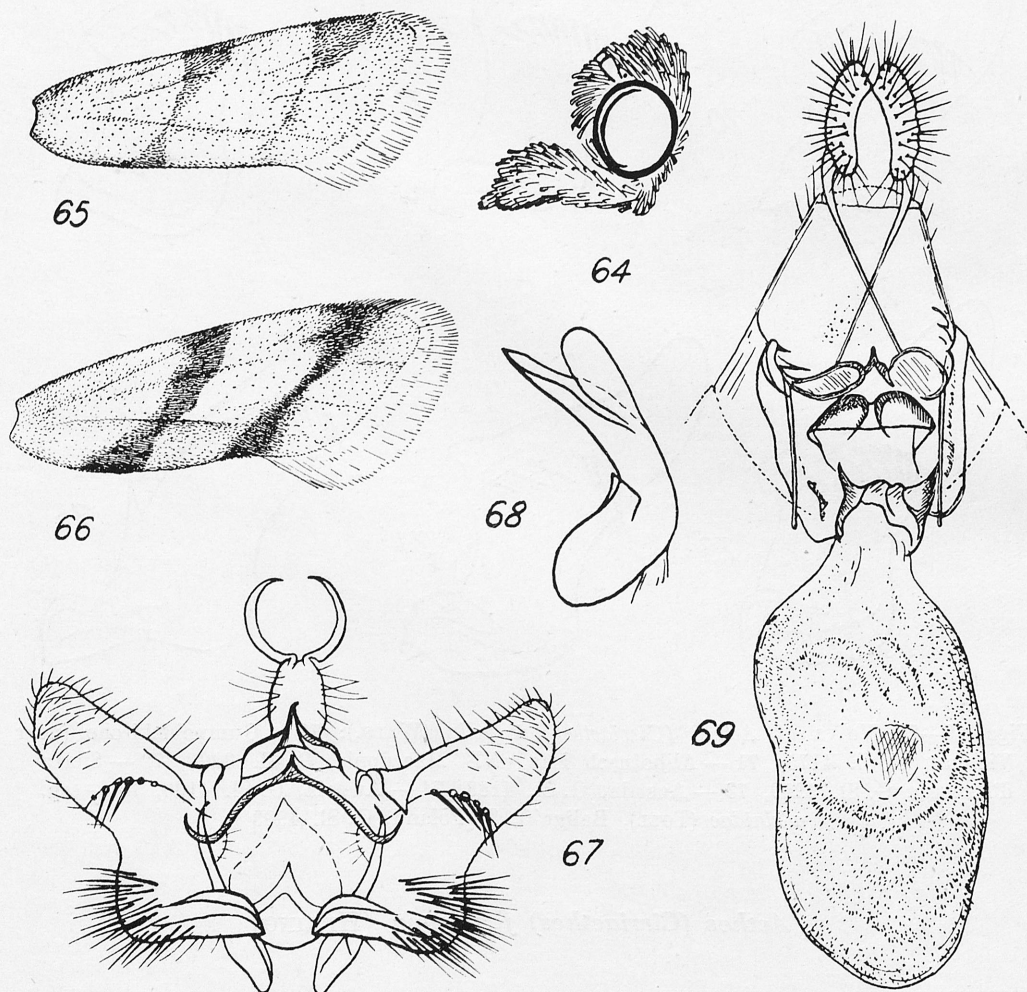
Female genitalia (fig. 69). Arms of lamella vaginalis broad, well sclerotized. Introitus vaginae and plates in ductus bursae strongly sclerotized. Bursa copulatrix elongate, sculptured.

Biology. Larva and food plant unknown. The moths appear in May and June, in Poland in July.



