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The Palaearctic *Cnephasiini (Lepidoptera, Tortricidae)*

[with 153 text-figs. and Plates XII—XXVI]

Palearktyczne *Cnephasiini (Lepidoptera, Tortricidae)*

Палеарктические *Cnephasiini (Lepidoptera, Tortricidae)*

INTRODUCTION

In 1959 I published in the Acta zoologica cracoviensia „European Species of *Cnephasiini*". The studies on the *Cnephasiini* were completed during the next few years, and many important problems were solved. Thanks to the authorities of the British Museum (Natural History) in London, the Muséum d'Histoire Naturelle in Paris, the Naturhistorisches Museum in Vienna and the Muzeul „GR. ANTIPA" in Bucharest, I have had the opportunity to study very interesting materials in these institutions during the last four years.

At the time of the publishing of „European *Cnephasiini*" 139 species of this tribe were known from the Palaearctic Region. During my studies on the *Torticidae* I have transferred some species into the *Cnephasiini* from other groups. Some other ones must be included into other groups of *Tortricidae* and into *Cochylidae* after examination of their genitalia. Thus 147 species are now known from the discussed Region.

I wanted to complete the studies on the World *Cnephasiini* with the present paper. In the year 1963 I. F. B. COMMON published his very interesting study on the Australian species of the *Cnephasiini*. A. DIAKONOFF issued „Indo-Malyan and Papuan *Microlepidoptera*" and „*Tortricidae* from Madagascar" and is still working on the exotic species of several groups of the *Tortricidae*. The American fauna of the *Torticidae* (including *Cnephasiini*) shall be published shortly by N. S. OBRAZTSOV.

The present paper is treated as a supplementation of „European Species of *Cnephasiini*" and is closely connected with it. I discuss here only the species which were not studied in that paper, or those on which I can add some new data. All other species are listed in a new systematic order and references to the „European *Cnephasiini*" are added.

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I wish to express my best thanks to the authorities of the British Museum (Natural History) of London, the Muzeul „Gr. Antipa" of Bucharest, the Muséum d'Histoire Naturelle of Paris and the Naturhistorisches Museum of Vienna. I am particularly grateful to Mr. J. D. Bradley, Dr. M. Falkovitsh, Dr. F. Kasy, Dr. V. I. Kuznetsov, Dr. A. Popescu-Gorj, Mr. W. G. Tremewan and I am thanking once more all who helped me in my work on „European *Cnephasiini*".

GENERAL PART

Historical Review

The first species of the *Cnephasiini* was described by Linnaeus (*Eulia ministrana* [L., 1758]). In the first quarter of the 19th cent. several further species belonging to this tribe were known from Europe. The studies of non-European *Cnephasiini* started in 1871 when N. Erschoff described *Cheimatophila praeviella*, the species referable to the genus *Doloploca* Hbn. In the years 1881—1889 H. Christoph and Snellen described some further species of the *Cnephasiini*. However, the studies on the *Cnephasiini* start well in the first years of the 20th cent. At that time J. Kennel and Walsingham published some papers on Asiatic and North African species. In „Die Palaearktischen Tortriciden" (1910) J. Kennel included all species of *Cnephasia* Curt. into the genus *Tortrix* L., but this work is the first complete one and has proved itself very useful until now. E. Meyrick in his „Exotic *Microlepidoptera*" described several new species of *Cnephasiini*, as well as J. Kennel in his additional papers to the mentioned monograph of the *Tortricidae*. After the last war a rather small number of new species of the *Cnephasiini* were described from non-European regions of the Palaearctic. They were described by H. G. Amsel and N. S. Obraztsov from Asia Minor and the Near East, and by myself from Central Asia. Those species are referable chiefly to the genera *Cnephasia* Curt. and *Eana* Billb.

There are only few papers treating the systematics of the *Cnephasiini* or some groups of this tribe. The first review of the *Cnephasiini* was given by Pierce & Metcalfe (1922) with the illustrations of the genitalia of all British

species. Two other early publications are the papers of J. KREMKY (1935) on the genus *Eana* BILLB. (under the name *Nephodesme* HBN.) and of S. ADAMCZEWSKI (1935) on *Cnephasia* CURT. Both papers include redescriptions of the species of Polish fauna, but they were very important for all further authors in their studies on the *Cnephasiini*. In 1952 P. RÉAL introduced a new system of the *Cnephasiini* (*Cnephasia* CURT.) dividing the genus *Cnephasia* CURT. into several sugbenera. Some of RÉAL's subgenera were later treated in other systematic publications as valid genera, as for instance *Neosphaleroptera* RÉAL, while some are sunk as synonyms of the genus *Cnephasia* CURT. Six years after RÉAL's paper N. S. OBRAZTSOV published in his catalogue of the *Tortricidae* a new critical system of *Cnephasiini*. Both systems are discussed in my „European *Cnephasiini*". The discussion of the present system is given in the next pages below.

To complete this very short historical review it is necessary to add some words on the history of the name of this tribe. Till 1859 *Cnephasiini* were included in different groups of the *Tortricidae* and occasionally in other families (*Yponomeutidae* part. STEPH.). STAINTON as the first used the name *Cnephasidae* in his system of the *Tortricidae*. PIERCE & METCALFE (1922) used the name *Cnephasidii* in the meaning of subfamily. In 1940 A. BUSCK considered this group as a subfamily *(Cnephasiinae)* and A. DIAKONOFF in 1941 established the name *Cnephasiades* for it. The present name of this tribe is dating from 1949 and was stated by N. S. OBRAZTSOV.

External anatomy

Head with well developed ocelli, clothed with rather short scales (or hairs), usually shorter on the face, longer on the vertex. Labial palpus in comparison with that in other groups of the *Tortricidae* rather short (in some Exotic, or Australian species the palpi are very long as in *Arotrophora* MEYR., *Cnephasitis* RAZ. or *Syllomatia* COMMON). Basal joint short, rather slender; median joint very long, delicately expanding terminally; terminal joint slender, usually short. The scales change the shape of the palpi and the median joint is usually strongly broadened terminally. Terminal and basal joints seem to be much shorter and the terminal joint is partially concealed in the scales of the median joint. Maxillar palpi vestigial, without any scales. Tongue rather weak, but usually normally developed. In some genera the tongue is, however, ill-defined as in *Doloploca* HBN. and *Tortricodes* GUEN. In *D. punctulana* (SCHIFF. & DEN.) the tongue is really very weak, but in both sexes of *D. praeviella* (ERSCH.) it is rather well developed, but short. The scape of the antenna large, flagellum thin, rather long, ciliate and scaled. The bristles in males always longer and more differentiate than in females. The joints are similar to each other, especially in the basal part of the flagellum. In the posterior portions of the flagellum the shape of the joints is different and the terminal joint has pointed termi-

nation. Some types of the antennae are figured in „European *Cnephasiini*" (figs. 125—128).

Thorax very often provided with cluster of scales on the breast (in genera: *Cnephasia* CURT., *Olindia* GUEN., *Isotrias* MEYR., *Eulia* HBN., *Oxypteron* STGR., *Doloploca* HBN. and *Euledereria* FERN.). In *Exapate* HBN. the cluster is well developed in the males, completely atrophied in the females; in *Eana* BILLB. weakly developed, sometimes absent especially from the females; weak in both sexes in *Trachysmia* GUEN., *Tortricodes* GUEN. and *Neaosphaleroptera* RÉAL, and completely atrophied in *Synochoneura* OBR.

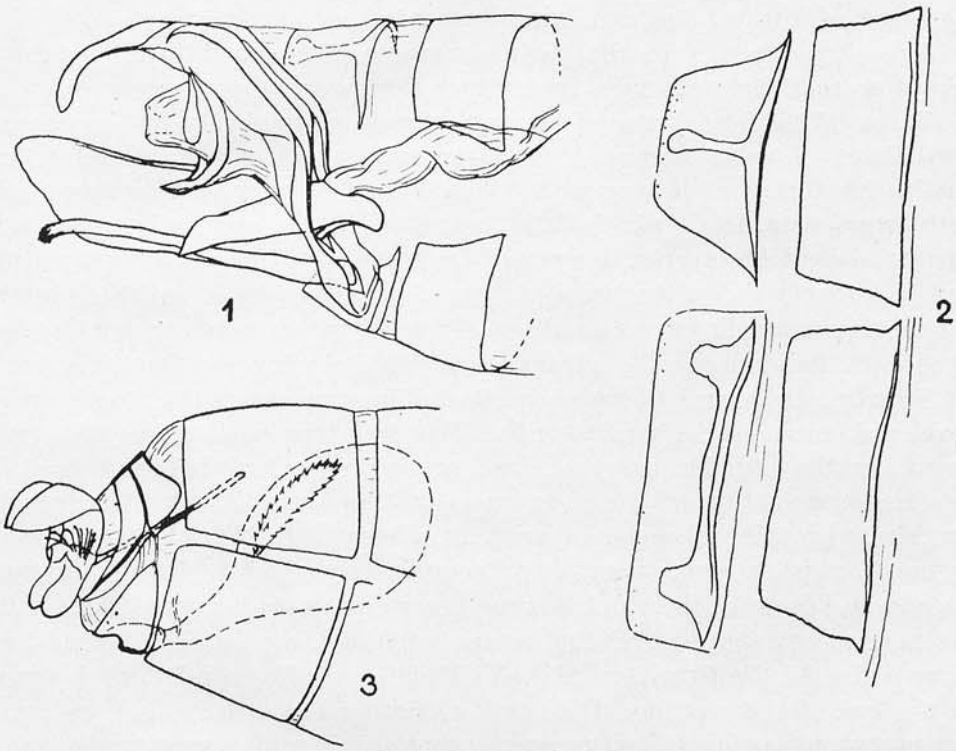
The wings usually well developed, except in the females of *Exapate* HBN., *Epicnephasia* DANIL. and *Euledereria* FERN. (and probably in *Palpocrinia* KENN.) in which the sexual dimorphism is very distinct. Forewing is broad, with the only exception of the species of the genus *Oxypteron* STGR. in which it is very narrow, pointed apically. Costa curved outwards at the base, more or less straight in the median portion. The terminal edge straight or convex, more or less oblique. The hindwing broad with rather short rounded apex; in *Euledereria* FERN. very narrow, rudimentary in *Exapate* HBN. and atrophied in *Epicnephasia* DANIL. Costal fold of the forewing absent.

Venation. In the forewing all veins run separately. Vien *sc* reaches the middle of the costa, or is longer, sometimes decidedly approaching the costal edge; r_1 from $^1/_3$ or $^1/_2$ of the median cell; r_5 to the apex or to the termen. Median veins rather parallel to each other; first cubital vein more or less curved at base, cu_2 between r_1—r_2 on the opposite side of the median cell, sometimes very near to r_1. Infracellular vein more or less well developed, originating between r_1 and r_2, or before r_1. In the female of *Euledereria* FERN. all veins well developed, but median and cubital veins much shorter than in the male. In the females of *Exapate* HBN. the venation is variable. Radial veins are very short, reduced to three or four branches, median veins very short, cu_1 also very short, parallel to median veins, cu_2 absent.

In the hindwing *sc* is normally developed; the status of veins *rr* and m_1 variable. In *Isotrias* MEYR. the two mentioned veins run separately, in *Olindia* GUEN. from one point, in *Propiromorpha* OBR. they are long-stalked, and in some genera as in *Cnephasia* CURT. all the three combinations can be found. The veins m_2 and m_3 are rather parallel to each other. In *Tortricodes* GUEN., *Kawabea* gen. nov., *Oxypteron* STGR. and *Oporopsamma* GOZM. m_3 is lacking; in the remaining genera the status of m_3—cu_1 is similar to that in veins *rr*—m_1. In the female of *Euledereria* FERN. the median and cubital veins are strongly modified, very short; anal veins nearly atrophied.

The pattern in the majority of the *Cnephasiini*-species is of the characteristic *Tortricidae*-shape. Basal patch very often atrophied in the anterior portion, however, well preserved in the posterior portion in the shape of anarched outwards fascia, very often incomplete in the dorsal area of the wing. For this part of the pattern I use the name „post-basal fascia". Median fascia usually well developed, broad, narrowed or atrophied in the middle or in two places.

Subapical spot sometimes connected with irregular subterminal pattern. In several species the pattern is indistinct [*Eulia ministrana* (L.), *Eana osseana* (Scop.)], or completely atrophied [*Eana argentana* (Cl.), *E. darvaza* (Obr.)], but in some aberrations of these species the pattern is rather well developed. Besides the two mentioned unicolorous species we can find some unicolorous forms of the species, which are normally patterned in the typical forms. In *Oxypteron* Stgr. the pattern is weak and the pale ground along the costa changes



Figs. 1—3: male genitalia of *Cnephasia* sp. in natural position (with right valva), 2 — sclerites of two last abdominal segments, 3 — female genitalia of *Cnephasia* sp. in natural position

it a little. In *Olindia* Guen. the ground colour between the basal pattern and the median fascia is much paler (white) than in the posterior portion of the wing. The variability of the pattern is weaker than the variability of the colour of pattern and ground. Very often in pale specimens [*Cnephasia alticolana* (H.-S.)] the pattern is ill-defined, while in dark specimens the ground colour approaches the colour of the pattern [in *C. virgaureana* (Treit.)]. Hindwings are unicolorous, usually paler in basal areas.

The abdomen is short-scaled, paler than the thorax. The terminal portion of the abdomen provided with longer scales, which cover the posterior portions of the genitalia. Because of the floricomous shape of the labia the abdomens in the females are sometimes similar in the shape of the terminations to those

in the males. In the females of the species of the subgenus *Cnephasiella* ADAMCZ. the abdomen in very characteristic by the pointed terminations (pointed and coalescent labia on telescopic ovipositor).

The male genitalia well sclerotized and easily separable from the body of the abdomen. The shape of the genitalia very important for the determination of the species and rather slightly variable. The genitalia of *Cnephasia* sp. in the natural position (right valva removed) are shown on fig. 1. The sclerites of the praegenital segments of the abdomen are strongly modified and differ from the sclerites of the remaining segments (fig. 2).

The characteristics of the particular parts of the male genitalia ranged according to their systematic importance are given hereunder.

Valva. Well developed and elongate, tapering terminally in the posterior part. Costa of valva narrow, usually strongly sclerotized, more or less long. In *Olindia* GUEN. and *Isotrias* MEYR. valva is elongate, elliptical, provided with broad costa. In *Cnephasia* CURT. and *Eana* BILLB. valva is long and rather narrow, delicately tapering terminad. In *Doloploca* HBN., *Trachysmia* GUEN. and *Euledereria* FERN. the basal portion of valva is very broad, the posterior portion is narrow. Processus basalis rather weak, but in *Synochoneura* OBR. well developed. Pulvinus usually atrophied but in *Synochoneura* OBR. distinct

Sacculus. In several groups of species and in some genera the sacculus is well developed, provided with more or less long free termination; in other genera or species the sacculus has the shape of strongly sclerotized edge of valva. The free termination of the sacculus is in *Cnephasia* CURT. (when present) provided with minute spine-like hairs. In other genera (*Eana* BILLB.) the free termination is smooth, pointed or complicately shaped. In the group of *Cnephasia sedana* (CONST.) and in some other groups of this genus the sacculus has no free termination and the ventral edge of the valva has not any projections. In *Olindia* GUEN. and *Isotrias* MEYR. a small ventral thorn is present on the end of the sacculus. The basal portion of the sacculus is broad, while the posterior portion is, with some exceptions [*Oporopsamma wertheimsteini* (RBL.), *Doloploca punctulana* (SCHIFF. & DEN.)], slender and delicate. The shape of the sacculus is very different specifically, very often concave in the middle.

Tegumen. Tegumen is slender in the group of genera closely related to *Cnephasia* CURT., broad in the remaining genera, provided with strongly sclerotized edges.

Uncus. Uncus in nearly all genera is slender and pointed, rather flattened laterally, provided with more or less broad basal parts. In *Olindia* GUEN. the shape of the uncus is very different from that in the remaining genera; it is flat (dorso-ventrally) and very broad, bifurcate terminally. In *Eulia* HBN. uncus is strong, in *Exapate* HBN. very short. In *Cnephasia* CURT. the basal parts of the uncus are rather delicate and elongate, in *Eana* BILLB. they are very broad, rounded or bulbous, and in *Doloploca* HBN. the lateral corners of the basal parts of the uncus are strongly protruding. In the majority of the

genera the uncus (including the basal portions) is minutely spined throughout.

Gnathos consists of two lateral more or less slender arms. These are free in *Olindia* GUEN. and *Isotrias* MEYR., coalescent ventrally in the remaining genera. In *Cnephasia* CURT. this termination is provided with a characteristic plate, in some species of *Eana* BILLB. with a thorn, or the plate is ill-defined. In *Exapate* HBN. large parts of the gnathos are minutely spined. The species of *Oxypteron* STGR. are characterized by the very weakly sclerotized and ill-defined gnathos, which is rather membraneous, and in some cases only more strongly sclerotized ventrally.

Socii are very different specifically in size, sometimes (*Oxypteron* STGR.) very weak. In *Eulia* HBN. the socii are broad, rounded, in *Cnephasia* CURT. and *Eana* BILLB. decidedly elongate, drooping. In *Eana penziana* (THNBG.) the ventral edges of the socii are well sclerotized and pointed.

Transtilla usually well sclerotized and large. In *Isotrias* MEYR. very small and very weak, stronger only in the middle; in *Tortricodes* GUEN., *Synochoneura* OBR. and in some species of *Oxypteron* STGR. (?) membraneous or lacking. The shape of the transtilla is in *Cnephasia* CURT. different in particular species. In some species, as in *C. communana* (H.-S.) it is narrow and smooth, in the *sedana*-group and in some other species broad and short. In *Eana* BILLB. the transtilla is strongly broadened in the middle and this part is provided with minute spines. In *Olindia* GUEN. and *Eulia* HBN. the transtilla has a very characteristic shape. In both genera long dorsal projections are present, and in *Olindia* GUEN. these are well spined.

Aedeagus simple, rather slender, pointed terminally. In *Kawabea* gen. nov. bifurcate. Basal portion of the aedeagus strong and bent. The cornuti absent from the vesica except in *Synochoneura* OBR., in the vesica of which a few rather long cornuti were found.

Anellus long in several genera, very short in *Olindia* GUEN., *Isotrias* MEYR. and in the species of the *Cnephasia sedana*-group.

Juxta rather large, normally developed.

Diaphragm and anal tube very weakly sclerotized, membraneous. Subscaphium also ill-defined.

The female genitalia in the normal position are shown on fig. 3. Posterior portions of the labia folded downwards, basal portions protruding distally. In the case of telescopic ovipositor labia projecting from the abdomen.

Labia. There are two types of labia in the *Cnephasiini*. The normal *Tortricidae*-type is characteristic of *Olindia* GUEN., *Isotrias* MEYR., *Synochoneura* OBR., *Eulia* HBN., *Propiromorpha* OBR. and *Trachysmia* GUEN. In the remaining genera labia are large and flat, especially their posterior portions (floricomous type of the ovipositor). The shape of the posterior portions of the labia is in *Cnephasia* CURT. rather regular, in *Eana* BILLB. and *Neosphaleroptera* RÉAL sometimes distinctly irregular. Two kinds of hairs on the labia of this type are present: normal hairs, thin and rather long, and short hairs, bulbous ter-

minally. The species of the subgenus *Cnephasiella* ADAMCZ. have the labia very slender, partially coalescent with each other.

Ovipositor is normally developed, only in *Cnephasiella* ADAMCZ. telescopic. The gonapophyses in the species of this subgenus are extremely long, of the normal shape in the species of the subgenus *Cnephasia* CURT. s. str. and in the remaining genera.

Lamella genitalis broad, especially in *Cnephasia* CURT. and in the genera closely related to this genus. Anterior edge of this lamella straight or concave in the middle, posterior edge very strongly concave, rounded. Postero-lateral corners of the lamella genitalis long, provided with strongly sclerotized rubs. The gonapophyses anteriores connected laterally with lamella genitalis. The lamella genitalis in *Cnephasiella* ADAMCZ. is strongly modified.

Lamella vaginalis (lamella antevaginalis + lamella postvaginalis which are in the *Cnephasiini* united in one plate in most cases). This lamella is very narrow in *Isotrias* MEYR. and has membraneous dorsal edge. In *Propiromorpha* OBR. the lamella vaginalis is well developed and has long, tapering terminally lateral wings. In the remaining genera the lamella vaginalis is large (*Tortricodes* GUEN.). The anterior edge of the lamella vaginalis is rounded or nearly straight in *Cnephasia* CURT. and some other genera, very short in *Eana* BILLB. in which the ostium bursae is placed more anteriorly and the posterior portion of the lamella is better developed. The introitus in *Eana* BILLB. is very close to the anterior edge of the lamella.

The lamella vaginalis in *Neosphaleroptera* RÉAL is cup-like shaped with dorsal wall longer than ventral one, and the lateral corners are slightly protruding anteriorly. The lateral arms of the lamella vaginalis are long, pointed in *Eana* BILLB., rounded in some species of *Cnephasia* CURT, very short in *Neosphaleroptera* RÉAL and *Eulia* HBN. The terminations of these arms are connected with the gonapophyses anteriores through a more or less transparent membrane.

Introitus (posterior, modified by the sclerotization part of the ductus bursae). Very often well sclerotized, broad. In some species of *Cnephasia* CURT. and in *Eulia* HBN. it does not differ from the rest of the ductus bursae.

Ductus bursae. The ductus bursae is usually long (*Cnephasia* CURT., *Eana* BILLB.); in the group of *Cnephasia alfacarana* RAZ. provided with strongly sclerotized ring in the posterior portion.

Bursa copulatrix large or very large, transparent, very rarely sculptured (*Synochoneura* OBR.). The signum present or absent (in *Euledereria* FERN., *Exapate* HBN., *Kawabea* gen. nov., etc.). In *Isotrias* MEYR. the signum consists of a few short transversal sclerites in the sculptured area. In *Eulia* HBN. it consists of numerous spines on the whole anterior area of the bursa copulatrix, and in the *Cnephasia*-group the signum is long, spined. The signum of *Synochoneura* OBR. differs very much from all other genera of Palaearctic *Cnephasiini* and is in the shape of a small, well sclerotized sack.

The position of the ductus seminalis is in *Cnephasiini* different. In *Syno-*

choneura OBR., *Olindia* GUEN., *Isotrias* MEYR. and some other genera it is posterior, in *Cnephasia* CURT. rather in the middle of the ductus bursae, in *Eana* BILLB. in the anterior portion of the ductus bursae and in *Eulia* HBN. it originates from the posterior portion of the bursa copulatrix.

Characteristics of early stages

The morphology of the egg and pupa is unknown. The morphology of some caterpillars was given in the paper of P. BENANDER (1929), but studies on the chaetotaxy were published by B. SWATSCHEK (1958). Hereafter I give the translation of SWATSCHEK's diagnosis of the caterpillars of the *Cnephasiini*.

„Double crowns of hooks present (except in *longana*). On ninth abdominal segment warts I and III separate and on the mesothorax IIIa dorsocranial to III. When all these features cannot be found, the bristles VI on ninth abdominal segment absent, bristles IV and V on abdominal segments of equal length and sutura coronalis longer than the breadth of the adfrontalis, or group VII consists of two bristles on the mesothorax and the metathorax."

SWATSCHEK's diagnosis is based upon the examination of 12 species only and thus further studies are of great importance.

Phylogeny

The phylogeny and the systematic position of the *Cnephasiini* were discussed in few papers. COMMON (1963) places *Cnephasiini* near *Schoenotenini*, *Chlidanotini* and *Tortricini*, and supposes that all four tribes have a close origin. The *Archipini* are according to COMMON more specialized and are placed with *Epithymbiini* in a farther position after the *Cnephasiini*. The author based himself on the presence of infracellular vein (*m*) and on the genitalia. In other publications (DIAKONOFF, OBRAZTSOV, RAZOWSKI) the *Cnephasiini* were placed between the *Archipini* and *Tortricini* in the *Tortricinae*.

The *Cnephasiini* are closer to the *Archipini* than to the *Tortricini* and in some cases it is very difficult to decide in which of the two first tribes the species belong, especially regarding the exotic species (compare DIAKONOFF, 1960, where in the *Cnephasiini* there are some genera and species of the *Archipini*). The *Cnephasiini* differ from the *Archipini* by the presence of infracellurar vein (*m*) and by the shape of the male and female genitalia. In the male genitalia of the *Cnephasiini* the uncus is usually slender and pointed, but sometimes bifurcate (*Olindia* GUEN, *Peraglyphis* COMMON). In the female genitalia the signum (with some exceptions: *Synochoneura* OBR., *Isotrias* MEYR.) has the shape of an elongate, spined band. The floricomous ovipositor is very characteristic of the chief groups of the *Cnephasiini* and can be found only occasionally in other groups of *Tortricinae* (not in *Archipini*). In the *Archipini* the uncus in the male genitalia is very strong and the transtilla very often

large and complicate. The female genitalia of the *Archipini* are characterized by long ductus bursae (very often provided with well developed cestum) and signum in the shape of a thorn (the signum is provided with the capitulum, sometimes very complicate, in some cases lacking). The *Tortricini* are also very close to the *Cnephasiini* in the type of the venation. The infracellular vein (*m*) is usually atrophied, but can be found in the genus *Tortrix* L. and in *Croesia aurichalcana* (BREM.). The differences in the male genitalia are between the two tribes distinct (the absence of the uncus and gnathos in the *Tortricini*). The females of the *Tortricini* have spinate signum, but this is short and rounded.

I suppose that *Cnephasiini* had an origin close to *Archipini*, and I place this tribe between *Archipini* and *Tortricini*.

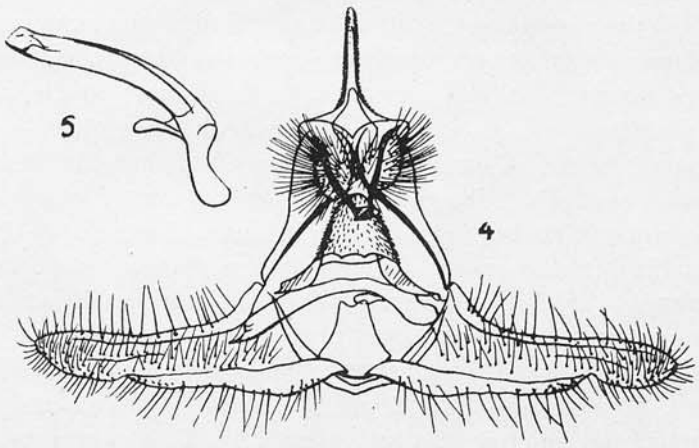
Taxonomy

It seems to be very necessary to state which features are important for the grouping of the genera and species in the system of the *Cnephasiini*. In the first period of the studies on the systematics of the *Lepidoptera* the venation was taken as a criterion. Based upon the venation KENNEL (1910) included the majority of the *Cnephasiini* into the genus *Tortrix* L. On studying the genitalia of the *Tortricidae* several new genera were established. The venation in the species very closely related to each other by the genitalia is very often inconstant as in *Cnephasia* CURT., where in the hindwing veins *rr*—m_1 and m_3—cu_1 originate separately, from one point or are stalked. The status of these veins is sometimes variable in the particular species. Therefore the venation cannot be a conclusive basis of the system of this group. I used, however, the features of the venation in addition to those of the male and female genitalia when I established the systematic positions of the genera.

The Palaearctic *Cnephasiini* are a rather compact group, and differ from the *Cnephasiini* of other Regions. Very interesting are the Nearctic *Cnephasiini*, the revision of which is done by N. S. OBRAZTSOV (in print). The genus *Decodes* OBR. is closely related to *Cnephasia* CURT.; however, regarding the venation (vein m_2 in the hindwing missing) they are very near to the *Tortricodes-Oxypteron* group. The structure of the sacculus in the male genitalia is very interesting. Similarly as in *Cnephasia* CURT. there are two groups of species in *Decodes* OBR., viz., the group with the sacculus normally developed, provided with long free termination, and the group with slender sacculus, which has not free termination as in the *Cnephasia sedana*-group. The shape of the transtilla is in this genus similar to that in *Eana* BILLB. I figure the genitalia of the type of *Decodes basiplagana* (WLSM.) for comparison (figs. 4, 5). Exotic *Cnephasiini* differ from the Palaearctic species very much in the male and female genitalia. They need, however, a revision, except the Australian *Cnephasiini*, which I. COMMON revised very well. The exotic *Cnephasiini* were

described under various generic names. Many species of *Eulia* HBN. must be transferred to the *Sparganothinae* or *Archipini*, while for some of them it should be necessary to establish new genera.

In the Palaearctic Region there are 18 genera of the *Cnephasiini*, which can be divided into three groups. The genus *Synochoneura* OBR. is the closest to *Archipini*. Many features of the male genitalia and the venation are, however, characteristic of the *Cnephasiini*, but in the vesica there are some cornuti, very similar to those in some Palaearctic genera of the *Archipini*, while in the female genitalia the signum resembles rather the type of *Archipini*-signum.



Figs. 4, 5. *Decodes basiplagana* (WALSM.): 4 — Type, „Bosque Co., Texas, 12. X. 1874 BELFRAGE", G. Sl. 5356 [BM], 5 — aedeagus of same specimen

I treat *Synochoneura* OBR. as a intermediate genus and place it according to OBRAZTSOV's system and my own („Palaearctic *Cnephasiini*") in the first position among the genera of the *Cnephasiini*.

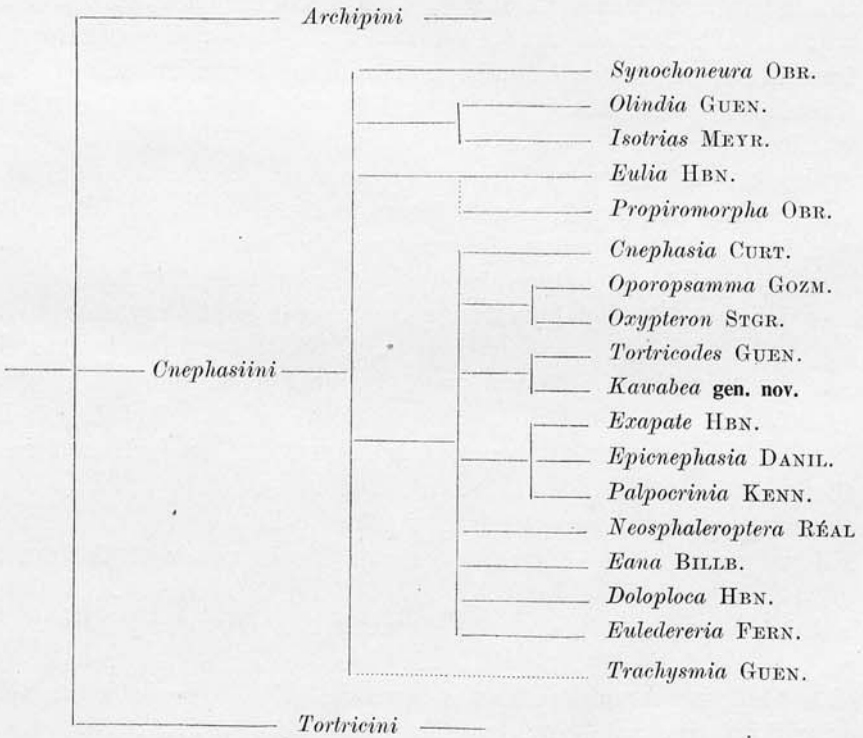
Olindia GUEN. and *Isotrias* MEYR. form a very characteristic but rather primitive group of genera. In the venation of the forewing of *Isotrias* MEYR. there are two weak infracellular veins, in *Olindia* GUEN. only one. The male genitalia of both genera are very close to each other; the differences in the female genitalia are greater but that depends probably on the specialization of the genitalia of *Isotrias* MEYR. A very interesting feature is the shape of the lateral arms of the gnathos, which in this group are separate, and this is the only case encountered in the *Cnephasiini*. This group holds a rather distinct and separate position in the tribe under consideration.

The second group of genera is the group of *Eulia* HBN. in which I include *Propiromorpha* OBR. and *Eulia* HBN. The venation of the wings is very similar in both genera. Gnathos is normally developed, provided with more or less large terminal (ventral) plate, the transtilla shows some primitive features, and is similar to that in some genera of the *Archipini*. The female genitalia of *Eulia* HBN. differ from those in *Propiromorpha* OBR. by the position of

the ductus seminalis and the signum. This group does not seem to be monophyletic, but differs strongly from the preceding group and from the group of the genera closely related to *Cnephasia* CURT.

The majority of the genera and species belong in the third group. The type of this group is *Cnephasia* CURT. The venation of the wings is in the members of the present group variable both in species and genera. In three genera vein m_2 of the hindwing is missing, and in three genera the females are micropterous. The features of the male and female genitalia are characteristic of this group; however, in some cases the females differ from the usual type, viz., *Cnephasiella* ADAMCZ. and *Trachysmia* GUEN. These differences depend on the specialization, as is shown by the remaining features of the male and female genitalia. The genera *Cnephasia* CURT., *Oporopsamma* GOZM. and *Oxypteron* STGR. are very closely related to each other, however, the differences in the venation are distinct. In *Cnephasia* CURT. s. str. there are two types of male genitalia, as it was mentioned in the discussion of *Decodes* OBR., but the female genitalia are of the usual type. The subgenus *Cnephasiella* ADAMCZ. was established for *Cnephasia incertana* (TREIT.) as a distinct genus. RÉAL used this name for the subgenus (but in the present interpretation of the genus, because other RÉAL's subgenera as *Eana* BILLB. or *Neosphaleroptera* RÉAL are fixed as valid genera now). Based upon the status of the ovipositor in *Cnephasiella* ADAMCZ. OBRAZTSOV stated it as a genus very close to *Cnephasia* CURT. I compared (1959) *Cnephasiella* ADAMCZ. with *Cnephasia* CURT. and stated that this group can be considered as a subgenus only. It is necessary to add here that in other groups of the *Tortricidae* (in the *Cochylidae* too) the telescopic type of the ovipositor can be found, and that in all those cases the remaining features are uniform in the genera. I therefore am fixing my opinion of 1959. *Oxypteron* STGR. seems to be a not uniform group and was divided by L. GOZMANY (1954). Unfortunately the females of some species of this genus are unknown and deciding on the validity of those taxa is now extremely difficult. All species grouped by me in *Oxypteron* STGR. have no distinct gnathos, which is either membraneous or very weakly sclerotized ventrally and linked with the anal tube as in *Tortricini*. The genus *Oporopsamma* GOZM. created for *Cnephasia wertheimsteini* RBL. is very close to *Oxypteron* STGR., however, in this the gnathos is rather well developed. The genera *Tortricodes* GUEN. and *Kawabea* gen. nov. are very close to each other in the venation and in the genitalia, and differ by the shape of the aedeagus and the presence of the transtilla and signum. This small group is closely related to two preceding genera regarding the male and female genitalia but separate from them in the morphology of the caterpillars (only *Tortricodes* GUEN. was examined). The six next genera are very distinct and differ by the genitalia and the venation. In *Exapate* HBN. the shape of the wings and the venation of the male are similar to those in *Tortricodes* GUEN., but females are micropterous. The male genitalia of *Exapate* HBN. resemble rather those in *Eana* BILLB. and *Neosphaleroptera* RÉAL than in *Cnephasia* CURT. or in *Tortricodes* GUEN. The females

of *Epicnephasia* DANIL. are also micropterous. The labial palpi in this genus and in *Exapate* HBN. are similar to each other, and based on the similarity of those I suppose that *Palpocrinia* KENN. belongs in this group of genera, however, the original descripton is rather unclear and only male of this genus is known. In *Neosphaleroptera* RÉAL the shape of the lamella vaginalis is very distinct and differs from that in all the remaining genera of this tribe. It is cup-like shaped, protruding dorsally. Signum is missing. The labia are rather asymmetrical, closer in the shape to those in *Eana* BILLB. than in *Cnephasia* CURT. SWATSCHEK, however, suggested that *Neosphaleroptera* RÉAL belongs to the *Cnephasia*-subgroup. The species of *Eana* BILLB. are characterized by the shape of the valva, which is rather similar to that in *Cnephasia* CURT., but the sacculus is different, and the uncus is short. The shape of the transtilla resembles that in the Nearctic *Decodes* OBR. The lamella vaginalis in the female is in this genus of a distinct shape, and shows only little similarity to that in the group of the species closely related to *Cnephasia sedana* (CONST.)-group. The labia in *Eana* BILLB. are asymmetrical. The genus *Doloploca* HBN. is characterized by the presence of very weakly developed infracellular veins (two) in the forewing and by the shape of the uncus, valva and introitus. The latter is somewhat similar to that in some species of *Oxypteron* STGR. There are two more genera, whch differ, however, more strongly from other genera of this group. *Euledereria* FERN. shows very distinct sexual dimorphism. The



male genitalia are characterized by weak gnathos and strong bifurcate sacculus; the female genitalia by very narrow lateral wings of the lamella vaginalis and strongly sclerotized posterior portion of the ductus bursae. The labia, however, are of normal *Cnephasia*-shape. *Trachysmia* GUEN. shows many features of the more primitive groups of the *Cnephasiini*, except the transtilla which is very similar to that in the *Eana* BILLB.-group and the valva in which this genus resembles the preceding genus *Euledereria* FERN. The labia in the female genitalia of *Trachysmia* GUEN. are similar to those in the *Eulia*-group; the lamella vaginalis and the lamella genitalis are of the simple shape. The signum is similar to that in other *Cnephasiini*-genera, but divided in several parts. This genus differs very much from the remaining genera of this group, but those features seem to be more specialized than in the mentioned genera.

I enclose the tribe-tree for the illustration of the present system of the *Cnephasiini*.

