

TAXONOMIC STUDIES ON THE GENERA
SIDERIDIS HÜBNER, SARAGOSSA STAUDINGER
AND CONISANIA HAMPSON (LEPIDOPTERA,
NOCTUIDAE: HADENINAE)

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(Received 4th March, 1990)

Survey of the *Sideridis* genus-group; the phylogenetic relationships of the genera *Sideridis*, *Conisania*, *Saragossa* and *Heliophobus* are discussed and a new phylogenetic approach of these genera is given. A new genus, *Cornutifera* for *S. simplex*, a new subgenus, *Dianthivora* for *Siderides implexa*, two new species, *Sideridis herczigi* sp. n. (Caucasus) and *C. discestricides* sp. n. (Mongolia); three new subspecies, *Saragossa siccanorum poecilographa* ssp. n. (Iraq), *C. poelli daghestanensis* ssp. n. (Daghestan) and *C. renati meszarosi* ssp. n. (Bulgaria) are described. The taxonomic relationships of the taxa of the *Conisania leineri* group and the taxonomic position of *Saragossa porosa* EVERSMAAN are discussed. *Heliophobus* HÜBNER is downgraded to the subgenus of *Sideridis*, *Trichospolas* DRAUDT is synonymized with *Conisania*. With 105 figures and two photoplates.

Introduction — The higher classification of the family *Noctuidae* was influenced for a long time by the system proposed by HAMPSON. His conception, based often on some features having the phylogenetic value not enough clarified (e.g. hairy or lashed eyes), resulted in a general system in which many, phylogenetically important (mainly synapomorphic) characteristics remained hidden. Therefore it is not surprising, that the systems based either on the larval characteristics (AHOLA 1989; BECK 1960, 1989; MERZHEEVSKAYA 1967) or the anatomy of the genitalia are more or less different from the Hampsonian and their phylogenetic conclusions are partly or merely opposite from the latter one.

In some previous papers (RONKAY & VARGA 1989, 1990) it was stated that the genera, placed formerly into the separate subfamilies *Noctuinae*, *Hadeninae*, *Cuculliinae* and *Amphipyryinae*, possibly being close to the phyletic lines of the earlier phylogenetic divergences, have a unified general configuration of the male genitalia. These genera, beside displaying clearly the process of derivation from the mentioned common basic structure "groundplan"), can be also characterized by numerous common (derived) features as follows:

- the strong sclerotization of the costal margin of the valva which is terminated in an additional clasping process (digitus, in some other works as "clasper");
- the cucullus is wide, spatulate or spoon-like, bearing strong setae (macrotricha) and a well-developed corona;

- the harpe (clasper) is usually reduced to its basal plate, having only supporting role as an apomorphic stage of the originally reversible clasping organ, moved by the muscles of the sacculus;
- the clavus is sclerotized, firmly joined to the fultura inferior and bears specialized setae and sensory hairs;
- the sacculus is sclerotized having strong musculature, the saccular extension is large and strong, often plays the clasping role of the reduced harpe.

Beside these above-mentioned characteristics, a tendency of dyssymmetrization of the digitus, the saccular extension, the clavus (and the harpe) can be found in certain genera, especially in the most apomorphic species and species-groups. This tendency, representing also the development of the lock-and-key system of the genitalia, is an important factor in the increase of the specific variability.

By these arguments, the genus-group of the *Hadeninae*, containing the genera *Saragossa*, *Sideridis* (including *Heliophobus*), *Hada*, the *Mamestra* s.l., *Hyssia*, *Pachetra*, *Haderonia*, *Polia* and *Tricheurois*, forms a monophyletic unit. This suprageneric unit shows strict connections with the *Mythimna-Leucania* complex, and, with the SE Asian (Indo-Malayan and Australo-Malayan) fauna, very probably having a SE Gondwana origin. An important period of their differentiation proceeded in the monsoonic SE Asian mountainous regions (in the ancient 'Kathaysia'), and there were two main possibilities for the expansion into the temperate Palaearctic (and Nearctic) territories. One of them was throughout the arboreal connection with the taiga biome, canalizing the faunal movement from the monsoonic montane forests to the S Siberian montane taiga — boreal and circumpolar taiga (as zonobiomes). The second one was the xeromontane chain from the Himalaya range through the barriers of the Inner and Central Asian high mountains to the eremic and W Palearctic orcal biomes.

The plesiomorphic type of the vesica of these genera is a long, tubular structure with a long distal fascia of spiniform cornuti ('fasciculate cornuti') and a shorter proximal diverticulum bearing a single, thorn-like cornutus. The secondary modifications of this configuration are as follows:

- the reduction of the proximal cornutus (and diverticulum);
- the elongation of the proximal diverticulum, in connection with the change of the cornutus into a bundle of cornuti;
- the differentiation of a sclerotized lamina (sometimes with a tooth-like cornutus) from the carina;
- appearance of a horn-like, sclerotized extension of the carina;
- the transformation of the tubular vesica into a helical or recurved configuration;
- the transformation of the tubular vesica into a T-shaped configuration;
- the presence of a row of large, strong cornuti at the place of the distal fascia.

Beside this genus-group, *Hadeninae* contains some other large genus groups of different evolution (and some small, specialized genera representing different phyletic lines). One of them, by the tubular basic configuration of the vesica, refers to the common phylogenetic roots with the firstly discussed genus-group. It contains externally very different genera as *Lasionycta*, *Eriopy-*

godes, *Monostola*, *Cerapteryx*, *Tholera*, *Niaboma* (= *Manobia*), etc. The second group displays the irradiation from the high montane steppe-zones to the eremic and circumboreal open biomes (*Cardiestra*, *Aglossestra*, *Discestra*, *Cardepia*, *Hadula*, *Thargelia*, *Anarta*, etc.). This genus-group is characterized by the relatively short, usually recurved vesica with one or two long diverticula bearing small cornuti; fasciculate cornuti are absent. The saccular extension is often elongated and asymmetric. An other genus-group has a SE Asian centre of dispersion and is connected to the humid broad-leaved forest areas (the genus *Orthosia* s.l. and its close relatives); this group shows connections with some "Cuculliinae" and "Amphipyrynae" genera. The relationships of these genus groups will be discussed in details in the subsequent papers.

It is important to note that the double abdominal coremata can be found in every major line of *Hadeninae* as a plesiomorphic feature of the triffine *Noctuidae* 'subfamilies' with the exception of *Noctuinae*. The presence of them, therefore, has no phylogenetic significance, but their reduction, as a convergent phenomenon, may appear in several genera. The other, similarly convergent character of many *Hadeninae* groups is the presence of a sclerotized, sometimes extreme prominence of the frons (see BOURSIN 1964, etc.). As this prominence is typical for eremic-xeromontane species of various *Noctuidae* 'subfamilies' (*Euxoa*, *Pachyagrotis*, *Cladocerotis*, *Metopoceras*, *Metalopha*, several quadriffine genera, etc.), it presumably has the function in digging out from the firm, dry soil after hatching from the pupa.

GENERAL CHARACTERIZATION OF THE GENERA *SIDERIDIS*, *SARAGOSSA* AND *CONISANIA*

In the genus group under discussion, by the configuration of the male genitalia, the genera *Sideridis*, *Saragossa* and *Conisania* are very closely related. In her revision SUKHAREVA (1973) considered *Sideridis* and *Conisania* as two subgenera of the same genus. Moreover, she placed a species which we undoubtedly relegated as a member of *Saragossa* (*S. porosa* EVERSMAAN) into that common genus. *Sideridis* is a Holarctic genus, but some related genera occur in the Indo-Australian territory. The species of the genus *Heliophobus* have no distinctive differences as compared with *Sideridis*. Our opinion is similar to the conception of SUKHAREVA who synonymized *Heliophobus* with *Sideridis* (although her result were not accepted by other authors), but we think it would be reasonable to separate it on subgeneric level as a homogeneous, surely monophyletic unit. The recently discovered *S. remmi* is very close to the E Palearctic *S. peculiaris*, this fact was not clearly stated in the original description of *remmi*.

Although the study of the Nearctic species and the survey of the Indo-Australian genera of this genus group is necessary to the revisional work of

Sideridis, two distinct developmental lines are separated here, one of them on generic, the other one on subgeneric level.

The species *simplex* STAUDINGER, placed formerly into the genus *Sideridis* displays a very special configuration of the vesica which reflects to an earlier separation from the main line of *Sideridis*. It has the area most close to the presumable ancient centre of dispersion and some species of the endemic New Zealandian genus *Graphania* HAMPSON (= *Maoria* WARREN) show surprisingly conspicuous similarity to *simplex*. A new, monotypical genus, *Cornutifera* gen. n. is erected here for *simplex*.

The exact phylogenetic relationships of '*Sideridis*' *implexa* HÜBNER (= *Discestra* i.) are dubious, as its taxonomically important features show connections with *Saragossa* and *Sideridis*. The majority of the external features are common with *Saragossa* (except the antenna of the male), since the genitalia of both sexes are also close to *Sideridis*. According to BECK (pers. comm.) the larval features of *implexa* are strictly different from any other European species of this genus group. This species is considered as a specialized line of development and a new subgenus, *Dianthivora* subgen. n. is erected for it in the genus *Saragossa*, tentatively.

The genus *Saragossa* contains only few, strictly Palaearctic and characteristically eremic species. The configuration of the male genitalia is simplified, the digitus short (*incerta*) or reduced (*siccanorum*), in case of *porosa* a bit longer and flattened, the saccular extension simple. The proximal cornutus of the vesica is reduced, remained only in case of *incerta*, the fasciculate cornuti present.

The species of the genus *Conisania* show the most extremely specialized (autapomorphic) features. The vesica in the majority of species is T-shaped, the proximal cornutus may be very large (*lahoulicola*), transformed into a bundle of spiniform cornuti (*renati*, *leineri*-group, *arida*, *suavis* and *discestroides*) or reduced (*capsivora*). The carina often bears a sclerotized lamina which can appear as a more or less strong cornutus. The saccular extensions are asymmetric in the *suavis-discestroides* pair of species; the distal parts of valvae, especially in cases of the E Asian taxa, are strongly modified (*xanthothrix*, *leuconephra*, *roseipicta* etc.).