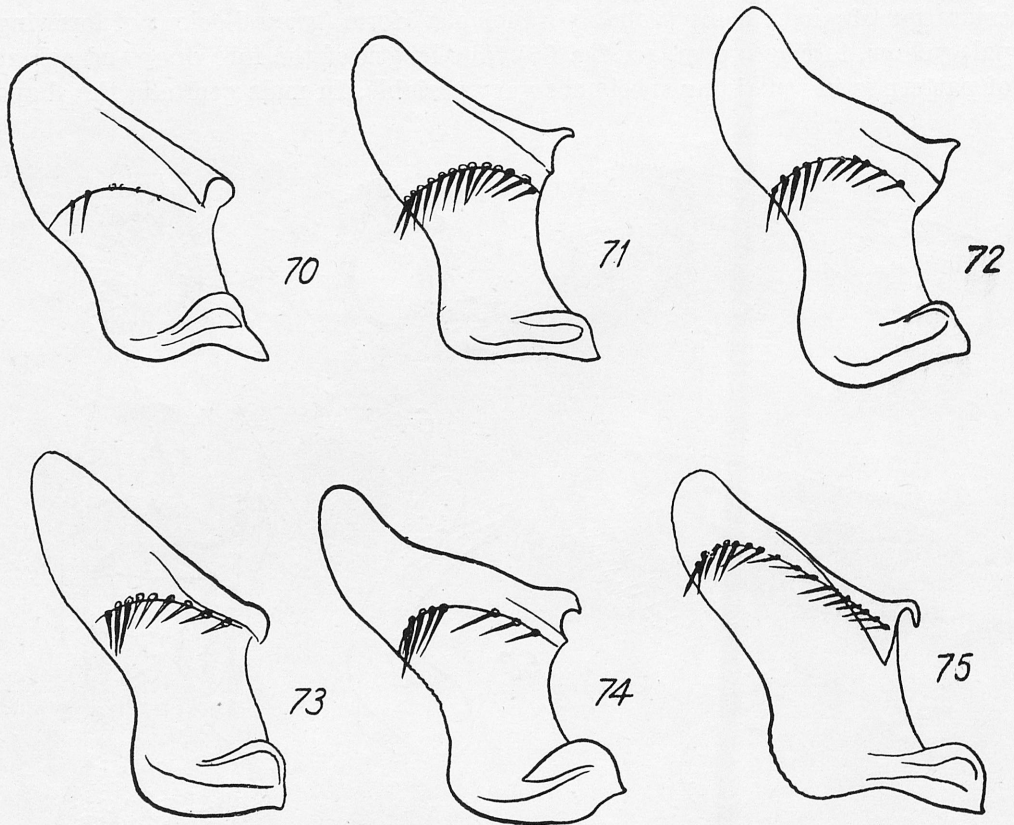
Distribution. This species was described from Corsica. I have examined specimens from Spain, Yugoslavia (Dalmatia, Macedonia, Bosnia & Herzegovina), Austria and Germany. In Asia Minor it is recorded from Brussa. In Poland in many localities cited heretofore as *Lozopera adelaidae* TOLL.

Comments. The problem of this species is obscure, and should be solved on the basis of very extensive material and biological research. It is probably a very variable species. Only „*Lozopera adelaidae* TOLL” has more constant coloration of wings, being probably a biological form (ground colour of forewing pale yellow, fascias brown; see fig. 66). The length of the forewings and colour of pattern is in remaining specimens very variable. In male genitalia the shape



Figs. 64—69. *Aethes (Cirriaethes) tornella* (WALS.): 64 — head, 65 — forewing, 66 — forewing of ssp. *adelaidae* (TOLL), 67 — male genitalia (Corte, Corsica, 17. V. 1896, G. Sl. 4039, lectotype), 68 — aedeagus of the same specimen, 69 — female genitalia (Corte, Corsica, 17. V. 1896, G. Sl. 5400, paratype)

of valva and location of the row of spikes are also variable, however, this row is always bent and rather long. The shape and position of mentioned row of spikes in *Aethes tornella adelaidae* (TOLL) is rather similar to that in *Ae. fennicana* (HER.). Differences in shape of valva of the species under consideration are figured below (figs. 70-75).



Figs. 70—75. Valva of *Aethes* (*Cirriaethes*) *tornella* (WALS.): 70 — Gumpoldskirche (near Vienna), G. Sl. 4175, 71 — Alibotusch Mts., NE Macedonia, G. Sl. 3290, 72 — Sierra d'Espuna, G. Sl. 3289, 73 — Austria, G. Sl. 4188, 74 — Austria, G. Sl. 4190, 75 — ssp. *adelaidae* (TOLL), Baligród, S. Poland, G. Sl. 4903

### *Aethes* (*Cirriaethes*) *fennicana* (HERING)

*Coccyx dilucidana*, WALLENGREN, 1889, Ent. Tidskr., 10: 22.

*Lozopera fennicana* HERING, 1924, Notulae ent., 4: 77, pl. 00, fig. 00.