Key to the genera

1. Hindwing normally developed, head and labial palpi normally scaled 2
—. Hindwing atrophied, when fully developed vein m_3 absent; or head and labial palpus with strong hairs 15
2. Infracellular vein in the forewing originates from before r_1 3
—. Infracellular vein in the forewing originates between r_1 and r_2 . . . 4
3. Additional infracellular vein present, vein r_5 to apex . . . *Doloploca* HBN.
—. Additional infracellular vein absent, vein r_5 to termen . . . . . *Synochoneura* OBR.
4. In forewing r_1 originates from beyond middle of median cell . . . 5
—. In forewing r_1 originates from the middle or from before the middle of median cell 6
5. Hindwing strongly narrowed, pointed 7
—. Hindwing fully developed, rounded terminally . . . . . *Eana* BILLB.
6. Median joint of labial palpus longer than the head 7
—. Median joint of labial palpus decidedly shorter than the head . . . 8
7. Median joint of labial palpus triangular, apical joint very short . . . . *Trachysmia* GUEN.
—. Median joint of labial palpus elongate, apical joint longer . . . . . *Euledereria* FERN.
8. In the forewing cu_2 originates at three quarters or farther from the median cell 9
—. In forewing cu_2 from two thirds of median cell 11
9. Labial palpus about 1·5 times as long as the diameter of the eye . . . *Eulia* HBN.
—. Labial palpus twice as long as the diameter of the eye, or in the hindwing veins m_3—cu_1 stalked 10
10. Apex of hindwing rounded; all veins separate. . . *Neosphaleroptera* RÉAL.
—. Apex in hindwing pointed, m_3 stalked with cu_1 14

11. Median joint of labial palpus triangular . . . . . *Cnephasia* CURT.
—. Median joint of labial palpus slightly expanding posteriorly 12
12. In hindwing cu_2 rather from three quarters of median cell 13
—. In hindwing cu_2 from about two thirds of median cell 14
13. In hindwing rr—m_1 originating from one point or stalked. . *Olindia* GUEN.
—. In hindwing veins rr—m_1 separate . . . . . *Isotrias* MEYR.
14. In hindwing rr—m_1 stalked . . . . . *Propiromorpha* OBR.
—. In hindwing rr—m_1 from one point 18
15. In forewing the abcissa r_1—r_2 about three times longer than that between r_2—r_3 (at the median cell); hindwing of female fully developed. . . 16
—. In forewing the abcissa r_1—r_2 shorter than twice r_2—r_3; hindwing in female reduced or head and labial palpus provided with strong hairs . . . 18
16. In forewing r_1 from the middle of median cell 17
—. In forewing r_1 from beyond the middle of median cell . . . . . *Oxypteron* STGR. or *Oporopsamma* GOZM.
17. In forewing r_4 near r_5 at the median cell . . . . . *Tortricodes* GUEN.
—. In forewing r_4 well separate from r_5. . . . . *Kawabea* gen. nov.
18. Labial palpus weak . . . . . *Exapate* HBN.
—. Labial palpus large 19
19. In the hindwing m_3 stalked with cu_1; female micropterous . . . . . *Epicnephasia* DANIL.
—. In the hindwing m_3—cu_1 separate; female unknown. . *Palpocrinia* KENN.

Biology

The biology of the *Cnephasiini* is very poorly known. We know only some data about the occurrence of the moth of Asiatic and African species and nothing about their ecology, food plants or caterpillars. There are, however, some data on the biology of the European *Cnephasiini*, and that is the only knowledge of the biology of the group. In some old publications (TREITSCHKE, etc.) there are to be found some remarks on the caterpillars and food plants of some commoner species, but they are very short. We can find some data about the biology of *Cnephasiini* in KENNEL's Palaearctic *Tortricidae*. BENANDER (1929) gave as the first the characteristics of the external appearance and biological notes on some *Cnephasia* CURT. Many data on the biology of the *Cnephasiini* must be checked now, as some determinations of the species are probably doubtful („*wahlbomiana*"-group).

There are no data on eggs-laying in the literature. They are laid on leaves, but judging by the shape of the ovipositor in *Cnephasia incertana* (TREIT.) and *C. abrasana* (DUP.) it is probable that they are also laid in buds. There are no data on the hibernation of eggs, but in several species, e.g. in *Cnephasia* CURT., the hibernation takes place in the stage of egg or young caterpillar, because the larvae live in May and June, while moths in the next months, and moreover the imagines do not hibernate.

The caterpillars feed in parenchyma or mine as *Cnephasia alternella* STEPH., then eat the whole leave sparing only the stronger veins. Young examples fold the tops of leaves, older ones bend down larger portions or roll the leaves, or bind them together. The shape of the bindings and rollings is in some cases specific. The excrements are removed, or as in *C. alternella* STEPH. remain in the leave. Some species feed in flowers and seeds (*C. genitalana* P. & M.) or roots [*Eana osseana* (SCOP.) and *E. argentana* (CL.)]. The biology of the two mentioned species is very interesting and somewhat resembles that in some species of the genus *Crambus* F. *(Pyralidae). Eana osseana* (SCOP.) builds a delicate shelter of sand and small bits of plants.

Food plants are chiefly herbs, bushes and leafed trees, rarely coniferous-trees as in the case of *Tortricodes tortricella* (HBN.) or *Exapate duratella* HEYD. The food plants of the majority of species are unknown. The caterpillars of most species live in spring and summer, till July, as for instance the caterpillars of the species of *Cnephasia* CURT., which can be found in May and June. The caterpillars of *Eulia* HBN. and the caterpillars of the second generation of *Trachysmia rigana* (SODOFF.) hibernate and then live till April.

Pupation in feeding-places, sometimes prepared for that by closing the entrances. I did not find any data on the hibernation of the chrysalid, except of *Propiromorpha rhodophana* (H.-S.).

The imagines occur in one, two, and occasionally in three generations. The majority of the species (genera: *Cnephasia* CURT., *Neosphaleroptera* RÉAL, *Eana* BILLB. and *Eulia* HBN.) fly in one generation, except some species in South Europe, North Africa and probably Asia Minor. *Cnephasia longana* (HAW.) occurs in Central Europe in one generation, and in the Mediterranean Region at least in two generations. May and June are the top months of the occurrence of the *Cnephasiini*. In August, September and October fly the species of *Oxypteron* STGR. Regarding the examined material this seems to be the second generation, or there are two indistinctly separable ones. Only few species fly in autumn e.g. the representatives of *Exapate* HBN. Some specimens of *E. congelatella* (CL.) can hibernate and fly in early spring. In February and March flies *Tortricodes tortricella* (HBN.), the earliest species of this tribe. It is known that sometimes specimens of this species emerge before winter and hibernate. These two cases are the only known evidence of the hibernation of the *Cnephasiini*-moths.

The *Cnephasiini* occur nearly in all types of terrain, but prefer rather dry places. Many species fly in forests or on forest-borders on various altitudes. There are three species, which occur both in low terrains and very high mountains. The first of these is *Eulia ministrana* (L.) which lives in plains in the forests and feeds on various trees and bushes, but also flies in the mountains in the Alpine Regions, where the caterpillar feeds on *Vaccinium*-species. These alpine forms are usually very dark in colour. Two other species, *Eana osseana* (SCOP.) and *E. argentana* (CL.), do not need any special bioecological conditions. They live in meadows at very various altitudes (in the meadows by the sea

in Poland, as well as in Cashmere or Pamir), but rather in damp areas. The species of *Cnephasia* CURT. occur chiefly in the forests or near them. KUZNETSOV (1956) found *Cnephasia asiatica* KUZN. in the forest regions of Kopet-Dag, where this species was common, and supposed that it occurred also in the neighbouring desert regions. *Cnephasia alticolana* (H.-S.) known as Alpine species and flying on the altitudes about 1000—1600 m. in the Tatra Mts., occurs also in some localities in the lowland in Poland. There are, however, some species as *Exapate duratella* HEYD. and *Euledereria alpicolana* (FRÖL.) characteristic of mountainous regions.

Zoogeography

The geographical distribution of the *Cnephasiini* is very insufficiently known, as many species are recorded from one or few examples, or from one locality. The fauna of Central Asia is very feebly known, only few species were found in East Asia, Middle East and the central part of North Africa. Older data concerning this group are rather doubtful, and in the species which can be distinguished genitalically only they can never be useful for zoogeographical study. Thus in the present paper I try to give a short and provisional sketch of the distribution of the genera and species of the *Cnephasiini*. The majority of species of the *Cnephasiini* are European or palaearctic species. There are three holarctic species, namely *Eulia ministrana* (L.), *Eana argentana* (CL.) and *E. osseana* (SCOP.), and probably *Cnephasia virgaureana* (TREIT.) which was purchased from Newfoundland. The examples of palaearctic species are *C. communana* (H.-S.), *C. pascuana* (HBN.) or *C. abrasana* (DUP.). The ranges of these species differ from each other. It should be necessary to add *C. alternella* STEPH. to this group, but the problem of this species (or group of species) is not clear. In the *alternella*-group there are several more or less similar forms and five species. *Cnephasia alternella* STEPH. is recorded from whole Europe, North Africa, Asia Minor and probably from Siberia. In Spain and Asia Minor occur two other species: *C. hispanica* OBR. and *C. anatolica* OBR.; in Morocco (Great Atlas) *C. atlantis* FIL. In East Asia occurs *C. cinereipalpana* RAZ., which is East-Asiatic species. It was recorded from Manchuria, North East China, Vladivostok and Yokohama. Among the west-palaearctic species there are some which can be found also in North West Africa, as for instance *C. longana* (HAW.). The distribution of this species is very interesting. It occurs in western Europe including England, in North-West Africa, in Asia Minor, in Central Europe and in southern Sweden. The eastern limit of its distribution in Central Europe is the line of the river Odra in Poland. This limit is expanded eastwards in southern parts of Europe, but the distribution of the species under consideration is insufficiently known in that region. The distribution of some European species is also interesting as for instance the distribution of *Exapate conegelatella* (CL.) which occurs in whole Europe except the southern regions. Two species could be considered as Atlantic ones, viz., *Cnephasia conspersana*

DOUGL. and *C. octomaculana* STEPH. The occurrence of *C. octomaculana* STEPH. in Ussuri Land is doubtful. *Cnephasia conspersana* DOUGL. is known from England, Spain and North West Africa, chiefly coastally. To the Mediterranean species I include *Cnephasia gueneana* (DUP.), *Oxypteron exiguanum* (LAH.) and *Cnephasia tyrrhaenica* AMS., however, the distribution of the latter is insufficiently known. *C. tyrrhaenica* AMS. was found in isolated locality in Central Europe (Neu Siedlersee near Vienna). *C. gueneana* (DUP.) occurs along the coasts in North West Africa (Morocco, Tunisia), in Sicily, Crete and Cyprus. The distribution of *C. orientana* (ALPH.) is characteristic of ponto-oriental species. This species was found in southern Ukraine, Transcaucasia, Turkestan, Afghanistan, Persia and Syria. To the alpine species can be included *Exapate duratella* HEYD. and *Euledereria alpicolana* (FRÖL.), which occur in Alpine Regions of Europe only, chiefly in Central Europe. The distribution of the species belonging to the *sedana*-group is bound to large mountains, chiefly in the more southern regions. The species of this group were recorded from Great Atlas (Morocco), Granada (Spain), Alps, Appenines, Mountains of Yugoslavia, Greece, Asia Minor, Persia, Afghanistan, from Altai, Cashmere and probably from other mountains of Central Asia as well.

The species distributed in North Africa have probably larger ranges than those we know now, and are distributed aslo in Asia Minor and the Middle East, as the species of the group of *Cnephasia constantinana* RAZ.

Further studies on the distribution of the *Cnephasiini* will allow in some future time to prepare more precise maps. At present, however, any particular conclusions would be erroneous.

SYSTEMATIC PART

Synochoneura OBR.

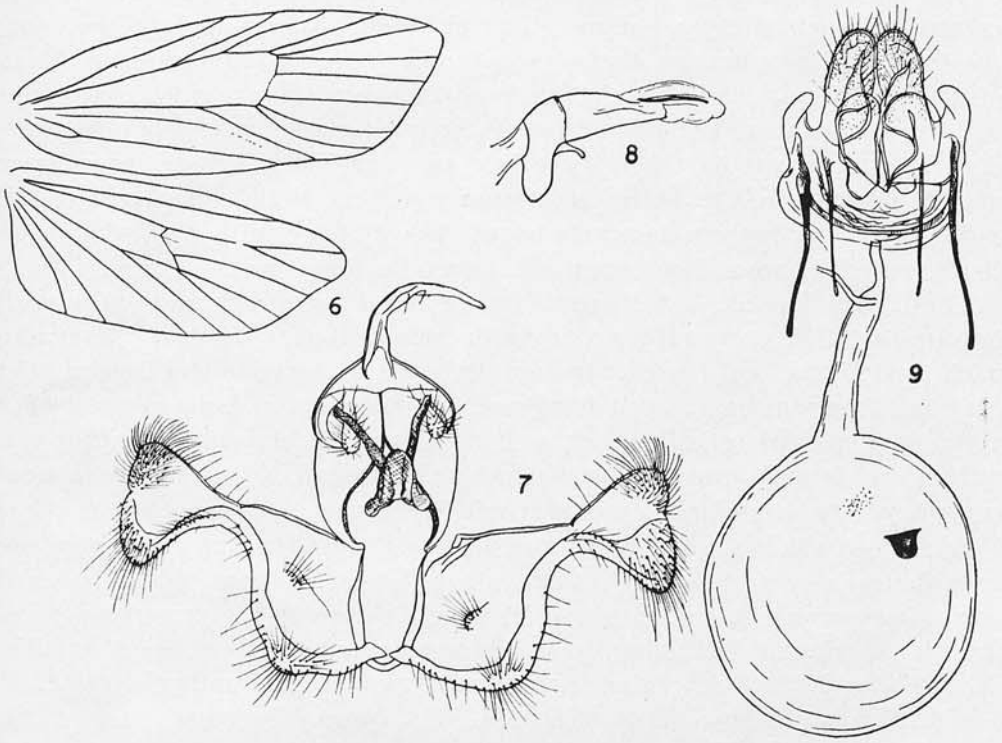
Type species: *Eulia ochriclivis* MEYRICK, 1931

Eulia MEYRICK, 1931, Bull. Sect. sci. Acad. Roum., **14**: 63
Synochoneura OBRAZTSOV, 1955, Tijdschr. Ent., **98**: 151.

Labial palpus about 2, very slender; median joint slender, long; terminal joint short, short-scaled. Antenna with short bristles; tongue well developed. Forewing rather of constant width throughout; costa arched outwards; apex rounded; termen straight and oblique. Vein *sc* rather short; r_1 from beyond the middle of median cell; r_2 equidistant to r_1 and r_3; m_1 approximate to r_5 at median cell; r_5 to termen; r_5, m_1 and m_2 parallel to each other; m_3 approximate to cu_1; cu_2 from $^2/_3$ of median cell. Hindwing elongate with short, rather pointed apex; *sc* long; *rr* stalked to $^1/_2$ with m_1; m_2 subparallel to m_3; m_3—cu_1 from one point or very short-stalked (fig. 6).

Male genitalia. Valva very broad at base, narrowing in posterior portion; sacculus very long; small pulvinus present; tegumen large; uncus long, pointed; socii small; gnathos with well developed termination; transtilla absent; aedeagus simple; cornuti present.

Female genitalia. Labia narrow; gonapophyses rather long. Lamella vaginalis with well sclerotized anterior edge and membraneous posterior portion; ostium bursae large; introitus broad; ductus bursae membraneous, very thin in the posterior portion, where ductus seminalis originates. Bursa copulatrix with small sack-shaped signum.



Figs. 6—9. *Synochoneura ochriclivis* MEYR.: 6 — venation, 7 — male genitalia, „Kwanhsien, China, F. VII. [19]30", G. Sl. 6954, 8 — aedeagus of same specimen, 9 — female genitalia, „M. 18. VII.", G. Sl. 7609

Biology unknown.

Distribution: China.

Comments. This genus is an intermediate between the *Cnephasiini* and *Archipini*. There is no costal fold in the males. A very interesting feature is the presence of the cornuti in the vesica. The cornuti are of the usual *Archipini*-shape. The remaining features of the male genitalia of *Synochoneura* OBR. are typical of the *Cnephasiini*. The signum in the female genitalia also characteristic of the *Archipini*. In the species of all the remaining genera there is not a similarly shaped signum.

Synochoneura ochriclivis (MEYR.)

(Pl. XII, fig. 1)

Eulia ochriclivis MEYRICK, 1931, Bull. sect. sci. Acad. Roum., **14**: 63; *Synochoneura ochriclivis*; OBRAZTSOV, 1954, Tijdschr. Ent., **97**: fig. 214, 215, 232—234; OBRAZTSOV, 1956, ibid., **98**: 107.

Basal joint of labial palpus very short; median joint long, orange-brown, creamy in terminal portion; terminal joint short, pale brownish. Head pale brownish orange with whitish front; thorax darker than the head, posterior crest reddish. Forewing elongate, broadest in $^3/_4$; costa curved; apex very short, pointed; termen slightly oblique. Ground colour pale orange-yellow along the costa and near tornus. Costa rusty-brown, rather pale, darker near base of the wing. Dorsal edge of costal fascia waved. Apex rusty, termen concolorous with subcostal area. Dorsal portion of the wing rusty-brown provided with dark brown-rusty radial fascia from base to $^1/_3$ medially. Fringes concolorous with the ground colour. In female posterior portion of the wing large yellow-rusty area. Dark pattern delicately edged with white costally. Hindwing rather small, rounded; apex short, rounded. Length of forewing 9—11 mm.

Male genitalia (fig. 7, 8). Valva very broad at base, narrowing posteriorly in terminal third. Costa rather delicate. Sacculus strong, curved in $^1/_3$, angulate in the middle, without free termination. Pulvinus in the middle of basal portion of valva. Processus basalis well developed. Tegumen rather short; uncus slender, very long, pointed apically; socii well developed, feebly hairy, gnathos with rather long lateral arms and well developed terminal plate. Aedeagus short, curved, pointed terminally, provided with cornuti.

Female genitalia (fig. 9). Labia of a normal *Tortricidae*-shape; gonapophyses long. Lamella vaginalis with rather narrow lateral portions; introitus broad, narrowing towards ductus bursae which is very narrow in the posterior portion. Anterior portion of ductus bursae broad; bursa copulatrix very large, rounded, delicately sculptured in posterior portion. Signum small, well sclerotized.

Distribution: China (West Tien-Mu-Shan, prov. Chekiang). The moths occur in May and July.

Olindia GUEN.

Type species: *Pyralis schumacherana* FABRICIUS, 1787

Olindia GUENNÉE, 1845, Ann. Soc. ent. France, sér. 2, **3**: 178.
(RAZ.: 197)

Labial palpus short; median joint slender; terminal joint short. Forewing rather large; costa arched outwards; apex pointed. Vein *sc* short; r_1 from the middle of the median cell; r_5 to beyond apex; r_1—r_2 about three times longer than r_2—r_3; r_3, r_4, r_5 near to each other from the median cell. Hindwing with short, rounded apex. Veins *rr* and m_1 separate, from one point or short-stalked; m_2—m_3 parallel; m_3—cu_1 near to each other.

Male genitalia. Valva broad with rather straight costa, rounded apically. Sacculus reaching $^3/_4$ of the ventral edge of valva, without free termination, provided with delicate spine on the end ventrally. Tegumen in comparison with valva small; uncus flat, broad, bifurcate distally; socii very small; gnathos ventrally not coalescent; transtilla with large lateral projections. Aedeagus slender provided with short anellus. No cornuti in vesica.

Female genitalia. Labia of normal *Tortricidae*-shape; gonapophyses short; lamella vaginalis with elongate lateral parts; ostium rounded; ductus bursae short; bursa copulatrix transparent; signum nearly atrophied, reduced to minute granules.

Caterpillar (after SWATSCHEK): „bristles I and II of ninth abdominal segment on separate warts, bristle VI present, the distances between bristles VIII larger than in eight abdominal segment. Bristle VIII of mesothorax on the costa".

Biology. The moths occur in June and July. The caterpillar feeds on various plants (*Aquilegia* L., *Galeobdolon* ADANS., *Vaccinium* L., *Chrysoplenium* L., etc.) in May and June.

Distributed in Continental Europe as well as in Great Britain.

Comments. Only one species belongs in this genus. *Olindia* GUEN. resembles the Australian genus *Peraglyphis* COMM. both in the venation and in the male genitalia, in which uncus is broad and bifurcate. The females of *Peraglyphis* COMM. differ from *Olindia* GUEN. by the shape of the ductus bursae and lamella vaginalis, and they seem to be closer to those in the tribe *Archipini*. By the shape of the valva and sacculus and also by the gnathos *Olindia* GUEN. is close to *Isotrias* MEYR.

Olindia schumacherana (F.)

Pyralis schumacherana FABRICIUS, 1787, Mant. Ins., **2**: 236.
(RAZ.: 199 pl. 17 fig. 1, pl. 36 fig. 165, pl. 54 fig. 249)

Isotrias MEYR.

Type species: ***Tortrix rectifasciana*** HAWORTH, 1811

Isotrias MEYRICK, 1895, Handb. Brit. Lep.: 542.
(RAZ.: 200)

The shape of the wing, head and labial palpus as those in *Olindia* GUEN. Venation very similar to that in the preceding genus. In the forewing r_1 just from before middle of median cell; r_5 to apex. In the hindwing *rr* remote from m_1; m_3—cu_1 sometimes from one point.

Male genitalia as in *Olindia* GUEN. with the exception of the uncus which is simple, pointed terminally. Socii rather well developed, slender; gnathos as in *Olindia* GUEN., but more delicate.

Female genitalia with labia thin and delicate; gonapophyses thin; lamella vaginalis narrow, subquadrate with straight proximal edge; ductus bursae

long with small more strongly sclerotized areas before lamella vaginalis; signum very delicate, in the shape of short transverse sclerites on sculptured band.

Distribution: Europe, chiefly in southern regions, and Asia Minor.

Biology very little known. The moths appear in May and June, probably in single generation. Caterpillars polyphagous, feeding on various plants, chiefly trees (*Crataegus* L., *Acer* L., *Quercus* L.).

Comments. Four species belong to *Isotrias* MEYR. All of them are very similar to each other in the genitalia and differ in pattern and coloration. *Isotrias rectifasciana* (HAW.) is very variable species and two of its forms can be considered as subspecies (*insubrica* M.-R. and *castiliana* RAG.). In „European *Cnephasiini*" only the original description of *I. joannisana* (TUR.) was enclosed. The type of this species has been found in the collection of the Muséum d'Histoire Naturelle in Paris.

Isotrias rectifasciana (HAW.)

Tortrix rectifasciana HAWORTH, 1811, Lep. Brit.: 465.
(RAZ.: 201 pl. 17 fig. 3, pl. 36 fig. 166, pl. 54 fig. 250)

Isotrias hybridana (HBN.)

Tortrix hybridana HÜBNER, 1814—17, Samml. eur. Schmett., Tortr., pl. 38 fig. 238.
(RAZ.: 203 pl. 23 fig. 54, pl. 36 fig. 168, pl. 54 fig. 252)

Isotrias stramentana (GUEN.)

Sciaphila stramentana GUENÉE, 1845, Ann. Soc. ent. France, sér. 2, **3**: 167.
(RAZ.: 204 pl. 23 fig. 54, pl. 36 fig. 168, pl. 54 fig. 252)

Isotrias joannisana (TUR.)

(Pl. XII, fig. 2)

Anisotaenia joannisana TURATI, 1921, Nat. Sci., **23**: 327 pl. 4 fig. 40, 41; *Isotrias ?joannisana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 108; RAZOWSKI, 1959, Acta zool. cracov., **4**: 205; RAZOWSKI, 1961, ibid., **5**: 663 pl. 86 fig. 2.

Very similar to the preceding species in the shape of the wing and pattern, but differing in coloration. Head and ground colour of forewing pale orange-yellow. Pattern much darker, more orange. Fringes concolorous with the ground colour. Hindwing brownish, rather dark; fringes pale greyish. Length of forewing about 8 mm.

Male genitalia (fig. 10). Valva broad, elongate-ovate, rounded terminally, with costa strongly curved in middle. Sacculus rather weak; several minute spines in ventral area of valva before middle and some spines in the end of

sacculus ventrally. Tegumen broad; uncus strong, very broad at base; gnathos with short arms, strongly broadened and rounded terminally. Aedeagus short.

Comments. The only known specimen was collected on Mt. Autore in Central Italy, 10. VI. This type is preserved in the collection of the Muséum d'Histoire Naturelle in Paris. *Isotrias joannisana* (TUR.) differs from all the remaining species of this genus by orange coloration and male genitalia, in which the valva is broader, the uncus and gnathos stronger, and the aedeagus shorter. The female unknown.

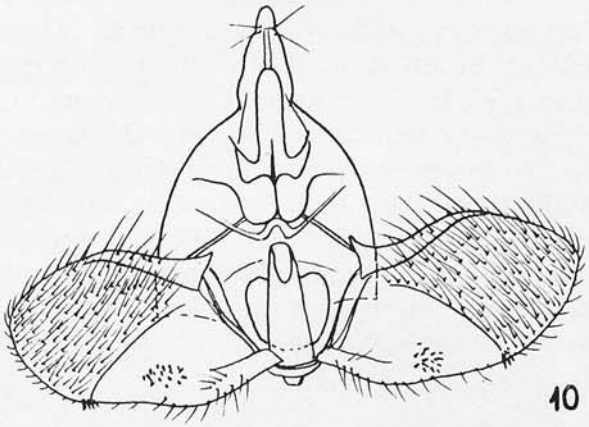


Fig. 10. Male genitalia of *Isotrias joannisana* (TUR.), type, „Italia centr., Mt. Autore, m. 800, 10. VI. [19]09, C. KRÜGER", G. Sl. 3833 (Viette)

Eulia HBN.

Type species: *Phalaena Tortrix ministrana* LINNAEUS, 1758

Eulia HÜBNER, 1825, Verz. Bek. Schmett.: 379.
(RAZ.: 206)

Labial palpus short; median joint slightly expanding posteriorly; terminal joint small, delicate. Forewing broad with all veins separate. Vein r_1 from about $^1/_3$ of median cell; r_5 to termen. Hindwing also broad with very short apex. Veins *rr* and m_1 short-stalked; m_3—cu_1 near one another.

Male genitalia. Valva very broad, ovate, rounded apically. Sacculus without free termination, well sclerotized. Group of stronger hairs beyond the end of sacculus on valva. Tegumen strong; uncus long, very delicately concave terminally; socii very broad, short, rounded; gnathos long, provided with terminal plate; transtilla with long and pointed lateral projections; aedeagus thin, bent.

Female genitalia with slender labia and thin gonapophyses. Lamella vaginalis broad, rounded; ductus bursae very narrow; bursa copulatrix very large, spined in anterior half.

In the caterpillar (according to SWATSCHEK's diagnosis) bristle VI of ninth abdominal segment present; the distance between bristles VIII not larger

than in ninth abdominal segment on aequal position with the stigma, and bristle VIII on mesothorax well remote from the costa. The characteristic of the caterpillar of *Eulia ministrana* (L.) is in SWATSCHEK's publication on p. 66.

Biology. The moths occur from mid-May to end of July, usually in woods. Caterpillar from end of August to April; the small ones fold the apical portions of the leaves, the larger ones live in characteristic tubes made of silk. Pupation in April. Food plants: *Betula* L., *Alnus* L., *Sorbus* L., *Quercus* L., *Vaccinium* L., and others.

Distribution: Europe, Siberia, Japan and North America.

Comments. Very nany species have been described under the generic name *Eulia* HBN., chiefly by E. MEYRICK. Most of those are referable to the *Sparganothinae* and *Archipini*, however, some of them belong to the *Cnephasiini*, but only *Eulia dryonephela* MEYR. was listed by OBRAZTSOV in his catalogue of the Palaearctic *Tortricidae* as doubtfully belonging in this genus. *Eulia abdallah* LE CERF (LE CERF, 1932, Bull. Soc. ent. France, **37**: 165) is an aberration of *Paraclepsis accinctana* (CHRÉT.) and *Eulia neftana* D. LUC. (D. LUCAS, 1943, Bull. Soc. ent. France, **48**: 134) is synonymous with *Prohysterophora chionopa* (MEYR.), the species of the *Cochylidae*. *Tortrix Lophoderus ancillana* KENNEL listed by OBRAZTSOV as *Eulia* HBN. (in species incertae sedis) is the species of the *Archipini*.

Eulia ministrana (L.)

Phalaena Tortrix ministrana LINNAEUS, 1758, Syst. Nat. ed. **10**: 531.
(RAZ.: 207 pl. 26 fig. 78, pl. 36 fig. 169, pl. 55 fig. 253)

Propiromorpha OBR.

Type species: *Penthina rhodophana* HERRICH-SCHAEFFER, 1851

Propiromorpha OBRAZTSOV, 1955, Tijdschr. Ent., **98**: 156.
(RAZ.: 208)

Labial palpus rather similar to that in *Eulia* HBN. Forewing elongate; costa arched outwards; apex delicately rounded; termen slightly oblique. All veins in forewing separate; r_1 originates from before the middle of median cell; r_5 to termen. Hindwing with short, delicately rounded apex; *rr* stalked with m_1 to the half of the length; m_3 remote from cu_1.

Male genitalia. Valva large, narrowing posteriorly in terminal portion; sacculus slender with thin, pointed termination; tegumen broad; uncus thin, pointed; socii long, gnathos rather delicate with very small terminal portion. Aedeagus simple; no cornuti in vesica present.

Female genitalia. Labia as in the preceding species; gonapophyses thin. Lamella vaginalis with well developed introitus and lateral parts; ductus bursae transparent, bursa copulatrix ovate, provided with long, dentate signum.

Biology. The moths occur in April and May. The larvae of *P. rhodophana* (H.-S.) feeds on *Clematis* L. Hibernation in pupa.

Distribution: South and East Europe, North-West Africa and Asia Minor.

Comments. The genitalia of *P. adulteriana* (KENN.) unknown. Regarding the genitalia of *P. rhodophana* (H.-S.) this genus is closer to *Eulia* HBN. than to *Cnephasia* CURT. In the female genitalia the signum is of characteristic *Cnephasia*-type.

Propiromorpha rhodophana (H.-S.)

Penthina rhodophana HERRICH-SCHAEFFER, 1851, Syst. Bearb. Schmett. Eur., **4**: 234. (RAZ.: 209, pl. 18 fig. 9, pl. 36 fig. 170, pl. 55 fig. 254)

Propiromorpha adulteriana (KENN.)

Lophoderus adulteriana KENNEL, 1901, Iris, **13** (**1900**): 221; *Tortrix adulteriana* KENNEL, 1910, Pal. Tortr.: 167 pl. 8 fig. 51; *Propiromorpha adulteriana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 108.

Labial palpus rather short; head, palpi and thorax brownish grey. Forewing slightly expanding posteriorly; costa rather straight; apex rounded; termen oblique, convex. Ground colour whitish, sprinkled with brownish along costa; pattern brownish grey with blackish spots and stripes. Basal area dark, bordered with slight post-basal fascia; median fascia well developed, broad in posterior half; subapical and subterminal spots rather large. Fringes whitish-brownish. Hindwing brownish grey; fringes a little paler. Length of forewing 7 mm.

Terra typica: North-West Africa (Teniet-el-Haad).

Comments. The genitalia of this species are unknown. The description is based on the illustration in KENNEL's monograph, and on the original description. I have examined one specimen (unfortunately without abdomen), which is probably conspecific with this species.

OBRAZTSOV included this species into *Propiromorpha* OBR., however, without examination of the genitalia it is very difficult to state its systematic position. I preserve in this paper the systematic position fixed by N. OBRAZTSOV.

Cnephasia CURT.

Type species: ***Olethreutes pascuana*** HÜBNER, 1822

Cnephasia CURTIS, 1826, Brit. Ent., **3**: 100. (RAZ.: 210)

Labial palpus usually short, twice or three times as long as diameter of the eye. Basal joint short; median joint elongate, triangular; terminal joint very short, very often concealed in the scales of the median joint. Antenna short ciliate, in males before the end dentate. Tongue normally developed, rather

long. Forewing of constant width throughout or broadening posteriorly, costa sometimes more strongly arched outwards; apex pointed or rounded; termen different in shape. All veins in forewing separate, r_5 reaching apex, sometimes termen just beyond apex. In hindwing veins *rr* and m_1 as well as veins m_3 and cu_1 separate, from one point or stalked.

Male genitalia. Valva long, sacculus of different shapes and lengths, provided with free hairy termination (very short spine-like hairs), or without the termination, in the shape of strongly sclerotized edge of valva. Uncus usually long, minutely spined. Gnathos with well developed terminal plate, which in a few species is weak and small. Aedeagus without cornuti but sometimes with characteristic projections (always small ones).

Female genitalia. Labia with large, flat posterior portions, only in *Cnephasiella* ADAMCZ. narrow and partially coalescent. Ovipositor short, in *Cnephasiella* ADAMCZ. telescopical. Lamella vaginalis of different shapes, ostium simple; ductus bursae sometimes long. Signum usually well developed.

Caterpillar (translation of SWATSCHEK's diagnosis): „On ninth abdominal segment bristles I and III on one wart, bristle VI absent. Third ocellus decidedly larger than remaining ocelli. Sutura coronalis broader than adfrontalis; bristles IV and V of the abdominal segments are far from one another, on first abdominal segments ordered vertically". SWATSCHEK characterized *Cnephasia* CURT. on the basis of *C. longana* (HAW.) and *„wahlbomiana* auct.". The caterpillar of the latter was taken on *Genista tinctoria* L. Unfortunately it is not possible to state which species was examined by SWATSCHEK. I suppose, however, it was *C. alternella* STEPH. or *C. communana* (H.-S.). The differences between *Cnephasia* CURT. s. str. and *Cnephasiella* ADAMCZ. are according to SWATSCHEK's opinion very slight („third ocellus not larger than remaining ocelli, on first abdominal segment bristle V and IV similar to those on all remaining abdominal segments, stalked diagonally"). The subgenus *Cnephasiella* ADAMCZ. was characterized on the basis of the caterpillar of *C. incertana* (TREIT.).

Systematics. The genus is divided into two subgenera; the key to the determination of these is added. In European Cnephasiini I used RÉAL's name *Anoplocnephasia* for the group of species closely related to *Cnephasia sedana* (CONST.). The moths of this group differ from other *Cnephasia*-species by the very short anellus in the male genitalia and several less constant features. In the present paper *Anoplocnephasia* RÉAL is synonymised with *Cnephasia* s. str. The subgenus *Cnephasia* s. str. is divided into three groups: 1. the group of *C. communana* (H.-S.), 2. the group of *C. longana* (HAW.) and the afore mentioned group of species related to *C. sedana* (CONST.). In the group of *Cnephasia communana* (H.-S.) there are some subgroups of species, very similar to each other in the genitalia [*C. chrysantheana* (DUP.), *C. communana* (H.-S.), *C. alternella* STEPH. and *C. fragosana* (ZELL.)]. In different subgroups the variability of the sacculus and its free termination is shown. The presence of the free termination seems to be a specific feature. *Cnephasia grandis* (OSTH.) and *C. facetana* KENN. are not belonging in the group of *C. sedana* (CONST.)

as it was stated by OBRAZTSOV (1950, 1956) because of the long anellus in the male genitalia, and these species are closely related to the *C. fragosana*-subgroup, in which in some cases there is no free termination of the sacculus. In the *C. longana*-group sacculus is short but has always a free termination. The shapes of the valva and uncus are also very characteristic of this group. In the female genitalia the lamella vaginalis is very broad while the ductus bursae in comparison with that in the *C. communana*-group is very short. In this group two subgroups could be established, viz., the subgroup of the species closely related to *Cnephasia longana* (HAW.) and that of *C. gueneana* (DUP.). The species of the group of *Cnephasia sedana* (CONST.) are very similar to each other in the male and female genitalia. The differences among the species are chiefly in the coloration of the wings and in the female genitalia.

I transferred (1961) *Sciaphila vetulana* CHR. to the genus *Eana* BILLB. (listed as the species of *Cnephasia* CURT. in OBRAZTSOV's catalogue) and enclosed *Tortrix amseli* D. LUC. in this genus. *Tortrix mienshani* CAR. listed by OBRAZTSOV as „species incertae sedis" in this genus is referable to *Olethreutinae*; *Sciaphila mesomelana* WKR. to *Cochylidae* to the genus *Aethes* BILLB.; *Cnephasia luctuosana* RBL. to *Archipini* (*Ptycholomoides* OBR.); *Tortrix Cnephasia alhamana* SCHMIDT to *Epagoge* HBN. *(Archipini)* and *Cnephasia callimachana* TUR. to the genus *Clepsis* GUEN. *(Archipini). Cochylis zelleri* CHR. is the species of the *Cnephasiini* as the genitalia of the type show.

Geographical distribution. The species of *Cnephasia* CURT. are widely distributed in the Palaearctic Region, and one species [*C. virgaureana* (TREIT.)] is known from the Nearctic Region. The species of the *communana*-group are known from Europe, North Africa and Asia. They are chiefly Euro-Siberian species. The species of the *longana*-group occur chiefly in the Mediterraneum, and only *C. longana* (HAW.) is known from Central Europe, England and more from Scandinavia. The species of the *sedana*-group are known from the mountainous regions of Southern (partially Central) Europe, North Africa and Asia. There are no data on *Cnephasia*-species from Japan, except one record of *C. cinereipalpana* RAZ. from Yokohama. It seems, however, that this genus has many more representatives in East Asia.

Biology is very slightly known. The species occur sometimes on high altitudes, very often in low lands in different biotopes. Because of the poor knowledge of the biology of *Cnephasiini*, the differences among particular genera cannot be stated precisely. Some data about the biology of the genus in question are given in the general part of this paper.