On the basis of the morphological and zoogeographical features discussed above the genera and subgenera are shortly redescribed as follows:

Sideridis HÜBNER, [1821] 1816

Verz. bekannter Schmett., p. 232.

Type species: *Noctua evidens* HÜBNER, 1808, primary homonym of *Noctua evidens* THUNBERG, 1784. Replacement names: *Leucania evidens* var. *lampra* SCHAWERDA, 1913, validated by KOCAK (1989). *Sideridis anapheles* NYE, 1975, a proposed replacement name for *Sideridis evidens* HÜBNER. (NYE, 1975; POOLE 1989).

Species examined:

Sideridis lampra (SCHAWERDA, 1913)
rosea (HARVEY, 1874)
satanella (ALPHERAKY, 1892)
albicolon (HÜBNER, [1813])
egena (LEDERER, 1853)
demotica (PÜNGELER, 1902)

peculiaris (STAUDINGER, 1888)
remmi KONONENKO, 1982
incommoda (STAUDINGER, 1888)
unica (LEECH, 1889)
unica suavina (DRAUDT, 1950) stat. n.

D i a g n o s i s: Proboscis developed, palpi obliquely porrect, second joint with long hair-scales. Frons with rounded, smooth protuberance, clypeus developed as a prominent, sclerotized crest. Tarsi of forelegs with a series of strong spines, last one often very strong, claw-like. Abdomen strong, males usually have coremata.

Male genitalia (Figs 1—20, 25—28, 49—50): cucullus large, spatulate, covered with strong setae and a well-developed corona. Costal margin angulate, digitus usually short, sometimes more or less spatulate (e.g. *S. egena*), in some species reduced (*S. lampra*, *S. rosea*). Harpe represented by its basal, bar-shaped plate, with the exception of some species. (*S. lampra*, *S. rosea*, *S. satanella*) in which a plesiomorphic claw-like form can be observed. In these species the extension of sacculus less differentiated since more developed and sclerotized in other members of genus (*S. albicolon*, *S. egena*). Clavus poorly differentiated, marked mostly only as a rough, strongly sclerotized and/or sculptured surface with some setae on the inner face of sacculus. Vesica long, tubular; often recurved (*S. satanella*, *S. rosea*, *S. lampra*), helically coiled (*albicolon*). It may have a broad, proximal diverticulum with (*S. remmi*, *S. peculiaris*) or without cornutus (*S. incommoda*, *S. unica*). In some species this proximal diverticulum long, tubular, bearing a second fascia of spine-like cornuti (*S. egena*, *S. satanella*). Distal fascia of cornuti usually well-developed and strong, except in case of *S. satanella*.

Female genitalia: Ovipositor short and weakly sclerotized, ostium bursae wide and strong. Ductus bursae flattened, posterior part usually strongly sclerotized. Cervix bursae large, elongated or curved, adapting to tubular or helicoid structure of vesica. Corpus bursae elliptical, membranous, with large, rounded signa arranged into two or four rows, sometimes reduced to a pair of signa. Sternite VIII with deep, triangular or smaller and rounded incision at ostium bursae; heavily sclerotized and firmly connected with ostium.

Heliophobus BOISDUVAL, 1828

Eur. Lepid. Index Methodicus, p. 69

Type species: *Phalaena saponariae* BORKHAUSEN, 1792 (= *Phalaena reticulata* GOEZE 1782)

S p e c i e s e x a m i n e d :

Sideridis (*Heliophobus*) *reticulata* (GOEZE, 1782)
unicolor (ALPHERAKY, 1889) (?bona sp., see BEHOUNEK 1986)
kitti (SCHAWERDA, 1914)
texturata (ALPHERAKY, 1892)
(= *nepalensis* PLANTE, 1982, syn. n.)

The external and genital structures of *Heliophobus* and *Sideridis* display a great similarity. The differential features (reduction of digitus, less developed harpe, strongly sclerotized extension of sacculus, elongated form of distal fascia of cornuti or its separation into smaller groups of "sclerosetae") can also appear in different groups of *Sideridis*, consequently hardly allow a generic distinction. As *Heliophobus* forms a compact, Transpalaeartic group, it seems to be reasonable to relegate as a subgenus of *Sideridis*.

Cornutifera gen. n.

Type species: *Mamestra simplex* STAUDINGER, 1889, Stettiner ent. Z., 1889: 39 (= *irkutica* SUKHAREVA, syn. n.)

M a l e g e n i t a l i a (Figs 23—24): digitus broad, flattened, harpe plate-like, less developed. Saccular extension strongly sclerotized, upturned, pointed and slightly curved. Carina very strong, thorn-like, vesica tubular and recurved, without any diverticula but with a series (15—20) of very strong cornuti. Abdominal coremata absent.

F e m a l e g e n i t a l i a: ovipositor short and wide, posterior papillae anales rounded, gonapophyses moderately long. Ostium bursae wide and strong, trapezoidal. Ductus bursae flattened, wide, proximally dilated, strongly sclerotized; conjoined to bursa copulatrix with a wide, rugulose zone. Cervix bursae huge, falciform, strongly sclerotized and slightly rugulose. Bursa copulatrix elongated, lower part dilated. Walls of bursa copulatrix membranous, with four rows of rounded, large signa.

Saragossa STAUDINGER, 1900

Dtsch. ent. Z. Iris 13: 109

Type-species: *Saragossa seeboldi* STAUDINGER 1900 l. c. (by monotypy) (= *Onychestra* HAMPSON, 1905, Cat. Lep. Phal. p: 223, type-species: *Mamestra siccanorum* Staudinger, 1870 Berl. ent. Z. 1870: 114).

Species examined:

Saragossa siccanorum (STAUDINGER, 1870)
seeboldi STAUDINGER, 1900
incerta ((STAUDINGER, 1896)
porosa (EVERSMANN, 1854), comb. n.
porosa kenderesiensis (KOVÁCS, 1968)
implexa (HÜBNER, [1909]), comb n.

Diagnosis: Proboscis developed, palpi porrect with an elongated 3. segment, 1—2. joints fringed with hairs; frons with a smooth, rounded prominence and with a sclerotized plate (labrum) below the frons, laterally elongated (“wings”). Antennae (male) very finely pectinated. Tarsi on forelegs very short.

Male genitalia (Figs 31—48): Uncus spatulate; cucullus broad, covered with setae and bordered by a developed corona, harpe plate-like, digitus short or reduced, processus of sacculus not differentiated. Vesica tubular, broad, only with one fascia of cornuti in distal position; sometimes with a tiny, spine-like proximal cornutus. Coremata absent (exception: *S. implexa*).

Female genitalia: ovipositor very short and relatively weak, ostium bursae large, quadrangular, sclerotized. Ductus bursae elongated and flattened, with more sclerotized, longitudinal crests. Cervix bursae large, rugulose, partly heavily sclerotized, corpus bursae membranous, with rounded signa.

TAXONOMIC NOTES

Saragossa porosa (EVERSMANN, 1854)

The species of often discussed and uncertain taxonomic position “*Orthosia*” p., “*Hyssia*” p. auct.) must belong to this genus, based both on its external features and genital configuration. It is an eremic species, distributed from SW-Siberia and Transcaspiia to SE Ukraina with a typical marginal exclave, represented by a well-differentiated subspecies (*S. porosa kenderesiensis* KOVÁCS, 1968) in the saline grasslands of the Pannonian basin.

Dianthivora subg. n.

Type species: *implexa* HÜBNER 1808 Samml. eur. Schmett. 4. (by monotypy)

Diagnosis: male genitalia of *Saragossa*-type (like in *siccanorum* STAUDINGER) (Figs 29—30, 40—48), cucullus very broad with well developed corona digitus very short and flattened; harpe plate-like, narrow, poorly developed; without saccular extension and clavus. Aedoeagus with strongly developed sclerotized and finely dentate carina, vesica with a smaller proximal and with a brush of cornuti. Coremata present. — Female genitalia agrees with that of *Sideridis*.

According to BECK (1989, pers. comm.) the caterpillar is very dissimilar to all European species of this genus-group studied by him.

Conisania HAMPSON, 1905

Cat. lep. Phal. 5.: XIV: 472

Type-species: *Apamea leineri* FREYER, 1836 Neuere Beitr. Schmett. 2: 145, pl. 184/3 (by original designation).

Species examined:

<i>Conisania leineri</i> (FREYER, 1836)	<i>arida</i> (LEDERER, 1855)
<i>leineri pomerana</i> (SCHULZ, 1869)	<i>vidua</i> (STAUDINGER, 1888)
<i>leineri bovina</i> (STAUDINGER, 1888)	<i>egenoides</i> BOURSIN, 1966
<i>poelli</i> STERTZ, 1915	<i>xanthotrix</i> BOURSIN, 1960
<i>poelli ostrogovichi</i> DRAUDT, 1933 bona ssp.	<i>mienshani</i> (DRAUDT, 1950)
<i>poelli daghestanica</i> ssp. n.	<i>roseipicta</i> (DRAUDT, 1950)
<i>albina</i> (STAUDINGER, 1896) bona sp.	<i>leuconephra</i> (DRAUDT, 1950)
<i>arterialis</i> (DRAUDT, 1936) comb n., stat. n.	<i>suavis</i> (STAUDINGER, 1892)
<i>capsivora</i> (DRAUDT, 1933)	<i>discestroides</i> sp. n.
<i>renati</i> (OBERTHÜR, 1890)	<i>lahoulicola</i> HACKER et VARGA, 1990 (in press)
<i>renati meszarosi</i> ssp. n.	

Diagnosis: proboscis developed, palpi obliquely porrect, the 1—2 segments below with long hairs. Frons sclerotized with small rounded prominence. Antennae of males ciliated. Tibiae with spine on outer side, tarsi short with curved claws.

Male genitalia (Figs 51—105): Uncus normal in most species or thick in other ones (*leineri* group), spatulate with stick-like modified setae. Cucullus and corona present in most species, strongly modified or reduced in some eastern or central Asiatic ones (*C. leuconephra* DRAUDT, *C. xanthotrix* BOURSIN.). Digitus short and broad, sometimes (*suavis*-group, *roseipicta*) reduced, or, on the other hand, extremely developed (*leuconephra*, *lahoulicola*). Processus of sacculus usually well-differentiated, sclerotized; with an asymmetric configuration in the *suavis*-group. Clavus firmly unified with sacculus often debate and covered

with setae. Aedoeagus short and stout, carina sclerotized and differentiated in various forms (spine-like: *renati*; with a claw-like big cornutus: *xanthothrix*; dentate and firmly attached to the penis-tube: *capsivora* etc.). Vesica shortened, tubular or saccate, perpendicular to the axis of the aedoeagus, in the most cases with a fascia of cornuti on the tip of a proximal, spacious diverticulum and with an other one in distal position. Coremata absent (no exception is known).