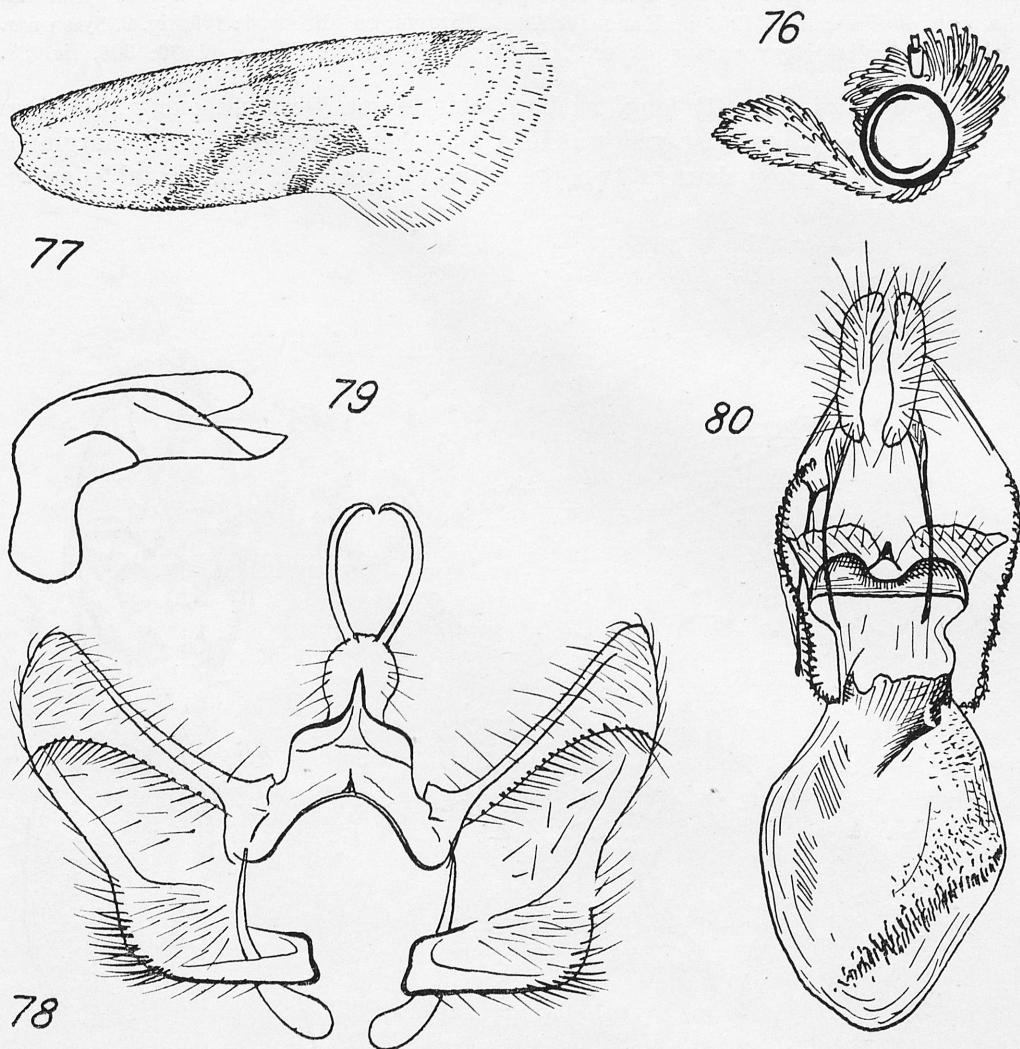
*Lozopera fennicana*, BENANDER, 1950, Svensk Insekth., 10: 52, fig. 7c.

*Lozopera fennicana*, AMSEL in HARTIG & AMSEL, 1951, Fragm. ent. 1: 111, fig. 10.

*Aethes* (*Coccaethes*) *fennicana*, RAZOWSKI, 1960, Pol. Pis. ent. 30: 342, figs. 89, 132.

Labial palpi (fig. 76), head and thorax yellow. Costal margin of the forewing (fig. 77) delicately arched or straight. Apex slightly rounded, termen oblique and convex. Ground colour pale-yellow to yellow. Pattern (two fascias usually interrupted in central area of the wing) brownish-grey to yellowish-grey. Fringes little paler than ground colour of wing. Hindwing grey-brownish or greyish. Length of forewing about 7 mm.