Variability. The species of *Cnephasia* CURT. have rather constant coloration in comparison to other groups of this tribe or to other *Tortricinae*. The variability regards the colouring of the ground and pattern. Very often there are dark or unicolorous specimens in the species with pattern usually well developed. In *C. sedana* (CONST.) the variability is, however, very great, and the specimens from different localities show slight differences in the shape of forewing and in the pattern. The problem of this species is very difficult,

and perhaps, these forms are the subspecies. On the other hand, the mentioned forms of *C. sedana* (CONST.) differ very often from one another in the genitalia. Some forms of *C. sedana* (CONST.) are discussed in this paper; all undescribed forms need longer study.

Like in the pattern, the variability of the genitalia is known in this genus. Most variable are the shape and the length of the sacculus. ADAMCZEWSKI (1936) showed the variability of the length of the sacculus in *Cnephasia virgaureana* (TREIT.) from Poland.

I have had no opportunity to examine some species, thus their original descriptions are enclosed. The types of *C. albatana* CHRÉT. (which was probably preserved in the Paris Museum) and *C. bogodiana* TUR. are lost.

Key to the determination of the subgenera

1. Two kinds of hairs on labia; gnathos with well developed terminal plate; if this plate is weak, sacculus without free termination . . . . . *Cnephasia* CURT. s. str.
—. Normal hairs on labia only; gnathos with very weak terminal plate or strongly enlarged ventrally, sacculus with free termination . . . . . *Cnephasiella* ADAMCZ. .

Subgenus 1: *Cnephasiella* ADAMCZ.

Type species: *Sciaphila incertana* TREITSCHKE, 1835

Cnephasiella ADAMCZEWSKI, 1936, Ann. Mus. zool. polon., **11**: 268.
(RAZ.: 213)

This subgenus was placed by OBRAZTSOV (1956) as a valid genus between *Cnephasia* CURT. and the *Oxypteron*-group. The only differences between this subgenus and the genus *Cnephasia* CURT. s. str. are in the female genitalia. The habitus as in *Cnephasia* CURT. s. str. Male genitalia delicate with long uncus and slender aedeagus. Female genitalia with coalescent thin labia and reduced lamella genitalis. Ovipositor telescopical, gonapophyses posteriores very long.

Two species of this subgenus are known. Several forms described as good species or aberrations or subspecies of *Cnephasia incertana* (TREIT.) are conspecific with this species or are its infraspecific forms.

Cnephasia (Cnephasiella) abrasana (DUP.)

Sciaphila abrasana DUPONCHEL, 1843, Hist. Nat. Lép. France, Suppl., **4**: 407, pl. 8 fig. 2.
(RAZ.: 213, pl. 18 fig. 10, pl. 27 fig. 171, pl. 55 fig. 255)

Cnephasia (Cnephasiella) incertana (TREIT.)

Sciaphila incertana TREITSCHKE, 1835, Schmett. Europ., 10, **3**: 91.
Tortrix barbarana WALSINGHAM, 1900, Ann. & Mag. nat. Hist., ser. 7, **5**: 461; *Cnephasiella barbarana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 117 — **synon. nov.**
Cnephasiella kurdistana AMSEL, 1955, Beitr. Naturkunde Forsch. Südwestdeutschl., **14**: 125, pl. 6 fig. 6.
(RAZ.: 214, pl. 18 fig. 11—13, pl. 37 fig. 172, pl. 55 fig. 256, 257)

I have examined the types of both *Tortrix barbarana* WALSM. and *Cnephasiella kurdistana* AMSEL and I have not found any differences neither in the habitus nor in the genitalia. Small differences in the coloration must be thought as normal variability. *Cnephasiella kurdistana* AMS. has been synonymised by me in 1961.

I preserve as valid aberrations *leucotaeniana* SCHAW., *proincertana* RAZ. and *berguniana* RAZ. Another form described as *atticana* RAZ. from Greece is probably a subspecies. I have found few specimens of this form, and working on so scarce material I cannot decide about the systematic position of *atticana* RAZ.

Subgenus 2: *Cnephasia* CURT. s. str.

Type species: ***Olethreutes pascuana*** HÜBNER, 1822

(RAZ.: 216)

The group of the species very similar to one another externally. Male genitalia: valva elongate, rounded or pointed terminally; sacculus usually well developed, however, sometimes without a free termination; uncus long with slender basal portions; socii rather small; gnathos provided with terminal plate; aedeagus simple.

Female genitalia: lamella vaginalis and lamella genitalis well developed; ovipositor of the normal shape; labia very broad with petal-shaped posterior portions.

This subgenus comprises about 70 species. It is divided into three groups in this paper.

Group 1

Group type: *Cnephasia communana* (H.-S.)

Sacculus well developed, provided with free termination, however, in a few species this termination is very short as in *Cnephasia chrysantheana* (DUP.) and in *C. zelleri* (CHR.). In *C. nigripunctana* AMS. the termination is longer and the sacculus resembles that in the two preceding species. Females of both groups of species (with long, normal sacculus and with short terminated sacculus) are very similar to each other.

15
13
11
14
12

Cnephasia zelleri (CHR.), comb. nov.

(Pl. XII, fig. 3)

Cochylis zelleri CHRISTOPH, 1877, Horae Soc. ent. Ross., **12:** 290, pl. 8 fig. 63; *Conchylis zelleri* CHRISTOPH, 1885, in ROMANOV's Mém. Lép., **2:** 156, pl. 8 fig. 7; *Euxanthis zelleri*; REBEL, 1901, Cat. Pal. Micr., **2:** 100; KENNEL, 1913, Pal. Tortr.: 327 pl. 14 fig. 35.

Labial palpi short, whitish; front nearly of the same colour; the rest of head and thorax more yellowish. Forewing very slightly broadening posteriorly in the male, of the constant width throughout in the female. Costa delicately arched outwards; apex rounded; termen oblique and convex. Ground colour clear white, costa and dorsum delicately sprinkled with yellowish. Basal area yellowish, darker, more orange-yellow at posterior edge. Rest of pattern pale yellow with slight addition of pale orange or rusty. The edges of the pattern darker than their inner areas. Two parallel fascias vertical to costal edge, one in $^1/_4$, second in $^1/_2$ of costa. Narrow fascia in posterior portion of the wing connects with terminal fascia. This pattern is sometimes altered by an irregularity of the fascias. Fringes white. Hindwing white-yellow, darker in the peripheries than in the basal area; fringes white. Length of forewing 7—8 mm.

Male genitalia (figs. 11, 12). Valva very broad, broadest in the middle, very slightly tapering terminally in the posterior portion. Costa of valva well developed, rather straight. Sacculus rather without free termination, strongly sclerotized, with large bases. Tegumen broad; uncus very strong, broad; socii large; gnathos with broad lateral arms and well developed median plate; transtilla very broad with enlarged median portion. Aedeagus in comparison to whole apparatus very small, bent and pointed.

Female genitalia (fig. 13). Labia with very broad and large posterior portions. Lamella vaginalis with well developed lateral parts, which are pointed terminally. Introitus feebly sclerotized; ductus bursae rather long, of constant width throughout, strongly sclerotized in one third before bursa copulatrix. Bursa large, transparent; signum absent. Gonapophyses strong; gonapophyses posteriores longer than gonapophyses anteriores.

Distribution. Turkmenian SSR, ? Northern Persia (after KENNEL, 1913).

Biology unknown except that this moth appears in May.

Comments. *Cnephasia zelleri* (CHR.) was described as a species of the *Cochylidae* and always included in this family till now. It resembles externally

Figs. 11—15. Male and female genitalia: 11 — *Cnephasia zelleri* (CHR.), „Krasnovodsk, *Euxanthis zelleri* CHR.", G. Sl. 6869, 12 — aedeagus of same specimen, 13 — female genitalia of *C. zelleri* (CHR.), „8. V. [1]959, 40 km. k. sieviern. dl. Mary", G. Sl. 4900, 14 — *C. maraschana* CAR., male genitalia, „Marasch", Typoid, G. Sl. 7533, 15 — *C. maraschana* CAR., female genitalia, „Marasch", Lectotype, G. Sl. 7445

Cnephasia orientana (ALPH.), but differs genitalically by the different shape of the sacculus in the male and by the lamella vaginalis, the labia and the ductus bursae in the female. In the mentioned species the signum is present but it lacks in the species under consideration. The systematic position of *C. zelleri* (CHR.) is now fixed in the group of the species closely related to *C. chrysantheana* (DUP.).

Cnephasia (Cnephasia) maraschana CAR., bona sp.

(Pl. XII, fig. 4)

Cnephasia gueneana var. *maraschana* CARADJA, 1916, Iris, **30:** 48; ?*Cnephasia orientana*; WILTSHIRE, 1939, Trans. ent. Soc. London, **88:** 54; *Cnephasia orientana* ?*maraschana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99:** 110.

Labial palpus, head and thorax white; tegulae with yellowish hue laterally; abdomen whitish. Forewing slightly expanding posteriorly; costa delicately arched outwards; apex pointed; termen oblique (about 60°). Ground colour white, pattern yellowish, spotted with yellow-brown on the edges, sometimes ill-defined. Basal shade with irregular posterior edge; post-basal fascia broad, interrupted beyond the middle; the pattern in posterior portion of the wing well developed, especially large area on termen. Fringes white. Hindwing white to yellowish white; fringes white. Length of forewing 11 mm.

Male genitalia (fig. 14). Valva broad, rather of constant width throughout, rounded terminally. Sacculus well developed, reaching beyond half the length of ventral edge of valva, provided with free termination. Tegumen strong; uncus large; socii broad; gnathos well developed with rounded terminal plate, broad at base, pointed terminally.

Female genitalia (fig. 15). Labia broad; gonapophyses well developed, rather short. Lamella genitalis large; lamella vaginalis delicate with narrow and pointed lateral portions; introitus large; ductus bursae rather long, transparent; bursa copulatrix large with very long signum.

Distribution: Marasch in North Iran; all specimens from other localities must be examined genitalically. I suppose that the specimens from Lebanon determinad as *C. maraschana* (CAR.) belong in *C. orientana* (ALPH.).

Comments. The species is very similar to *Cnephasia orientana* (ALPH.), and differs from it superficially by the paler and more irregular pattern of the forewing. In the genitalia *Cnephasia maraschana* CAR. is closely related to *C. zelleri* (CHR.), but differs from it by the presence of the free termination of the sacculus in the male and by the shape of the ductus bursae and lamella vaginalis and the presence of the signum in the female genitalia.

The lectotype labelled „Marasch, Cneph. gueneana v. maraschana Car.", G. Sl. 7445 and five typoids (identically labelled) are preserved in the collection of the „Gr. Antipa" Museum in Bucharest.

Cnephasia (Cnephasia) nigripunctana AMS.

(Pl. XIII, fig. 5)

Cnephasia nigripunctana AMSEL, 1959, Bull. Soc. ent. Egypte, **43**: 56 pl. 4 fig. 1.

Labial palpus rather short with small, but protruding terminal joint. Basal and terminal joints white-grey, base and apical portion of median joint whitish, remainders brownish. Head cream; antenna pale grey-white; thorax cream-white. Forewing slightly broadening posteriorly; costa curved at base, then rather straight; apex delicately rounded; termen straight, oblique. Ground colour white with delicate cream hue along costa. Small yellowish spots on costa, very weak yellowish shade across the middle of the wing (remainders of the median fascia) and subterminal, slightly visible, elongate pale yellowish shade. Several black dots all over the surface, especially in the middle of the wing and a row of a little larger dots parallel to termen subterminally. Fringes white. Hindwing grey with very slight addition of brownish; fringes cream-white. Length of forewing 11 mm.

Male genitalia (fig. 16). Valva long, tapering in the posterior portion terminally, rounded apically. Sacculus long, thin, provided with small free termination. Tegumen large; uncus long and rather thin; socii small; rounded terminally; gnathos rather short, provided with well developed terminal plate; transtilla broad. Aedeagus long and thin, pointed terminally, strongly curved before the end, provided with very short basal portion and long anellus; juxta delicate.

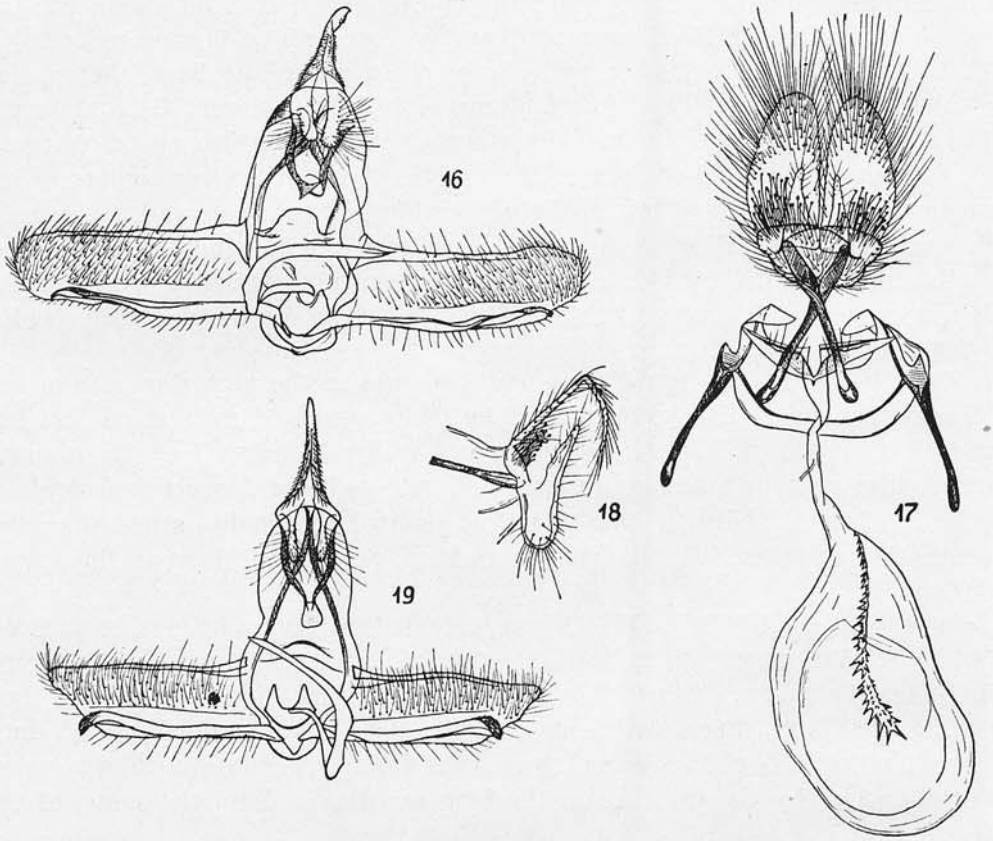
The holotype (labelled: „Hai Omran, Rayat, Iraq, 5000—6000 ft., 2—13. VI. 56, E. P. WILTSHIRE") is in the collection of Dr. H. G. AMSEL of Karlsruhe in Baden, Germany. The moth is very similar to *Cnephasia maraschana* CAR. or *C. zelleri* (CHR.) superficially, however, it differs by the decidedly black dots. The male genitalia of *C. nigripunctana* AMS. differ from those in the two mentioned species by the presence of the long sacculus and by the shape of the aedeagus.

Cnephasia sp., ♀

(Pl. XIII, fig. 6)

Three specimens, females from Syria („6—7. VI. 1961, Syria 60 km. NO v. Ladikije, KASY & VARTIAN") before me. I suppose that these specimens are conspecific with *Cnephasia nigripunctana* AMS., however, they differ from it in the shape of the wings and in the coloration. Unfortunately I cannot compare them with *C. nigripunctana* AMS. because this species is known as a single male specimen only. This problem can be solved when the male of the species under consideration becomes available; the species is easily distinguished by the coloration. The description of the Syrian specimens as follows.

Head white with slight addition of cream; labial palpus slender, cream; thorax white; bases of tegulae creamer. Forewing broad, slightly expanding posteriorly; costa arched outwards throughout; apex rounded; termen less oblique than in *C. nigripunctana* Ams., convex. Ground colour white, costa very slightly spotted with yellowish among the pattern. Basal area with yellowish ill-defined shade or white; postbasal fascia atrophied in dorsal



Figs. 16—19. Male and female genitalia: 16 — *Cnephasia nigripunctana* Ams., Holotype, G. Sl. 3367 (Ams.), 17 — *C.* spec.?, „6—7. V. 1961, Syria, 60 km. NO. v. Ladikije, Kasy & Vartian, G. Sl. 4323, 18 — ovipositor of same specimen, 19 — *C. sareptana alatauana* Raz., „Ala Tau, [18]78 Hbn.", G. Sl. 5109

and sometimes in costal portion, broad in the middle; median fascia from beyond the middle of costa to before tornus, broadest in the middle; subapical spot well developed, in two specimens joined with elongate subterminal pattern. On the edges (chiefly on ventral edges of the pattern) fine black dots present. Fringes concolorous with the ground colour. Hindwing whitish cream with slight addition of brownish; fringes white. Length of forewing about 11 mm. Underside of the wings similarly coloured as that in *C. nigripunctana* Ams.

Female genitalia (fig. 17). Labia elongate, rounded posteriorly with very characteristic anterior portions, which are protruding dorsally in the middle (fig. 18). Gonapophyses posteriores strong and broad; gonapophyses anteriores rather slender; lamella genitalis broad, rather straight anteriorly in the middle; lamella vaginalis with narrow tapering posteriorly lateral parts; anterior edge of the lamella slightly rounded, posterior edge rather straight, provided with heavily sclerotized bands; ostium bursae wide, surrounding area minutely spined; introitus larger and more strongly sclerotized than the ductus bursae, which is long and transparent. Bursa copulatrix large, tapering posteriorly; signum very long, narrow.

Cnephasia (Cnephasia) chrysantheana (DUP.)

Sciaphila chrysantheana DUPONCHEL, 1843, Hist. Nat. Lép. France, Suppl., **4:** 410, pl. 83 fig. 5; *Sciaphila chrysanthemana* HERRICH-SCHAEFFER (nom. emend.) 1851 (part.), Syst. Bearb. Schmett. Eur., **4:** 200; *Cnephasia cinareana* CHRÉTIEN, 1892, Naturaliste, **1892:** 132; MEYRICK, 1912, WAGNER's Lep. Cat., **10:** 47; FILIPIEV, 1934, Bull. Acad. Sci. URSS, **1934:** 1408; FILIPIEV, 1935, Z. Wien. Ent. Ver., **20:** 55; LHOMME, 1939, Cat. Lép. France et Belg., **2:** 276; OBRAZTSOV, 1956, Tijdschr. Ent., **99:** 109; RAZOWSKI, 1959, Acta zool. cracov., **2:** 217, pl. 18 fig. 14, pl. 27 fig. 173, pl. 56 fig. 258; *Cnephasia pulmonariana* RÉAL, 1953, Bull. mens. Soc. linn. Lyon, **22:** 61 fig. 5; OBRAZTSOV, 1956, Tijdschr. Ent., **99:** 115; *Cnephasia chrysantheana*; RAZOWSKI, 1961, Acta zool. cracov., **5:** 663.

In the European *Cnephasiini* the description of this species can be found under *Cnephasia cinareana* CHRÉT. I have examined the type of the DUPONCHEL's species, which is preserved in the Muséum d'Hist. Nat. in Paris and the types of *Cnephasia cinareana* CHRÉT. and *C. pulmonariana* RÉAL. All other data on *Cnephasia chrysantheana* (DUP.) except those in this paper are referable to *C. alternella* STEPH.

Cnephasia (Cnephasia) crassifasciana JOANN.

Cnephasia crassifasciana JOANNIS, 1920, Bull. Soc. ent. France, **1920:** 143.
(RAZ.: 219, pl. 18 fig. 16)

Cnephasia (Cnephasia) sareptana RAZ.

Cnephasia (Cnephasia) sareptana RAZOWSKI, 1959, Acta zool. cracov., **4:** 218 pl. 18 fig. 15, pl. 27 fig. 174.

Cnephasia sareptana alatauana RAZ.

Cnephasia sareptana alatauana RAZOWSKI, 1961, Pol. Pis. entom., **31:** 105 fig. 1.

Forewing slightly broadening posteriorly; costa delicately arched outwards; apex pointed; termen oblique, more oblique than in the typical form. Ground colour yellowish brown, sprinkled with grey. Fringes yellowish grey. Hindwing

yellowish grey, darker on the peripheries; fringes rather whitish. Length of forewing 10 mm.

Male genitalia (fig. 19). Valva long with rather straight costa, nearly of the same width throughout, strongly narrowing posteriorly and pointed apically. Uncus long and thin; socii slender; gnathos long with small terminal plate. Aedeagus long and thin, pointed terminally.

Distribution. The typical form is recorded from Eastern Europe from Sarepta near Volgograd, subspecies *alatauana* RAZ. from Ala Tau in Armenia.

Comments. This subspecies differs from the typical form by the shape and the length of the forewing. In the male genitalia the differences are: uncus and gnathos in *alatauana* RAZ. shorter than in the typical form, aedeagus longer, sacculus in comparison with the length of the valva shorter than in *C. sareptana sareptana* RAZ.

Types of *C. sareptana* RAZ. are preserved in the collection of the Zoological Institute P.A.S. in Warszawa, the holotype of *C. sareptana alatauana* RAZ. in the coll. of the Institut für Spezielle Zoologie in Berlin.

Cnephasia (Cnephasia) tianshanica FILIP.

(Pl. XIII, fig. 7)

Cnephasia abrasana; RAEBEL (non DUPONCHEL), 1914, Iris, **28:** 273; *Cnephasia tianshanica* FILIPIEV, 1934, Bull. Acad. Sci. URSS, **1934:** 1407; FILIPIEV, 1935, Ztschrft. österr. Ent. Ver., **20:** 51; OBRAZTSOV, 1956, Tijdschr. Ent., **99:** 116.

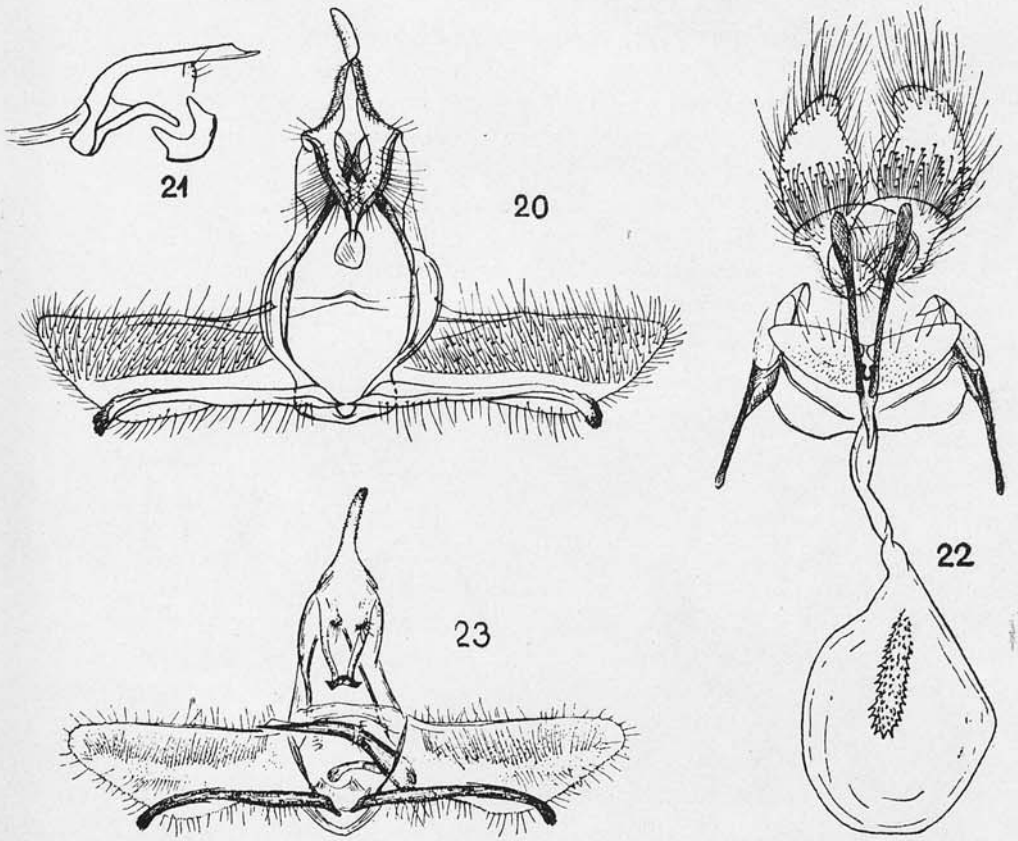
Labial palpus, head and thorax brownish grey. Forewing much broader in the male than in the female. In the male costa delicately arched outwards; apex rounded; termen delicately convex and oblique. The colour of the wing more or less dark grey, browner along costa and partially near termen, provided with delicate blackish dots all over the surface. Fringes concolorous with the ground colour. Forewing more elongate with more pointed apex in the female. Ground colour as in the male but the pattern rather well developed, brown-grey. Postbasal fascia atrophied in posterior half; median fascia ill-defined beyond the middle; subapical spot indistinct or suffused with grey-brown. Hindwing in both sexes brownish grey, rather pale; fringes grey-white. Length of forewing about 12 mm.

Male genitalia (fig. 20, 21). Valva broad, slightly broadening in posterior portion, pointed terminally. Sacculus long with rather long free termination. Uncus long; socii well developed; gnathos with rather short arms. Aedeagus slender and pointed.

Female genitalia (fig. 22). Labia rather small; gonapophyses long; lamella vaginalis with elongate lateral parts; introitus small; ductus bursae shorter than bursa copulatrix; signum broad.

Distribution: Tian-Shan, Dshungarish Ala Tau. The moths occur in June.

Comments. This species is very similar to *C. sareptana* RAZ., but differs from it in the shape of the valva, which is more slender and characteristically narrowed in terminal part in mentioned species. The sacculus and the aedeagus in *C. sareptana* RAZ. are longer than in the species under consideration. The species differs also in the coloration and distribution.



Figs. 20—23. Male and female genitalia: 20 — *Cnephasia tianshanica* FIL., „Mr. Ketmen, U. Siumbe, 13. VI. 1957, FALKOVITSH", G. Sl. 6930, 21 — aedeagus of same specimen, 22 — same species, female genitalia „Ketmen, U. Siumbe, 13. VI. 1957, FALKOVITSH", G. Sl. 6931, 23 — *C. osthelderi* OBR. (after OBRAZTSOV, 1959)

Cnephasia (Cnephasia) osthelderi OBR.

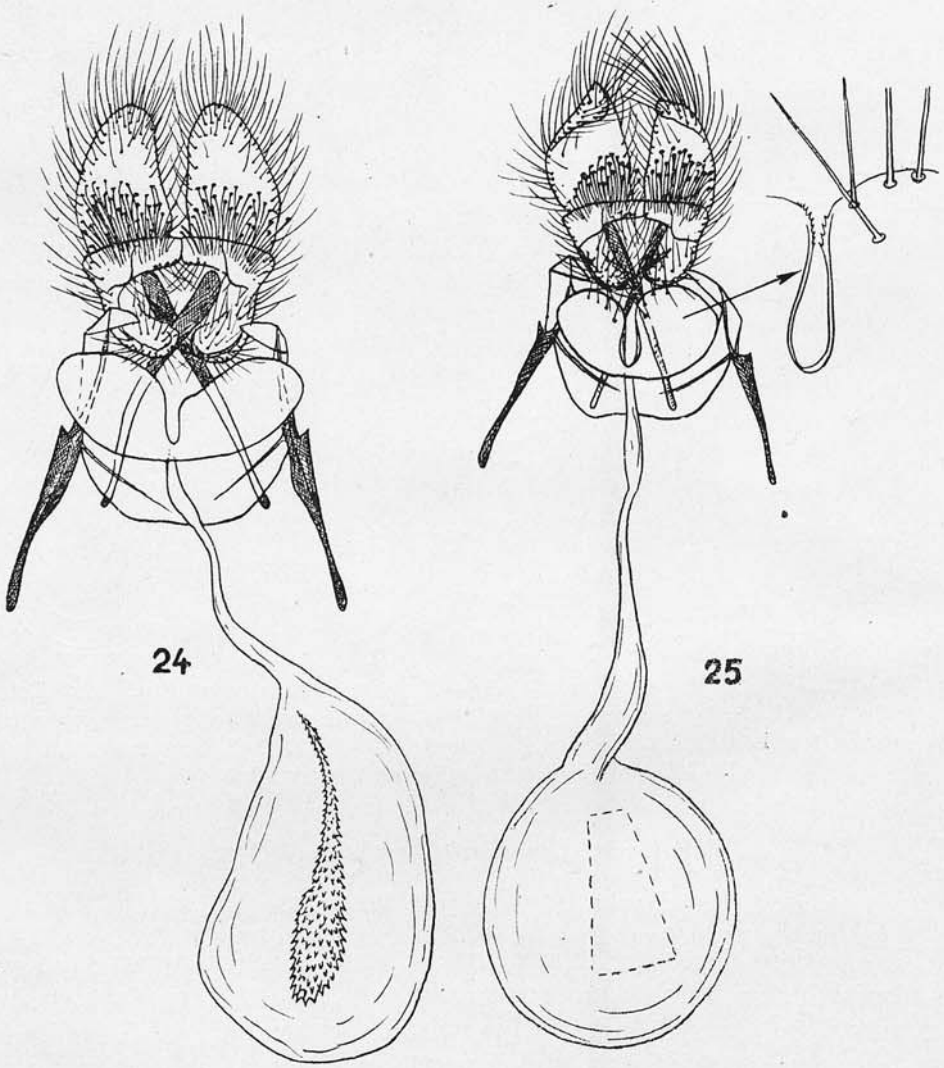
Cnephasia osthelderi OBRAZTSOV, 1950, Eos, **26**: 304 fig. 3.

Labial palpus, head and thorax grey; antenna concolorous with the head, ringed with brown. Forewing rather narrow, costa arched outwards at the base, then only slightly curved; apex rather pointed; termen oblique. Ground colour brownish grey, sprinkled with whitish in places. The pattern dark brown provided with small blackish points or stripes. Fringes concolorous with the ground. Hindwing brownish grey. Length of forewing 8 mm.

Male genitalia (fig. 23). Valva broad, largest beyond the middle, tapering terminally in the posterior portion. Sacculus long, reaching $^3/_4$ of the length of the valva. Uncus long, socii small, gnathos with short lateral arms.

The female genitalia figured in OBRAZTSOV's paper are referable to another species, which I called *C. constantinana* RAZ. The female genitalia of the species under consideration are unknown till now.

Comments. This species is recorded from Marasch, North Syria. I have figured the female genitalia (under the name *C. constantinana* RAZ.) of the specimen from Marasch too, but that was designated by FILIPIEV as the typoid of *Cnephasia osthelderi* FIL. IN LITT. and the male of it is different from the



Figs. 24, 25. Female genitalia of *Cnephasia* sp.: 24 — „Mardin", G. Sl. 5144, 25 — „Kurdistan, Malatya, 5. V. 1932", G. Sl. 4037

male of *C. osthelderi* OBR. This problem must be solved when more material is available. I figure for the comparison two female genitalia (figs. 24, 25) very similar to each other; one from Mardin, the other from Malatia, Kurdistan. One of them might be a female of the species under consideration. In the female from Mardin the lamella vaginalis is very similar to that in OBRAZTSOV's figure (1950: 305), the ductus bursae is long and the signum is very long. The female from Malatia (fig. 25) has very short and broad lamella vaginalis and very long ductus bursae. The bursa copulatrix is rounded, the signum unfortunately lacks in my drawing (the genital slide is in the British Museum (Nat. Hist.), No. 4037.

Cnephasia (Cnephasia) tofina MEYR.

Cnephasia tofina MEYRICK, 1922, Exot. Micr., **2**: 498; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 111; CLARKE, 1958, Catal. Meyr. Types, **3**: 88 pl. 44 figs. 4, 4a-b.

Labial palpus and head brownish grey; thorax a little darker. Forewing slightly broadening posteriorly; costa strongly arched outwards at base, then rather straight, except the apical portion, which is delicately curved; apex pointed; termen straight, oblique. Unicolorous species with brownish grey ground colour, sprinkled and delicately spotted with dark grey-brown. Fringes

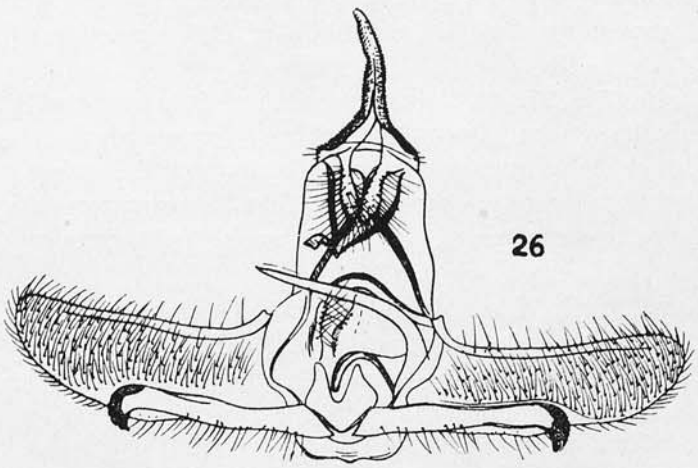


Fig. 26, Male genitalia of *Cnephasia tofina* MEYR., Paratype

a little paler than the ground colour. Hindwing elongate with apex slightly protruding and pointed, brownish grey, paler at alar base; fringes paler than ground colour. Length of forewing about 10 mm.

Male genitalia (fig. 26). Valva broad, of constant width throughout, rounded terminally. Sacculus in comparison to that in other species of this group short, with short free termination. Tegumen slender; uncus long, pointed apically;

gnathos short; socii rather small, slender. Aedeagus delicate, strongly bent in before middle, pointed terminally. Transtilla well developed.

Distribution. The unique specimen was taken in Nazareth in April.

Comments. This species is very similar in the coloration to unicolorous specimens of *C. constantinana* RAZ. The gnathos is short as in preceding species and in *C. constantinana* RAZ., rather shorter than in the latter. Broad and short aedeagus is very characteristic of it. In some species of *Cnephasia* CURT. the variability of the length of the sacculus is known, however, the differences between this species and *C. constantinana* RAZ. are also in the shape of the remaining parts of the genitalia.

Cnephasia (Cnephasia) constantinana RAZ.

Cnephasia (Cnephasia) constantinana RAZOWSKI, 1958, Acta zool. cracov., **2**: 576 pl. 55 fig. 21, pl. 57 fig. 30, pl. 61 fig. 52.

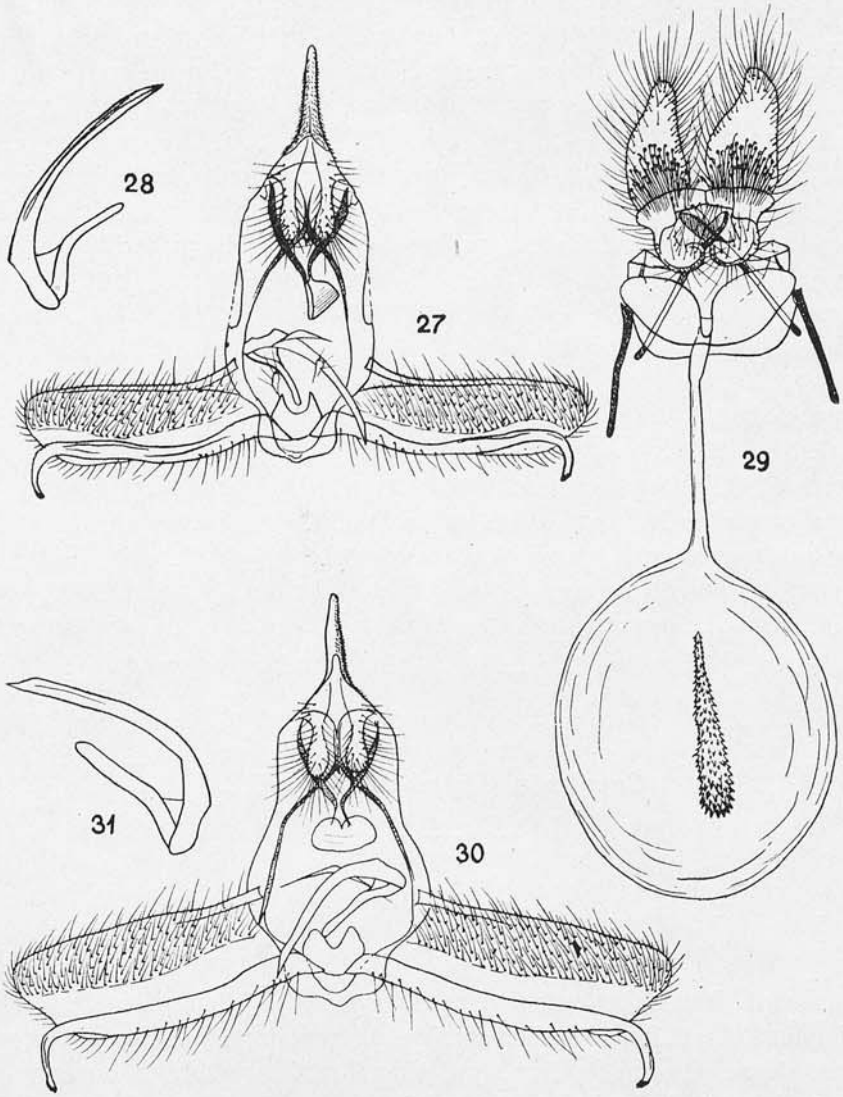
Labial palpus, head an thorax brownish grey, rather dark. Forewing broadening posteriorly; costa arched outwards at base, then rather straight in males, more curved in females. Ground colour greyish to brownish grey, pattern a little darker, brown-grey or very dark grey, sometimes indistinct. Fringes concolorous with the ground colour. Hindwing grey-brown, paler at base; fringes concolorous with the middle of the wing. Length of forewing 10 mm.

Male genitalia (figs. 27, 28). Valva long, rather of the same width throughout, rounded terminally. Sacculus very long, curved downwards in terminal portion, provided with very long free termination. Tegumen well developed; uncus long, slender; socii rather large; gnathos longer than in two preceding species, provided with large terminal plate. Transtilla weak; aedeagus very slender, long and bent.