The female genitalia can be characterized by the following general features: ovipositor short and wide, posterior papillae anales usually small and rounded, gonapophyses moderately long. Ostium bursae strongly sclerotized, large, quadrangular or trapezoidal. Ductus bursae flattened and wide, usually moderately long, sometimes (e.g. *capsivora* DRAUDT) long. Both surfaces strongly sclerotized, partly granulosely. Its margins often with stronger bars, sometimes with a membranous-granulose lateral appendage. Ductus bursae conjoined with bursa by a wide and rugulose, sclerotized zone. Size of cervix bursae variable, usually rounded, dorsal surface of its apical part sclerotized and often folded or/and rugulose. (in *capsivora* elongated and pointed, its sclerotization weaker and smooth). Corpus bursae large elliptical, membranous, with large, rounded signa forming two parallel rows; number of them variable, can be reduced to a sole signum or a pair of large signa.

The last sternite, similarly to some groups of *Hadena* SCHRANK, 1802, medially divided into two sclerotized parts, the shape of them is variable, rounded or subtriangular.

A part of the *Conisania* species is arranged into some species-groups, other species seem to be rather isolated, displaying very peculiar, specialized (autapomorphic) structures, e.g. *C. xanthothrix* BOURSIN, *C. capsivora* DRAUDT, *C. leuconephra* DRAUDT, *C. roseipicta* DRAUDT, *C. lahulicola* HACKER et VARGA.

TAXONOMIC REMARKS ON THE *CONISANIA LEINERI* FREYER SPECIES-GROUP

Conisania leineri FREYER was considered as polytypic species displaying intensive subspeciation and the validity of *C. poelli* STERTZ as separate species was an "evergreen" matter for taxonomic discussion for a long time. By the detailed studies of the genitalia of both sexes we could find some small but constant differences between *leineri* (and its races), *poelli*, *albina* and *arterialis*. These differences can be found in the shape and the length-width ratio of the uncus, the shape and size of the digitus and the sclerotized extensions of the carina (Figs 51—82) in the males; the length and sclerotization of ductus bursae and the configuration of cervix bursae in the females. So we cannot accept BOURSIN's opinion (1966: 155—156) that *leineri* and *poelli* are only subspecies of a single polytypic species and HAMPSON's statement considering *albina* as a subspecific unit within *C. leineri* (HAMPSON 1905, l. c. p. 472—473).

In our opinion the species of the *leineri* group represent three lines of development. The different races of *leineri* and the Mongolian *albina* can be undoubtedly derived from a common ancestral taxon and their separation was very probably earlier than the divergence of *leineri* and *poelli*; the species *arterialis* is a possible western relict member of the *albina* line. The significantly smaller differences in the genital features of *leineri* and *poelli* reflect to their relative recent dichotomy. The strong homogeneity of the *poelli* races in their external and genital characteristics is an important — indirect — argument for their specific identity as this fact implies a formerly more widespread taxon having wide contact zone with *leineri*. The recent distribution pattern is very probably the result of the late Glacial and Postglacial faunal movements. The different races of *leineri* inhabit the *Artemisia* steppes of the forest-steppe belt from C Europe to the S Ural region and Turkestan (*pomerana*: Germany; *leineri*: Austria, Moravia, Slovakia, Hungary; *cervina*: S Russia; *furcata*: S Ural; *bovina*: Turkestan). The main habitats of the western populations are sandy grasslands with *Artemisia campestris* but they occur in xerotherm limestone slopes and plateaus, too. The *poelli* races live in xeromontane steppes and rocky grasslands. The nominate *poelli* is typical for the Inner Alpine xerotherm slopes ("inneralpine Trockengebiete"), *ostrogovichi* is close to the Transylvanian 'Érchegeység' since *daghestanensis* is the inhabitant of the xeromontane steppes. The most probable theory for the genesis of their area — by the analysis of the recent areas — is that the races of *poelli* are the results of a more ancient process (possibly 'protocratic' relicts of the last glaciation) since the subspecies of *leineri* are the isolates of a postglacial expansion in a steppe-phase.

***Conisania poelli ostrogovichi* DRAUDT, stat. n.**

C. ostrogovichi DRAUDT was synonymised as species with *C. leineri* FREYER by BOURSIN (1966: 156) with the following comment: "... It may be perhaps separate 'race' (Rasse) on the calcareous area near Cluj (Klausenburg)", but on the next page it was completely synonymised with *C. leineri poelli* STERTZ, 1915. This taxon belongs to the *poelli*-line and displays characteristic differences in the colouration and the wing pattern; its area is completely isolated from all the other described taxa of the *leineri*-group, consequently it can be regarded as a separate subspecies.

Conisania arterialis DRAUDT 1936, comb. n.

(Ent. Rdschau 53: 470)

Trichospolas arterialis as a new species and at the same time a monotypic new genus closely related to *Conisania* (cf. DRAUDT in SEITZ Suppl. III: p. 254) was described based on a pair (male, female) of syntypes, collected in "Daghestan". The types were destroyed during the Second World War in Darmstadt (coll. DRAUDT). In the collection of the ZIN, Leningrad a series of a conspicuous *Conisania* was found with the locality: Petrovsky port (Primorskye peski) near Mahachkala (Daghestan). The study of the male genitalia (slide No. 3436 VARGA) (Figs 51—52) confirmed their basic similarity with *C. leineri* FREYER. The specimens agreed completely with the description and the figure of *T. arterialis* DRAUDT and the locality is possibly also the same. Therefore, the dissected male was designated as the neotype of *Trichospolas arterialis* DRAUDT and at the same time *Conisania arterialis* (DRAUDT, 1936) comb. n. was stated.

Despite of the extremely different external features (reduction of markings, pale arenaceous-yellow ground-colour, a *Mythimna*-like habitus), the genitalia are very similar to those of the other taxa of the *leineri*-group.

DESCRIPTIONS OF NEW SPECIES AND SUBSPECIES

Sideridis herczigi sp. n.

H o l o t y p e: male, "USSR, ChIASSR, Furtoug 1000 m, 12 July 1989, leg. HERCZIG, UHERKOVICH, HORVÁTH, SZOLLÁT, SÁRKÖZI", slide No. 3332 RONKAY. Deposited in Coll. HERCZIG (Tata, Hungary).

D e s c r i p t i o n: wingspan 34 mm, length of forewing 15 mm. Head and thorax light sepia-brown with some ochreous shade, palpi, collar and tegulae marked with dark brown-grey hairs. Forewing an elongated triangle, apex finely pointed. Ground colour light, unicolorous ochreous-grey with some brownish irroration. Wing pattern pale and diffuse, brownish, transverse lines sinuous, double. Orbicular a pale shadow, reniform and claviform stigmata marked with some darker scales. Medial line a diffuse, darker brown stripe, subterminal, line a pale whitish ghost, defined by dark arrowhead-spots on inner side. Hindwing whitish-grey, cellular lunule pale but visible. Veins covered with brown, marginal suffusion narrow, dark brownish. Underside of wing whitish-grey, forewing suffused with brownish. Transverse line a row of dark spots on veins, cellular lunule of hindwing small, rounded.

M a l e g e n i t a l i a (Figs 49—50): uncus long, anterior part slender, distal third dilated, like a head of a snake. Tegumen wide and high, penicular lobes large. Fultura inferior small, deltoidal, vinculum short, strong, V-shaped.

Valvae symmetric, elongated, strongly sclerotized. Sacculus wide, big, clavus a wide, setose plate. Saccular extension heavily sclerotized, large, rounded triangular. Harpe a less strong, narrow bar, costal extension well-developed, strong, finger-like. Cucullus rounded, partly fused with dilated ventral edge of valva, corona forms a setose field. Aedeagus cylindrical, ventral side of carina a sclerotized plate terminated in a short, peaked processus, dorsal lamina longer, granulose. Vesica everted forward, then divided into two arms. Dorsal arm a long, curved sac with a sole spine at its tip, ventral arm very long, tubular, bearing two small bundles of spiniform cornuti sitting on small, rounded diverticula.

Abdominal coremata present, well-developed.

The new species resembles to a very pale, less marked specimen of *Conisania renati meszarosi* or a short-winged *Sideridis egena* LEDERER but the differences in the male genitalia are great. The configuration of the cucullus is an unique feature of *herczigi* in the genus-group, all the related species have well-separated cucullus, connected with the proximal part of the valva with a narrow neck. The saccular extension and the costal processus are somewhat similar to those of *C. egenoides* but are essentially smaller. The differences between *herczigi* and the similar *C. renati* and *S. egena* can be easily recognized by the Figs 9, 11, 83—86.

Saragossa siccanorum poecilographa ssp. n. (Plate I: 6)

Holotype: male, Iraq, SO v. Ruthba 7.10. 1965 in coll. E. VARTIAN (Vienna). — **Paratypes:** 22 males and 14 females with the same data and 27. 10. 1963 from the same place (coll. VARTIAN), 2 males with the same data (coll. VARGA), 1 male, Iraq, Shibchah stone desert, 260 m., 150 km. SW of Najaf, 18. 1. 1979, coll. O. JAKES (Brno), 1 female, Iraq, (without more information) (coll. HNHM).

Slides Nos 996 and 4851 VARGA (males).

The specimens collected in Turkey (cf. HACKER 1985) belong also to the same subspecies (slide 4774 (VARGA).

Head, thorax and forewings deep ochraceous, without dark brownish or greyish colouration. All white markings are very clear, relatively broad and often contrasted with fine blackish-brown margins. Reniform large, whitish; orbicular of the same colour, finely dark bordered and with an ochraceous filling. Claviform short, with dark margin. Antemediane double, serrate, filled with whitish scales. Subterminal slightly arcuate, cilia irrorated. Hindwings pure white, abdomen light greyish-ochraceous.