Male genitalia (fig. 78, 79). Valva broad basally, narrowed towards the end. A row of spikes situated in dorsal portion of valva. Transtilla and socii like those in preceding species. Aedeagus (fig. 79) considerably shorter than in *Ae. tornella* (WALS.).



Figs. 76—80. *Aethes (Cirriaethes) fennicana* (HER.): 76 — head, 77 — forewing, 78 — male genitalia (Fennia, Tvärminne, 1931, KANERVA, G. Sl. 4402, 79 — aedeagus of the same specimen, 80 — female genitalia (Fennia, Tvärminne, H. KROGERUS, G. Sl. 4408)

Female genitalia (fig. 80). Introitus vaginae broad, ductus bursae also broad and rather short. Strongly sclerotized plate in ductus goes into bursa copulatrix.

Biology. The moth appears in July and August. Food plant *Angelica* L. Distributed in Finland and Sweden.

*Aethes (Cirriaethes) mauritanica* (WALSINGHAM)

*Lozopera mauritanica* WALSINGHAM, 1898, Ent. mon. Mag., 34: 73.

*Lozopera mauritanica*, REBEL, 1901, Cat. Pal. Lep., 2: 94.

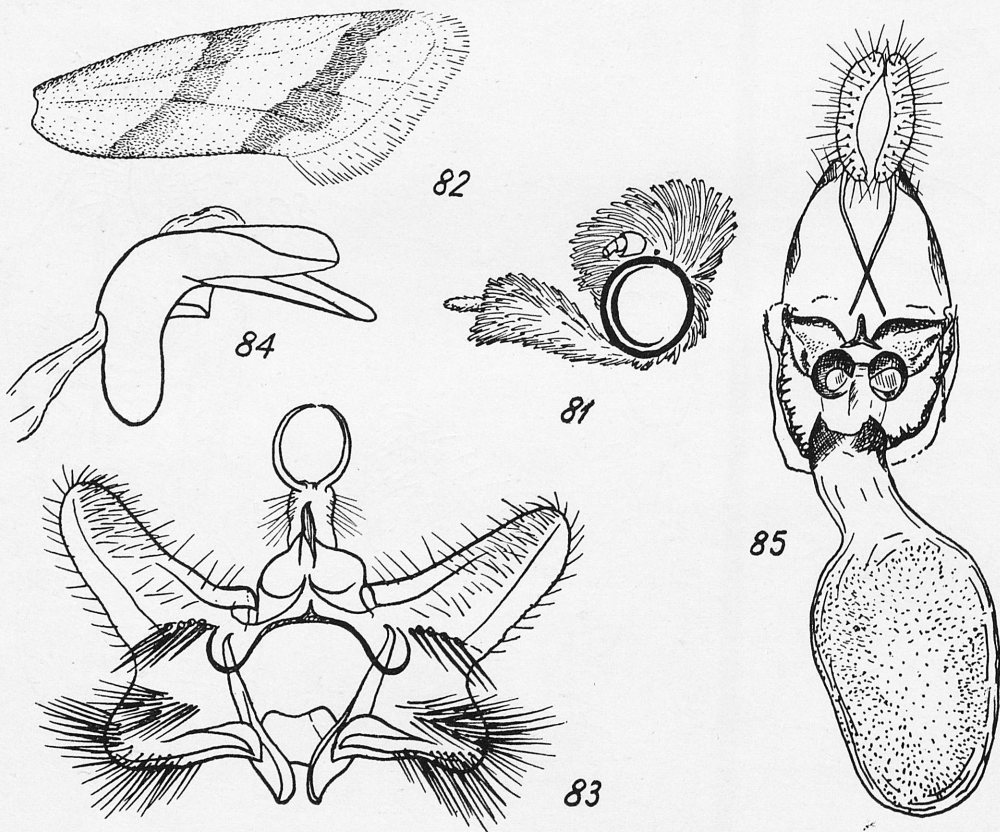
*Lozopera mauritanica*, KENNEL, 1913, Zoologica, 21: 235, pl. 11, fig. 43.