Distribution. North-West Africa, Algeria: Guelt-es-Stel, Macheria, Hassi-Babah, El Kantara and Constantine (type locality).

Biology unknown except the time of appearance: April and May. One specimen, which differs, however, from the type in the shape of the male genitalia was taken in March.

Comments. I described and figured (1958) the female genitalia; now, however, having more material, I am not sure whether those females are conspecific with the type. I therefore figure the female genitalia (fig. 29) of the species called in the mentioned paper as *C. constantinana* RAZ., but the discussion on the systematic position of this needs more available material. In the examined material there are three males with small terminal plate of the gnathos and one specimen with very large plate of the gnathos, which differs in shape from that in the remaining specimens (figs. 30, 31). In the latter specimen the shape of the valva is also different and the sacculus is very long.



Figs. 27—31. Male and female genitalia: 27 — *Cnephasia constantinana* Raz., Type, „Constantine", G. Sl. 5125, 28 — aedeagus of same specimen, 29 — *C. ? constantinana* Raz. (after Raz. 1958), 30 — *C. ? constantinana* Raz. „Algérie, Macheria", 19—30. Mars 1886, L. Lahaye", G. Sl. 4004, 31 — aedeagus of same specimen

Cnephasia (Cnephasia) korvaci sp. no v.

(Pl. XIII, fig. 8)

Head and thorax brownish grey, more or less dark. Forewing rather narrow, elongate; costa curved at base, then rather straight; apex pointed; termen oblique. Ground colour brownish grey, more or less pale, pattern much darker,

more brownish. The shape of the pattern as in *C. constantinana* RAZ., or the pattern is ill-defined. Delicate suffusion and minute, more or less visible spots on whole surface of the wing present. Fringes concolorous with the ground colour. Hindwing brownish grey with fringes a little paler. Length of forewing about 12 mm.

Male genitalia (figs. 32—35). Valva strong, elongate, rounded terminally, slightly variable in shape. Sacculus very long, longer than ventral edge of valva. Uncus slender, long; socii long; gnathos longer than in preceding species with very broad terminal plate. Juxta small; aedeagus delicate, bent, pointed terminally.

Holotype (♂): „Kurdistan, Malatya, 4. V. 1932, Prof. AJTAI KORVAC", G. Sl. 4011.

Typoids (2 ♂♂) similarly labelled as the holotype: 9. V. (G. Sl.: 4010) and 3. V. (G. Sl.: 4030).

Comments. This species resembles very much the remaining species of this subgroup superficially and differs in the male genitalia by the length of the gnathos and very broad terminal plate of the gnathos. Sacculus is the longest of those of all known species of this group and resembles that in *C. genitalana* P. & M. The holotype and one typoid (G. Sl.: 4010) in the collection of the British Museum (Nat. Hist.), the remaining typoid in author's collection.

Cnephasia (Cnephasia) jozefi RAZ.

(Pl. XIV, fig. 9)

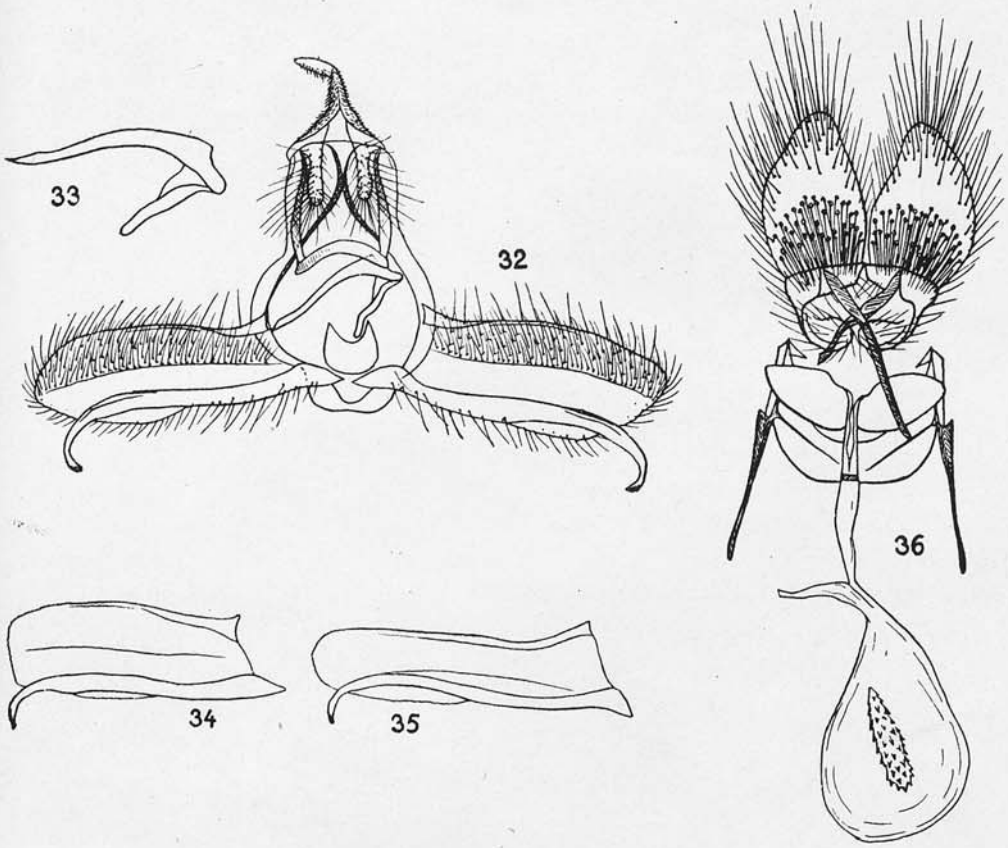
Cnephasia jozefi RAZOWSKI, 1961, Pol. Pis. entom., **31**: 105 fig. 4.

Head and thorax brownish grey. Forewing broadening posteriorly; costa arched outwards at base, rather straight in remaining portion; apex pointed; termen oblique. Ground colour grey, tinged with whitish in outer portion of the wing. Pattern dark grey or brownish, similar to that in *C. alfacarana* RAZ. Fringes concolorous with the ground colour. Hindwing pale grey-brown; fringes paler. Length of forewing about 10 mm.

Female genitalia (fig. 36). Labia large with broad posterior portions gonapophyses long. Lamella vaginalis with large lateral parts, slightly rounded terminally; introitus narrow; strongly sclerotized ring in $^1/_3$ of ductus bursae. Bursa copulatrix with broad signum.

Distribution. Oran (Algeria), in June.

Comments. The species is very similar to *Cnephasia alfacarana* RAZ. in the shape of the female genitalia, but differs by larger lamella vaginalis and short ductus bursae. The shape of the introitus is also different. Male unknown. The holotype in the collection of the British Museum (Nat. Hist.).



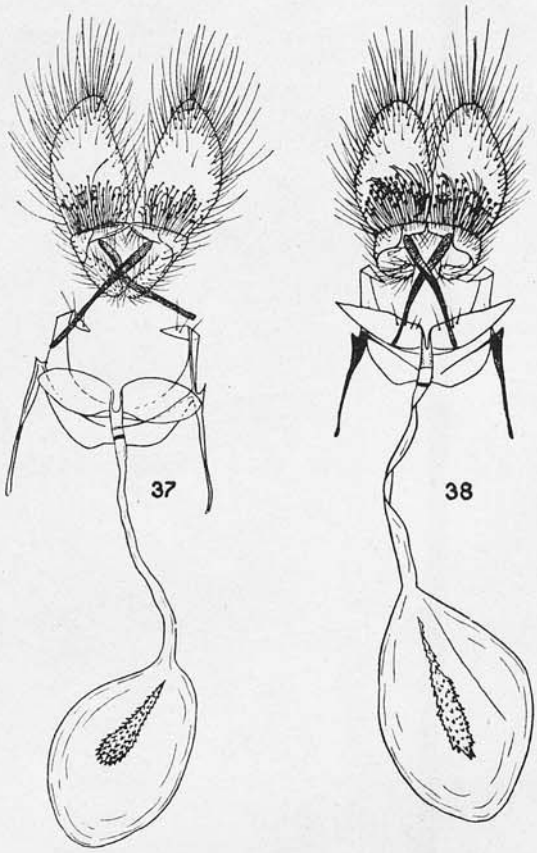
Figs. 32—36. Male and female genitalia: 32 — *Cnephasia korvaci* sp. n., „Kurdistan, Malatya, 4. V. 1932, Prof. de Ajtai KORVAC", G. Sl. 4011, 33 — aedeagus of same specimen, 34 — valva („Kurdistan, Malatya, 3. V. 1932", G. Sl. 4030), 35 — valva („Kurdistan, Malatya, 9. V. 1932), G. Sl. 4010), 36 — *C. jozefi* RAZ., holotype, „Prov. d'Oran, Aflou, Juin 1911, Harold POWELL", G. Sl. 4036

sp. ?

In the material from Algeria I have found two other females, very similar in pattern and coloration to the preceding species, but different by the genitalia. I figure both for the comparison. Short descriptions are as follows.

1: „Prov. d'Oran, Aflou, Juin 1911, H. Powell", G. Sl. 4034 (fig. 37). Lamella vaginalis as in the preceding species. Introitus short, rather more strongly sclerotized than ductus bursae, with much shorter posterior convexity. Strongly sclerotized ring in the posterior portion of ductus bursae near introitus. Ductus bursae very long; bursa copulatrix elongate; signum large, broadening anteriorly.

2: Identically labelled as the preceding female, G. Sl.: 4027 (fig. 38). Lamella vaginalis with lateral parts slender and pointed terminally. Introitus



Figs. 37—38. Female genitalia: 37 — *Cnephasia* sp., „Prov. d'Oran, Aflou, Juin 1911", G. Sl. 4034, 38 — *Cnephasia* sp., identically labelled, G. Sl. 4027

short; ductus bursae shorter than in the preceding female; bursa copulatrix with very long signum.

Both specimens are in the coll. of the British Museum (Nat. Hist.).

Cnephasia (Cnephasia) alfacarana RAZ.

Cnephasia alfacarana RAZOWSKI, 1958, Acta zool. cracov., **2**: 578 pl. 56 fig. 22, pl. 58 fig. 40, pl. 61 fig. 53.
(RAZ.: 220 pl. 19 fig. 17, 18, pl. 37 fig. 175, pl. 56 fig. 259)

Cnephasia (Cnephasia) laetana (STGR.)

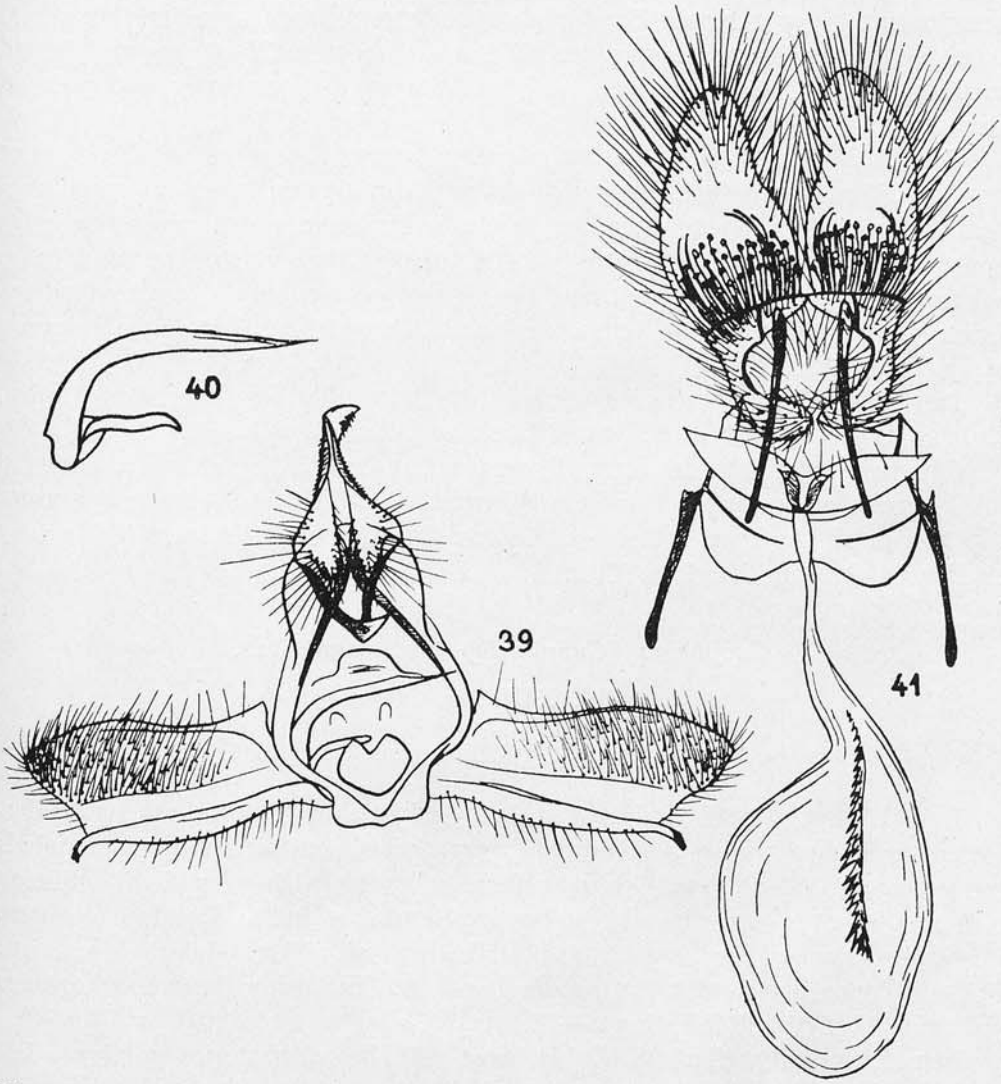
Sciaphila laetana STAUDINGER, 1871, Berl. ent. Ztg., **14 (1870)**: 275.
(RAZ.: 225 pl. 20 fig. 25, 26, pl. 38 fig. 177 pl. 57 fig. 263)

Cnephasia (Cnephasia) virginana (KENN.)

(Pl. XIV, fig. 10)

Sciaphila virginana KENNEL, 1899, Iris, **12:** 12 pl. 1 fig. 10; *Tortrix virginana* KENNEL, 1910, Pal. Tortr.: 211 fig. 12, pl. 10 fig. 30; *Cnephasia virginiana* (laps. calami); RAZOWSKI, 1957, Beitr. Natkde. Südwestdeutschl., **16:** 104, figs. 5, 6.

Labial palpus and head brownish yellow; thorax a little darker; abdomen brownish. Forewing slightly broadening posteriorly; costa delicately arched outwards; apex rather pointed; termen oblique, rather straight. Ground colour



Figs. 39—41. *Cnephasia virginana* (KENN.): 39 — male genitalia, „Iran, Fars, BRANDT", G. Sl. 5653, 40 — aedeagus of same specimen, 41 — female genitalia, „Alvand [Iran], VI. [19]38, [E. P. WILTSHIRE leg.]", G. Sl. 6655

white; dorsal edge of the wing very slightly sprinkled with yellowish, base also a little darker than the rest of the wing. Pattern orange-yellow, however, pale. Postbasal fascia feebly visible in posterior portion, median fascia atrophied beyond the middle. Costa spotted with brownish yellow in posterior half; termen darkened with yellow. On the pattern's margins and scarcely in the ground colour black dots present. Fringes clear white. Hindwing white-yellow, a little darker on the peripheries; fringes a little paler than the ground colour, darkened in anal portion of the wing. Length of forewing about 10 mm.

Male genitalia (figs. 39, 40). Valva broad, broadened beyond the middle, rounded terminally. Sacculus long, rather straight, provided with short free termination. Tegumen well developed; uncus strong; socii broad, rather short. Arms of gnathos broad, short, terminal plate large; transtilla strong with broad median portion. Aedeagus long and bent, tapering posteriorly and pointed terminally.

Female genitalia (fig. 41). Labia very large with very broad posterior portions. Lamella vaginalis large with broad lateral portions, which are pointed terminally. Anterior edge of lamella vaginalis subrounded, posterior edge concave in the middle. Introitus a little broader than ductus bursae, feebly sclerotized. Ostium bursae well marked with more strongly sclerotized edges. Ductus bursae as long as bursa copulatrix, broadening anteriorly. Signum strong and long.

Distribution. The species is recorded from Asiatic Turkey [Diarbekr, Mardin, Haleb (KENNEL, 1910)] and Iran (Fars and Alvand).

Comments. This species differs by coloration from all species of this group and approaches rather the *C. albatana* CHRÉT., but the genitalia are very similar to those in all the species discussed before. The shape of the transtilla is very similar to that in *C. zelleri* (CHR.).

Cnephasia (Cnephasia) tremewani RAZ.

(Pl. XIV, fig. 11)

Cnephasia tremewani RAZOWSKI, 1961, Pol. Pis. entom., **31**: 107 fig. 3.

Labial palpus, head and thorax brownish yellow; head, however, paler. Forewing rather narrow; costa delicately arched outwards; apex rounded; termen short and oblique. Ground colour yellowish with very slight addition of brown, in some cases tinged with brown. Basal spot and median fascia brown. Posterior portion of the wing darkened with brownish, paler and darker in places. Fringes concolorous with the ground colour. Hindwing brownish; fringes yellowish. Length of forewing 8—10 mm.

Female genitalia (fig. 42). Labia large with broad posterior portions. Lamella vaginalis broad, sinuate posteriorly in the middle, rounded on anterior edge. Lateral tops of lamella vaginalis pointed. Delicate sculptures on the posterior and median areas of the lamella present. Ostium large, rounded.

Very thin ring on posterior portion of ductus bursae; introitus feebly marked, weakly sclerotized; ductus bursae nearly as long as the length of signum; bursa copulatrix large, rounded.

Distribution. This species is known hitherto from its type locality: Sidi-bel-Abbès, prov. of Oran in Algeria and was taken in mid June.

Comments. Regarding the female genitalia *Cnephasia tremewani* RAZ. is related to the *pumicana*-group, but differs from it by the presence of strongly sclerotized narrow ring of the posterior portion of the ductus bursae. I therefore place this species between the group of the species closely related to *C. constantinana* RAZ. and the group of *C. pumicana* (ZELL.). Male unknown. The type in the collection of the British Museum (Nat. Hist.).

Cnephasia (Cnephasia) pumicana (ZELL.)

Sciaphila pumicana ZELLER, 1847, Isis, **1847**: 669.
(RAZ.: 245 pl. 21 fig. 39, 40, pl. 42 fig. 197, 198, pl. 59 fig. 273)

Ssp. *hagiosana* RAZ.

Cnephasia pumicana hagiosana RAZOWSKI, 1959, Zchrft. wien. Ent. Ges., **44**: 82 pl. 2 fig. 3.

Forewing a little narrower than in typical form. Ground colour ash-grey, pattern delicate, dark grey. A delicate bluish grey hue all over the surface. Hindwing grey-brown. Length of forewing 7—9 mm. (Pl. IX, fig. 20).

This subspecies is known from Cyprus (Hagios Athanasios) and was taken by the end of April in 3 specimens.

Cnephasia (Cnephasia) fiorii (RAZ.)

(Pl. XIV, fig. 12)

Cnephasia (Cnephasia) fiorii RAZOWSKI, 1958 (1957), Pol. Pis. entom., **27**: 81 fig. 16, 30.

Labial palpus rather short, yellowish; head and thorax a little darker. Forewing not broadening posteriorly; costa strongly arched outwards on the whole length; apex rounded; termen oblique, delicately convex. Ground colour yellowish grey, pattern indistinct, with the exception of the posterior edges of the basal spot and median fascia. Dark, elongate stripes in posterior portion of the wing among the venation. The colour of the pattern a little darker than the ground colour, more brownish yellow. Fringes concolorous with the ground colour. Hindwing rather narrow, rounded; apex short, rounded. The colour of the hindwing whitish, fringes concolorous. Length of forewing 8 mm.

Female genitalia (fig. 43). Labia very large with posterior portions tapering posteriorly. Lamella genitalis large; gonapophyses very strong and long. Lamella vaginalis very characteristic in shape, rather delicate, concave in the

middle of posterior edge. Lateral parts of lamella vaginalis delicately rounded terminally. Introitus well sclerotized, short; ostium bursae rounded; ductus bursae not longer than introitus; bursa copulatrix elongate; signum very weak, short.

Distribution. The only specimen known till now is recorded from Tripolitania, Jefren, and was taken in April.

Comments. *Cnephasia fiorii* RAZ. resembles a little *C. pumicana* (ZELL.) in the shape of the forewing; however, it is easily distinguished. The female genitalia very characteristic by the shape of the lamella vaginalis and the ductus bursae. The labia and the gonapophyses much longer than in all species of this group. Unfortunately the male is unknown and the correct systematic position of the species under consideration cannot be fixed. The type is in the collection of the late Dr. Attilio FIORI of Bologna.

Cnephasia (Cnephasia) tolli RAZ.

Cnephasia tolli RAZOWSKI, 1956, Acta zool. cracov., **1**: 22 pl. 4 fig. 4, pl. 5 fig. 9.
Cnephasia tolli palaestinensis AMSEL, 1958, Zschrft. wien. Ent. Ges., **43**: 71 — **synon. nov.**
(RAZ.: 243 pl. 21 fig. 37, pl. 41 fig. 193, 194, pl. 42 fig. 195)

Cnephasia tolli RAZ. was described from Haifa. AMSEL (1958) described a new subspecies from Abu Goash near Jerusalem on the basis of a single specimen. However, there are some differences between this specimen and my specimen from Haifa in the male genitalia, it is necessary to sink AMSEL's name as the synonym of *Cnephasia tolli* RAZ. Other specimens of this species show great variability of the male genitalia, especially in the shape of the aedeagus. To supplement the knowledge of the distribution of *C. tolli* RAZ. I give two other localities, viz., Kyrenia (Cyprus) and St. Nicolo (Crete). The moths appear in April and in May.

The type of *C. tolli* RAZ. is preserved in the collection of late Dr. S. TOLL of Katowice, the type of *C. tolli palaestinensis* AMS. in Dr. AMSEL's collection.

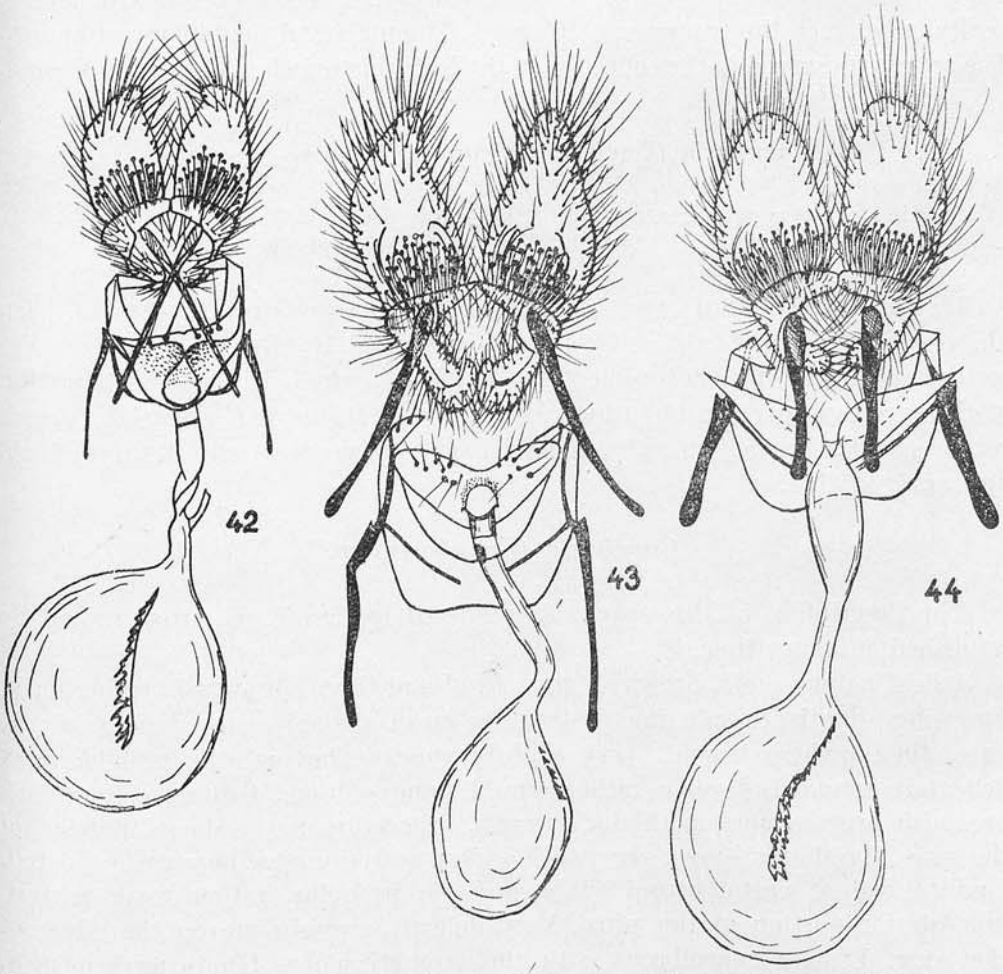
Cnephasia (Cnephasia) syriella RAZ.

(Pl. XV, fig. 13)

Cnephasia syriella RAZOWSKI, 1956, Acta zool. cracov., **1**: 21 pl. 3 fig. 1, pl. 5 fig. 6.

Labial palpus rather short. Palpi and head brownish grey; thorax a little darker. Forewing slightly broadening posteriorly; costa arched outwards at the base, then nearly straight; apex rounded; termen slightly oblique, rather straight. Ground colour brownish grey, rather pale, paler in the middle of the wing. Pattern indistinct, a little darker than the ground colour, greyish brown. Median fascia and posterior edge of postbasal fascia most distinctly marked.

Over the whole surface of the wing, both on ground colour and on the pattern, minute, transverse stripes, distinctly darker than the ground colour. Fringes concolorous with the ground colour. Hindwing rather narrow, rounded; apex short, rounded. The colour of the hindwing grey-brown, darker on the peri-



Figs. 42—44. Female genitalia: 42 — *Cnephasia tremewani* Raz., holotype, „Sidi-bel-Abbes, Prov. d'Oran, 17. VI. [19]16, M. Rotrou", G. Sl. 4022, 43 — *C. fiorii* Raz., holotype, „Tripolitania, Jefren, IV. 1935, A. Fiori", G. Sl. 7001, 44 — *C. syriella* Raz. holotype, „Syria", G. Sl. 5541

pheries; fringes concolorous with the median portion of the wing. Length of forewing 9 mm.

Female genitalia (fig. 44). Labia with large posterior portions. Lamella vaginalis well developed with lateral parts tapering terminally and pointed. Posterior portion of ductus bursae three times as broad as beyond the bursa, very weakly sclerotized. Bursa copulatrix rounded; signum narrow, long; gonapophyses short, strong and broad.

Distribution. This species is known from the type locality, i.e. from Syria and also from Ankara (Turkey) and Cyprus.

Comments. *Cnephasia syriella* RAZ. resembles small, pale coloured specimen of *C. cupressivorana* (STGR.), but differs by the shape of the forewing and the greyer colour of the pattern of the forewing. The differences in the female genitalia between the two species are great. The male and the biology unknown. The type is preserved in the collection of the Naturhistorisches Museum in Vienna.

Cnephasia (Cnephasia) cupressivorana (STGR.)

Sciaphila cupressivorana STAUDINGER, 1871, Horae Soc. ent. Ross., **7** (1870): 215. (RAZ.: 220 pl. 19 fig. 19, 20, pl. 37 fig. 176, pl. 56 fig. 260)

I synonymised (1961) two aberrations of *C. cupressivorana* (STGR.), viz., ab. *confluentana* and ab. *reducta*, both described by RÉAL. Both were described as forms of *Cnephasia orthoxyana* RÉAL, which is also an aberration of the species under consideration. As valid aberrations of *Cnephasia cupressivorana* (STGR.) besides ab. *orthoxyana* RÉAL I preserve ab. *styx* RÉAL and ab. *apenninicola* OBR.

Cnephasia (Cnephasia) sp.

The description of this species is prepared by Dr. F. KASY and shall be published in short time.

Labial palpus short, brownish grey; head and thorax brownish, rather dark. Forewing slightly broadening posteriorly; costa strongly curved outwards at base, then rather straight, very slightly concave beyond the middle; apex delicately rounded; termen rather straight and oblique. Ground colour dark brownish grey, striped with dark brown, especially in the dorsal portion of the wing. Basal area brown-grey, with darker posterior edge near costa; median fascia broad at costa, atrophied beyond $^1/_3$; irregular, rather weak pattern in posterior portion of the wing. Very delicate greyish hue on the edges of the wing. Fringes concolorous with the ground colour. Hindwing brownish, paler in basal area; fringes much paler. Length of forewing 7 mm.

Male genitalia (fig. 45). Valva broad, rounded terminally, provided with strong costa, which is concave before middle. Sacculus strong, straight in the basal third, strongly curved in posterior portion, provided with long and bent termination. Uncus long; socii elongate, slender; gnathos long with delicate terminal plate; transtilla broad. Aedeagus well developed, long, bent beyond the basal portion, tapering posteriorly, pointed.

Comments. This species resembles very much *Cnephasia tyrrhaenica* AMS. by the shape of the wing and by the coloration. The forewing is, however, more broadening posteriorly. The male genitalia resemble those in *C. cupressivorana* (STGR.) and differ from them by the shape of the valva and by the shape

and length of the sacculus. The aedeagus in the species under consideration is broader than that in *C. cupressivorana* (STGR.). Female and early stages unknown. The unique specimen (holotype) is labelled as follows: „Hansag, Burgenland, Austria, 12. VI. 1960, F. KASY", and is preserved in the collection of the Naturhistorisches Museum in Vienna.

Cnephasia (Cnephasia) asiatica KUZN.

(Pl. XV, fig. 14)

Cnephasia asiatica V. KUZNETSOV, 1956, entom. Obozr., **35**: 447 fig. 1, 2.

Labial palpus short, brownish grey, rather dark; head and thorax darker than the palpus. Forewing broadening posteriorly in male, rather of constant width throughout in female; apex pointed; termen oblique. Ground colour grey to ash-grey, paler, more whitish grey in the central portion of the wing. Pattern grey-brown. Pattern in basal portion of the wing ill-defined, except postbasal weak fascia; median fascia broad, waved, darker near costa, partially atrophied in dorsal area; subapical spot well developed; the pattern in the terminal portion of the wing consists of small dark spots. One male paratype rather unicolorous. Fringes concolorous with the ground colour. Hindwing brownish grey, paler in basal area, fringes more greyish, rather pale. Length of forewing 7—9 mm.

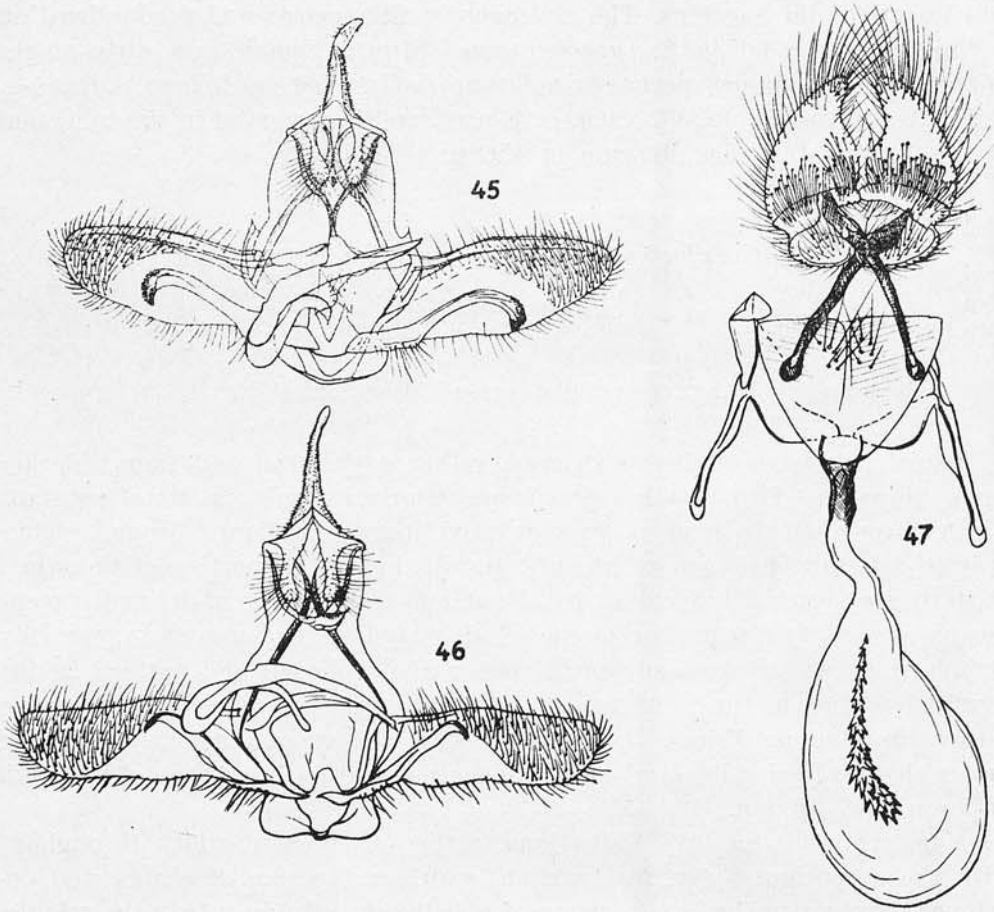
Male genitalia (fig. 46). Valva long, rather of constant width throughout with the exception of terminal portion, which is tapering. Sacculus well developed, straight in the basal portion, decidedly curved upwards in the middle, provided with long free termination. Uncus long; socii slender, long; gnathos shorter than in the two preceding species. Aedeagus long and thin, pointed terminally, straight in posterior portion.

Female genitalia (fig. 47). Labia large; lamella vaginalis very large, but delicate, subtriangular. Ostium bursae small, introitus weak, but more strongly sclerotized than the rest of ductus bursae, which is short and narrow. Bursa copulatrix with long signum. Gonapophyses long and thin.

Distribution. Western Kopet-Dag; Iol-Dere, Ai-Dere, Siunta in Asia.

Biology. The moth appears in the forest regions of Kopet-Dag, and probably in the neighboring desert region (KUZNETSOV, 1956), and is very common. It was taken in April and May.

Comments. *Cnephasia asiatica* KUZN. resembles *C. communana* (H.-S.) superficially, but differs by the genitalia. The male genitalia of *C. asiatica* KUZN. are very similar to those in *C. laetana* (STGR.) and in the preceding species, because of the shape of the sacculus. The female genitalia differ from those in *C. laetana* (STGR.) and show many distinct features. The type is in the coll. of the Zoological Institute of the Academy of Sciences of USSR in Leningrad.



Figs. 45—47. Male and female genitalia: 45 — *Cnephasia* sp. „Hansag, Burgenland, Austria, 12. VI. 1963, F. Kasy", G. Sl. 4290, 46 — *C. asiatica* Kuzn., typoid, „Zap. Kopetdag, 12. V. [1]953, W. Kuznetsov", G. Sl. 3189, 47 — same sp., female, „Iol-Dare, 15 km. NO. Kara-Kala, 7. IV. [19]53, W. Kuznetsov", G. Sl. 3190, typoid

Cnephasia (Cnephasia) nowickii Raz.

(Pl. XV, fig. 15)

Cnephasia (Cnephasia) nowickii Razowski, 1958, Acta zool. cracov., **2**: 573 pl. 55 fig. 15, pl. 62 fig. 55.

Labial palpus, head and thorax pale grey-brown. Forewing broadening posteriorly; costa delicately arched outwards, more strongly in the basal area; apex pointed; termen oblique, straight. Ground colour whitish grey, much paler in the outer portions of the wing. Pattern brown. It consists of postbasal fascia, median fascia and of a considerable infuscation in the outer portion of the wing. Middle fascia broadest in the middle. Fringes concolorous with

the ground colour. Hindwing pale grey-brown; fringes paler. Length of forewing 11 mm.

Male genitalia (figs. 48, 49). Valva well developed, of nearly constant width throughout, except posterior third. Sacculus slender and short, reaching less than half length of the ventral edge of valva. Uncus slender; socii rather small, rounded terminally; gnathos as in *C. communana* (H.-S.). Aedeagus slightly bent, narrow, pointed terminally.

Female genitalia (fig. 50). Labia proportionately very large, elongate; lamella vaginalis with very narrow lateral arms, pointed apically. Ostium bursae large, rounded; introitus a little wider than the rest of ductus bursae, weakly sclerotized. Ductus bursae shorter than lamella vaginalis; bursa copulatrix with short, but well developed signum.

Distribution. *Cnephasia nowickii* RAZ. was described from one female from Uliassatai in Mongolia, two other specimens are from Minussinskaia, Siberia.

Biology unknown, except date of collecting (4. VII.) of two specimens from Minussinskaia.

Cnephasia (Cnephasia) heringi RAZ.

Cnephasia (Cnephasia) heringi RAZOWSKI, 1958, Acta zool. cracov., **2**: 575 pl. 55 fig. 19, 20, pl. 58 fig. 38, pl. 62 fig. 58.
(RAZ.: 244 pl. 21 fig. 38, pl. 42 fig. 196, pl. 58 fig. 272)

This species is very distinct by the shape of the free termination of the sacculus. According to other features of the male genitalia and to the shape of the female genitalia I place *C. heringi* RAZ. in the middle of the *communana*-group. The type is preserved in the collection of the Institut für Spezielle Zoologie in Berlin.

Cnephasia (Cnephasia) communana (H.-S.)

Sciaphila communana HERRICH-SCHAEFFER, 1851, Syst. Bearb. Schmett. Eur., **4**: 201.
(RAZ.: 223 pl. 19 fig. 21—23, pl. 28 fig. 178, pl. 56 fig. 261)

I have synonymised all aberrations of this species described by P. RÉAL except for ab. *lucia* RÉAL, which seems to be a valid individual form. The slight variability of this species is referable to the ground colour, which in some cases is very pale, and to pattern, which can be dark and contrasting with the ground colour, or very slightly visible. Among these types of coloration occur all the intermediate forms.