The male genitalia (Figs 46—48) are of the same configuration as in the nominotypic subspecies (40—42), but the angle of the costa before the cucullus is smaller, narrower.

The new subspecies is a little larger and broader-winged than the nominotypic one and its very irrorate ochraceous-white colouration is also rather con-

spicuous. The new subspecies occurs in salinized oases in desert-like habitats of Iraq and in some alkaline semi-deserts of Inner and SE Anatolia. The nominate subspecies seems to be also halophilous and is widely distributed from S Ukraine through Transcaspia and Turkestan to the W Mongolia (Dzhungarian Gobi). The specimens from the latter territory are little darker and perhaps larger on average than S Russian (Sarepta) and Turkestanian ones (Aksu), but it seems for us as insufficient for a description as distinct subspecies. In the male genitalia we could not find any significant differences (Figs 43—45). The species *Saragossa siccanorum* STAUDINGER is new for the fauna of Mongolia (W Mongolia, Chovd aimak, Bulgan sum, 1300—1400 m, 1986. leg. GYULAI et VARGA; 8 males and 2 females).

***Conisania poelli daghestanensis* ssp. n. (Plate II: 12)**

H o l o t y p e: Daghestan, Chodzai-machi, 29. 6. 1926, leg. RJABOV (coll. ZIN, Leningrad). — **P a r a t y p e s:** 3 males with the same data (ZIN, Leningrad). Slide No. 3395 VARGA.

D i a g n o s i s: head, thorax and forewings light ochraceous brown with whitish-greyish irroration. All markings obsolescent with the exception of the whitish-grey orbicular. Hindwings brownish-grey. The new subspecies seems to be related to *C. poelli poelli* STERTZ. and *C. poelli ostrogovichi* DRAUDT, but more greyish and the darker irroration is essentially stronger than in the former races. The genital structures (Fig. 70) do not differ essentially from those of other *poelli* subspecies (Figs 67—69, 71—74).

***Conisania renati meszarosi* ssp. n. (Plate II: 16)**

H o l o t y p e: male, "Bulgaria, Sofia-Kostinbrod", "1982. V. 30, leg. MÉSZÁROS Z." (coll. HHNM Budapest). — **P a r a t y p e s:** a long series from the same locality, 30. 5—01. 06. 1982, leg. MÉSZÁROS Z. et BALÁSHÁZY L.; 03—09.06. 1990, leg. HERCZIG et SZEŐKE (collections of the collectors, HHNM Budapest, etc.). Slide No. 4317 VARGA.

D e s c r i p t i o n: The new race can be characterized by its unicolorous brown colouration of the forewings, the elements of pattern fine, more or less sharp, blackish-brown. The fillings of the double markings not or only very slightly whitish; the only intensive white part of the wing is the reniform spot. The hindwing whitish with relatively narrow but consistent dark brown-grey marginal suffusion. The external differences between *renati renati* and *renati meszarosi* are surprisingly large, the new subspecies differs from the nominate one by the following features:

- ground colour of forewing unicolorous, light chocolate-brown, without whitish and lighter grey irroration in basal and medial fields;
- transverse lines less sinuous, their filling not or only very poorly whitish;
- claviform spot strong, well-defined, blackish;
- marginal suffusion of hindwing wider and homogeneously dense, dark brown-grey.

In spite of the relatively large and conspicuous differences between the two races in colouration and wing pattern, the configuration of the male genitalia is very similar (Figs 83—86), only some minute differences can be found in the shape of valvae (cucullus, ventral edge) and in the shape and size of the tooth of the carina.

The species displays a strictly disjunct distribution: the nominate race occurs in C Spain and the newly discovered race is represented by a small population in NW Bulgaria. This population inhabits a very dry rocky steppe on a carstic plateau N from Sofia.

The new subspecies is dedicated to the well-known Hungarian lepidopterist, Dr ZOLTÁN MÉSZÁROS, who discovered it.

Conisania discestroides sp. n. (Plate II: 14)

H o l o t y p e: male, "Mongolia, Bayanhongor aimak, Mts. Ih Bogd Uul, 1850 m, valley of Pitut river, 100°13'E 45°00'N, 1987. 07. 24—26, leg. L. PEREGOVITS, M. HREBLAY, T. STÉGER", slide No. 4899 VARGA. — **P a r a t y p e s:** 2 males, Mongolia, Saarga Mout, 20 km NE of Ulaan Baatar, 1400—1500 m, 107°04'E 48°03'N, 17—19. 07. 1987, leg. PEREGOVITS, HREBLAY et STÉGER; 2 males, Mongolia, Central aimak, Tsagaan Davaa, 1400—1600 m, 11—14. 07. 1988, leg. Cs. SZABÓKY. Slide No. 2455 RONKAY.

D e s c r i p t i o n: wingspan 32—36 mm, length of forewing 15—17 mm. Head and thorax light violaceous-grey with some brownish and ochreous hairs, collar and tegulae marked with dark brown stripes at tips. Abdomen greyish-brown, without dorsal crest. Ground colour of forewing light violaceous-grey with fine ochreous-bronze shine; medial field and some parts of marginal area with rosy-brownish shade. Transverse lines dark blackish-brown, double and sinuous, filled with ground colour. Orbicular spot large, slightly flattened and oblique, incompletely encircled with blackish and filled with light ochreous-grey. Reniform elongated, greyish, encircled with blackish-brown, with a dark grey inner annulus. Claviform large, rounded, dark violaceous-brown; median area the with similarly dark violaceous-brownish patch around reniform. Subterminal line whitish, sinuous, forms a large M at veins ml-cu₂; defined by a row of dark brown triangular spots on inner side. Inner part of marginal area nearly unicolours, light violaceous-grey with only fine darker suffusion on veins. Terminal line whitish-ochreous with a row of dark brown arrowheads and triangles. Cilia dark brown, spotted with rosy-whitish. Hindwing light, shiny cupreous-brown with bronze shine, cellular lunule and transverse line diffuse, darker brown. Marginal suffusion wide but not homogeneously dark, terminal line dark brown, cilia shiny rosy-ochreous with interrupted brown medial line. Underside of wings light, shiny ochreous-grey, inner part of forewing suffused with brownish. Cellular lunules and transverse lines conspicuous, wide, dark brown on both wings; cilia as on upper side.

M a l e g e n i t a l i a (Figs 103—105): uncus slender, pointed, tegumen wide and moderately high; penicular lobes narrow but well-discernible. Fultura

inferior consists of two parts: ventral part a small, triangular, medially peaked plate, dorsal part larger, elongated, shield-like with slightly dilated apical part and double medial crest. Vinculum strong, V-shaped. Valvae large and strongly sclerotized; basal part wide and rounded, medially strongly constructed, cucullus more or less triangular. Sacculi asymmetric: right clavus a curved hook with a serrate crest, left clavus much wider and shorter, without serrate part. Saccular extension well-developed on right side, rounded, with a claw-like processus. Posterior part of sacculus on left side a wide lamina without processus. Harpe a flattened bar, ampulla absent. Costal margin with a more or less expressed triangular emergence, conjoined with ventral crest of cucullus. Cucullus without sclerotized apical lamina, corona strong. Aedeagus cylindrical, distally curved. Carina with a sclerotized, roof-like dorsal plate. Vesica everted forward, T-shaped. Dorsal arm long, arcuate, finely granulose, with a small, membranous diverticulum and a bundle of spiniform cornuti apically. Ventral arm recurved, with a flattened, pocket-like diverticulum at base and a narrow field of spiniform cornuti.

The new species is very similar in appearance to *C. suavis* STAUDINGER and *Sideridis unica suavina* (DRAUDT, 1950) (comb. n.). *Discestroides* and *suavis* represent a sibling species-pair and the external differences are slight but visible. The transverse lines of *discestroides* are less sharp and less sinuous, the inner part of marginal area is significantly lighter and more unicolorous. The configuration of the male genitalia displays conspicuous differences between the two taxa as follows (Figs 100—102):

- C. discestroides*: (1) saccular extension with a claw-like, relatively short processus on right side, (2) right clavus of *discestroides* is strong, hooked, with serrate crest, (3) processus of saccular extension reduced on left side, (4) cucullus without sclerotized apical lamina, (5) carina with a strong, roof-like dorsal plate, (6) cornutus at distal end of aedeagus absent.
- C. suavis*: (1) saccular extension with a very strong, bill-like processus on right side, (2) right clavus of *suavis* is small or reduced, without serrate crest, (3) saccular extension has a triangular processus of left side, (4) cucullus with a sclerotized apical lamina, (5) carina without sclerotized dorsal plate, (6) distal end of aedeagus with a conical, peaked cornutus.

The another similar species *S. unica suavina* has a significantly smaller size and shorter wings, the dark pattern usually less sharp. In the configuration of the male genitalia there are essential differences (see Figs 13—18).

The new species has an allopatric distribution with the closest relative, *C. suavis* STAUDINGER, as the former is known only from Mongolia while the latter occurs in the Soviet Far East and Chinese Manchuria. The occurrence of *C. suavis* in other parts of China is dubious, the published data from the Mien Shan Mts. and N Yuennan (DRAUDT 1950) are to be confirmed. On the basis of the significant morphological differences, the two related taxa should be considered, in spite of their allopatric distribution, as two distinct species.