*Lozopera cornelia* TURATI, 1924, Atti Soc. ital. Sci. nat., 63: 155, pl. 6, fig. 1. **Synon nov.**

*Lozopera albella* AMSEL, 1951 in HARTIG & AMSEL, Fragm. ent. Rome, 1: 109, fig. 9. **Synon nov.**

*Aethes (Coecathes) mauretana* [ex err.], RAZOWSKI, 1960, Pol. Pis. ent., 30: 308, fig. 88.

Labial palpi (fig. 81) long, median joint broad, terminal one protruding. Palpi externally brownish-yellow. Head and thorax yellow. Costal margin of the forewing darker than in two preceding species (fig. 82). Costal edge on



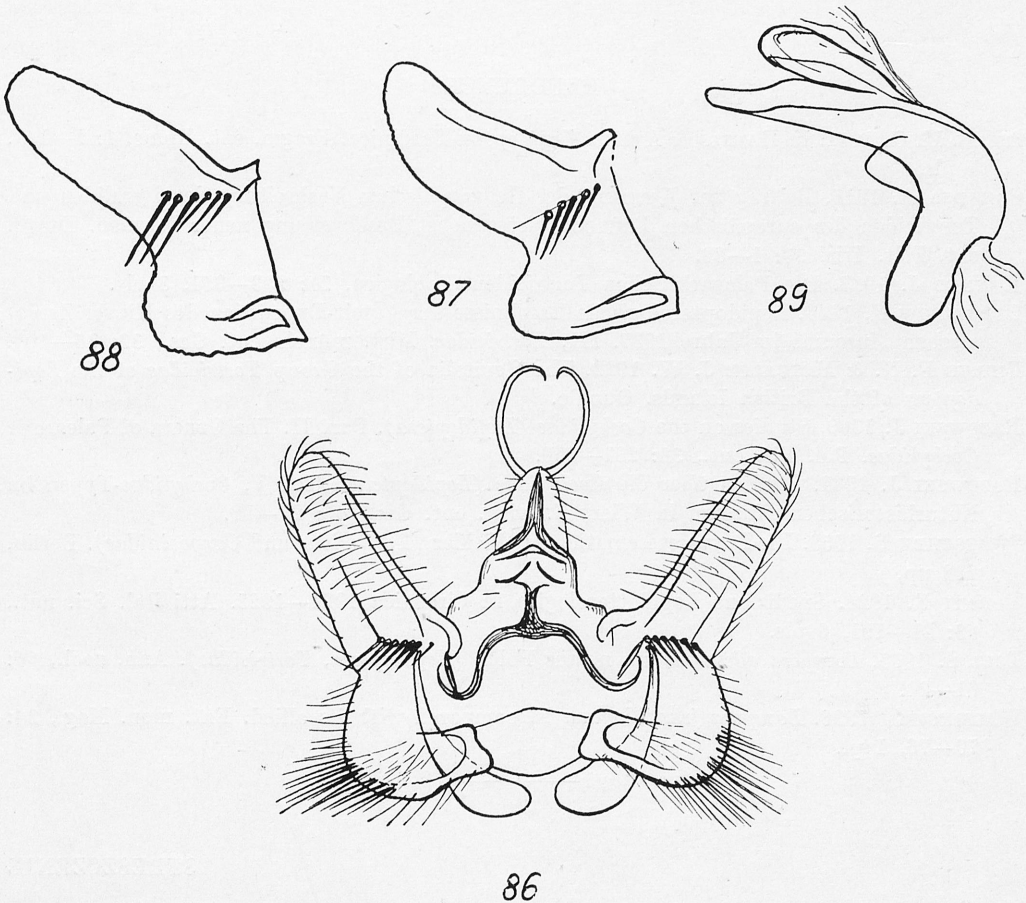
Figs. 81—85. *Aethes (Cirriaethes) mauritanica* (WALS.): 81 — head, 82 — forewing, 83 — male genitalia (Mogador, Morocco, III. 1885, LEECH, G. Sl. 4038, holotype), 84 — aedeagus of holotype, 85 — female genitalia (Grecia, Attica, 1896, KRÜPPER, G. Sl. 4407)

its basal side more or less distinctly marked with brown. Fascias rusty-brown to red-brownish. Fringes a little paler than ground colour. Hindwing grey-brownish, fringes greyish or whitish. Length of forewing 7—8 mm.