Cnephasia (Cnephasia) parnassicola RAZ.

Cnephasia parnassicola RAZOWSKI, 1958, Acta zool. cracov., **2**: 581 pl. 56 fig. 25, pl. 59. fig. 43, pl. 62 fig. 59.
(RAZ.: 225 pl. 19 fig. 24, pl. 28 fig. 179, pl. 57 fig. 262)

Cnephasia (Cnephasia) alticolana (H.-S.)

Sciaphila alticolana HERRICH-SCHAEFFER, 1851, Syst. Bearb. Schmett. Eur., **4**: 200.
(RAZ.: 226 pl. 20 fig. 27, pl. 38 fig. 180, pl. 57 fig. 264)

Both forms described by RÉAL, viz., *juncta* RÉAL and *decaryi* RÉAL can be preserved as aberrations; however, some intermediate forms can be found. Those aberrations are probably the extreme forms of variability of this species.

Cnephasia (Cnephasia) microstrigana RAZ.

Cnephasia (Cnephasia) microstrigana RAZOWSKI, 1958, Acta zool. cracov., **2**: 578 pl. 56 fig. 24, 25, pl. 59 fig. 41, pl. 62 fig. 56.
(RAZ.: 230, pl. 20 fig. 29, 30, pl. 39 fig. 183, pl. 57 fig. 266)

Cnephasia (Cnephasia) virgaureana (TREIT.)

Sciaphila virgaureana TREITSCHKE, 1835, Schmett. Eur., 10, **3**: 89, 253.
(RAZ.: 228 pl. 20 fig. 28, pl. 38 fig. 181, 182, pl. 57 fig. 265)

Aberration *mediocris* described by RÉAL is conspecific with *C. communana* (H.-S.) and ab. *latior* RÉAL is conspecific with the typical form of *C. virgaureana* (TREIT.). I have had no opportunity to examine another RÉAL's aberration namely ab. *confluens*, which seems to be a good aberration.

Cnephasia (Cnephasia) pascuana (HBN.)

Olethreutes pascuana HÜBNER, 1822, Syst.-alphab. Verz.: 63.
Cnephasia bleszyńskii TOLL, 1953, Pol. Pis. entom., **22** (**1952**): 125 pl. 2 fig. 7, pl. 3 fig. 15; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 115; RAZOWSKI, 1957, Acta zool. cracov., **2**: 129 pl. 18 fig. 4, pl. 26 fig. 4; RAZOWSKI, 1959, l. c., **4**: 231, pl. 20 fig. 31, pl. 39 fig. 184 — **synon. nov.**

AB. *pyrophagana* RBL.

Cnephasia pyrophagana REBEL, 1939, Z. wien. Ent. Ges., **24**: 163; *Cnephasia pascuana* f. (?) *pyrophagana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 115.

AB. *linophagana* RBL.

Cnephasia linophagana REBEL, 1939, Z. wien. Ent. Ges., **24**: 163; *Cnephasia pascuana* f. (?) *linophagana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 115.

The forms *pyrophagana* RBL. and *linophagana* RBL. are known to me from REBEL's descriptions. I agree with OBRAZTSOV's opinion, that they are no more than aberrations of the species under consideration. The types of both are probably lost.

In preceding papers I cited *Cnephasia bleszyńskii* TOLL as a good species on the basis of some differences between it and *C. pascuana* (HBN.) in the coloration and in the male genitalia. Some time ago I have received several specimens of *C. pascuana* (HBN.) from Northern Germany (Flensburg), and I have stated that these specimens are intermediate between the typical form of *C. pascuana* (HBN.) and *C. bleszyńskii* TOLL. The latter name could be used as the name of aberration for unicolorous dark specimens of *C. pascuana* (HBN.).

Cnephasia (Cnephasia) genitalana P. & M.

Cnephasia genitalana PIERCE & METCALFE, 1922, Genit. Brit. Tortr: 12 pl. 5.
(RAZ.: 234 pl. 21 fig. 33, pl. 39 fig. 186, pl. 58 fig. 268)

Cnephasia (Cnephasia) alternella STEPH.

Cnephasia Syndemis alternella STEPHENS, 1852, List. Spec. Brit. Anim. B. M., **10**: 65
Cnephasia uniformana CARADJA, 1916, Iris, **30**: 49; OBRAZTSOV, 1956, Tijdschr. Ent. **99**: 116 — **synon. nov.**
Cnephasia kurentzovi FILIPIEV, 1962, Trudy zool. Inst. Akad. Nauk. S.S.S.R., **30**: 380, fig. 19—21 — **synon. nov.**
(RAZ.: 236 pl. 21 fig. 34, pl. 40 fig. 187—189, pl. 58 fig. 269)

In 1961 I revised the problem of „*chrysantheana*" and synonymised some aberrations, viz., *directana* RÉAL, *interjunctana* RÉAL, *parvana* RÉAL, *pseudochrysantheana* RÉAL and *rectilinea* RÉAL. All synonymical notes given for „*chrysantheana*" in „European *Cnephasiini*" on p. 236 are referable to the species under consideration, except some, mentioned in the present paper for *Cnephasia chrysantheana* (DUP.) nec auct.

Cnephasia freii WEBER, listed by OBRAZTSOV as aberration of this species is referable to *Eana incana* (STEPH.).

I have examined the lectotype (designated by Dr. A. POPESCU-GORJ of Bucharest) of *Cnephasia uniformana* CAR. This is conspecific with *C. alternella* STEPH. and shows no differences with the typical form of this species. FILIPIEV (1935) characterised the male genitalia of a species closely related to *Cnephasia sareptana* RAZ. and called this species „*uniformana* CAR.".

Several species very similar to *Cnephasia alternella* STEPH. have been described. Some of them are nearly identical with *C. alternella* STEPH. in the male and especially in the female genitalia. It is extremely difficult to decide whether those species are valid ones, or only forms of *C. alternella* STEPH. This species is widely distributed in Europe, North Africa and Asia Minor, and the variability of it is rather great. In addition to the variability of the shape of the wings, pattern and coloration I have noticed the variability of the male genitalia too. I preserve, however, all more distinct forms as valid species.

Cnephasia (Cnephasia) hispanica OBR.

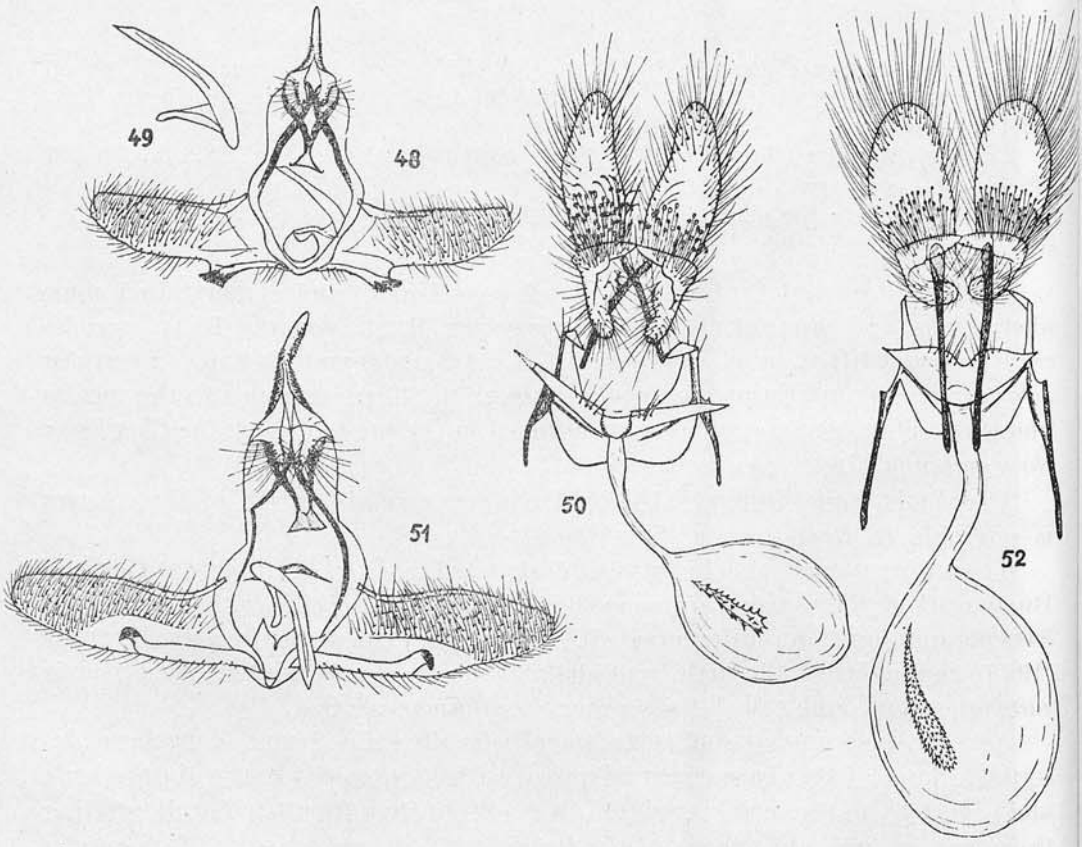
Cnephasia hispanica OBRAZTSOV, 1950, Eos, **26:** 308 fig. 6.
(RAZ.: 239 pl. 40 fig. 190)

Cnephasia (Cnephasia) atlantis FIL.

(Pl. VIII, fig. 16, Pl. IX, fig. 17)

Cnephasia atlantis FILIPIEV, 1934, Bull. Acad. Sci. URSS, **1934:** 1404; FILIPIEV, 1935, Zschrft. oesterr. Ent. Ver., **20:** 48; ZERNY, 1935, Mém. Soc. Nat. Maroc., **42:** 132 pl. 2 fig. 18; OBRAZTSOV, 1956, Tijdschr. Ent., **99:** 114; RAZOWSKI, 1956, Zschrft. wien. Ent. Ges., **41:** 207 fig. 8, 9, pl. 20 fig. 5, 6.

Labial palpus and head greyish; thorax darker, more grey-brown. Forewing slightly expanding posteriorly; costa delicately arched outwards, less in the male than in the female; apex rounded; termen oblique, delicately arched



Figs. 48—52. Male and female genitalia: 48 — *Cnephasia nowickii* RAZ., „Minusinska., 4. VII. [19]24", G. Sl. 1372 (Filip.), 49 — aedeagus of same specimen, 50 — same sp., female, „Uliassatai", holotype, G. Sl. 5110, 51 — *C. atlantis* FIL., type, „Marokko, Gr. Atlas, Tachdirt, 2200—2700 m., 11—19. VII. 1933, ZERNY", G. Sl. 5545, 52 — same sp., female, labelled as the male „2—10. VII. 1933"

outwards in male, nearly straight in female. Ground colour greyish to grey-brown, sprinkled with whitish grey in places. Male unicolorous, much paler than female, especially in the dorsal portion of the forewing. Female with remainders of median fascia and with subterminal shade. Fringes concolorous with the ground colour. Hindwing broad, apex short, rounded. The colour of hindwing brownish grey, more or less dark; fringes a little paler. Length of forewing 13—15 mm.

Male genitalia (fig. 51). Valva large, delicately tapering in the posterior portion, rounded terminally. Sacculus well developed, reaching half length of valva. Uncus very long; socii short, rounded terminally; gnathos rather small, provided with delicate terminal plate. Aedeagus rather small, slender and bent, pointed terminally. Transtilla weak.

Female genitalia (fig. 52). Lamella vaginalis with rounded anterior edge and deeply convex posterior edge. Introitus weakly sclerotized, not broadened; ductus bursae of the same width throughout; bursa copulatrix large, ovate; signum long.

Distribution. This species is recorded from Great Atlas, Morocco.

Biology. *Cnephasia atlantis* FIL. was taken in the first half of July at the altitude of 2200—2700 m. Early stages unknown.

Comments. *C. atlantis* FIL. is distinct from *C. alternella* STEPH. by the coloration and the shape of the forewing and by the shapes of the uncus and the socii in the male and the lamella vaginalis in the female genitalia. The holotype is preserved in the collection of the Naturhistorisches Museum in Vienna.

Cnephasia (Cnephasia) cinereipalpana RAZ.

Cnephasia (Cnephasia) cinereipalpana RAZOWSKI, 1958, Acta zool. cracov., **2**: 581 pl. 56 fig. 27, 28, pl. 62 fig. 57.

Labial palpus pale grey, paler laterally; head and thorax brownish grey, concolorous with the pattern of forewing. Forewing slightly expanding posteriorly; costa arched outwards at base, then rather curved; apex pointed; termen rather oblique, nearly straight. Ground colour pale greyish with delicate bluish or brownish grey hue. Pattern grey-brown, spotted and sprinkled with dark grey-brown. Small and delicate stripes on the ground in some specimens. Basal area darker than the rest of the wing; postbasal fascia well developed except the dorsal portion, bent; median fascia broad, irregular in shape, atrophied before dorsum; the pattern in the posterior portion of the wing consists of small spots. Fringes concolorous with the ground colour, delicately divided with grey-brown. Hindwing grey-grown, darker on peripheries; fringes much paler. Length of forewing 8—11 mm.

Male genitalia (figs. 53, 54). Valva broad, tapering posteriorly in terminal portion; costa of valva well sclerotized, convex before the middle. Sacculus

rather slender, long. Tegumen large; uncus very long; socii rather delicate; arms of gnathos well developed, long; terminal plate of gnathos small. Aedeagus slender and bent, narrower than in *C. alternella* STEPH., provided with dorsal projection before the end and pointed terminally.

Female genitalia (fig. 55). Lamella vaginalis very broad, rounded anteriorly, strongly concave in the middle of the posterior edge. Introitus broader and more strongly sclerotized than ductus bursae, which is short and narrow. Bursa copulatrix elongate; signum very long, broadening anteriorly; gonapophyses strong; gonapophyses posteriores longer than gonapophyses anteriores.

Distribution. This species was described from Vladivostok, East Asia, then was found in Manchuria and Japan (Yokohama).

Biology unknown.

Comments. *Cnephasia cinereipalpana* RAZ. differs from *C. alternella* STEPH. by the ground colour, which is never brownish, and by the genitalia. The shape of the costa of the valva and that of the aedeagus in the male, and the shape of the lamella vaginalis in the female are very characteristic of *C. cinereipalpana* RAZ.

The type is preserved in the collection of the Institut für Spezielle Zoologie in Berlin.

Cnephasia (Cnephasia) anatolica OBR.

Cnephasia anatolica OBRAZTSOV, 1950, Eos, **26**: 306 fig. 5; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 114.

Labial palpus, head and thorax brownish grey. Forewing rather of constant width throughout; costa nearly straight; apex delicately rounded; termen oblique, convex. Ground colour brownish grey, pattern in the normal *Cnephasia*-shape, brown, spotted with black. Fringes grey with brown dividing line. Hindwing subtrapezoid with rather short apex, pale grey-brown; fringes whitish with weakly developed brownish dividing line. Length of forewing 7·5—8 mm.

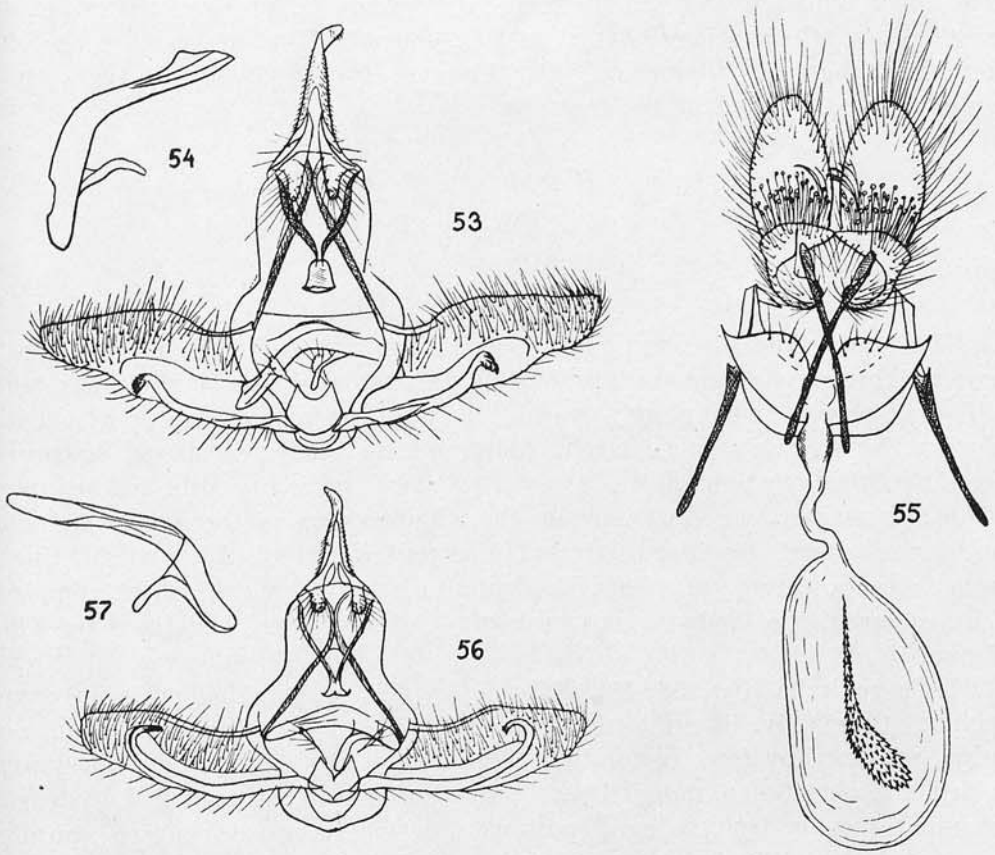
Male genitalia (figs. 56, 57). Valva elongate, rounded apically; costa of valva concave before the middle. Sacculus slender, very long, curved in the middle, turned up in the terminal portion. Uncus long, pointed; socii short; gnathos with narrow and rather long lateral arms and delicate terminal plate. Aedeagus long and slender, delicately curved.

Distribution: Akshehir in Central Anatolia (terra typica) and Southern Amasia.

Biology. Early stages unknown. The moths were taken in the first half of July at the altitude of 1200 m.

Comments. The species is very characteristic by the shape and length of the sacculus. In *Cnephasia alternella* STEPH. sacculus is sometimes (two or three specimens from North Africa) long, reaching $^3/_4$ length of the valva, however, it is never turned up on the valva in its terminal portion. The free

termination of the sacculus is rather short in comparison with the length of whole sacculus. OBRAZTSOV does not give any descriptions of the male and female genitalia (the male genitalia are figured only), but I suppose there are not any greater differences in the shape of the female genitalia between *C. alternella* STEPH. and this species. The type of *C. anatolica* OBR. is preserved in the collection of the Zoologische Sammlung des Bayerischen Staates in Munich.



Figs. 53—57. Male and female genitalia: 53 — *Cnephasia cinereipalpana* RAZ., holotype, „Wladiwostock, [18]77, CHR. W.", G. Sl. 5111, 54 — aedeagus of same specimen, 55 — same sp., female, allotype, labelled as holotype, G. Sl. 5160, 56 — *C. anatolica* OBR., „Amasia m.", G. Sl. 5051, 57 — aedeagus of same specimen

Cnephasia (Cnephasia) octomaculana STEPH.

Cnephasia octomaculana STEPHENS, 1834, Brit. Ent., Haustel., **4**: 127.
(RAZ.: 240 pl. 21 fig. 35, pl. 41 fig. 191, pl. 58 fig. 270)

Cnephasia (Cnephasia) conspersana DOUGL.

Cnephasia conspersana DOUGLAS, 1846, Zoolog., **4**: 1267.
(RAZ.: 241 pl. 21 fig. 36, pl. 41 fig. 192, pl. 58 fig. 271)

Cnephasia (Cnephasia) tyrrhaenica AMS.

Cnephasia tyrrhaenica AMSEL, 1951, Fragm. ent., **1**: 108 fig. 8.
(RAZ.: 255 pl. 24 fig. 58, pl. 45 fig. 209, pl. 60 fig. 281)

This species differs from all the species of this group by the male and female genitalia. The ductus bursae in the female is extremely long, but other features are rather similar to those in the remaining species. *C. tyrrhaenica* AMS., *C. divisana* RAZ., *C. fragosana* (ZELL.) and *C. graecana* RBL. make up a very interesting subgroup. The species, differ, however, from each other in the pattern and in the coloration of the forewing.

Cnephasia (Cnephasia) divisana RAZ.

(Pl. XVI, fig. 18)

Cnephasia divisana RAZOWSKI, 1959, Zschrft. wien. Ent. Ges., **44**: 82 fig. 2, pl. 2 fig. 2.

Head and thorax brownish grey. Forewing very slightly broadening posteriorly; costa arched outwards; apex delicately rounded; termen rather straight, oblique. Ground colour grey-brown, pattern browner. Basal area a little darker than the ground colour; in middle of costa irregular fascia, narrowed in the central portion of the wing. Two small spots on costa before apex. Brownish stripes and short lines on the whole surface of the wing, chiefly in median area; well developed narrow line in posterior third of the wing. Fringes concolorous with ground colour. Hindwing rather narrow; apex short, rounded. The colour of the hindwing brownish grey; fringes paler. Length of forewing 7 mm.

Male genitalia (figs. 58, 59). Valva long, narrow, tapering posteriorly and pointed terminally. Sacculus short, in the shape of a narrow well sclerotized edge, without any free termination. Tegumen slender; uncus very short, provided with very broad, rounded basal parts. Socii very short, rounded. Aedeagus slender, strongly bent in basal portion, tapering terminad, pointed apically.

Distribution. The holotype is recorded from Crete („Neapolis, Mai—Juni").

Comments. *Cnephasia divisana* RAZ. can be easily distinguished by the shape of the forewing and the coloration. The male genitalia very characteristic, very similar to those in the preceding species, but sacculus is without any free termination, and is similar to that in the *sedana*-group. The aedeagus and especially the anellus are of the normal *communana*-group shape. The female unknown. The holotype is preserved in the collection of the Naturhistorisches Museum in Vienna.

Cnephasia (Cnephasia) facetana KENN.

Cnephasia facetana KENNEL, 1901, Iris, **13 (1900)**: 230; *Tortrix facetana* KENNEL, 1910, Pal. Tortr.: 215 pl. 11 fig. 8; *Cnephasia facetana*; OBRAZTSOV, 1950, Eos, **26**: 313 fig. 9b; *Cnephasia (Anoplocnephasia) facetana*; RAZOWSKI, 1958, Acta zool. cracov., **2**: 566 pl. 53 fig. 2.

Head and thorax yellowish, rather pale. Forewing elongate, delicately broadening posteriorly; costa slightly arched outwards; apex delicately rounded. Ground colour pale brownish yellow to yellowish, pattern more brownish, brownish spots on costa present. In median area of the wing the pattern is very often atrophied. Fringes concolorous with the ground colour, divided with brownish. Hindwing greyish yellow with paler fringes. Length of forewing 8 mm.

Male genitalia (figs. 60, 61). Valva elongate with well sclerotized costa, pointed terminally. Sacculus more strongly sclerotized than valva, broadened before the end, however, without free termination. Transtilla large; uncus short; socii small; gnathos very delicate. Aedeagus slender, bent, pointed terminally.

Distribution. The type was recorded from Jordan Valley, other specimens from Mesopotamia and Persia (Fars, Shapur).

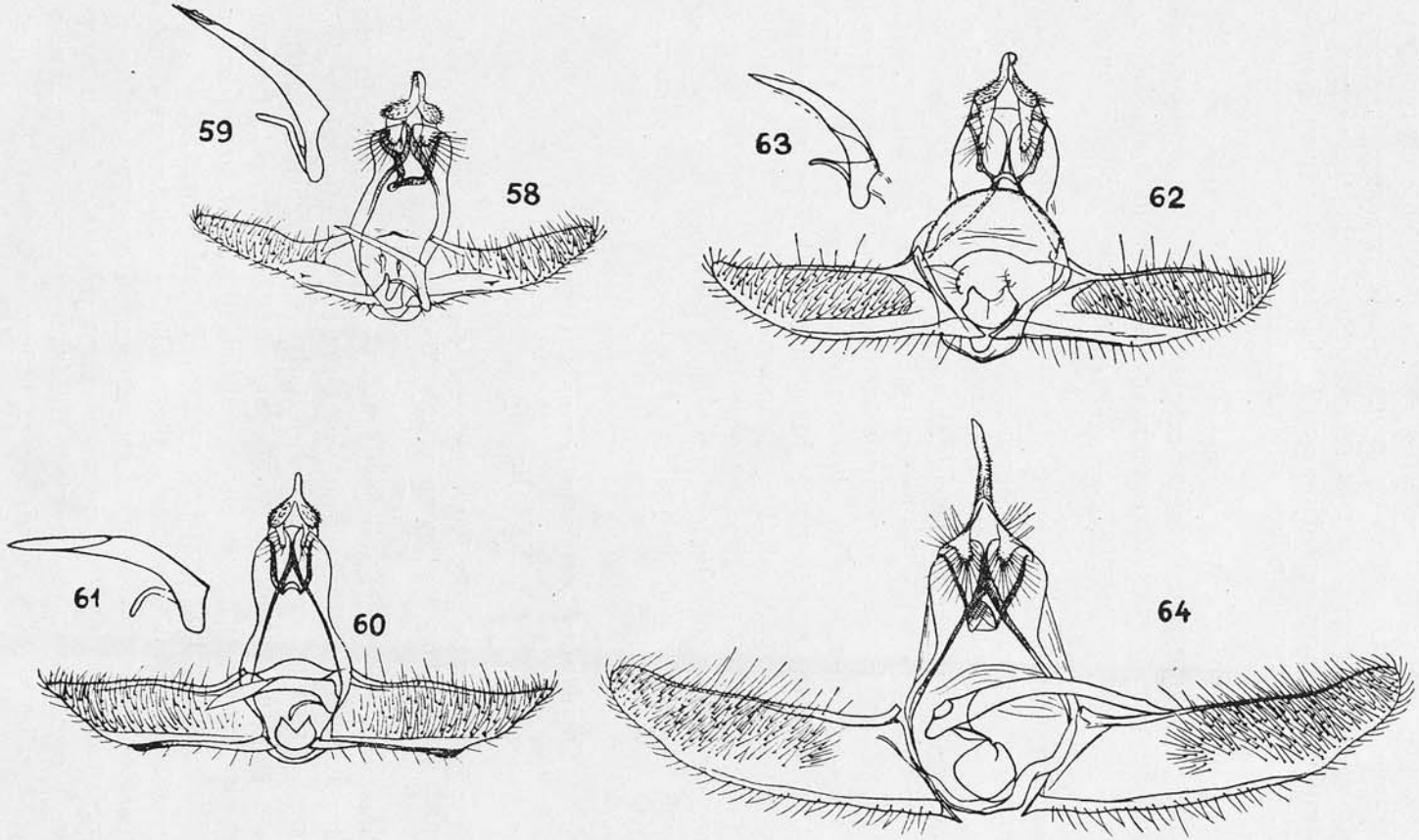
Comments. In 1958 I figured the type of *Cnephasia facetana* KENN., but erroneously included it in the subgenus *Anoplocnephasia* RÉAL (now the *sedana*-group). The specimen is labelled by FILIPIEV: „*tristrami* WLSGH., N. FIL. [det]" and the genital slide is lost. *Cnephasia tristrami* (WLSM.) belongs, however, to the *sedana*-group and differs also in the coloration from KENNEL's species. The type is somewhat differently coloured than the specimens from Persia. The end of the sacculus of those specimens is shorter than that in OBRAZTSOV's figure. According to my determination AMSEL (1959) supposed these specimens can belong to a distinct subspecies. I suppose, however, that this can be some variability, and the problem may be solved when more material is available.

Cnephasia (Cnephasia) grandis (OSTH.)

(Pl. XVI, fig. 19)

Anisotaenia grandis OSTHELDER, 1938, Mitt. münch. Ent. Ges., **28**: 23; *Cnephasia grandis*; OBRAZTSOV, 1950, Eos, **26**: 312 fig. 9a; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 110.

Labial palpus very short, greyish-yellowish; head similarly coloured, slightly tinged with brownish; thorax pale brownish, posterior portions of tegulae paler. Forewing elongate, narrow, broadening posteriorly; costa delicately arched outwards; apex pointed; termen strongly oblique, rather straight. Ground colour pale greyish brown with very slight addition of yellow, much darker and greyer than that in the preceding species. Pattern brownish, better developed in costal area of the wing than in the middle. Several brownish spots on costa and before termen and delicate strigulation all over the surface of the wing. Fringes concolorous with the ground colour of costa, which is more yellowish than in central area of the wing. Hindwing transparent, yellowish grey, darker, more brownish on peripheries. Fringes yellowish. Length of forewing 8 mm.



Figs. 58—64. Male genitalia: 58 — *Cnephasia divisana* RAZ., holotype, „Kreta, Neapolis, Mai—Juni' 04, RBL.", G. Sl. 3245, 59 — aedeagus of same specimen, 60 — *C. facetana* KENN., „S. Persia, Fars, Shapur, 21. VI. 1941, 3000 ft., WILTSHIRE", G. Sl. 3056 (AMS.), 61 — aedeagus of same specimen, 62 — *C. grandis* (OSTH.), „Syria, 2—3. VI. 1961, 25 km. W. v. Damascus, KASY & VARTIAN", G. Sl. 4319, 63 — aedeagus of same specimen, 64 — *C. minutula* FALK., „Sar Tugai r. Tsharyk, Auma Atanok Obl. 1. VI. 1957, FALKOVITSH, Typus", G. Sl. 250 (Len.)

Male genitalia (figs. 62, 63). Valva long, but delicate. Sacculus well sclerotized without free termination, similar to that in the species of the *sedana*-group. Tegumen slender; uncus short, pointed; socii small, slender; gnathos very weak, provided with small terminal plate. Transtilla very strong (in OBRAZTSOV's drawing rather delicate). Aedeagus strongly bent beyond the basal portion, pointed terminally.

Distribution: Syria (Säedab-Valley, Bushire, Damascus). The moth appears in June.

Comments. The species differs from the preceding one by the shape of the wings and greyer coloration of the forewing superficially and by the weakly developed, simple sacculus in the male genitalia. In some specimens (from Bushire and Damascus) the transtilla is very strong, very similar to that in *Cnephasia facetana* KENN., however, in the OBRAZTSOV's specimen (fig. 9a) it seems to be weaker. OBRAZTSOV suggested that this species and *C. facetana* KENN. belong to the group of *Cnephasia sedana* (CONST.) and are a link between that group and other *Cnephasia*-species (*communana*-group). Both species differ, however, from the *sedana*-group by the long anellus, and therefore, the shape of the sacculus has a specific character only.

The holotype of *C. grandis* (OSTH.) is preserved in the collection of the Zoologische Sammlung des Bayerischen Staates in Munich.

Cnephasia (Cnephasia) fragosana (ZELL.)

Sciaphila fragosana ZELLER, 1847, Isis, **1847**: 673.
(RAZ.: 253 pl. 23 fig. 56, pl. 44 fig. 206, pl. 60 fig. 279)

I have synonymised *Cnephasia distinctana* D. LUCAS (1937, Bull. Soc. ent. France, **42**: 126) with *C. fragosana* (ZELL.) and some remarks on this specimen are given in my paper of 1961.

Cnephasia (Cnephasia) graecana RBL.

Cnephasia graecana REBEL, 1902, Berl. ent. Ztg., **47**: 105; *Cnephasia pumicana* GRAVES 1925, Entomologist, **58**: 293; *Cnephasia pumicana graecana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 111; *Cnephasia semibrunneata* ab. *graecana*; RAZOWSKI, 1959, Acta zool. cracov., **4**: 254 pl. 45 fig. 208; *Cnephasia graecana*; RAZOWSKI (bona sp.), 1961, Acta zool. cracov., **5**: 666.

This species was erroneously mentioned as the form of *Cnephasia pumicana* (ZELL.) or *C. semibrunneata* (JOANN.), but it is a distinct species very similar to *C. fragosana* (ZELL.). The differences between *C. fragosana* (ZELL.) and *C. graecana* RBL. are in the pattern of the forewing and in the female genitalia. The male genitalia show very slight differences in the shape of valva, and in the length of the sacculus and aedeagus. In „European *Cnephasiini*" I figured

(fig. 57) a form of this species namely ab. *ochreana* RAZ. The typical form of *C. graecana* RBL. differs from it by the larger size of the forewing, clear grey or whitish ground colour and characteristic brown colour of the pattern.

AB. ***ochreana*** RAZ.

Cnephasia semibrunneata; RAZOWSKI, 1959, Acta zool. cracov., **4**: 254 pl. 24 fig. 57; *Cnephasia graecana* f. *ochreana* RAZOWSKI, 1961, Acta zool. cracov., **5**: 666.

Forewing rather narrow; ground colour greyish, sometimes tinged with ochreous, striped with grey-brown. Pattern brownish with rusty places.

This form, stated here provisionally as an aberration, is rather similar to *Cnephasia fragosana* (ZELL.) than to *C. graecana* RBL. but differs in the male genitalia from both mentioned species. Unfortunately the female genitalia are unknown and it is difficult to fix its systematic position now.

Cnephasia (Cnephasia) minutula FALK.

Cnephasia minutula FALKOVITSH, 1962, Trudy Inst. zool. Akad. Nauk Kazakh. SSR, **18**: 98.

Labial palpus about 2, brownish grey; front greyish, rest of head a little darker. Forewing very narrow, of constant width throughout. Costa rather straight; apex pointed; termen decidedly oblique. Ground colour pale greyish, delicately suffused with grey. Pattern dark grey spotted with blackish. Postbasal fascia of constant width, completely atrophied in dorsal portion of the wing; median fascia rather broad, atrophied near dorsum in the holotype, well developed in the allotype. Terminal portion of the wing provided with delicate pattern. Fringes concolorous with the ground colour. Hindwing with short, rather rounded apex; pale grey in coloration, rather transparent at base; fringes whitish. The paratype a little differently coloured than the holotype and the allotype. Length of forewing about 6 mm. in male and about 7 mm. in female.

Male genitalia (fig. 64). Valva very long, narrow, delicately rounded terminally. Sacculus narrow, very long, without a free tip. Uncus long, narrow, pointed; gnathos rather short with narrow arms and broad terminal plate; socii short, rounded; transtilla broad, transparent. Aedeagus long, narrow, pointed apically with very short basal portion. Anellus well developed; juxta broad.

Female genitalia (fig. 65). Ovipositor delicate; labia with very large proximal portions; gonapophyses long; gonapophyses posteriores evidently longer than gonapophyses anteriores; lamella vaginalis with pointed lateral portions; introitus broad, subtriangular, well sclerotized; ductus bursae shorter than bursa copulatrix, rather broad in posterior portion; signum long with very delicate dents.

Distribution. The species is known from four specimens collected in Tsharyn, Ketmen and Naryn (Tianshan) and appears in June.

Comments. *Cnephasia minutula* FALK. has been compared with *C. sedana* (CONST.) and is really very similar to the species belonging in that group. However, the presence of well developed anellus shows that it is referable to the *communana*-group.

Group 2

Group type: *Cnephasia longana* (HAWORTH)

This rather small group includes species grouped by RÉAL in the subgenus *Brachycnephasia* RÉAL. I used (1958) the name *Brachycnephasia* RÉAL in the short revision of this group of species also as a subgeneric name, and then included it (1959) in the *Cnephasia* CURT. s. str.

Male genitalia: valva broad at base, strongly tapering terminally in posterior half; uncus short; sacculus short; transtilla well developed, broad.

Female genitalia: lamella vaginalis broad; introitus large, well sclerotized; ductus bursae very short; bursa copulatrix large; signum well developed.

Cnephasia (Cnephasia) dispersana KUZN.

Cnephasia dispersana KUZNETSOV, 1962, Trudy Inst. zool. Akad. Nauk Kazakh. SSR., **18**: 100.

Labial palpus about 2·5; median joint broad; terminal joint expanding posteriorly. The colour of the palpi dark grey; basal joint and anterior portion of median joint pale. Head and thorax grey with slight yellowish grey hue; tegulae greyer. Forewing broader in male than in female. Costa delicately curved outwards in male, arched in female. Ground colour pale grey, delicately sprinkled with dark grey. Pattern ill-defined, darker at costa, atrophied in dorsal portion of the wing. In median portion of the wing very delicate yellowish grey scales. The pattern completely atrophied in posterior portion of the wing. Fringes whitish. Hindwing grey-brown with slightly expanding and rounded apex. Fringes whitish. In the allotype the ground colour is grey, paler at costa; pattern well developed, dark grey but atrophied in dorsal half of the wing. In other specimens (paratypes) the pattern is sometimes very dark and distinct, and the ground colour very pale, ash-grey. In some specimens the forewing is unicolorous dark grey, fringes grey. Length of forewing about 13 mm.

Male genitalia (fig. 66). Valva broad at base, narrowing posteriorly and pointed apically; sacculus rather short, broad at base, strongly narrowing in posterior portion, without a free tip but provided with subtriangular ventral projection. Tegumen broad; uncus strong; gnathos with well developed terminal plate; socii short and broad; transtilla broad. Aedeagus short, broad at base, narrowing posteriorly. A small dorsal dent on the aedeagus terminally. Juxta broad.

66
68
69
67
65

Female genitalia (fig. 67). Labia broad with rather short, broad anterior portions. Gonapophyses strong; lamella vaginalis with broad, pointed lateral arms; introitus large, well sclerotized; ductus bursae narrow, rather short; bursa copulatrix large; signum well developed.

Distribution. The species is known from Ala Tau and was collected in July.

Comments. The systematic position of this species seems to be unclear. Some features are characteristic either of *communana*-group or of *longana*-group. The moth is very distinct superficially and is rather similar to *Cnephasia kenneli* OBR. Ten specimens (including the holotype) in the collection of the Zoological Institute of the Academy of Science in Leningrad.