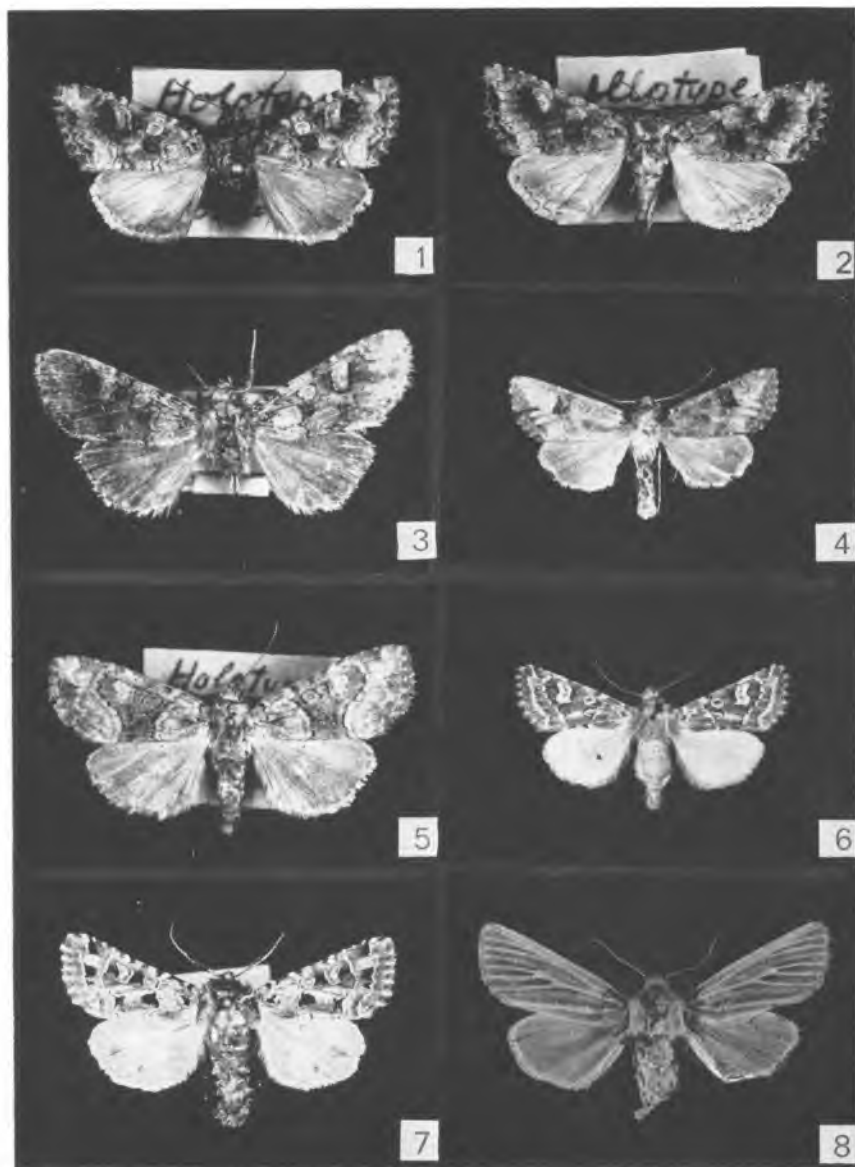
* * *

Acknowledgements — We would like to express our thanks to PROF Dr. H.-J. HANNEMANN and Dr. W. MEY (Berlin), Dr. D. STÜNING (Bonn), Dr. I. L. SUKHAREVA and Dr. V. I. KUZNETSOV (Leningrad), Dr. Z. F. KLYUCHKO and I. KOSTYUK (Kiev), Dr. Z. MÉSZÁROS (Budapest) and Dr. B. HERCZIG (Tata, Hungary) for their kind help. The research was supported by the OTKA Foundation, Budapest.

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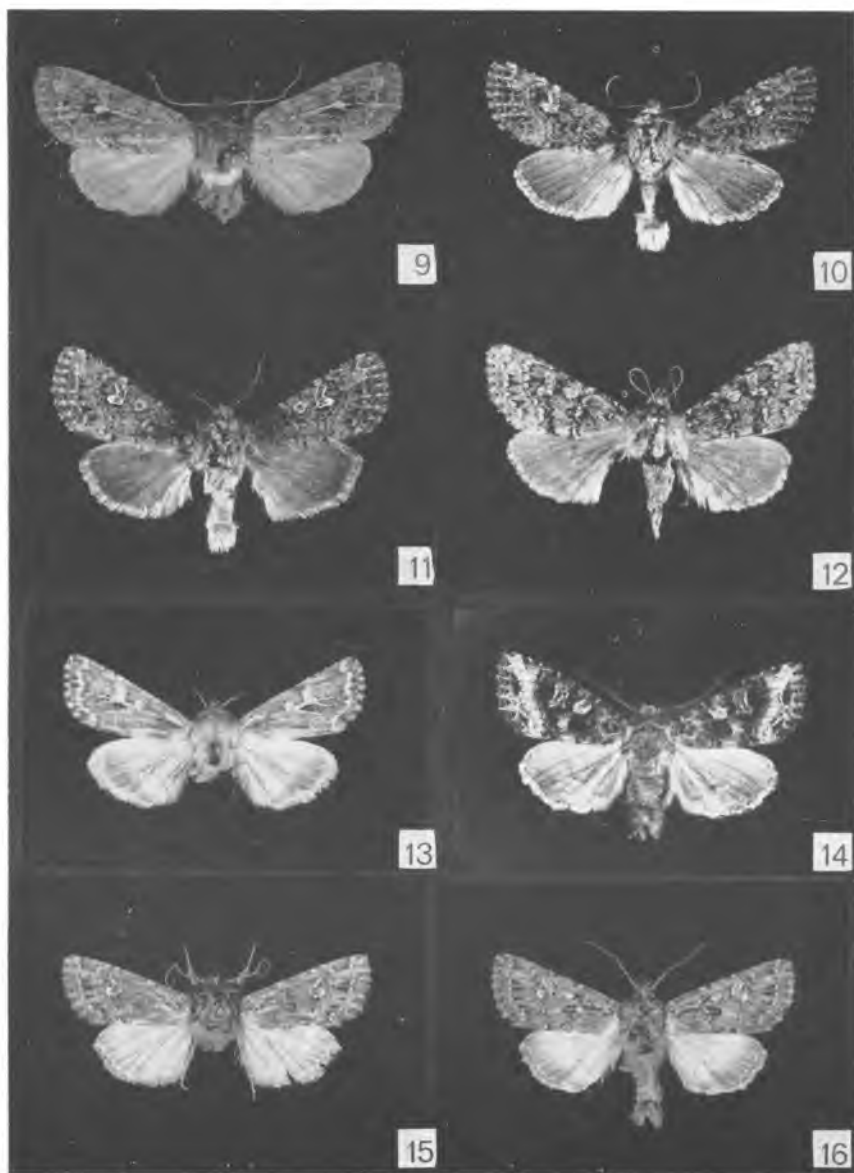
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Plate I



- 1 = *Sideridis unica suavina* DRAUDT: Holotype, China. — 2 = *Sideridis unica suavina* DRAUDT: Allotype, China. — 3 = *Siderides unica* Leech: USSR, Far East. — 4 = *Sideridis satanella* ALPHERAKY: Nepal. — 5 = *Hada abnormis* DRAUDT: Holotype, China. — 6 = *Saragossa siccanorum poecilographa* ssp. n. Paratype, Iraq. — 7 = *Saragossa porosa* EVERSMAHN: Sarepta. — 8 = *Conisania arterialis* Draudt: Neotype, USSR, Daghestan

Plate II



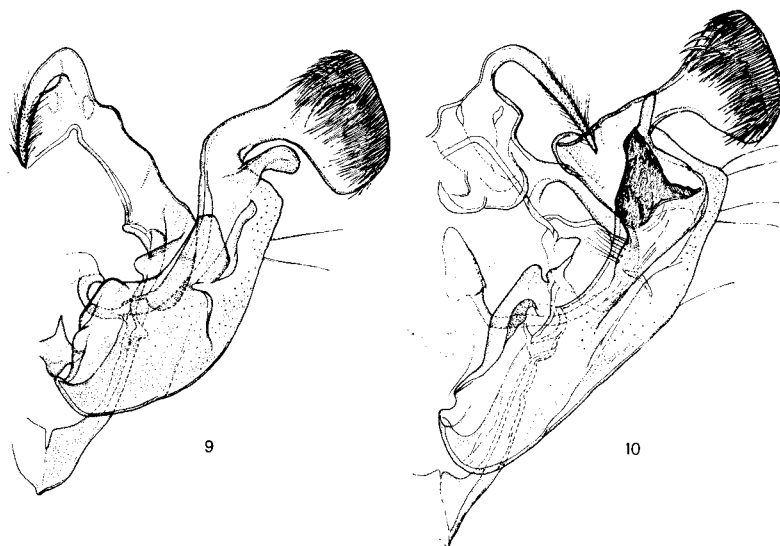
9 = *Conisania leineri pomerana* SCHULZ: Germany — 10—11 = *Conisania poelli poelli* STERTZ: Ötztaler Alpen. — 12 = *Conisania poelli daghestanensis* ssp. n.: Paratype, USSR, Daghestan. — 13 = *Conisania albina* STAUDINGER: Mongolia. — 14 = *Conisania discestroides* sp. n.: Holotype, Mongolia. — 15. *Conisania renati renati* OBERTHÜR: Spain, Albarracin. — 16 = *Conisania renati meszarosi* ssp. n.: Paratype, Bulgaria



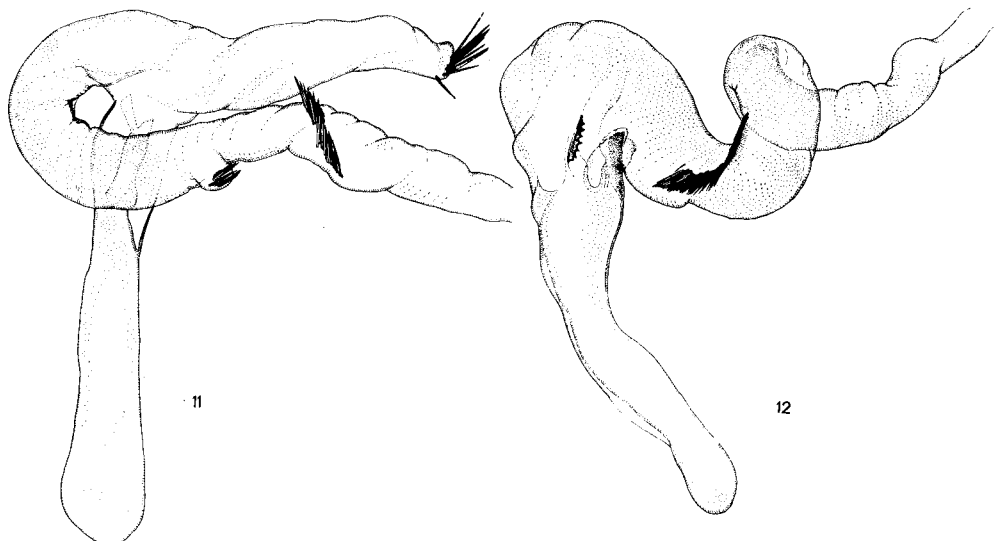
Figs 1—3. 1 = *Sideridis lampra* SCHAWERDA, Hungary; 2 = *S. satanella* ALPHERAKY, Nepal
3 = *S. rosea* HARVEY, Canada, Ontario