Male genitalia (figs. 83, 84). Valva broad basally, elongate terminally. The row of spikes short and straight. Spikes rather long. Saccus shorter than in both preceding species, rounded and protruding terminally. Long hairs on saccus present. Pointed tip of central part of transtilla long. Aedeagus (fig. 84) bent and long.

Female genitalia (fig. 85) similar to those in *Ae. tornella* (WALS.) and *Ae. fennicana* (HER.), however, ductus bursae in relation to the length of bursa is longer than in both mentioned species.

Biology. I have found WALSINGHAM'S note on the label of a specimen from Morocco: „larva on *Placoselinum meoides* in February, ex. 29 April". Other specimens were collected in May and June, type was taken in March.



Figs. 86—89. *Aethes* (*Cirriaethes*) *mauritanica* (WALS.): 86 — valva (Slivno, G. Sl. 4189), 87 — valva of the type of *Lozopera albella* AMS., 88 — male genitalia (Tangier, Morocco, 21. V. 1901, WALSINGHAM, G. Sl. 4396), 89 — aedeagus of the same specimen

Distribution: North Africa (Tangier and Mogador in Morocco), Cyrenaica and Europe (Southern Sardinia, Slivno in Yugoslavia, Attica in Greece).

Comments. Similar to *Aethes tornella* (WALS.) in that the coloration of forewings and shape of valva in male genitalia are rather variable. In the specimen from Tangier (figs. 88, 89) distal part of valva narrow and elongate, sacculus short and rounded. In another specimen (from Slivno; fig. 86) valva is also elongate, however, sacculus is smaller than in specimen from Tangier, rather straight on its ventral edge. I have investigated the type of *Lozopera albella* AMSEL from Sardinia. The shape of valva in this specimen agrees with that in the type of *Ae. mauritanica* (WALS.). I sink *L. albella* AMS. to a synonym of the species under consideration. I am synonymizing also *Lozopera cornelia* TURATI, of which, however, I did not investigate the type. The colour figure in TURATI's work (1924) agrees with a female specimen of *Ae. mauritanica* (WALS.) from Greece.

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#### STRESZCZENIE

Autor omawia wszystkie znane gatunki zaliczane do grupy „*Lozopera*“ umieszczając je w dwu podrodzajach *Lozopera* STEPH. i *Cirriaethes* nom. nov. Jako nowe zostały opisane *Aethes* (*Lozopera*) *kasyi* sp. n. z Jugosławii,

*Ae. (L.) speciosa* sp. n. z Azji Mniejszej, *Ae. (L.) bradleyi* sp. n. z Chin oraz *Ae. (L.) flagellana atlasii* ssp. n. z Maroka. Podrodzaj *Coecaethes* OBR. został zsynonimizowany z *Lozopera* STERN. *Lozopera fuscicella* TUR. okazał się synonimem *Ae. deaurana* (PEYER.), *Conchylis unicolor* BAKER synonimem *Ae. vicinana* (MANN), *Lozopera ferulae* M.-R. synonimem *Ae. francillana* (F.), *Phalonia loxopteroides* WALS. synonimem *Ae. bilbaensis* (RÖSSL.) a *Lozopera cornelia* TUR. i *L. albella* AMS. synonimami *Ae. mauritanica* (WALS.).

## РЕЗЮМЕ

Автором пересмотрены все виды зачисляемые к группе „*Lozopera*“ и отнесены к двум под родам: *Lozopera* СТЕРН. и *Cirriqethes* ном. нов. Как новые описаны *Aethes (Lozopera) kasyi* sp. n. из Югославии, *Ae. (L.) speciosa* sp. n. из Малой Азии, *Ae. (L.) bradleyi* sp. n. из Китая и *Ae. (L.) flagellana atlasii* ssp. n. из Марокка. Подрод *Coecaethes* ОВР. синонимизирован из *Lozopera* СТЕРН. *Lozopera fuscicella* TUR. оказался синонимом *Ae. deaurana* (PEYER.), *Conchylis unicolor* БАКЕР синонимом *Ae. vicinana* (MANN), *Lozopera ferulae* М.-Р. синонимом *Ae. francillana* (F.), *Phalonia loxopteroides* WALC. синонимом *Ae. bilbaensis* (RÖSSL.), а *Lozopera cornelia* TUR. и *L. albella* AMS. синонимами *Ae. mauritanica* WALC.

Redaktor zeszytu: dr S. Bieszyński

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