Cnephasia (Cnephasia) kenneli OBR.

(Pl. XVII, fig. 21)

Cnephasia obsoletana (non Wood) KENNEL, 1901, Iris, **13**: 230 (nom. praeocc.); *Tortrix obsoletana* KENNEL, 1910, Pal. Tortr.: 212 fig. 21, pl. 11 fig. 1; *Cnephasia kenneli* OBRAZTSOV (nom nov.), 1956, Tijdschr. Ent., **99**: 116; RAZOWSKI, 1958, Acta zool. cracov., **2**: 573 pl. 55 fig. 15, pl. 58 fig. 36.

Labial palpus, head and antenna pale greyish; thorax a little darker; bases of tegulae with very slight addition of brownish. Forewing delicately broadening posteriorly; costa gently arched outwards at base, then nearly straight; apex rounded; termen rather straight, oblique. Ground colour pale greyish to whitish, spotted and delicately sprinkled with dark grey and brown. Basal area, costa and dorsum suffused with grey-brown, but rather pale. Venation also marked with very slight suffusion. Fringes concolorous with the ground colour, provided with grey-brown dividing-line and similarly coloured stripes. Hindwing large, apex rather short, rounded. The colour of the hindwing pale brownish with slight addition of greyish or grey-yellow. Fringes whitish, divided with pale brownish. Length of forewing about 11 mm.

Male genitalia (figs. 68, 69). Valva large at base, strongly tapering posteriorly beyond the middle. Sacculus slender, short, reaching about $^1/_3$ of the length of the ventral edge of valva. Free termination narrow but well developed. Uncus long; socii elongate; gnathos well developed; transtilla strongly enlarged in the middle. Aedeagus long, slender, bent and pointed apically.

Distribution: Asia Minor, ? Syria, ? Kuldsha.

Figs. 65—69. Female and male genitalia: 65 — *Cnephasia minutula* FALK., „Hrebet Ket-Men, Podgornoie, 16. VI. 1957, leg. FALKOVITSH", allotype, G. Sl.: 250 (Len.), 66 — *C. dispersana* KUZN., „Issik, Zailiiski Ala Tau, 28. V. 1957, leg. FALKOVITSH, Holotype", G. Sl.: 7737 (Len.), 67 — same sp., Allotype, „M. Almatinka, Zailiiski Ala Tau, 28. VII. 1957, A. DANILEVSKI & V. KUZNETSOV", G. Sl.: 7737 (Len.), 68 — *C. kenneli* OBR., „Malatia, 19. V., MN., G. Sl. 5231, 69 — aedeagus of same specimen

Comments. *Cnephasia kenneli* OBR. resembles a little some species of the *communana*-group as for instance *C. virginana* (KENN.) because of the shapes of the transtilla, uncus and aedeagus. However, the shapes of the valva and the sacculus are typical of the *longana*-group, and some species of this group have large transtilla too. Unfortunately the female is unknown, and fixing the correct systematic position of this species is very difficult. It seems curious that all specimens collected till now should be males. The problem of the species under consideration can be solved when some material from Asia Minor is available, because the female of *C. kenneli* OBR. can be easily distinguished by the shape of the wing and the coloration.

Cnephasia (Cnephasia) hellenica OBR.

Cnephasia helenica OBRAZTSOV, 1950, Eos, **26:** 311, fig. 8 (a-c); *Cnephasia hellenica* OBRAZTSOV, 1956, Tijdschr. Ent., **99:** 116 (nom. emend.).
(RAZ.: 246 pl. 22 fig. 41, 42, pl. 42 fig. 199).

Cnephasia (Cnephasia) longana (HAW.)

Tortrix longana HAWORTH. 1811, Lep. Brit.: 463.
(RAZ.: 246 pl. 22 fig. 43—48, pl. 43 fig. 200—202, pl. 59 fig. 274)

Cnephasia (Cnephasia) bizensis RÉAL

Cnephasia bizensis RÉAL, 1953, Bull. mens. Soc. linn. Lyon, **22:** 58.
(RAZ.: 249 pl. 23 fig. 50, pl. 43 fig. 203, pl. 59 fig. 275)

Cnephasia (Cnephasia) fulturata RBL.

(Pl. XVII, fig. 22)

Cnephasia fulturata REBEL, 1940, Bull. Soc. Fouad Ier Ent., (**33**) **24:** 36 fig. 11, 12; OBRAZTSOV, 1956, Tijdschr. Ent., **99:** 113; *Cnephasia fulturana*; RAZOWSKI (erron.), 1959, Zschrft. wien. Ent. Ges., **44:** 83 fig. 3.

Labial palpus, head and thorax greyish with very slight addition of brownish. Forewing broadening towards the end; costa delicately arched outwards; apex rather rounded; termen slightly oblique. Ground colour grey with yellowish tint, or whitish grey. Pattern atrophied. Small dark dots and more or less pale areas in the ground present. Fringes concolorous with the ground colour. Hindwing yellowish grey, darker in apical portion and onp eripheries; fringes concolorous. Length of forewing about 8 mm.

Male genitalia (figs. 70, 71). Valva beyond the end of sacculus strongly tapering terminad, pointed apically. Sacculus short and slender. Socii and uncus long; gnathos with slender arms and large median plate. Aedeagus long,

bent, slightly broadened before the end, provided with several minute dents on the ventral edge terminally.

Distribution. The species was described from Algeria and Granada in Spain, but the specimens from the latter locality show some differences with those from North Africa.

Comments. Although this species resembles *Cnephasia bizensis* RÉAL superficially, it approaches *C. gueneana* (DUP.) because of the slender shape of the aedeagus, which in *C. bizensis* RÉAL is strong and short as in *C. longana* (HAW.). It seems that this species is an intermediate one between the species closely related to *C. longana* (HAW.) and those of *C. gueneana* (DUP.) — subgroup. In the two other species only female genitalia are known, but in both they are closer to *Cnephasia gueneana* (DUP.).

Cnephasia (Cnephasia) klimeschi RAZ.

Cnephasia (Brachycnephasia) klimeschi RAZOWSKI, 1958, Pol. Pis. entom., **27**: 79 pl. 2 fig. 13, pl. 6 fig. 24.

(RAZ.: 250 pl. 23 fig. 49, pl. 49 fig. 276)

Cnephasia (Cnephasia) tripolitana RAZ.

(Pl. XVII, fig. 23)

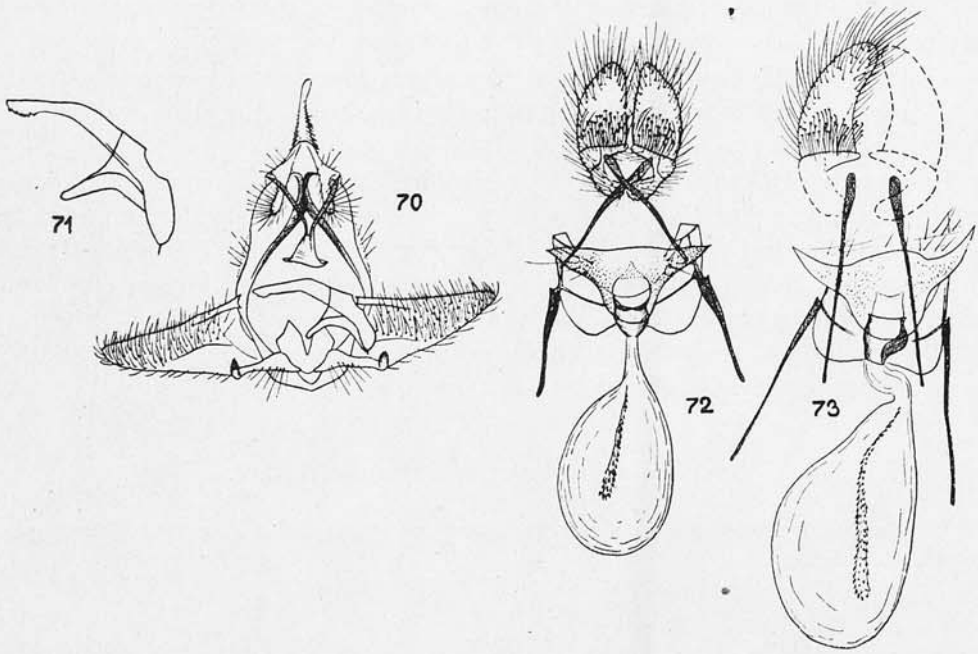
Cnephasia (Brachycnephasia) tripolitana RAZOWSKI, 1958, Pol. Pis. entom., **27**: 76 pl. 2 fig. 10, pl. 4 fig. 19.

Labial palpus and head (badly damaged) yellowish grey. Forewing of constant width throughout; costa strongly arched outwards at base, then nearly straight, only in subterminal portion delicately curved; apex rounded; termen oblique, rather convex. Ground colour yellow-grey with delicate brownish hue; pattern indistinct, more brownish than the ground colour. Costa and dorsum slightly suffused; row of small brown dots along the termen. Fringes yellowish. Hindwing whitish brown, rather pale; fringes yellowish. Length of forewing about 8 mm.

Female genitalia (fig. 72). Lamella vaginalis strong, sculptured, nearly straight in the posterior edge, with pointed lateral wings and elongate, rounded anterior portion. Ostium bursae large, rounded; introitus short, strongly sclerotized; ductus bursae very short; bursa copulatrix ovate, provided with long and narrow signum. Gonapophyses long and thin.

Distribution. The species is known from Tripolitania only.

Comments. Although *C. tripolitana* RAZ. resembles *C. pumicana* (ZELL.) superficially it is closely related to *Cnephasia klimeschi* RAZ., as its female genitalia show. Slight differences between *C. tripolitana* RAZ. and *C. klimeschi* RAZ. are in the shape of the lamella vaginalis and of the introitus. Male unknown. The type in the collection of late Dr. Attilio FIORI of Bologna.



Figs. 70—73. Male and female genitalia: 70 — *Cnephasia fulturata* Rbl., Type, „Zentral Alg., Hassi Babah, V. 930, Schwingenschuss", 71 — aedeagus of same specimen, 72 — *C. tripolitana* Raz., typoid, „Tripolitania, Jefren, 30. IV. 1934, A. Fiori", G. Sl. 7012, 73 — *C. semibrunneata* (Joann.), type, „Algeria, Philippeville", G. Sl. 161 (Réal)

Cnephasia (Cnephasia) semibrunneata (Joann.)

(Pl. XVII, fig. 24)

Sciaphila semibrunneata Joannis, 1891, Bull. Soc. ent. France, **1891**: 81; *Cnephasia semibrunneata*; Rebel, 1901, Cat. Pal. Faun., **2**: 91; *Tortrix gueneana* v. *orientana*; Kennel, 1910, Pal. Tortr.: 198 (part.), pl. 10 fig. 28; *Tortrix semibrunneata*; Kennel, 1910, l. c., pl. 10 fig. 29; *Cnephasia fragosana* (part.); Obraztsov, 1956, Tijdschr. Ent., **99**: 110; *Cnephasia semibrunneata*; Razowski, 1961, Acta zool. cracov., **5**: 664 fig. 20.

Labial palpus and head whitish; thorax yellow-white. Forewing slightly broadening posteriorly; costa arched outwards in basal portion, then rather straight; apex pointed; termen straight and oblique. Ground colour white, pattern brown. Costa and dorsum suffused with yellowish; apical portion of the wing a little darker. Postbasal fascia ill-defined, atrophied in costal portion; median fascia broad in dorsal area, atrophied near costa; in subterminal portion of the wing several black dots on yellowish ground. Fringes white. Hindwing with slightly protruding apex, grey-brown; fringes whitish. Length of forewing about 9 mm.

Female genitalia (fig. 73). Lamella vaginalis with broad and rounded anterior portion. Its posterior edge gently convex in the middle; terminal portion

of lamella vaginalis elongate and pointed. Introitus strongly sclerotized, broad and short; ductus bursae very short; bursa copulatrix elongate with very long signum. Gonapophyses very long, thin.

Distribution. This species is known only from its type locality, i.e. from Philippeville in Algeria.

Comments. Very distinct by the coloration, similar by the shape of the female genitalia to *C. tripolitana* RAZ. and *C. gueneana* (DUP.). I have seen some other specimens similarly coloured as the typical form but paler and with indistinct pattern. Unfortunately all of them were without the abdomens, thus the determination is uncertain.

Cnephasia (Cnephasia) albatana CHRÉT.

Cnephasia albatana CHRÉTIEN, 1915, Ann. Soc. ent. France, **84**: 297; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 112.

P. CHRÉTIEN placed this species near *Cnephasia virginana* KENN. It differs from the mentioned species in its narrower wing and more protruding apex. The translation of the original description is given as follows: „Wing expansion: 15—18 mm. Fore wing white, slightly soiled with brownish towards costa, which is marked with several small brownish spots; transverse stripes scarcely marked by some very pale yellowish ochreous, however, distinctly edged on either side with some dark ochreous and black scales set at intervals; similar scales are strewn on subterminal area; wing margin very slightly tinged with yellowish ochreous. Fringes white, sometimes crossed by brownish macular strip. Hindwing cream-white, slightly smoked towards outer angle and margin. Fringes white. Head and thorax white; upperside of antennae white, innerside brown; palpi cream-white, abdomen yellowish white; legs white. Biskra, in April; Gafsa in June".

Cnephasia (Cnephasia) gueneana (DUP.)

Argyrolepia gueneana DUPONCHEL, 1836, Hist. nat. Lép. France, **9**: 439 pl. 259 fig. 3.
(RAZ.: 251 pl. 23 fig. 52—54, pl. 44 fig. 204, pl. 59 fig. 278)

Cnephasia (Cnephasia) nuraghana AMS.

Cnephasia nuraghana AMSEL, 1951, Fragm. entom., **1(1)**: 106 fig. 7.
(RAZ.: 252 pl. 23 fig. 55, pl. 44 fig. 205)

Cnephasia (Cnephasia) taurominana RAZ.

Cnephasia (Brachycnephasia) taurominana RAZOWSKI, 1955, Zschrft. wien. Ent. Ges., **40**: 265 fig. 1, 3.
(RAZ.: 250 pl. 23 fig. 51, pl. 49 fig. 277)

Cnephasia (Cnephasia) amseli (D. LUCAS)

(Pl. XVIII, fig. 25)

Tortrix amseli D. LUCAS, 1942, Bull. Soc. ent. France, **67**: 122; *(? Aphelia) amseli*; OBRAZTSOV, 1955, Tijdschr. Ent., **98**: 212; *Cnephasia amseli*; RAZOWSKI, 1961, Acta zool. cracov., **5**: 663 pl. 90 fig. 19.

Labial palpus and head yellow-brown, front a little paler; thorax yellowish brown. Forewing broadening posteriorly; costa strongly arched outwards at base, then rather straight to before apical portion; termen oblique (about 60°), rather straight. Ground colour yellowish brown to rusty brown, or brownish; pattern more brownish, sometimes indistinct. Base of wing suffused with brownish; median fascia broad, coalescent with subapical large, elongate patterns; subterminal elongate bar well developed; transverse strigulation ill-defined, darker than the ground colour. Fringes concolorous with the ground colour. Hindwing whitish grey at the base, brownish on the peripheries; fringes concolorous with the base of the wing. Length of forewing 11 mm.

Female genitalia (fig. 74). Labia rather small, withrounded posterior portions. Lamella vaginalis delicate, however, rather large, rounded on the anterior edge, characteristically sinuate and convex in the middle of the posterior edge. Lateral tips of lamella vaginalis elongate and pointed; the area surrounding the ostium bursae well sculptured. Introitus short provided with well sclerotized centre; gonapophyses long and thin.

Distribution. Type locality: Cap Bon in Tunisia. Besides the type several specimens (all females) have been examined, all from North Africa.

Biology unknown, except that the moth appears in June.

Comments. The species is very easily distinguishable by the long forewing and the coloration. The female genitalia resemble those in *C. taurominana* RAZ. In both species the ductus bursae is long, much longer than that in all the remaining species of this group. The type is preserved in the collection of the Muséum d'Histoire Naturelle in Paris; other examined specimens in the afore mentioned museum and in the British Museum (Nat. Hist.) in London.

Group 3

Group type: *Cnephasia sedana* (CONSTANT)

Male genitalia: valva long and narrow; sacculus always without free termination; uncus short; gnathos with very small terminal plate; transtilla broad, simple; aedeagus with very short anellus.

Female genitalia: lamella vaginalis with long and narrow lateral parts and well sclerotized introitus; ductus bursae usually short.

For this group of species RÉAL has established the subgenus *Anoplocnephasia,*

which was cited in the „European *Cnephasiini*" as a valid one. The differences between this group of species and the remaining groups are very great, chiefly in the shape of the anellus. The species are very similar to each other in the genitalia, and differ very often in the pattern and in the coloration of the wings. Some of these forms are probably subspecies, some must be taken for the local forms of the infraspecific value. This problem shall be solved when the zoogeography of this group is known.

Cnephasia (Cnephasia) orientana (ALPHER.)

Sciaphila orientana ALPHERAKY, 1876, Trudy russk. entom. Obstsh., **10** (**1877**): 48.
(RAZ.: 260 pl. 24 fig. 63, 64, pl. 45 fig. 213, pl. 46 fig. 214, pl. 60 fig. 284)

This species is very distinct by the colour of the forewing and by the genitalia, and differs from all remaining species of this group by very large valva, which is similar to that in the preceding group of species, but lacks free termination of the sacculus (present as a well sclerotized edge of the valva only) in the male genitalia, and long ductus bursae in the female genitalia. The geographical distribution is cited in the general part of this paper.

Cnephasia (Cnephasia) heinemanni OBR.

Cnephasia heinemanni OBRAZTSOV (nom. nov. for *Sciaphila monochromana* HEINEMANN), 1956, Tijdschr. Ent., **99**: 110.
(RAZ.: 257 pl. 24 fig. 59, pl. 45 fig. 212, pl. 60 fig. 283)

Cnephasia (Cnephasia) minima RAZ.

Cnephasia (Cnephasia) minima RAZOWSKI, 1959, Acta zool. cracov., **4**: 258 pl. 24 fig. 60 pl. 45 fig. 210.

Cnephasia (Cnephasia) sedana (CONST.)

Sciaphila sedana CONSTANT, 1884, Ann. Soc. ent. France, ser. 6, **4**: 221 pl. 9 fig. 8.
(RAZ.: 258 pl. 24 fig. 61, 62, pl. 45 fig. 211, pl. 60 fig. 282)

This very variable species has several forms in the montainous regions of the Palaearctic. Some of them are probably valid subspecies. They differ from the typical form from the Alps in the coloration and in the shape of the wing.

Ab. *mediterranea* RÉAL (*Cnephasia (Anoplocnephasia) sedana* race *mediterranea* RÉAL, 1952, Rev. Franc. Entom., **14**: 13) is identical with the typical form and was synonymised by me in 1960.

Ssp. *agathana* (KENN.)

(Pl. XVIII, fig. 26)

Tortrix agathana KENNEL, 1919, Mitt. münch. Ent. Ges., **8** (**1917/18**): 62, 95 pl. 2 fig. 15, pl. 4 fig. 4; *Cnephasia sedana* (part.); FILIPIEV, 1934, Bull. Acad. Sci. URSS, **1934**: 1408; *Cnephasia sedana* f. *agathana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 109; *Cnephasia (Anoplocnephasia) sedana agathana*; RAZOWSKI, 1958, Acta zool. cracov., **2**: 566 pl. 53 fig. 4.

Forewing strongly broadening posteriorly; costa rather straight; apex pointed; termen oblique (about 60°), nearly straight. Ground colour pale grey with slight, very characteristic bluish grey tint; pattern brownish grey, very distinct. Postbasal fascia well developed, median fascia divided into three parts, or nearly uniform. Length of forewing 11—13 mm. Type locality: Juldus in Central Asia.

Ssp. *alaicana* CAR.

Cnephasia alaicana CARADJA, 1916, Iris, **30**: 49; *Tortrix sedana* (part.) WALSINGHAM, 1900, Ann. & Mag. nat. Hist., ser. 7, **5**: 460; *Tortrix marcidana* KENNEL, 1901 (nom. praeocc.), Iris, **13** (**1900**); *Cnephasia oricasis*; FILIPIEV, 1934, Bull. Acad. Sci. URSS, **1934**: 1408; *Cnephasia obscurana* OSTHELDER, 1938, Mitt. münch. Ent. Ges., **28**: 23 (nom. praeocc.); *Cnephasia sedana alaicana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 110.

Forewing narrow, slightly expanding posteriorly; costa delicately arched outwards; apex rather rounded; termen oblique; ground colour brownish grey, delicately suffused in basal and posterior portions of the wing, weakly transversely striped on edges. Pattern brownish grey marked with dark edges. Length of forewing 8 mm.

Type locality: Kurak-Dagh, Thian-Shan. The moth appears in July.

Ssp. *pirizanica* nom. nov.

(Pl. XVIII, fig. 27)

Cnephasia sedana amseli RAZOWSKI, 1957, Beitr. Naturkunde Südwestdeutschl., **16**: 101 (nom. praeocc.).

Forewing slightly broadening towards the end; costa strongly curved outwards in basal half, then nearly straight; apex delicately rounded; termen rather straight, oblique. Ground colour pale greyish in males, whitish grey in females; pattern dark, very distinct, brownish grey. In basal portion of the wing a narrow elongate pattern from $^1/_4$ of costa towards the middle. Median fascia well developed, with sharp anterior edge; pattern in the posterior portion of the wing rather weak and paler than the median fascia. Remaining features as in typical form. There are also some differences between this subspecies and the typical form of *C. sedana* (CONST.) in the male and female genitalia. Valva in the male narrower, strongly tapering posteriorly and pointed apically.

Saccullus short and very weak. In the female genitalia lamella vaginalis is large and narrow, ductus longer than that in *C. sedana sedana* (CONST.), bursa copulatrix and signum large (figs. 75, 76, 77).

Type locality: Pir-i-Zan and Teheran in Iran. The moths were taken in May.

Comments. This subspecies is very distinct and differs from the typical form much more than the two preceding ones. When *Tortrix amseli* D. LUCAS was genitalically examined and transferred to the genus *Cnephasia* CURT. I changed the name of this subspecies into *pirizanica* nom. nov.

Cnephasia (Cnephasia) stachi RAZ.

(Pl. XVIII, fig. 28)

Cnephasia (Anoplocnephasia) stachi RAZOWSKI, 1958, Acta zool. cracov., **2**: 567 pl. 53 fig. 5, pl. 57 fig. 29, pl. 60 fig. 46.

Head whitish, thorax somewhat darker. Forewing elongate, narrow; costa curved at base, very slightly arched outwards in the remaining portions; apex pointed; termen short, strongly oblique. Ground colour white; pattern yellowish with darker suffusion. Basal area paler than the colour of the pattern. Fringes concolorous with the ground colour. Hindwing elongate, with pointed apex. The colour of the hindwing yellowish white, darker on peripheries. Fringes white. Length of forewing in male 8 mm.; in female about 10 mm.

Male genitalia (fig. 78, 79). Valva narrow, tapering posteriorly. Sacculus well sclerotized, short. Uncus short; socii well developed; gnathos with long lateral arms; transtilla broad; aedeagus small, simple.

Female genitalia (fig. 80). Very similar to those in *Cnephasia sedana* (CONST.), but ductus bursae longer, lamella vaginalis with larger, pointed lateral parts. Signum large.

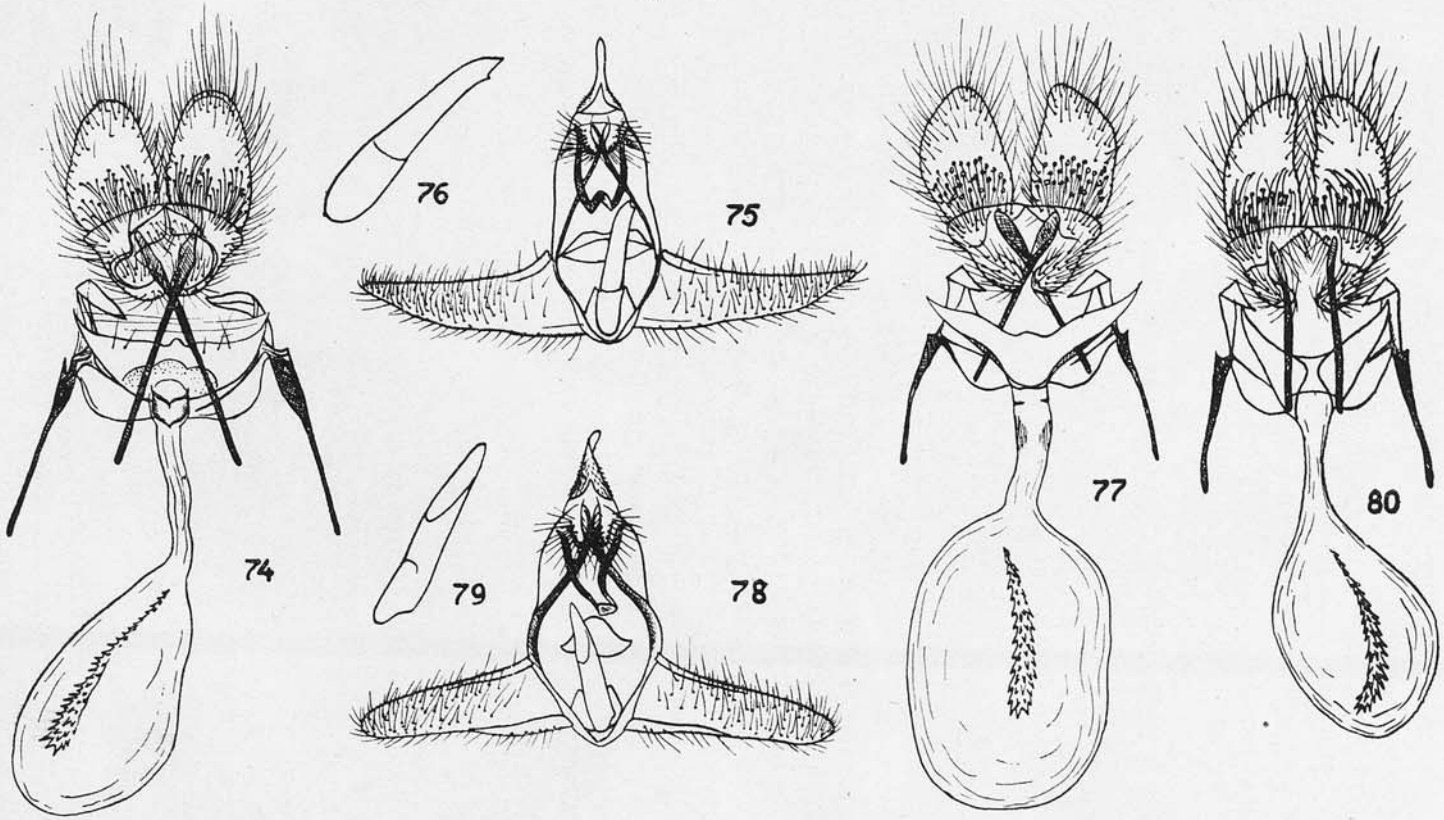
Comments. The species is recorded from Samarkand. The types are in the collection of the Institut für Spezielle Zoologie in Berlin.

Cnephasia (Cnephasia) lineata (WALSM.)

(Pl. XIX, fig. 29)

Doloploca lineata WALSINGHAM, 1900, Ann. & Mag. nat. Hist., ser. 7, **5**: 462; KENNEL, 1910, Pal. Tortr.: 223; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 124; *Tortrix terebrana* AMSEL, 1931, Deutsche entom. Ztg., **1931**: 148; AMSEL, 1935, Mitt. zool. Mus. Berlin, **20**: 290, pl. 11 fig. 86; AMSEL, 1935, Veröffentl. deutsch. kolon. Übers. Mus., **1**: 260; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 110 (as *Cnephasia*); *Cnephasia lineata*; RAZOWSKI, 1961, Acta zool. cracov., **5**: 667 fig. 3.

Head and thorax greyish. Forewing broadening posteriorly; costa curved outwards; apex pointed; termen oblique, delicately convex. Ground colour whitish grey to greyish, costa and middle area of the wing rusty-grey, however, not contrasting. Venation suffused with dark. Several dark dots especially in



Figs. 74—80. Male and female genitalia: 74 — *Cnephasia amseli* (D. Luc.) „Palermo, Sicily, ex. 15. V. 1918, Wlsm.", G. Sl. 6934, 75 — *C. sedana pirizanica* n. nov., „Persien, Teheran, 9. VI. 1934, Wiltshire", G. Sl. 3065 (Amsel), 76 — aedeagus of same specimen, 77 — same species, female, allotype, „Pir-i-Zan, 6. V. [19]40", G. Sl. 6674, 78 — *C. stachi* Raz., holotype, „Samarkand", G. Sl. 5118, 79 — aedeagus of same specimen, 80 — same species, female, allotype, „Samarkand", G. Sl. 5115

median and posterior portions of the wing. Fringes concolorous with ground colour. Hindwing brownish grey, rather pale; fringes pale. Length of forewing 8 mm.

Male genitalia (fig. 81, 82). Valva in comparison to that in the preceding species large, delicately tapering terminad, rounded apically. Socii, uncus and gnathos long. Aedeagus small and slender, provided with several minute dents in the terminal portion ventrally.

Known from Israel.

The type of *Cnephasia lineata* (WALSM.) is in the collection of the British Museum (Nat. Hist.) in London, the type of *Tortrix terebrana* AMSEL in Dr. AMSEL's collection (Karlsruhe in Baden).

Cnephasia (Cnephasia) ussurica FILIPIEV

(Pl. XIX, fig. 30)

Cnephasia ussurica FILIPIEV, 1962, Trudy zool. Inst. Akad. Nauk. SSSR, **30**: 379.

Head and thorax grey-brown. Forewing rather broad, broadening posteriorly; costa curved outwards; apex delicately rounded; termen oblique. Ground colour whitish grey with delicate yellowish tint; the pattern grey-brown, rather pale, spotted with dark on the edge of the median fascia and beyond the postbasal fascia. The pattern in posterior portion of the wing well developed; paler, however, than median fascia. Fringes concolorous with ground colour. Hindwing rather broad, whitish grey, darker in apical portion; fringes white. Length of forewing 8 mm.

Male genitalia (figs. 83, 84). The shape of valva as in the preceding species; sacculus weak, short; uncus long, gnathos longer than that in *C. lineata* (WALSM.) provided with larger terminal plate. Aedeagus slender, pointed terminally.

This species is recorded from Ussuri, Eastern Asia.

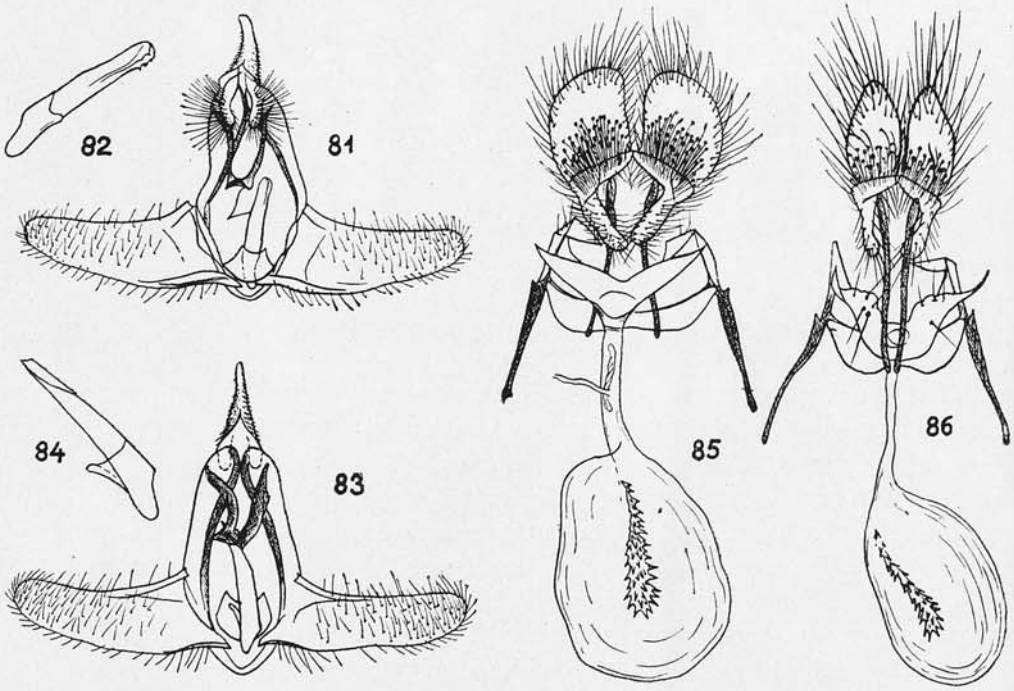
Comments. *Cnephasia ussurica* FIL. is very similar to *C. lineata* (WALSM.). Slight differences are in the ground colour of the forewing, which in the species in question is much paler, and in the shape of the gnathos in the male genitalia. Female unknown. The type and several typoids are in the collection of the Zoological Museum in Leningrad.

Cnephasia (Cnephasia) tristrami (WLSM.)

Tortrix tristrami WALSINGHAM, 1900, Ann. & Mag. nat. Hist., ser. 7, **5**: 460; KENNEL, 1910, Pal. Tortr.: 215; *Cnephasia tristrami*; FILIPIEV, 1934, Bull. Sci. Acad. URSS, **1934**: 1406; FILIPIEV, 1935, Zschrft. Öesterr. ent. Ver., **20**: 51; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 110.

Labial palpus, head and partially thorax whitish; tegulae white-grey. Costa delicately arched outwards; apex rounded; termen slightly convex. Ground colour whitish, delicately sprinkled with grey in the posterior portion. Post-

basal fascia well developed, arched; median fascia broad, the pattern in posterior portion of the wing delicate. The colour of the pattern ochre-grey, especially in median fascia; on the pattern of the posterior portion of the wing black scales, black dots on fascias. Fringes white. Hindwing grey, brownish grey on peripheries; fringes whitish. Length of forewing 8 mm.



Figs. 81—86. Male and female genitalia: 81 — *Cnephasia lineata* (WALSM.) lectotype, „Palestina, Tristram", G. Sl. 5667 (BM), 82 — aedeagus of same specimen, 83 — *C. ussurica* FIL., „Ussur. Krai, Sutshan, KURENTSOV, 6. VII. [19]28", 84 — aedeagus of same specimen, 85 — *C. tristrami* (WALSM.), lectotype, „Palestine, Tristram", G. Sl. 5668, 86 — *C. margelanensis* RAZ., holotype, „Margelan, 24. VI.", G. Sl. 5116

Female genitalia (fig. 85). Gonapophyses long; lamella genitalis broad, rounded anteriorly; lamella vaginalis well developed with long, tapering posteriorly and pointed terminally lateral parts. Ostium large; introitus well sclerotized, rather broad, broadening posteriorly; ductus bursae rather long; ductus seminalis in the middle of ductus bursae. Bursa copulatrix large with strong signum.

Distribution: Israel (Tristram), according to OBRAZTSOV (1956) also Syria and Lebanon.

Lectotype: „Palestine, Tristram, Type", G. Sl. 5668, in the collection of the British Museum (Nat. Hist.).

Comments. This species is known to me as a female only. The male genitalia

were characterized by FILIPIEV (1935), who stated no free termination of the sacculus. Other features of the male genitalia of this species are similar to those in *Cnephasia fragosana* (ZELL.). The type specimens resemble large, pale specimens of *Cnephasia incertana* (TREIT.) superficially.

Cnephasia (Cnephasia) margelanensis RAZ.

(Pl. XIX, fig. 31)

Cnephasia (Anoplocnephasia) margelanensis RAZOWSKI, 1958, Acta zool. cracov., **2**: 565 pl. 53 fig. 1, pl. 60 fig. 45.

Labial palpus and head grey; thorax brownish grey, darker than the head. Forewing very slightly broadening posteriorly; costa curved outwards to $^1/_3$, then rather straight; apex pointed; termen straight, oblique. Ground colour grey, sprinkled with whitish; pattern grey-brown. Basal area brownish grey, postbasal fascia broad and well developed to the middle, then atrophied, median fascia broad with sharp anterior edge; large brownish grey shade instead of subapical spot, and a row of blackish spots along termen. Very delicate dots and suffusion in places in the ground present. Fringes rather paler than the ground colour, divided with brownish grey. Hindwing brownish grey, a little paler at base; fringes concolorous with the colour of basal area. Length of forewing 7 mm.

Female genitalia (fig. 86). Labia rather small; gonapophyses very long; lamella vaginalis broad, rounded anteriorly, provided with elongate and pointed lateral termination. Posterior edge of lamella vaginalis strongly concave in the middle. Ostium bursae rounded; ductus bursae narrow, long; bursa copulatrix with long signum.

Cnephasia margelanensis RAZ. is known hitherto from Margelan in Central Asia. The type is preserved in the collection of the Institut für Spezielle Zoologie in Berlin.

Cnephasia (Cnephasia) personatana KENN.

(Pl. XIX, fig. 32)

Cnephasia personatana KENNEL, 1901, Iris, **13** (**1900**): 231; *Tortrix personatana* KENNEL, 1910, Pal. Tortr.: 214 pl. 11 fig. 6; *Cnephasia personatana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 117; *Cnephasia (Anoplocnephasia) personatana*; RAZOWSKI, 1958, Acta zool. cracov., **2**: 566 pl. 53 fig. 3.

Head and thorax brownish. Forewing broad, strongly broadening posteriorly; costa arched outwards; apex rather pointed; termen slightly oblique. Ground colour grey-brown, rather pale; pattern more brownish, consisting of post-

basal fascia, which is well developed in its costal portion (reaching the middle of the wing), and median fascia broad, arched outwards, sharply edged anteriorly. The pattern in posterior portion of the wing delicate. Minute transverse stripes on whole surface of the wing present. Fringes concolorous with the ground colour of the posterior portion of the wing. Hindwing broad, brownish with somewhat paler fringes. Length of forewing about 8 mm.