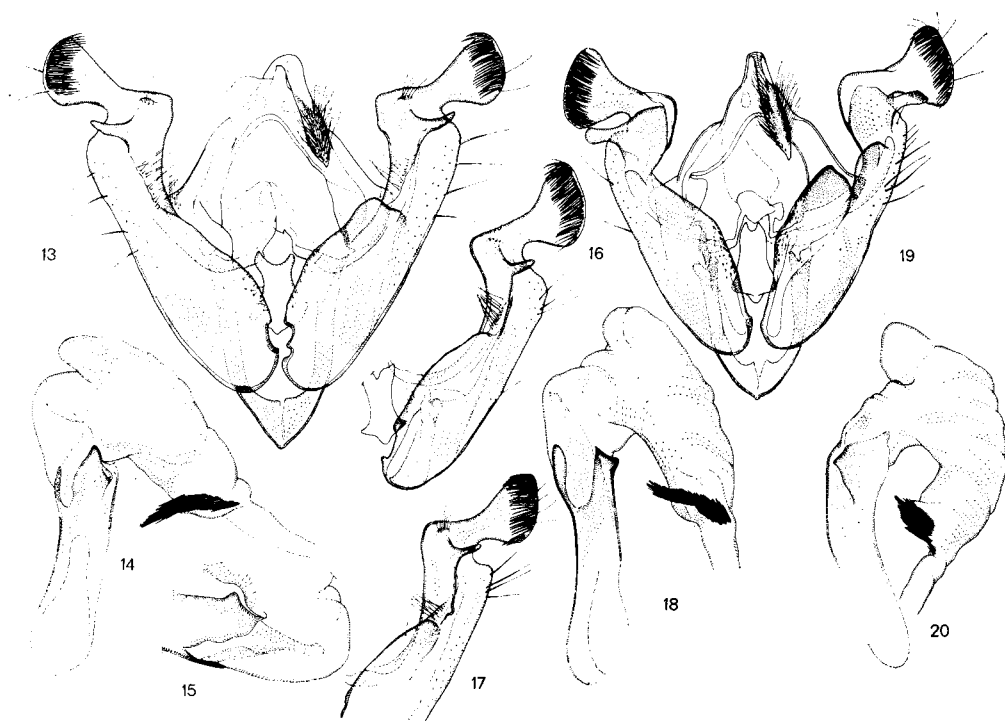
Figs 4—8. 4—6 = *Sideridis lampra* SCHAWERDA, Hungary; 7 = *S. rosea* HARVEY, Canada, Ontario; 8 = *S. satanella* ALPHERAKY, Nepal



Figs 9—10. 9 = *Sideridis egena* LEDERER, Mongolia; 10 = *S. albicolon* HÜBNER, Hungary



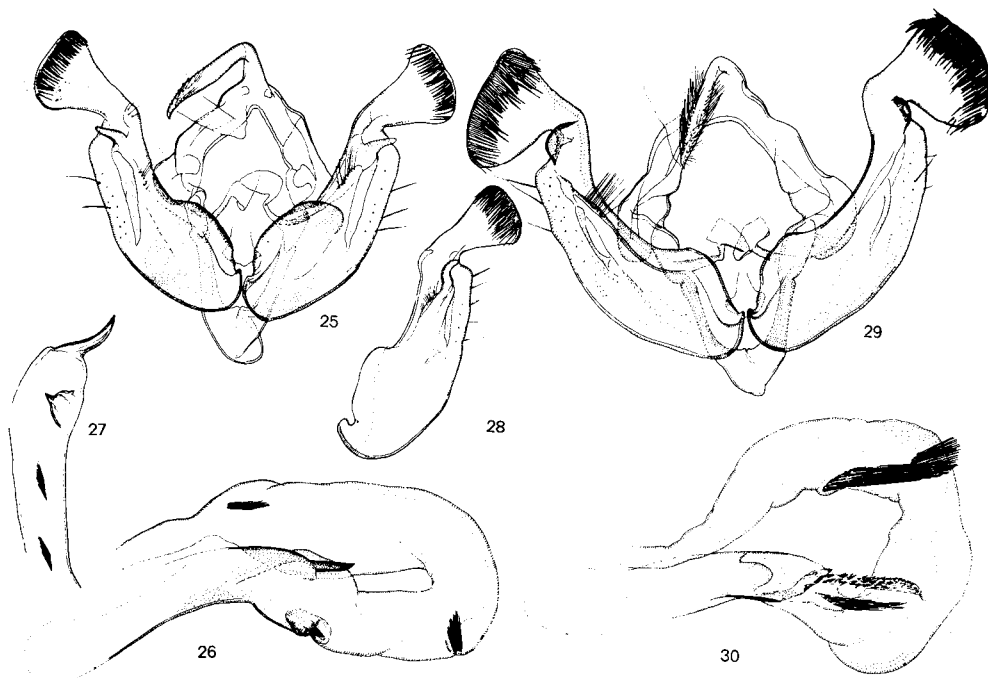
Figs 11—12. 11 = *Sideridis egena* LEDERER, Mongolia; 12 = *S. albicolon* HÜBNER, Hungary



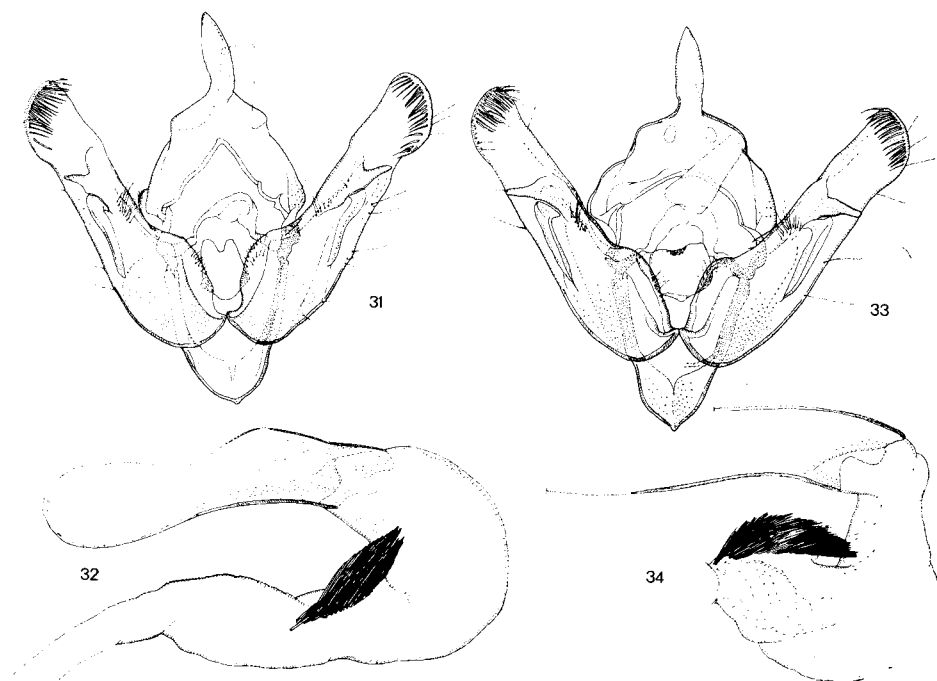
Figs 13—20. 13—15 = *Sideridis unica suavina* DRAUDT, holotype, China; 16 = *S. unica* LEECH, USSR, Far East; 17—18 = *S. unica* ssp., Mongolia; 19—20 = *S. incommoda* STAUDINGER, Ussuri



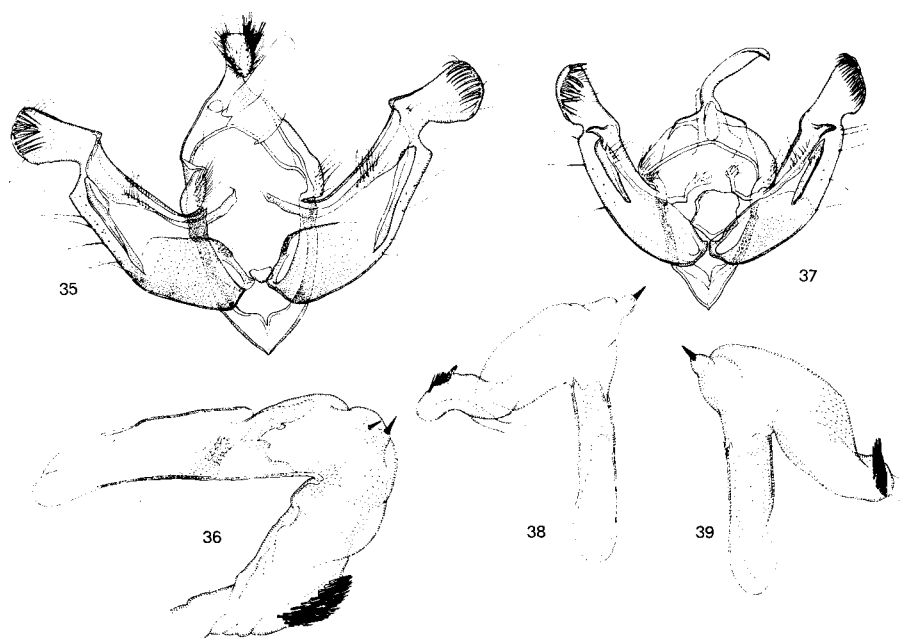
Figs 21—24. 21—22 = *Hadulipolia odiosa* STAUDINGER, Mongolia; 23—24 = *Cornutifera simplex* STAUDINGER, Mongolia