The type of *C. personatana* KENN. is recorded from the Amur Region and is preserved in the collection of the Institut für Spezielle Zoologie in Berlin. Unfortunately the abdomen is missing.

Cnephasia (Cnephasia) clarkei RAZ.

(Pl. XX, fig. 33, 34)

Cnephasia sedana; FILIPIEV, 1934, Bull. Acad. Sci. URSS, **1934**: 1408; *Cnephasia oricasis*; CLARKE, 1958, Catal. Type Spec. Meyr., **3**: 88 pl. 44 fig. 2, 2 a-b; *Cnephasia clarkei* RAZOWSKI, 1961, Acta zool. cracov., **5**: 667 pl. 86 fig. 4.

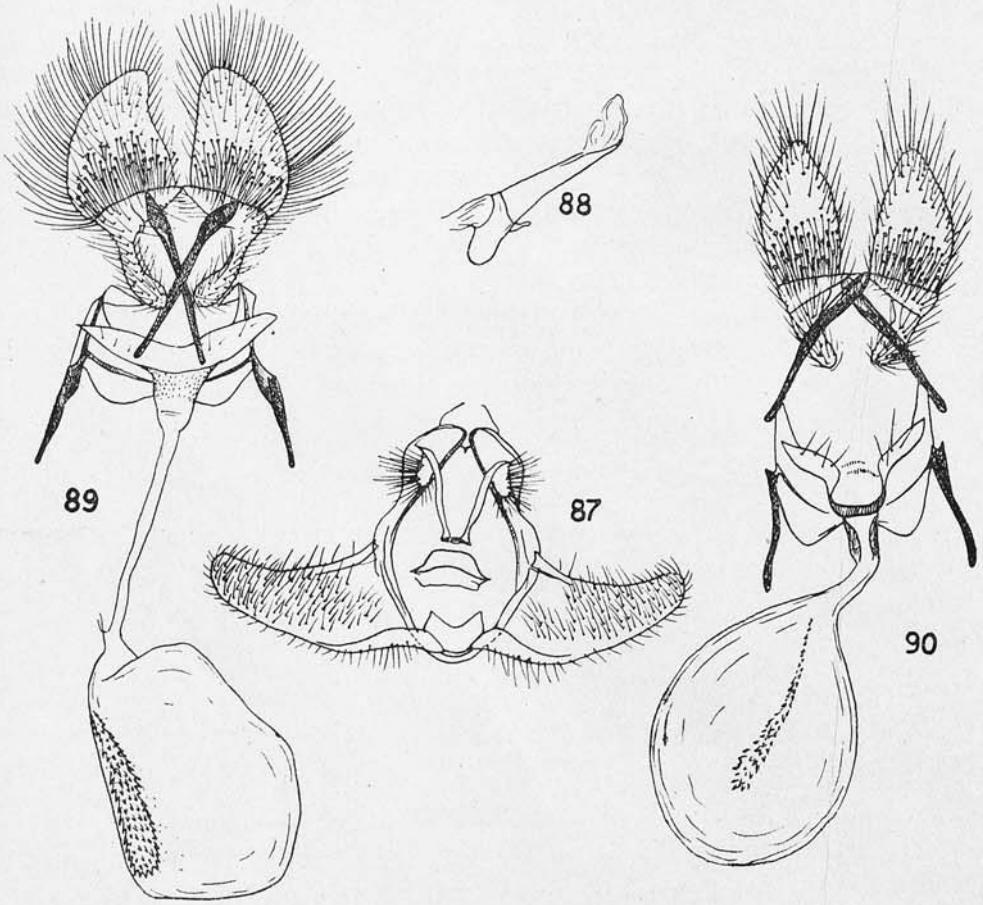
Head and thorax grey. Sexual dimorphism rather great. Male: forewing strongly broadening posteriorly; costa arched outwards; apex delicately rounded; termen oblique. Ground colour grey with slight olive tint; pattern brownish grey. Postbasal fascia delicate, atrophied beyond the middle; median fascia broad with ill-defined posterior edge; several spots in posterior portion of costa and along termen. Fringes whitish grey. Hindwing brownish grey, rather pale; fringes whitish grey. Length of forewing 9 mm. Female: forewing less broadening posteriorly than in the male; costa strongly arched outwards at base, then rather straight. Ground colour paler than in male, more whitish grey. Pattern more intense then in male. Hindwing and fringes of both pairs of the wings darker than in male. Length of forewing 9 mm.

Male genitalia (figs. 87, 88). Valva rather broad, tapering terminad. Sacculus weak; uncus rather short; gnathos with slender lateral arms; transtilla broad; aedeagus slightly bent, pointed terminally.

Female genitalia (fig. 89). Labia with large posterior portions; gonapophyses posteriores thin and long; gonapophyses anteriores short. Lamella vaginalis with narrow lateral parts; introitus broad, well sclerotized and delicately sculptured; ductus bursae very long, narrow; signum broad.

Distribution: Cashmere.

Comments. According to the original description *Cnephasia oricasis* MEYR. has free termination of the sacculus („valva elongate-triangular, apical tuft of sacculus grey, at about $^1/_3$ of valva") and belongs to *communana*-group. The designation of the lectotype (CLARKE, 1958) is wrong, and that specimen belongs in the *sedana*-group. I therefore described *Cnephasia oricasis* CLARKE nec MEYRICK as a new species.



Figs. 87—90. Male and female genitalia: 87 — *Cnephasia clarkei* Raz., holotype, „Gulmarg, Kashmir, T.B.F., 8800 [ft.], VI. [19]31, G. Sl. 3684, 88 — aedeagus of same specimen, 89 — same species, female, allotype, „Gulmarg, Kashmir, 8600', T.B.F., VII. [19]23, G. Sl. 6851. (Clarke), 90 — *C. zernyi* Raz., holotype, „Marokko, Gr. Atlas, Tachdirt, 2200—2700 m., 2—10. VII. 1933, Zebny", G. Sl. 3182

Cnephasia (Cnephasia) zernyi Raz.

(Pl. XX, fig. 35)

Cnephasia zernyi Razowski, 1959, Zschrft. wien. Ent. Ges., **44**: 84 fig. 6, pl. 3 fig. 4.

Head grey, thorax more brownish grey. Forewing rather of same width throughout; costa decidedly arched outwards; apex rounded; termen short, delicately convex and slightly oblique. Ground colour grey; pattern brownish grey. Costa and dorsum suffused with dark grey at bases; postbasal fascia narrow, atrophied in posterior half; median fascia ill-defined in the middle; delicate shade before the apex on costa and small spots before termen. Fringes concolorous with the ground colour. Hindwing rounded with short apex. The

colour of the hindwing brownish grey, brownish on peripheries; fringes whitish. Length of forewing 8 mm.

Female genitalia (fig. 90). Gonapophyses strong; lamella vaginalis delicate with slender lateral parts, pointed apically. Ostium bursae very broad; introitus with well sclerotized lateral areas; ductus bursae short; signum narrow, long.

Distribution. Type locality: Tachdirt in Great Atlas (Morocco). Several specimens were collected near Oran in Algeria.

Biology. *Cnephasia zernyi* RAZ. appears in July. The holotype was taken at the altitude of 2200—2700 m.

Comments. The species is very distinct by the female genitalia (large ostium bursae and slender lateral parts of the lamella vaginalis). The type is preserved in the collection of the Naturhistorisches Museum in Vienna.

Species unexamined

In here I place some species known to me from ten original descriptions only. The descriptions are unsufficient and I cannot decide about the systematic positions of the species.

Cnephasia (Cnephasia) oricasis MEYR.

Cnephasia oricasis MEYRICK, 1932, Exot. Micr., **4**: 342; *Cnephasia oricasis*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 117; OBRAZTSOV, 1957, l. c., **100**: 324.

According to the original description this species is similar to *C. incertana* (TREIT.) superficially. In the male genitalia the sacculus reaches $^1/_3$ length of the valva and is provided with free termination. Unfortunately the type is lost, and the lectotype designated by CLARKE (1958) is wrong.

The species is recorded from Gulmarg in Cashmere.

Cnephasia (Cnephasia) bogodiana TUR.

Cnephasia bogodiana TURATI, 1924, Atti Soc. ital. Sci. Nat., **26**: 152; *C. bogudiana* TURATI 1924, l. c., pl. 5 fig. 46; OBRAZTSOV, 1950. Eos, **26**: 312; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 116.

The redescription enclosed is based on the original description and photograph given by TURATI. TURATI compared *C. bogodiana* with *C. kenneli* OBR. (= *obsoletana* KENN.), OBRAZTSOV (1950) with his *Cnephasia hellenica*. It is necessairy to designate a neotype from Cyrenaica for it, but unfortunately I have no material from this country.

Labial palpus, thorax and forewing yellowish brown. Forewing rather slightly expanding posteriorly; costa gently curved outwards; apex rather pointed; termen very slightly convex, oblique. Pattern ill-defined. Posterior portion of the wing paler than the remaining areas, concolorous with fringes.

Hindwing pale, whitish-yellowish, slightly suffused with brownish in apical area and peripheries; fringes whitish. Expansion of forewings 20·5 mm.

Terra typica: Bengasi. The moth was taken on March 20th.

Oporopsamma Gozm.

Type species: *Cnephasia wertheimsteini* Rebel, 1913

Oporopsamma Gozmany, 1954, Ann. hist.-nat. Mus. nat. Hungar., ser. nova, **5**: 274.

Labial palpus as long as diameter of the eye; tongue rather weak and short. Antenna as in *Oxypteron* Stgr. Venation as in the mentioned genus; vein m_2 of the hindwing missing; veins rr—m_1 separate or stalked [in *O. stenoptera* (Fil.)].

Male genitalia. In *O. wertheimsteini* (Rbl.) valva is long with weakly sclerotized posterior portion of costa; sacculus very strong, curved; tegumen with delicate socii and uncus; gnathos very feebly developed; transtilla present, but also weak. In *O. stenoptera* (Fil.) valva is narrow with broadened and protruding posterior portion and with well developed costa. Sacculus thin; gnathos well developed. In both species aedeagus very thin.

Female genitalia with large, broad posterior portion of labia, short gonapophyses and well developed lamella genitalis. Lamella vaginalis very delicate with long and narrow lateral parts. Introitus short; ductus bursae and bursa copulatrix transparent; signum absent.

Biology. The moths were taken in July and August. One specimen of *O. wertheimsteini* (Rbl.) was bred from stems of *Chondrilla juncea* L.

Comments. In 1959 I transferred *Cnephasia wertheimsteini* Rbl. from *Eana* (Obraztsov) to *Oxypteron* Stgr. because of the structure of the gnathos, which in the species under consideration is weakly developed and slightly sclerotized, similar to that in the species of *Oxypteron* Stgr. *O. stenoptera* (Fil.) has gnathos rather well developed. The valva in this species is quite different from that in *O. wertheimsteini* (Rbl.) or in the species of *Oxypteron* Stgr., but the female genitalia of both species are very close.

The problem of the *Oxypteron*-group is unclear, and I suppose some more species of this group shall be found. It is not excluded that the species of the present genus are belonging in the large genus *Oxypteron* Stgr. in which the gnathos and some other features (venation) are inconstant. For the present time I am treating *Oporopsamma* Gozm. as a valid genus.

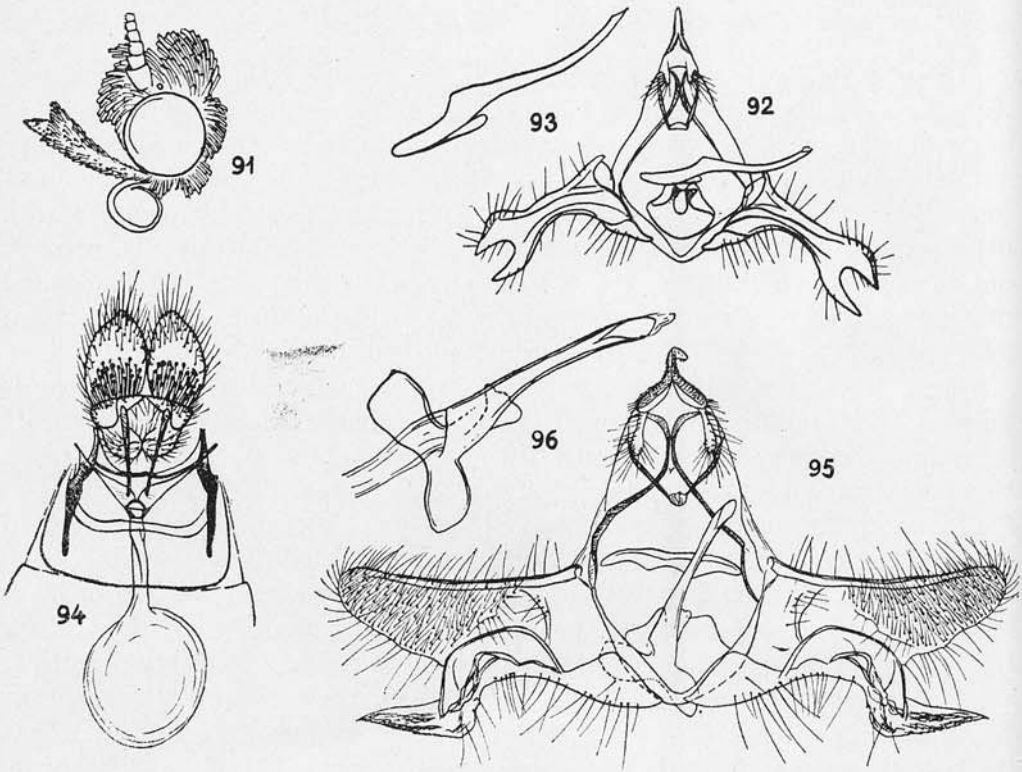
Oporopsamma stenoptera (Fil.), comb. nov.

(Pl. XX, fig. 36)

Eana stenoptera Filipiev, 1962, Trudy zool. Inst. Akad. Nauk SSSR, **30**: 381.

Labial palpus short (fig. 91), brownish grey; head and thorax similarly coloured. Forewing expanding posteriorly; costa straight to the middle, then curved; apex pointed; termen straight, strongly oblique. Ground colour greyish

with very delicate brownish olive tint; pattern brown-grey. Median fascia from middle of costa to before tornus narrow with rather straight anterior edge. Costa suffused in basal portion; termen concolorous with base; delicate dark brown scales on the ground and pattern, and blackish spot in central portion of the median fascia. Fringes grey. Hindwing grey, brownish grey on peripheries; fringes concolorous with the base of the wing. Length of forewing 6 mm.



Figs. 91—96: 91 — *Oporopsamma stenoptera* (Fil.) — head, 92 — same sp., male genitalia, „Klimoicy, Amur. Obl., 40 km. w. Swobodnogo (Am. Obl.), Kuznetsov, 1958", 93 — aedeagus of same specimen, 94 — same sp., female (labelled as the male), 95 — *O. adamana* (Kenn.), „Nuhu-Dabang, 13. VI. 1915, S. Rodionoff", G. Sl. 8030, 96 — aedeagus of same specimen

Male genitalia (figs. 92, 93). Valva rather broad at base, narrowed beyond the middle, enlarged in posterior portion. Sacculus long and thin with long, protruding posteriorly termination; tegumen delicate; uncus short; socii very small; gnathos well developed with rather small terminal plate; Aedeagus slender and long, pointed terminally.

Female genitalia (fig. 94). Labia large; gonapophyses posteriores thin; gonapophyses anteriores strong; lamella genitalis well developed; lamella vaginalis with lateral portions narrow, pointed terminally; ostium bursae small, rounded; introitus very short, however, well sclerotized; ductus bursae as long as bursa copulatrix, both transparent; signum absent.

Biology. This species lives commonly in oak-pine forests, rarely in oak-leafed-trees forests in June.

Distribution. The moths occur in East Asia (Amur land). The type was taken in Primorski Kraj, Sutshan, other specimens in Priamurie.

Comments. This species was described as an *Eana*-species, but it differs from the representatives of this genus in the venation and in the genitalia. Its systematic position is very difficult to be fixed, however, the female genitalia are closely similar to those in *O. wertheimsteini* (RBL.). The shape of the gnathos is very interesting and one can suppose that this species is an intermediate one between *Cnephasia* CURT. and *Oxypteron* STGR.

Oporopsamma wertheimsteini (RBL).

Cnephasia wertheimsteini REBEL, 1913, Rov. Lap. Budapest, **20**: 228 fig. 3, 4. (RAZ.: 265)

The species was known from Hungary and Daghestan. In the coll. of the British Museum (Nat. Hist.) I have found one specimen collected in Turkestan (Thian Shan Mts, 27th August). I have also examined one specimen from Moravia (Czechoslovakia), and about 50 specimens from Azerbaidjan, Daghestan etc. in the collection of the Zoological Institute in Leningrad.

? *Oporopsamma adamana* (KENN.)

(Pl. XXI, fig. 37)

Tortricodes adamana KENNEL, 1919, Mitt. münch. Ent. Ges., **8** (**1917/18**): 65 pl. 2 fig. 19; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 118.

Labial palpus brownish grey; head and antenna rather dark grey-brown. Forewing narrow, slightly expanding posteriorly; costa gently arched outwards; apex delicately rounded; termen rather straight, oblique. Ground colour grey, brownish grey or pale brownish with delicate olive hue, sometimes sprinkled with white especially among the pattern. Pattern brown-grey, sometimes ill-defined. Basal area suffused with brown-grey or provided with well developed patch; median fascia well developed at costa and in dorsal portion of the wing, sometimes atrophied; subapical spot and subterminal pattern rather well visible. Fringes concolorous with the ground colour, divided with brownish grey. Hindwing brownish grey, paler at base; fringes grey to white-grey. Length of forewing 13 mm.

Male genitalia (figs. 95, 96). Valva with strong costa, broad at base, tapering posteriorly, rounded apically; sacculus strong, strongly broadened in median and posterior portions, sinuate ventrally and pointed terminally. Small dents in posterior portion of sacculus present. Tegumen rather delicate; uncus short;

gnathos with narrow lateral arms and weak terminal plate; socii delicate; transtilla broad. Aedeagus very peculiar in shape, long, narrow, pointed terminally, provided with two large ventro-lateral portions of the basal part.

Female unknown.

Distribution. The species has been recorded from Altai. I found 6 specimens in the materials of the collection of the Zoological Institute P.A.S. in Warszawa (determined as *Tortricodes ignavana* CHR.) and in the collection of the Zoological Institute in Leningrad. All of them are males and were collected in Irkutsk or Saian.

Comments. The systematic position of this species cannot be fixed now as the female is unknown. It resembles other species of *Tortricodes* GUEN. (it was described as *Tortricodes* sp.) superficially; however, in *Oporopsamma* GOZM. vein m_2 is missing in the hindwing too. The species differs from those of the genus *Tortricodes* GUEN. in the male genitalia and rather resembles the species of this genus. I place the said species in the genus *Oporopsamma* GOZM. provisionally. The type is unknown to me and seems to be lost. The species is rather various in coloration, particularly in the colour of the ground.

Oxypteron STGR.

Type species: *Oxypteron impar* STAUDINGER, 1871

Oxypteron STAUDINGER, 1871, Berl. ent. Ztg., **14 (1870)**: 276.

This genus needs a revision. Several species were incorrectly interpreted. Short characteristics and comments are given below.

Labial palpus more or less twice as long as the diameter of the eye; basal joint short; median joint long, rather slender; terminal joint short. Antenna scaled and hairy; tongue decidedly reduced. Forewing very narrow; apex pointed; termen very strongly oblique. Venation: r_1 from the posterior third of median cell; r_5 to apex; internal vein of median cell well developed. Hindwing with rr and m_1 short-stalked; m_3 absent; m_2 separate from cu_1.

Male genitalia variably shaped. Valva broad at base, narrowed in posterior portion. Sacculus usually well developed; often with characteristic spines or projections. Tegumen slender; uncus delicate, rather short; gnathos absent; socii weak; transtilla well developed; aedeagus small, usually provided with spines or projections.

Female genitalia with simple ductus bursae or with bulbous sack before lamella vaginalis, which is well developed. Labia as in *Cnephasia* CURT. s. str. No signum in bursa copulatrix.

Distribution. The genus is very interesting in its geographical distribution. The representatives of *Oxypteron* STGR. occur in Southern Europe, North Africa; Eastern Europe, and Asia (chiefly in Asia Minor). There are no data on *Oxypteron*-species from Italy and Yugoslavia. I have had no opportunity

to check the data on the occurrence of *Oxypteron impar* STGR. in Central Asia, but I suppose there is another very similar species. The center of the distribution of this genus seems to be in Middle East.

The biology of *Oxypteron* STGR. is practically unknown. The moths were collected in spring (March), late summer and autumn, sometimes in November and December. The only data on the larval pabula is referable to *Oxypteron eremicum* (WALSM.). CHRÉTIEN found the caterpillars on *Emex spinosa* CAMP.

Comments. GOZMÁNY (1954) divided the species of this genus into two subgenera (*Oxypteron* STGR., s. str. and *Psammozesta* GOZM.) on the basis of the shape of the male genitalia. The same author established the genus *Oporopsamma*. OBRAZTSOV synonymised *Psammozesta* GOZM. with *Oxypteron* STGR. and *Oporopsamma* GOZM. with *Eana* BILLB. In the „European *Cnephasiini*" I transferred *Cnephasia wertheimsteini* RBL. (the typus generis of *Oporopsamma* GOZM.) to *Oxypteron* STGR. because of the similarity of the male genitalia (very weakly developed gnathos). When the genitalia of the female of *Eana stenoptera* FIL. were examined I grouped both mentioned species in GOZMÁNY's genus *Oporopsamma*. In the genus under consideration there are some groups of species that are more similar to each other, but unfortunately the female genitalia of some species are unknown. In the female genitalia we can distinguish two groups of species, but I suppose that the intermediate forms shall be found in some future time, and *Oxypteron algerana* sp. nov. seems to be one of them. Regarding the female genitalia there are two groups of species, one with long simple ductus bursae, and the other with bulbous sack before the ostium. The problem of these groups should be solved when the females of all the species are known.

Oxypteron impar STGR.

Oxypteron impar STAUDINGER, 1871, Berl. ent. Ztg., **14** (**1870**): 276.
(RAZ.: 264 pl. 25 fig. 68, 69, pl. 46 fig. 217, pl. 61 fig. 286)

Oxypteron palmoni (AMS.)

(Pl. XXI, fig. 38)

Tortricodes palmoni AMSEL, 1940, Veröffentl. deutsch. kolon. übersee Mus., **3**: 37 fig. 1; *Oxypteron palmoni* AMSEL, 1948, Bull. Soc. Fouad Ier, Ent., **32**: 301 fig. 1, 2, 9, 12; *Oxypteron palmoni*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 117.

Labial palpus greyish yellow, rather short; front pale yellow; head and thorax more yellow with slight addition of brownish. Forewing narrow, costa delicately arched outwards; apex pointed; termen short, very strongly oblique. Ground colour yellowish to pale yellow-brown; pattern atrophied or very slightly marked, a little darker than the ground colour, more brownish. The

most distinct is the stripe between the end of the median cell and the apex. Fringes concolorous with the ground colour, or paler. Hindwing pale yellowish or very pale brownish yellow, darker in apical area or on peripheries. Fringes concolorous with the colour of the basal part of the wing. Length of forewing 10—12 mm.

Male genitalia (figs. 97, 98). Valva subtriangular, strongly tapering posteriorly, delicate in the terminal portion. Sacculus with strong, broad basal part narrowing before the end, provided with large thorn-shaped termination ventrally. Tegumen slender but well developed; uncus rather long; socii long, drooping; transtilla long, narrow; aedeagus short, slightly bent, pointed terminally; juxta large.

Biology unknown, except the time of appearance of the moth: November.

Distribution: Israel, Syria, Persia.

Oxypteron schawerdai (Rbl.) bona sp.

(Pl. XXI, fig. 39)

Doloploca schawerdai Rebel, 1936, Iris, **50**: 93; *? Tortricodes impar*; Lhomme (non Staudinger), 1939, Cat. Lép. France & Belg., **2**: 270; *Oxypteron polita*; Amsel (non Walsingham), 1948, Bull. Soc. Fouad Ier, Ent., **32**: 301 fig. 4, 10, 13, 14; *Oxypteron (Psammozesta) neogena* Gozmány, 1954, Ann. Hist. nat. Mus. nat. Hungar., ser. n., **5**: 274 fig. 1—3; *Oxypteron politum* (part.); Obraztsov, 1956, Tijdschr. Ent., **99**: 118; *Doloploca schawerdai*; Obraztsov, l. c.: 124; *Oxypteron politum*; Razowski, 1959, Acta zool. cracov., **4**: 263 pl. 25 fig. 66, 67, pl. 46 fig. 216, pl. 61 fig. 285; *? Doloploca schawerdai*; Razowski, l. c.: 305 (orig. descr.); *Oxypteron politum*; Razowski, 1959, Zschrft. wien. Ent. Ges., **44**: 85.

The original description of this species was cited in the „European *Cnephasiini*" on p. 305. The same year I found Rebel's type in the Naturhistorisches Museum in Vienna and synonymised this species with *Oxypteron politum* (Walsm.). *Oxypteron neogena* Gozm. was synonymised by me with the Walsingham's species in the above mentioned paper. In Gozmány's paper the male genitalia differ from those in Amsel's publication (1948) by the shape of the aedeagus and therefore Obraztsov (1956) mentioned *O. neogena* Gozm. as a distinct species. I have, however, examined his specimens in the Magyar Nemzeti Museum and stated that the aedeagus in both is of the same shape. After examining the type of Walsingham's species I stated that Amsel was wrong in determining his specimen as *O. politum* (Walsm.), and the figure in his paper is referable to *O. schawerdai* (Rbl.). All other data on *O. politum* (Walsm.) given by Obraztsov and by myself were based on Amsel's paper. The redescription of *O. politum* (Walsm.) on p. 00. The short characteristics of the male and female genitalia of *O. schawerdai* (Rbl.) are given below.

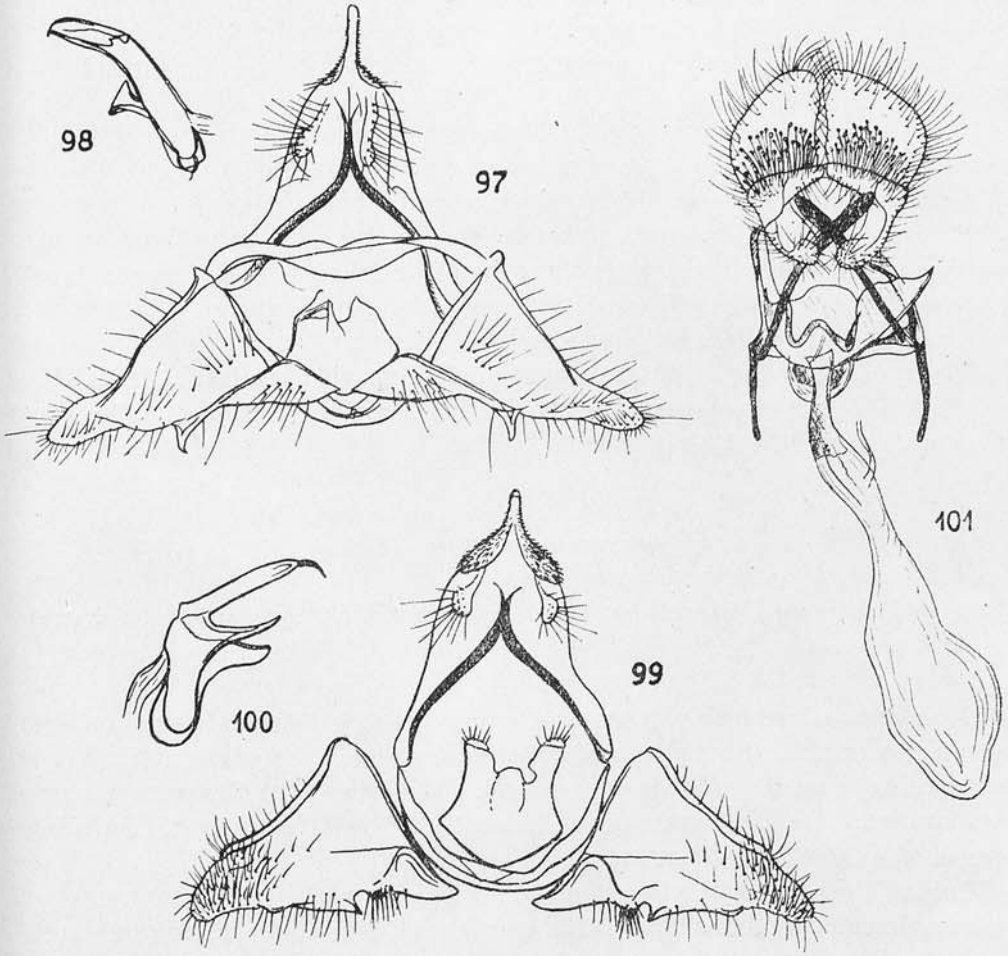
Male genitalia. Valva very broad, slightly tapering terminally. Sacculus long, protruding ventrally at the end, forming with the ventral end of valva a characteristic bifurcation. Tegumen slender; uncus thin, rather long; socii

delicate. Aedeagus broad in basal portion, bent and narrow in posterior portion, narrow laterally, characteristically broadening in the terminal portion; small spine in $^3/_4$ laterally.

Female genitalia. Lamella genitalis well developed, rather short; lamella vaginalis concave in the middle of the posterior edge; ostium large, rounded; ductus bursae very long, provided with strongly sclerotized area beyond the middle.

Distribution. Type locality: Sardinia; recorded also from Spain (Rivas, Madrid).

Biology. Early stages and food plant unknown. The moth occurs in September.



Figs. 97—101. Male genitalia: 97 — *Oxypteron palmoni* Ams., „Shiraz gardens, 5000 ft. Fars, Persia, 15. XI. 1950, E. P. Wiltshire", G. Sl. 5700, 98 — aedeagus of same specimen, 99 — *O. politum* (Walsm.), type, „Philippeville, Algeria, 16. X. 1905, Wlsm.", G. Sl. 5676 (BM), 100 — aedeagus of same specimen, 101 — *O.* type *exiguanum* (Lah.); of *T. chapmani* (Walsm.)

Oxypteron politum (WALSM.)

(Pl. XXI, fig. 40)

Tortricodes polita WALSINGHAM, 1907, Ent. mo. Mag., **43**: 194; *Oxypteron politum*; OBRAZTSOV (part.), 1956, Tijdschr. Ent., **99**: 118.

Head and thorax rather dark brownish grey. Forewing very slightly broadening posteriorly; costa gently arched throughout; apex pointed; termen delicately convex, strongly oblique. The colour of forewing brownish, darker in apical area, with paler places in median area. Costal edge pale, rather whitish. This pale pattern atrophies beyond the middle of the wing. Fringes concolorous with posterior portion of the wing. Hindwing dark grey-brown; fringes a little paler, concolorous with the colour of the apical portion of the hindwing. Length of forewing 10 mm.

Male genitalia (figs. 99, 100). Valva rather subtriangular, very broad at base, rounded terminally. Costa of valva well sclerotized to before the end of this edge of valva; sacculus well sclerotized, short, concave and provided with pointed ventral projection before the middle. Tegumen broad; uncus short; socii in comparison with those in other species of this genus broad, especially in terminal portions; juxta very large; aedeagus small, narrow in posterior half, provided with long and bent terminal spine.

The type was taken by WALSINGHAM in Philippeville in Algeria, 16. X. 1905 (G. Sl. 5676) and is preserved in the British Museum (Nat. Hist.). No other specimen except the type is known to me.

Oxypteron exiguanum (LAH.)

Sciaphila exiguana LAHARPE, 1860, Contr. Faune Sicil. (Bull. Soc. Vaudoise Sci. Nat.):11. (RAZ.: 262 pl. 25 fig. 65, pl. 46 fig. 215)

Tortricodes chapmani WALSM. was synonymized by AMSEL (1948) on comparing the original descriptions of this species and *O. exiguanum* (LAH.) and two specimens from the WALSINGHAM coll. The female genitalia were unknown till now, and the characteristic of these (based on the type of *Tortricodes chapmani* WALSM.) is given below.

Labia broad; gonapophyses posteriores longer than gonapophyses anteriores; lamella vaginalis large, with rounded anterior edge and pointed lateral ends. Small bulbous sack present. Ductus bursae delicately sclerotized except small area before the end; bursa copulatrix without signum (fig. 101).

Comments. The type of *Tortricodes chapmani* WALSM. is labelled „Anemone, Taormina, 23. VIII. 1905, WLSM.", G. Sl. 5704, and is preserved in the British Museum (Nat. Hist.) in London.

Oxypteron algerianum sp. nov.

(Pl. XXII, fig. 41)

Labial palpus and head yellowish grey; thorax a little darker, abdomen concolorous with the head. Forewing very narrow, of the same width throughout. Costa delicately arched outwards at base, then rather straight, very slightly concave in the middle; apex pointed; termen strongly oblique. Ground colour yellowish grey with delicate brownish tint. Two paler elongate areas in the middle cell one below the other and delicate spots in dorso-posterior area. An elongate dark stripe from apex towards the end of the middle cell. Dorso-posterior area of the wing suffused and minutely spotted with brownish grey. Fringes concolorous with the ground colour. Hindwing narrow with apex rather short and pointed, grey-brown in colour. Fringes a little paler. Length of forewing about 8 mm. In the paratype the pattern is better developed, brown-grey; ground colour more brownish grey than yellowish grey. The pattern consists of irregular spots and shades in medio-dorsal and partially in costal areas.

Male genitalia (figs. 102, 103). Valva large at base, tapering posteriorly and rounded terminally. Small spine in the terminal portion of valva ventrally. Sacculus well sclerotized, terminating just beyond half of the length of the ventral edge of valva, provided with delicate rounded convexity in the middle and very small rounded termination. Tegumen rather small; uncus slender, short; socii weak; aedeagus broad at base, strongly bent in middle, delicately tapering posteriorly. Delicate spine in praeterminal portion present.

Holotype (♂): „Zentral Algerien, Guelt-es-Stel, 23—30. X. [19]29, ZERNY", G. Sl. 3271.

Paratype (1 ♂): „Zentral Algerien, Hassi-Babah, 11—20. X. [19]29, ZERNY".

Both types in the collection of the Naturhistorisches Museum in Vienna.

Oxypteron eremicum (WALSM.)

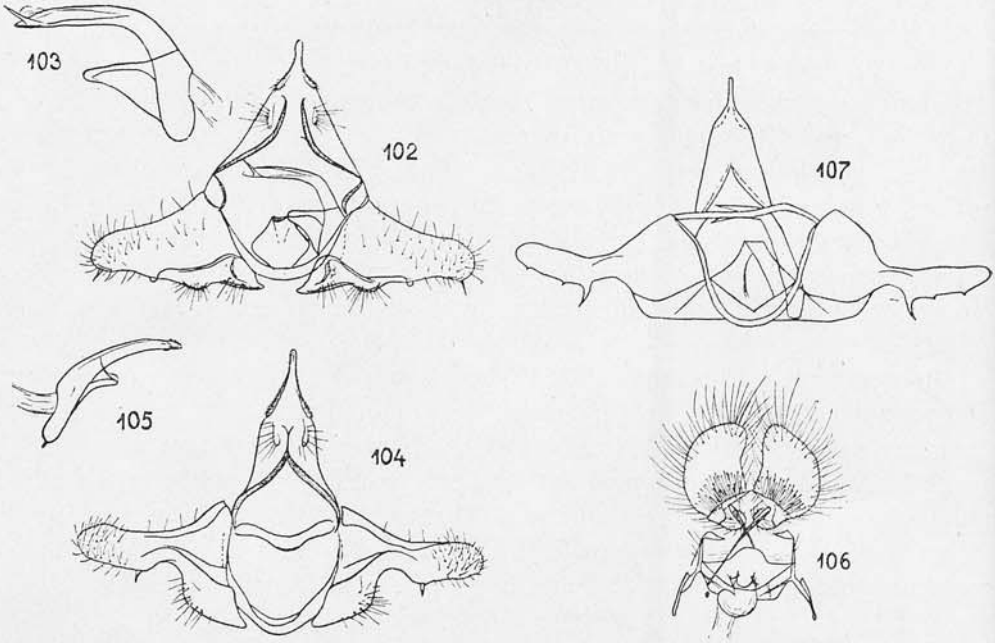
(Pl. XXII, fig. 42)

Tortricodes eremicum WALSINGHAM, 1907, Ent. mo. Mag., **43**: 194; *Oxypteron eremica*; AMSEL, 1948, Bull. Soc. Fouad Ier, Ent., **32**: 302, fig. 5, 11; *Oxypteron eremicum*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 118; *Oxypteron partitanum* CHRÉTIEN, 1915, Ann. Soc. ent. France, **84**: 297 — **synon. nov.**; AMSEL, 1948, Bull. Soc. Fouad Ier, Ent., **32**: 302; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 118; RAZOWSKI, 1961, Acta zool. cracov., **5**: 668 fig. 6, 22.

Head and thorax brown-grey. Forewing of constant width throughout; costa curved at base; apex pointed; termen delicately convex, strongly oblique. Ground colour yellowish, covered by irregular broad pattern which is brown to brown-black in colour. Base suffused with brownish, median fascia very broad, slightly oblique, subterminal fascia incomplete, delicate suffusion on termen. Dark brown curved stripe in the termination of the median cell. Fringes

grey with the exception of the apex where they are brown. Hindwing grey, brown-grey on peripheries and partially along the veins towards the base. Fringes concolorous with the ground colour. Males paler than females. Length of forewing 6 mm.

Male genitalia (figs. 104, 105). Valva broad at base, narrow in posterior portion, rounded terminally. Sacculus strongly sclerotized, concave in the middle.