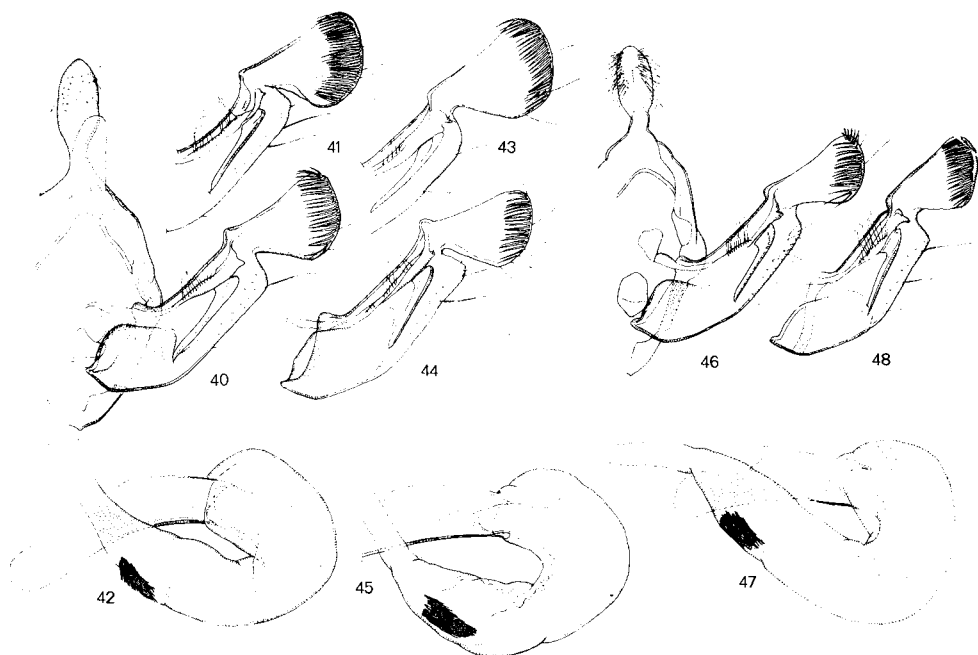
Figs 25—30. 25—28 = *Sideridis peculiaris* STAUDINGER, 25—26 = China, Aksu, 27—28 holotype, USSR, Samarkand; 29—30 = *Saragossa implexa* HÜBNER, Hungary



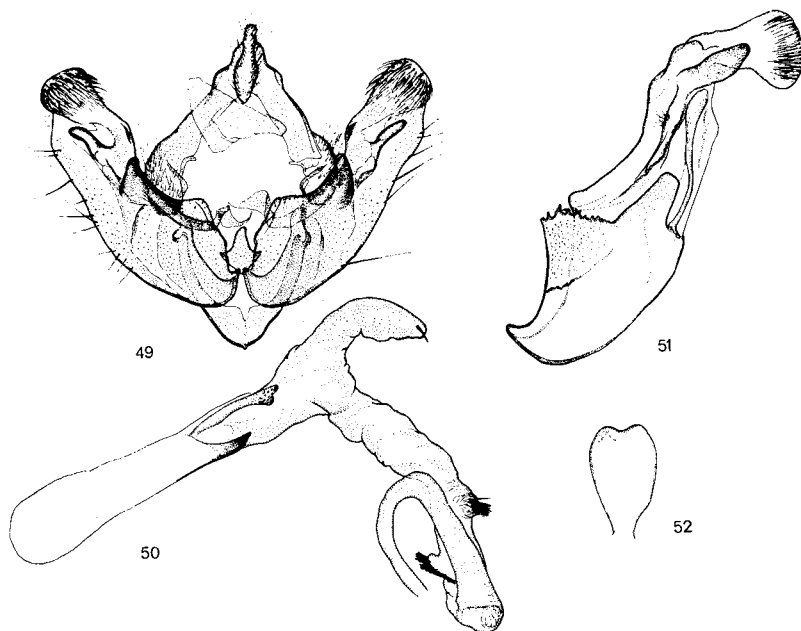
Figs 31—34. 31—32 = *Saragossa porosa kenderesiensis* Kovács, Hungary; 33—34 = *S. porosa porosa* EVERSMAHN, Sarepta



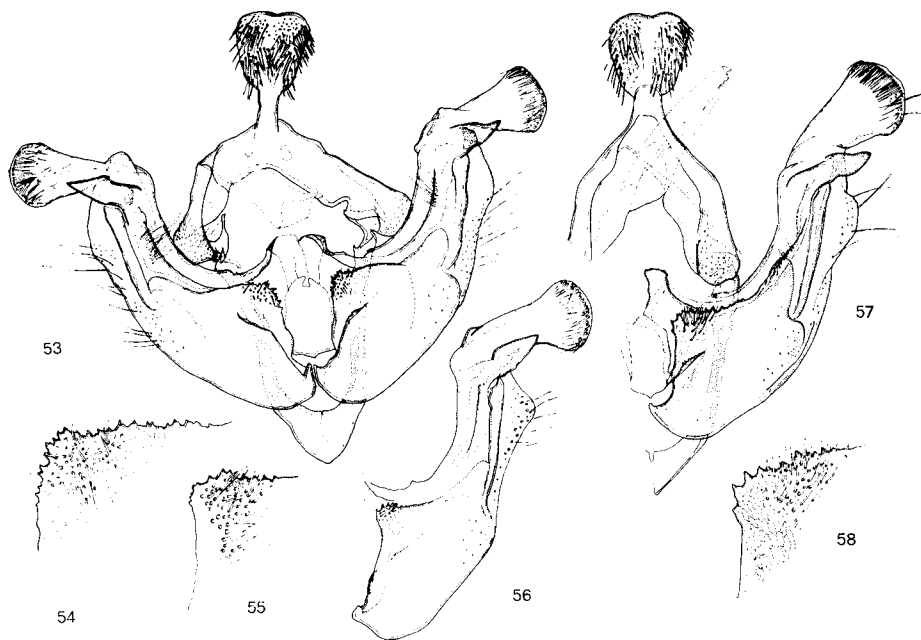
Figs 35—39. 35—36 = *Saragossa seeboldi* STAUDINGER, Spain; 37—39 = *S. incerta* STAUDINGER, Mongolia



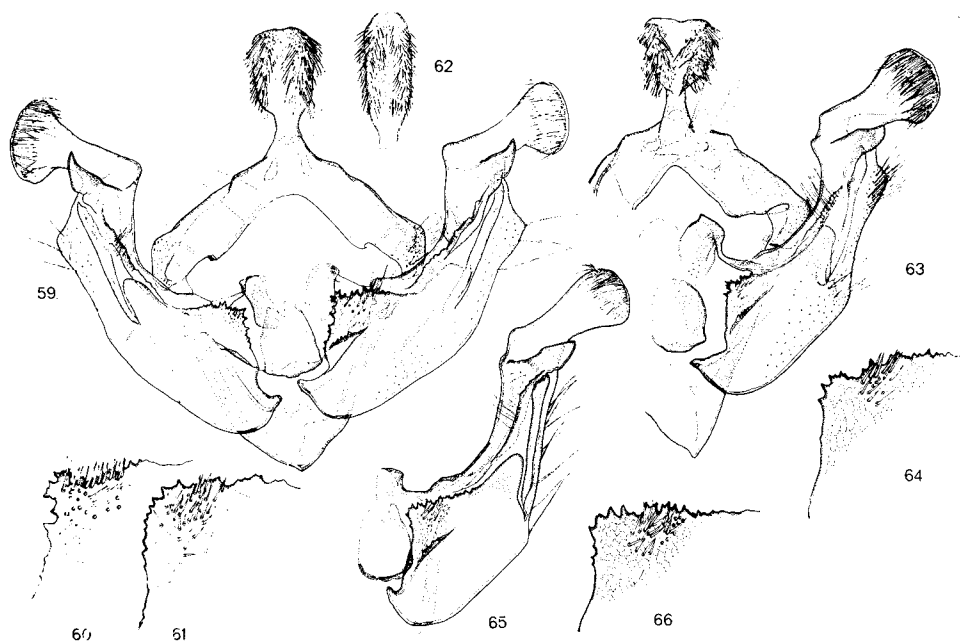
Figs 40—48. 40—45 = *Saragossa siccanorum* STAUDINGER 40—42 Sarepta, 43—45 Mongolia,
46—48 = *S. siccanorum poecilographa* ssp. n., paratypes, Iraq



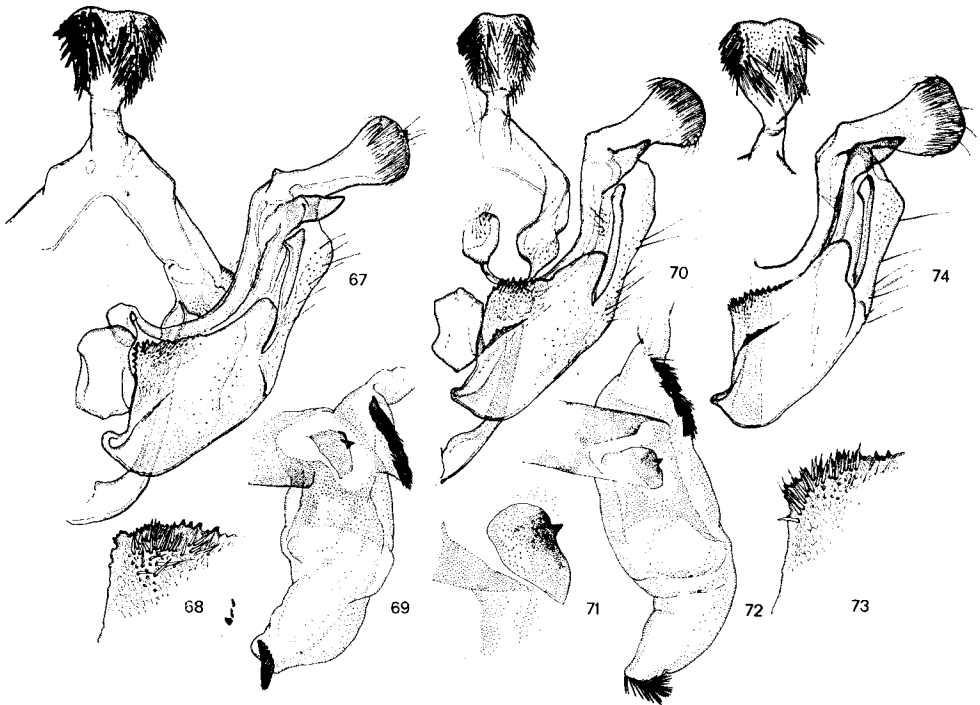
Figs 49—52. 49—50 = *Sideridis herczigi* sp. n. holotype; 51—52 = *Conisania arterialis*
DRAUDT, USSR, Daghestan



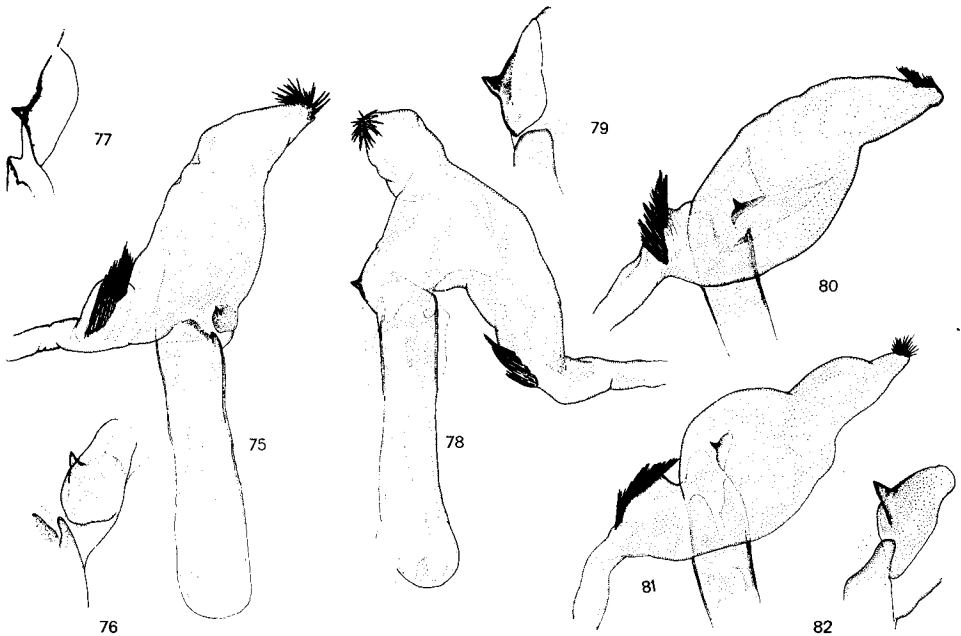
Figs 53—58. 53—56 = *Conisania leineri leineri* FREYER, Hungary; 57—58 = *C. leineri pomerana* SCHULZ, Germany



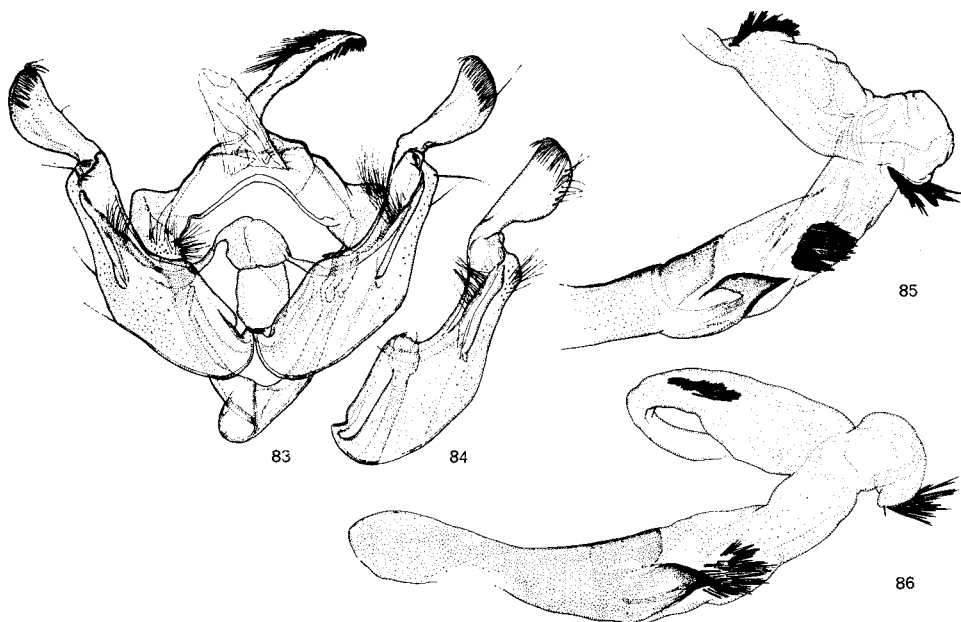
Figs 59—66. 59—62 = *Conisania albina* STAUDINGER, Mongolia; 63—64 = *C. leineri bovina* STAUDINGER, Ili; 65—66 = *C. leineri furcata* EVERSMAHN, Sarepta



Figs 67—74. 67—69 = *Conisania poelli ostrogovichi* DRAUDT, Transylvania; 70 = *C. poelli daghestanensis* ssp. n. Holotype, Daghestan; 71—74 = *C. poelli poelli* STERTZ Ötztaler Alpen



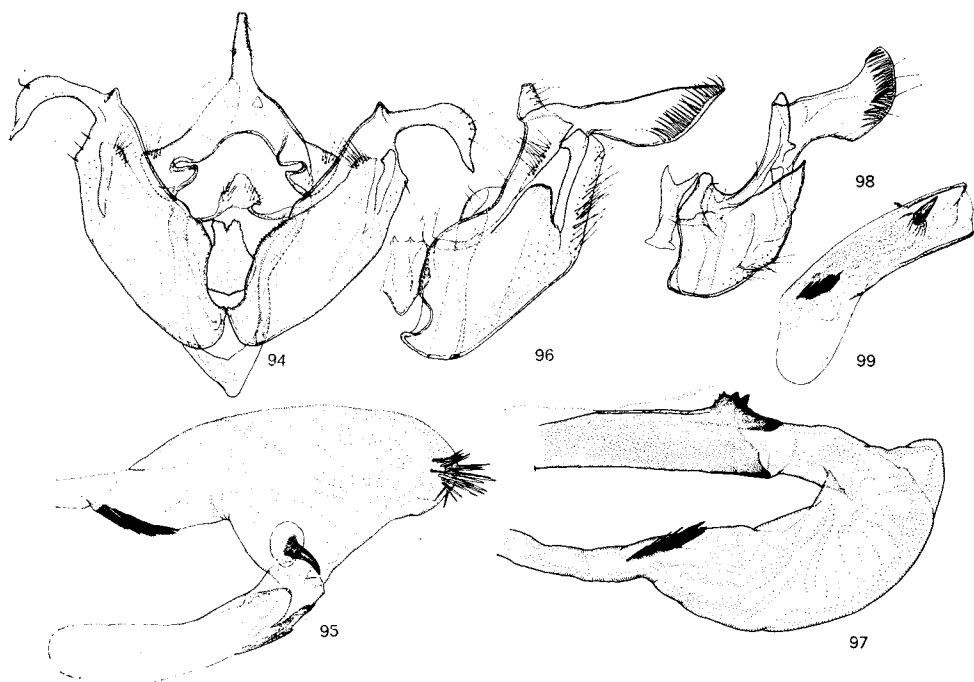
Figs 75—82. 75—76 = *Conisania leineri leineri* FREYER, Hungary; 77 = *C. leineri pomerana* SCHULZ, Germany; 78—79 = *C. albina* STAUDINGER, Mongolia; 80 = *C. leineri furcata* EVERS-MANN, Sarepta; 81—82 = *C. leineri bovina* STAUDINGER, Ili.



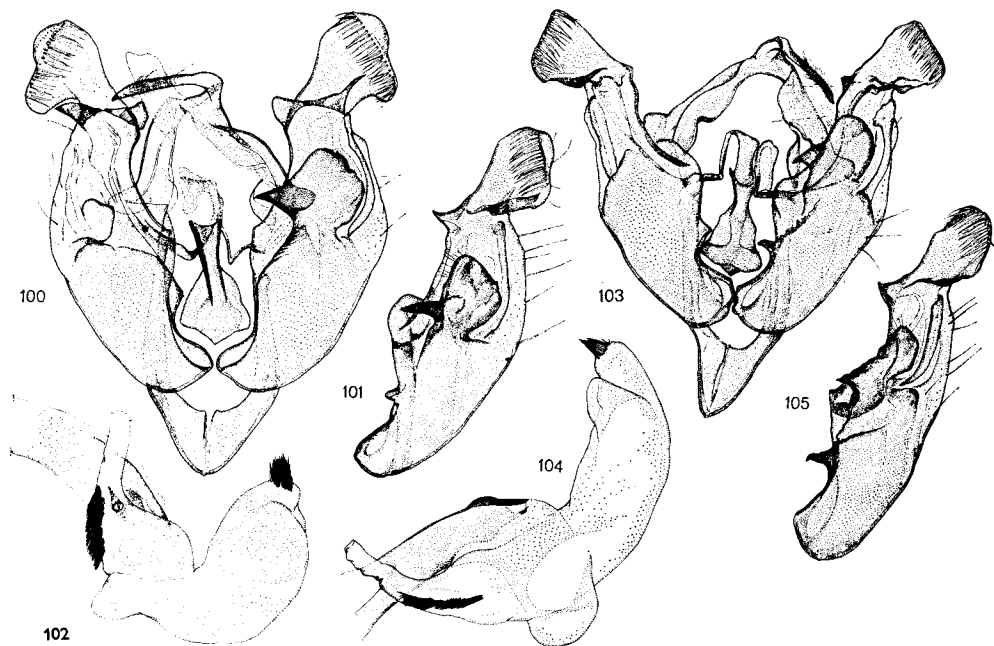
Figs 83—86. 83—84 = *Conisania renati meszarosi* ssp. n., paratypes, Bulgaria; 85—86 = *C. renati renati* OBERTHÜR, Spain, Albarracin



Figs 87—93. 87—92 = *Conisania arida* LEDERER, Mongolia; 93 = holotype, Altai



Figs 94—99. 94—95 = *Conisania xanthothrix* BOURSIN, Afghanistan; 96—97 = *C. capsivora* DRAUDT, Turkey; 98—99 = *C. roseipicta* DRAUDT, Holotype, China



Figs 100—105. 100—102 = *Conisania suavis* STAUDINGER, Amur valley, (100 = holotype); 103—105 = *C. discestroides* sp. n., Mongolia, 103—104 = paratype, 105 = holotype