Figs. 102—107. Male and female genitalia: 102 — *Oxypteron algerianum* sp. n., olotypeh, 103 — aedeagus of same specimen, 104 — *O. eremicum* (Walsm.), type, „Hamnan-es-Salahin, Algeria, 15. III. 1904", G. Sl. 5677 (BM), 105 — aedeagus of same specimen, 106 — same sp., female, „Gafsa, 18. XI. [19]08, Type [of *O. partitanum* Chrét.]", G. Sl. 3726 (Viette), 107 — *O. homsanum* Ams., holotype (reconstr. after Amsel, 1954)

Small spine beyond the end of sacculus ventrally. Tegumen delicate; uncus slender, rather short; socii small; transtilla narrow. Aedeagus delicate, bent, provided with minutely dentate plate in the terminal portion.

Female genitalia (fig. 106). Labia with very broad posterior portions; gonapophyses anteriores short; gonapophyses posteriores long and thin. Lamella vaginalis with rounded anterior edge and large, rounded convexity in the middle of posterior edge. Bulbous sack of introitus present; ductus bursae and bursa copulatrix transparent.

Distribution: Algeria (type of *T. eremicum* Walsm.); Tunisia (Gafsa).

Biology. I enclose the translation of Chrétien's descriptions of the chrysalis and caterpillar and notes on the biology of this species. „Caterpillar. Adult: 13—14 mm; subcylindrical, attenuate anteriorly from 3rd segment to head,

abruptly tapering posteriorly in last two segments; greenish; warts brownish grey, hardly distinct; posterior trapezoidals seemingly the thickest; pale hairy; head maroon-brown, largely overrun by black, shining; shield similarly, less black; legs yellowish brown. Caterpillar lives during winter, always concealed in a sand funnel, setting upon leaves or stems of *Emyx spinosa* CAMPDERA. It pupates in a long sheath, rather deeply burried into the ground, vertically made of white silk and hemmed in minute sand grains. The portion occupied by the chrysalis is closed by bristles on inner side and on upper side by an operculum in the shape of a disk, which opens up easily when the moth comes out. Chrysalis light yellowish brown; head armed with long bilobate reddish brown tip; surface sculptured on thorax, almost smooth on pterotheca, whose veins are indistinct; abdominal segments with two transverse rows of strongly thorny, reddish brown dentes; stigma very small, dark reddish brown; apparently not protruding; dark reddish brown mucro, rounded at base, terminated above in strong, dark reddish brown crest, indented in middle and forming a small naked horn at either end; in under side in the protrusions of anal legs, figuring on either side a small dent at base of inner side, provided with short hair. The moths appeared in next August, October, November and December. Moths taken at Gafsa in October and November; also in December (D. LUCAS)".

Comments. The genitalia of the lectotype of *O. partitanum* CHRÉT. were figured in my paper (1961). The dentate terminal plate of the aedeagus is well shown. Unfortunately the figure of the female genitalia lacks the ductus bursae and bursa copulatrix and the description of these is partially incorrect. The type of *Tortricodes eremicum* WALSM. labelled „Hamnan-es-Salahin, Algeria, 15. III. 1904", G. Sl., 5677 is preserved in the British Museum (Nat. Hist.).

Oxypteron homsanum AMS.

Oxypteron homsana AMSEL, 1954, Bull. Soc. Fouad Ier, Ent., **38**: 47 fig. 1; *Oxypteron homsanum*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 118.

The present diagnosis is based on AMSEL's original description and figure of the male genitalia.

Labial palpus with very short terminal joint; antenna of the male with very long bristles, which are as long as the breadth of the antennal joints. Forewing rather unicolorous with ill-defined dark brown spot in $^1/_3$ of dorsum. Some ill-defined brown stripes on costa beyond the middle. Hindwing grey-brown; fringes paler, concolorous with the fringes of forewing. Length of forewing about 9 mm.

Male genitalia (fig. 107). Valva broad at base, strongly narrowed in the middle, delicately rounded terminally. Sacculus broad at base, sinuate in the middle, provided with strong thorn on the end ventrally. Two delicate very small spines beyond the end of sacculus on valva ventrally. Vinculum

delicate; tequmen slender; uncus rather short; transtilla narrow, well sclerotized; socii probably very weak; gnathos transparent. Aedeagus slender, terminated similarly as in *Oxypteron eremicum* (WALSM.).

Distribution: Syria, Homs — one specimen collected November 1st, in the collection of Dr. H. G. AMSEL of Karlsruhe in Baden.

Comments. The species is very similar to the preceding one and differs by the small spines on the ventral edge of the valva. Unfortunately the drawing in AMSEL's paper is rather unclear.

Tortricodes GUEN.

Type species: ***Phalaena Tinea tortricella*** HÜBNER, 1796

Tortricodes GUENÉE, 1845, Ann. Soc. ent. France, ser. 2, **3**: 305.
(RAZ.: 266)

The characteristics of this genus are given in the „European *Cnephasiini*". Here I give some notes for the comparison with other genera.

Labial palpus very short, about 1·5 times as long as the diameter of the eye; basal joint small; median joint narrow; terminal joint short. Forewing elongate, broadening terminad. All veins of forewing separate; r_5 touching apex, very near to m_1 at the middle cell. In hindwing rr and m_1 short-stalked; m_3 absent; remaining veins all separate.

Male genitalia: valva long, with strongly sclerotized costa; sacculus well developed, broadened before the end, without minute hairs or spines at the end; gnathos strong; uncus long; transtilla absent.

Female genitalia with very broad and strongly sclerotized lamella vaginalis and introitus. Labia as in *Cnephasia* CURT. s. str., signum variable in shape.

Caterpillar (diagnosis after SWATSCHEK): „two bristles of group VII above thoracal legs in mesothorax and metahorax".

Biology. The moths appear in early spring. Food plants: various trees. Hibernation in pupa.

Distribution. Europe.

Tortricodes violella RAZ.

Tortricodes violella RAZOWSKI, 1956, Zschrft. wien. Ent. Ges., **41**: 204 fig. 1, 2.
(RAZ.: 267 pl. 25 fig. 71, pl. 61 fig. 288)

Tortricodes tortricella (HBN.)

Phalaena Tinea tortricella HÜBNER, 1796, Samml. eur. Schmett.: 16 pl. 2 fig. 11.
(RAZ.: 267 pl. 25 fig. 72, pl. 26 fig. 73, pl. 47 fig. 219, pl. 61 fig. 289)

Kawabea gen. nov.

Type species: ***Cheimatophila ignavana*** CHRISTOPH, 1881

Cheimatophila; CHRISTOPH, 1881, Bull. Soc. imp. Moscou, **56** (fasc. 1): 73.

Habitus of *Tortricodes* GUEN. Labial palpus very short, about 1·5 times as long as the diameter of the eye; antenna shortly ciliate. Forewing (fig. 108) in the shape of that in *Tortricodes* GUEN.; *sc* to beyond the middle of costa;

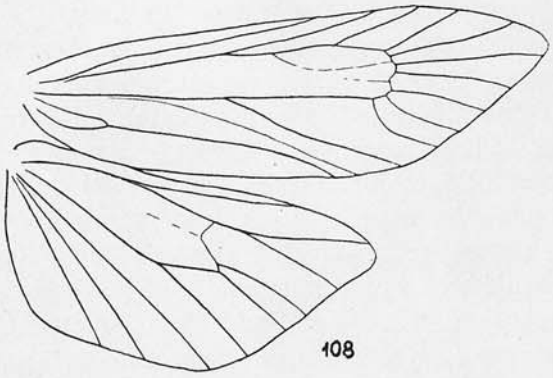


Fig. 108. *Kawabea razowskii* (KAW.), venation

r_1 from before the middle of median cell; r_1—r_2 twice as long as r_2—r_3; r_5 to beyond apex; m_3—cu_1 subparallel, bent; cu_2 opposite to r_1 at the median cell. Hindwing with short apex; vein *sc* near to costa; *rr* stalked with m_1; m_3 absent; cu_1 far to m_2 at the median cell.

Male genitalia. Valva narrow; sacculus short; tegumen very broad; socii short; uncus well developed, long; gnathos strong; transtilla broad, well sclerotized. Aedeagus strong, bifurcate.

Female genitalia. Labia broad; gonapophyses strong, rather short; lamella vaginalis well sclerotized, broad; ductus bursae and bursa copulatrix transparent; signum absent.

Comments. A. KAWABE (1963) in his „Taxonomic Studies of the Japanese *Tortricinae*" suggested that for *Tortricodes ignavana* CHR. and *T. razowskii* KAW. a new genus should be created. Although the new genus is closely similar to *Tortricodes* GUEN. in the shape of the forewing and in the venation, the differences in the genitalia are large. In the male genitalia transtilla is well developed and strongly sclerotized, while in *Tortricodes* GUEN. it is absent; aedeagus in the new genus is bifurcate, simple in *Tortricodes* GUEN. In the female genitalia the difference between the two genera is marked by the absence of strongly sclerotized introitus and signum in the new genus. I name the new genus in honour of Mr. Atsusi KAWABE of Tokyo, who as the first has worked in this group of species.

Kawabea ignavana (CHR.)

(Pl. XXII, fig. 43)

Cheimatophila ignavana CHRISTOPH, 1881, Bull. Soc. imp. Nat. Moscou, **56** (fasc. 1): 73; *Tortricodes ignavana*; KENNEL, 1910, Pal. Tortr.; 225 pl. 11 fig. 16; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 118; KAWABE, 1963, Tinea, **6**: 5 fig. 1, 1 a-b, pl. 3 fig. 5, 9—11.

Labial palpus very short, brownish grey; head and thorax darker, more brownish. Forewing broad; costa curved at base, rather straight beyond the middle, arched outwards in posterior portion; apex rather rounded; termen oblique, slightly convex. Ground colour pale brownish grey, sprinkled and striped with brownish. Basal area suffused with brown-grey; pattern ill-defined; fringes paler than ground colour. Female paler than male, delicately striped in posterior portion of the wing, with dark grey-brown radial stripe at base. Hindwing brownish grey with delicate yellowish hue; fringes a little paler. Length of forewing in male 16 mm, in female 14 mm. Both described specimens are types. To complete this description I add the characteristics of the Japanese specimens according to A. KAWABE's description as well as the characteristic of one specimen from Hokkaido kindly sent to me by Mr. KAWABE.

Pattern usually ill-defined, more brownish than the ground colour, which is greyish. Basal spot large, edged with black spots posteriorly; median fascia broad; dark brown spot in the end of median cell; pattern in the terminal portion of the wing ill-defined or atrophied. One very dark unicolorous specimen is figured in KAWABE's paper.

Male genitalia (figs. 109, 110). Valva long, narrow, slightly sclerotized and irregularly edged ventrally. Sacculus short, well sclerotized, pointed terminally. Tegumen broad; uncus long, pointed; socii short, rounded terminally; gnathos strong, in the shape of a broad, strongly sclerotized plate. Aedeagus bilobate with slender dorsal arm. Ventral arm of aedeagus broad, spined terminally. Anellus strong; juxta delicate.

Female genitalia (fig. 111). Labia with strong and broad posterior portions; gonapophyses broad, strong; lamella vaginalis broad; introitus transparent; ductus bursae rather short; bursa copulatrix without signum.

Distribution. The species is known from Central Siberia and Amur Region, and from Japan (Hokkaido: Shibeha, Kushiro; Mt. Akiba; Akakura; Sakasamki).

Biology. The moths occur in October and November.

Comments. I have designated as the lectotype the male specimen labelled: „Nikolsk, ignavana CHR., Type", G. Sl. 5673, and preserved in the British Museum (Nat. Hist.). The female specimen is without abdomen. According to the kind informations I have got from Dr. H. J. HANNEMANN of Berlin and Dr. V. I. KUZNETSOV of Leningrad there are no other CHRISTOPH's specimens of *K. ignavana* (CHR.) in the museums of Berlin and Leningrad.

Kawabea razowskii (KAW.)

(Pl. XXII, fig. 44)

Tortricodes ignavana; ISSIKI, 1957, Icon. Ins. Jap. Color. Nat. [1]: 84 pl. 14 fig. 433; OKANO, 1959, Icones Ins. Jap. Nat. Color., **1**: 266 pl. 17 fig. 20; *Tortricodes razowskii* KAWABE, 1963, Tinea, **6**: 7 fig. 3, 3a, 4, pl. 3 fig. 6—8.

Labial palpus short, narrow, brownish grey; front greyish; rest of head brownish grey; thorax a little paler than head. Forewing narrower than that in preceding species, strongly broadening posteriorly; costa delicately arched outwards at base, then nearly straight or very slightly concave in the middle; apex rounded; termen strongly oblique, rather straight. Ground colour brownish grey, pattern more brownish, much more darker than the ground colour, or atrophied. The shape of the pattern as in the preceding species; in the holotype radial brownish black stripes from base along costal arm of median cell. Fringes paler than the ground colour, more yellowish in hue. Hindwing pale brownish or yellowish grey with fringes much paler. Forewing larger in female than in male. Length of forewing 15 mm. in male, 12 mm. in female.

Male genitalia (figs. 112, 113). Valva very narrow, delicately expanding in posterior portion, rounded terminally. Sacculus short and broad, provided with arched and pointed termination. Tegumen very broad; uncus strong; socii well developed, however, short; transtilla in the shape of a narrow transversal plate. Aedeagus bifurcate with dorsal arm strong, bent and pointed terminally. Ventral branch broad, tapering posteriorly, pointed. Juxta long, delicate.

Female genitalia (fig. 114). According to KAWABE's figure labia broad; gonapophyses strong; lamella vaginalis more delicate than in the preceding species; ductus bursae transparent; bursa copulatrix lost during preparation.

Distribution. Japan: Narashimo (Chiba-pref.), Tama Hills and Mogusaen (Tokyo) and Nakayma (Nagano-pref.).

Biology. Food plant unknown. The moth occurs in February and March.

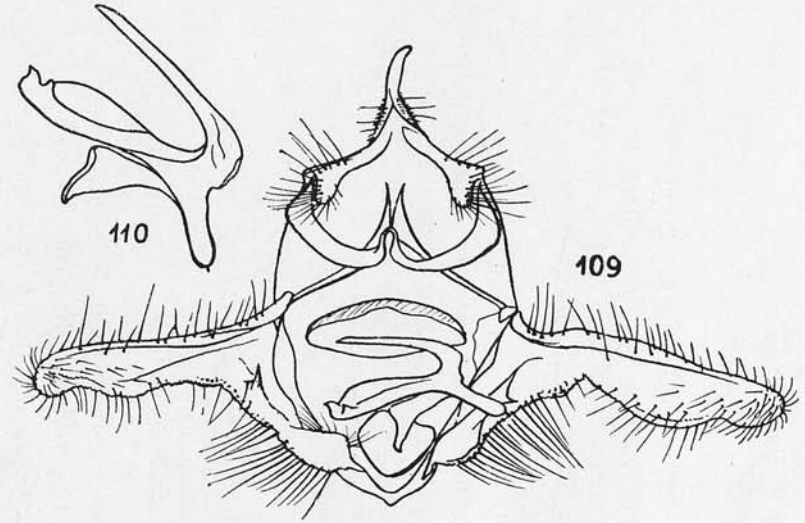
Comments. This species is very similar to *K. ignavana* (CHR.) superficially, but differs by narrower forewing and paler coloration. The differences in the male genitalia are very strong, rather slight in the female genitalia. The type is in the collection of Mr. A. KAWABE of Tokyo.

Exapate HBN.

Type species: *Phalaena Tinea congelatella* CLERCK, 1759

Exapate HÜBNER, 1825, Syst.-alphab. Verz.: 61.
(RAZ.: 306)

Labial palpus slender, rather short. Antenna with bristles longer in males than in females; tongue short, thin. Great sexual dimorphism is shown in the shape of the wings, which are strongly reduced in the female. Male: forewing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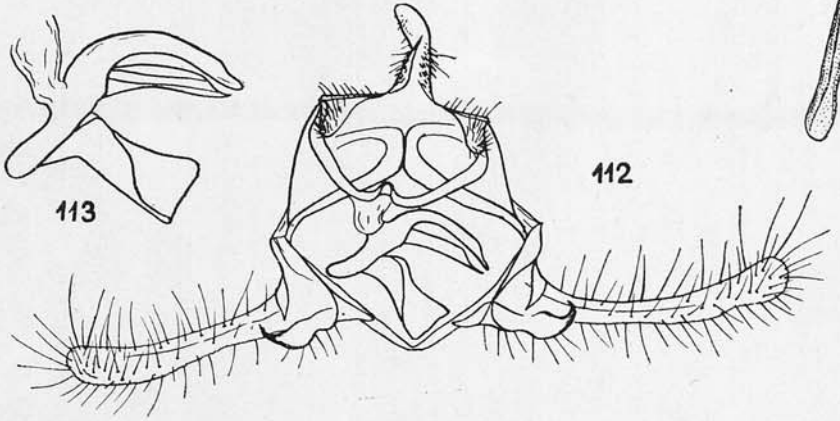
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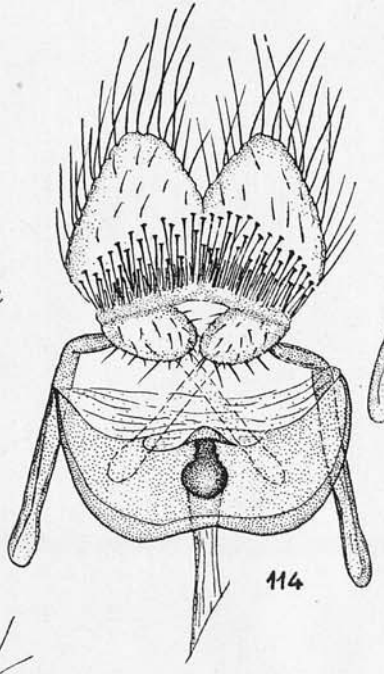
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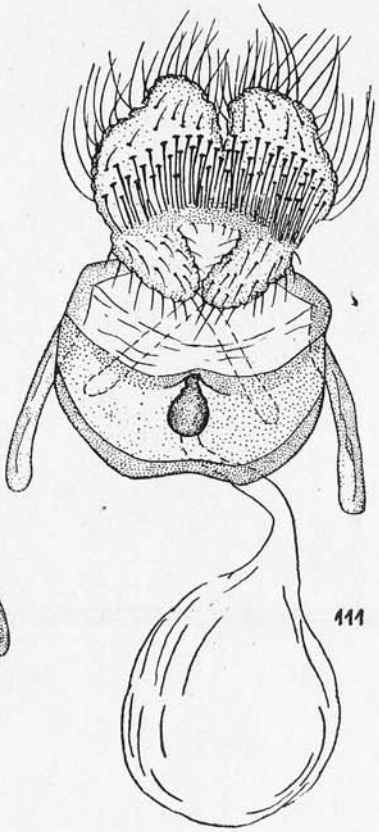
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elongate, broadening posteriorly; costa rather straight; apex pointed; termen strongly oblique. Vein *sc* curved costad in terminal part, r_1 just beyond the middle of median cell far to r_2; r_5 just beyond the apex; cu_2 rather posterior to r_1. In hindwing rr—m_1 near to each other, from one point or short-stalked; m_3—cu_1 remote. Female: forewing small, lanceolate, pointed. Venation variable. Median cell long, vein *sc* well developed, radial veins very short, reduced to three or four branches, r_5 to termen. Median veins short; cu_1 parallel to m_3; cu_2 absent; veins r_1, r_2 and m_1 sometimes atrophied. Hindwing nearly completely atrophied.

Male genitalia. Valva narrow; sacculus well developed with praeterminal ventral projection; tegumen very broad; uncus very short, provided with large ase; bsocii small; gnathos with minutely spined lateral arms and well developed median plate; transtilla narrow, minutely spined. Aedeagus small, thin. No cornuti in vesica present.

Female genitalia. Labia and gonapophyses similar to those in *Cnephasia* CURT. s. str.; lamella vaginalis very delicate; ostium and introitus small; ductus bursae and bursa copulatrix transparent, signum absent.

Caterpillar (after SWATSCHEK). „The stigma of the second abdominal segment not larger than the basal area of bristle III. Bristle II of the eighth abdominal segment in variable position according to the stigma. External bristles of the anal shield rather at the edge".

Notes and characteristics of the caterpillars of both *Exapate* HBN.-species are in SWATSCHEK's paper on p. 64 and 65.

Biology. The moths fly in autumn, but also in early spring (e.g. *E. congelatella* (CL.), because of the fact that some pupae hibernate). The caterpillar lives among clasped leaves in May, June and July. The food plant of *E. duratella* HEYD. is *Larix* MILL. (and probably other plants too), the larval pabula of *E. congelatella* (CL.) are *Lonicera* L., *Berberis* L., *Ulmus* L., *Ribes* L., *Rhamnus* L. and other trees and bushes.

Distribution: Europe.

Comments. Two species belong to this genus. Both are very similar to each other in the pattern and genitalia. The differences between the caterpillars are also very small; the biology and the geographical distribution are, however, different.

Figs. 109—114. Male and female genitalia: 109 — *K. ignavana* (CHR.), „Shibeha, Kushiro, Hokkaido, Japan, X. 21, ex. coll. K. IGIMA", G. Sl. 4906, 110 — aedeagus of same specimen, 111 — same sp., female (after KAWABE, 1963), 112 — *K. razowskii* (KAW.), typoid, „Mogusean, Tokyo, Japan, 2. III. 1958, coll. Y. OHARA", G. Sl. 4905, 113 — aedeagus of same specimen, 114 — same sp., female (after KAWABE, 1954)

118
117
115
116

Exapate congelatella (Cl.)

Phalaena Tinea congelatella Clerck, 1759, Icon. Ins., pl. 8 fig. 5.
(Raz.: 307 pl. 31 fig. 115, 116, pl. 53 fig. 245, pl. 67 fig. 314)

The subspecies *E. congelatella tibetana* Caradja is a good species referable to the genus *Eana* Billb.

Exapate duratella Heyd.

Exapate duratella Heyden, 1864, Mitt. schweiz. ent. Ges., **1**: 191.
(Raz.: 309, pl. 31 fig. 117—119, pl. 53 fig. 246, pl. 67 fig. 315)

Epicnephasia Danil.

Type species: ***Epicnephasia mongolica*** Danilevski, 1963

Epicnephasia Danilevski, 1963, Entom. Obozr., **42**: 170.

Labial palpus longer than the head, both long hairy; ocellus well developed; antenna with long bristles. Forewing narrow with pointed apex (fig. 115). Vein *sc* rather short, touching the middle of costa; r_2 equidistant to r_1 and r_3; r_5 to apex; m_2—m_3 from one point far to cu_1. In hindwing rr—m_1 from one point; m_2—m_3 short-stalked; remaining veins separate.

Male genitalia. Valva strongly tapering terminally in posterior half; sacculus well sclerotized, without free termination; tegumen broad; uncus strong; socii large; gnathos strongly developed; transtilla delicate, minutely spined dorsally. Aedeagus large, pointed terminally.

Comments. This genus is closely related to *Palpocrinia* Kenn., as the shape of the labial palpus shows. There are some differences between this genus and *Palpocrinia* Kenn. in the venation. The female genitalia of *Epicnephasia* Danil. are unknown. Only one species: *E. mongolica* Danil.

Epicnephasia mongolica Danil.

Epicnephasia mongolica Danilevski, 1963, Entom. Obozr., **42**: 171, fig. 8, 9.

Male (fig. 116): labial palpus about 2·5 as long as diameter of eye, rather dark brown, long hairy. In basal portion of median joint yellowish scales, pale hairs in terminal portion. Head and thorax black-brown; abdomen dark

Figs. 115—118. *Epicnephasia mongolica* Danil.: 115 — venation of the male, 116 — wings of the male, 117 — female, 118 — male genitalia of typoid „Iu [shnyi] Hangai [Mongolia], na lugu u podoshvy, 11. III. 1926, P. Kozlov", G. Sl. 8040

with long yellowish hairs especially in terminal and ventral portions. Forewing narrow, rather of constant width throughout; costa strongly curved at base, concave in median portion; apex delicately rounded; termen very strongly oblique, rather straight. Ground colour brownish, paler in the middle of the wing; basal area blackish to $^1/_4$ of costa and $^1/_2$ of dorsum, with straight posterior edge; posterior portions of costa and dorsum spotted with brown; an elongate, ill-defined spot in posterior portion of central cell or posterior part of median fascia present; fringes rather concolorous with the ground colour, but paler. Hindwing broad in anterior third, tapering posteriorly; apex short, rather pointed. Ground colour yellowish white to yellowish; basal and posterior portions of the wing strongly suffused with blackish; apex slightly suffused; fringes yellowish, strongly darkened with brown in posterior portions with exception of anal part. Length of forewing 8 mm.

Female (fig. 117): labial palpus paler than in male, grey-black with groups of pale yellowish scales and hairs; head yellowish grey, grey dorsally; thorax dark grey, yellow-grey hairy; abdomen very large, dark grey-brown with yellowish scales and hairs on posterior portions of segments, especially in the ventral parts; the end of abdomen provided with blackish hairs and scales. Forewing short, narrow, strongly tapering posteriorly, pale ochreous-yellow with three black transverse fasciae and some black hairs somewhere on the surface. Legs and ventral portion of thorax pale, rather yellowish, delicate blackish rings on the legs present. Length of forewing 4 mm.

Male genitalia (fig. 118). Valva broad at base, tapering posteriorly beyond $^1/_3$, rounded apically; sacculus well sclerotized but without a free tip, well hairy; tegumen strong; uncus broad, short; gnathos with rather narrow lateral arms and very broad termination; socii well developed, curved; transtilla well sclerotized in dorsal portion, spined. Aedeagus long, tapering in posterior portion, pointed.

Distribution: Mongolia, Eastern Hangai. The moth appears in March in steppe biotope.

Comments. The female remains unexamined genitalically. The holotype, allotype and 7 paratypes (males) are preserved in the collection of the Zoological Institute A. S. in Leningrad.

Palpocrinia KENN.

Type species: *Palpocrinia ottoniana* KENNEL, 1919

Palpocrinia KENNEL, 1919, Mitt. münch. Ent. Ges., **8** (1917/18): 66.

Head with long hairs; labial palpus rather short, provided with extremely long, strong hairs turned downwards. Venation as in other *Cnephasiini*, but in the hindwing veins m_3—cu_1 stalked. The genitalia unknown. Only one species, viz., *P. ottoniana* KENN.

Palpocrinia ottoniana KENN.

Palpocrinia ottoniana KENNEL, 1919, Mitt. münch. Ent. Ges., **8** (1917/18): 66 pl. 2 fig. 2). pl. 4 fig. 5; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 117.

I enclose the redescription of *P. ottoniana* KENN., which is based on KENNEL's figure and original description of this species: head and palpus with long hairs, dark olive-brown; thorax concolorous with head; abdomen paler and greyer. Forewing narrow; costa rather straight; apex rounded; termen straight and oblique. Ground colour pale olive-brown, pattern dark brown, slightly shining. Basal area suffused with brownish, bordered by post-basal fascia; median fascia well developed, broadest in dorsal portion; costal spots and the pattern in apical and posterior portions of the wing well marked. Fringes brownish with well visible dividing line. Hindwing brown; fringes brownish white, dividing line brownish. Expansion 19 mm.

Terra typica: Lob-Noor.

The type of the species is probably lost.

Neosphaleroptera RÉAL

Type species: *Tortrix nubilana* HÜBNER, 1799

Neosphaleroptera RÉAL, 1953, Bull. mens. Soc. linn. Lyon, **22**: 56.
(RAZ.: 269)

Labial palpus short, slightly expanding posteriorly; tongue well developed; forewing broad; costa arched outwards; apex rounded. Vein r_1 originates from the middle of median cell; r_5 to beyond the apex. Hindwing rounded with very short apex; venation as in *Cnephasia* CURT.

Male genitalia. Valva broad, provided with ill-defined pulvinus; sacculus strong with bifurcate termination; uncus long; slightly curved ventrad; socii long; gnathos with pointed termination; transtilla thin. Aedeagus without cornuti, minutely dentate ventro-terminally.

Female genitalia. Labia of the usual *Cnephasiini*-shape, however with elongate posterior parts. Lamella vaginalis very broad, cup-like, provided with enlarged postero-dorsal portion and angulate anterior corners; introitus short; ductus bursae short; signum reduced.

Larva (after SWATSCHEK): „Double crowns of hooks present, bristle VI of ninth abdominal segment absent; bristles I and III on separate warts". The characteristic of the caterpillar of *N. nubilana* (HBN.), the only species of this genus is given in the same paper (p. 63).

Biology. The moths occur in June and July (sometimes end of May). The caterpillar from September till May in bound leaves of *Crataegus* L., *Prunus* L. and other trees.

Distribution: Great Britain, Continental Europe except its south-western regions and Asia Minor (?).

Neosphaleroptera nubilana (HBN.)

Tortrix nubilana HÜBNER, 1799, Samml. eur. Schmett., pl. 17 fig. 111.
(RAZ.: 270 pl. 26 fig. 74, 75, pl. 47 fig. 220, pl. 61 fig. 290)

Eana BILLB.

Type species: *Tortrix penziana* THUNBERG, 1791

Eana BILLBERG, 1820, Enum. Insect.: 90.
(RAZ.: 271)

Labial palpus long with elongate median joint; tongue normally developed; antenna shortly ciliate and scaled; venation similar to that in *Cnephasia* CURT.

Male genitalia. Valva long, usually of the same width throughout the middle portion, a little broader at base, tapering posteriorly in terminal part, rounded apically. Sacculus well developed with more or less long free termination, which is never provided with minute hairs or spines and is usually pointed. Tegumen large; uncus with strong basal parts; socii large; gnathos with small exceptionally with peculiar median plate; transtilla large with broad central part, which is provided with numerous small spine-like hairs; aedeagus strong, usually simple.

Female genitalia. Labia large, asymmetric or irregular in shape. Gonapophyses rather short; lamella vaginalis with broad and sometimes sculptured median portion and narrow, pointed lateral parts; introitus rather short, well sclerotized; ductus bursae long; signum long, narrow.

Caterpillar (after SWATSCHEK's diagnosis): „Bristle VI of the ninth abdominal segment present, the distances among bristles VIII not larger than on eighth abdominal segment. Wart III of eighth abdominal segment dorsocranially to stigma. Stigmas in the segments second to seventh larger than bases of bristles II".

Only one species [*Eana argentana* (CL.)] has been examined by SWATSCHEK. The description of the larva is on p. 67 of SWATSCHEK's publication.

Biology similar to that in *Cnephasia* CURT. but with some exceptions. The biology of the species of the subgenus *Ablabia* HBN. differs from that in the remaining species and was characterized in the general part of this paper. The moths appear in very various biotopes and at various altitudes, sometimes at very great ones (Alps, Pamir).

Distribution. The genus is of the Palaearctic distribution. The majority of species are known from Europe, but that is accounted for by the very poor knowledge of the Asiatic fauna. In Central Asia there are some species very similar to the European ones. Two species are of holarctic distribution [*Eana argentana* (CL.) and *E. osseana* (SCOP.)].

Systematics. The genus is divided into two subgenera. To subgenus *Ablabia* HBN. belong the two afore mentioned species viz., *E. osseana* (SCOP.) and

E. argentana (CL.), and *E. darvaza* (OBR.). These differ from all remaining species of *Eana* BILLB. by the coloration, the genitalia and the biology. The most characteristic features of *Ablabia* HBN. are the shape of the lamella vaginalis, which is broad and has very short lateral parts, and the introitus in the female; the sacculus and the aedeagus in the male genitalia. The subgenus *Eana* BILLB. s. str. contains three groups of species. In the group of *Eana canescana* (GUEN.) there are four species very similar to each other in the male genitalia. Uncus is rather long, with elongate basal portions; gnathos terminated in strongly sclerotized hook. All those species are similar to each other in the coloration. In the group of *Eana nervana* (JOANN.) all the species are very similar to each other genitalically but differ by the coloration. *Eana cottiana* (CHRÉT.) is the most distinct of all the five species of this group. The third group is that of *Eana derivana* (LAH.) containing the majority of the species. All are characterized by a usually simple aedeagus, thin uncus and delicate terminal plate of the gnathos. The differences among the species are chiefly in the coloration and in the female genitalia. There are some groups of species very difficult to determine.

Comments. N. OBRAZTSOV (1956) transferred *Doloploca agricolana* KENN. and *D. dominicana* KENN. to this genus. The abdomens of both species are missing and the accurate determination of their systematic positions is difficult. *Cnephasia wertheimsteini* RBL., *C. tyrrhaenica* AMS. and *C. ecullyana* RÉAL listed by OBRAZTSOV (1959) in this genus were transferred by me (1959) to *Oxypteron* STGR. and to *Cnephasia* CURT. *Cnephasia antiphila* MEYR. listed by OBRAZTSOV in *Eana* BILLB. is unknown to me and the type of it is probably lost. I leave *C. antiphila* MEYR. in *Eana* BILLB. *Eana stenoptera* FIL. is closely related to *Oporopsamma wertheimsteini* (RBL.) as the female genitalia and the venation show, and therefore they must be excluded from this genus.

Key to the subgenera

1. Vesica provided with terminal thorn; lamella vaginalis broad, not tapering laterally . . . . . *Ablabia* HBN.
—. Vesica simple; lamella vaginalis with thin tapering laterally posterior parts . . . . . *Eana* BILLB. s. str.

Subgenus 1: *Ablabia* HBN.

Type species: *Phalaena osseana* SCOPOLI, 1763

Ablabia HÜBNER, 1825, Verz. bek. Schmett.: 383.

OBRAZTSOV (1956) included six species in this subgenus. In my paper on European *Cnephasiini* I have characterised *Ablabia* HBN. and fixed two species as belonging in here. These were *Eana argentana* (CL.) and *E. osseana* (SCOP.). The four remaining species differ from the type of this subgenus by the shape

of the wings, coloration and genitalia. In the present paper I include in *Ablabia* HBN. *Eana darvaza* (OBR.), described as a subspecies of *E. osseana* (SCOP.) from Pamir.

Male genitalia: valva long, delicately tapering posteriorly; sacculus well developed and well sclerotized; tegumen slender; uncus strong with large bases; socii slender, long; gnathos smooth or provided with very small median projection; aedeagus short with well sclerotized thorn of posterior portion of vesica.

Female genitalia: lamella vaginalis large with small, however well marked lateral projections of the anterior edge. Remaining features as in *Eana* BILLB. s. str.

Eana (Ablabia) argentana (CL.)

Phalaena argentana CLERCK, 1759, Icon. Ins., pl. 11 fig. 14.
(RAZ.: 274 pl. 17 fig. 76, pl. 47 fig. 221, pl. 61 fig. 291)

Ab. *colossa* CAR.

Cnephasia colossa CARADJA, 1916, Iris, **30**: 48.

OBRAZTSOV (1956) mentioned it as a subspecies, however, I have not found any differences between this form and the typical *E. argentana* (CL.) except in the magnitude of the specimens. Large specimens of *E. argentana* (CL.) can be found in some other localities among typical ones, and therefore I cannot preserve the form *colossa* CAR. as a subspecies of the species under consideration.

Ssp. *plumbeana* (KENN.)

Tortrix argentana var. *plumbeana* KENNEL, 1910, Pal. Tortr.: 196 pl. 10 fig. 18.

According to KENNEL's description and illustration it can be a good subspecies. It appears in Siberia and was also recorded from Uliassutai and China (? same form).

Labial palpus and head with delicate yellow hue. Forewing similarly coloured, slightly shining. Fringes more whitish, median dividing line concolorous with the ground colour. Hindwing brown-grey; fringes decidedly paler.

Comments. *Eana argentana* (CL.) is widely distributed in the Palaearctic and Nearctic Regions. It is also known from India, but I have had no opportunity to examine those specimens. Mr. Atsusi KAWABE of Tokyo has kindly written to me that there are no differences between Japanese and European specimens of this species. Thus I correct my note in „European *Cnephasiini*" (p. 275) that Japanese specimens can belong to a distinct subspecies. This species is not so variable as *Eana osseana* (SCOP.); however, this slight variability is similar to that in the mentioned species. The size-variability is more often stated.

Eana (Ablabia) darvaza (OBR.)

(Pl. XXIII, fig. 45)

Nephodesme osseana darvaza OBRAZTSOV, 1943, Mitt. münch. ent. Ges., **33**: 88; *Eana (Ablabia) osseana darvaza* OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 120.

Labial palpus brownish grey, rather pale, more grey at base. Head and thorax yellowish white to whitish; abdomen yellowish with brownish segmentation, or grey-white with darker segmentation. Forewing strongly expanding posteriorly; costa rather straight, delicately concave beyond the middle, bent in posterior third; apex pointed; termen oblique, rather straight. Colour of forewing white-yellow, pearl shining; fringes a little paler, especially in terminal portions. Hindwing broad; apex very slightly protruding terminad, delicately rounded. The colour of the hindwing yellowish-brownish, browner in basal and median areas; fringes whitish yellow, rather pale. Lower side of the forewing brownish with the exception of terminal portion, which is more yellowish, paler. Hindwing pale. Length of forewing 14—16 mm.

Male genitalia (figs. 119, 120) very similar to those in *E. osseana* (SCOP.) but differing in the shape of sacculus, which in *E. darvaza* (OBR.) is longer and more protruding ventrald, and in aedeagus. Valva long, delicately protruding posteriorly, rounded terminally. Sacculus more arched than in *E. osseana* (SCOP.), pointed terminally. Tegumen slender; socii rather long; gnathos well developed with small median plate. Aedeagus smaller than in *E. osseana* (SCOP.) and rather more similar to that in *E. argentana* (CL.).

Distribution and biology. The moth appears in July and August. The typical material was taken in mid-August in Darvaz; over 30 specimens collected 31. VII. and 1. VIII. in Sarekanda in Badakshan (Afghanistan) before me. It appears at the altitudes of 3000—4200 m. (Darvaz, Guschchon-dara, 3000 m.; Sarekanda 4100—4200 m.).

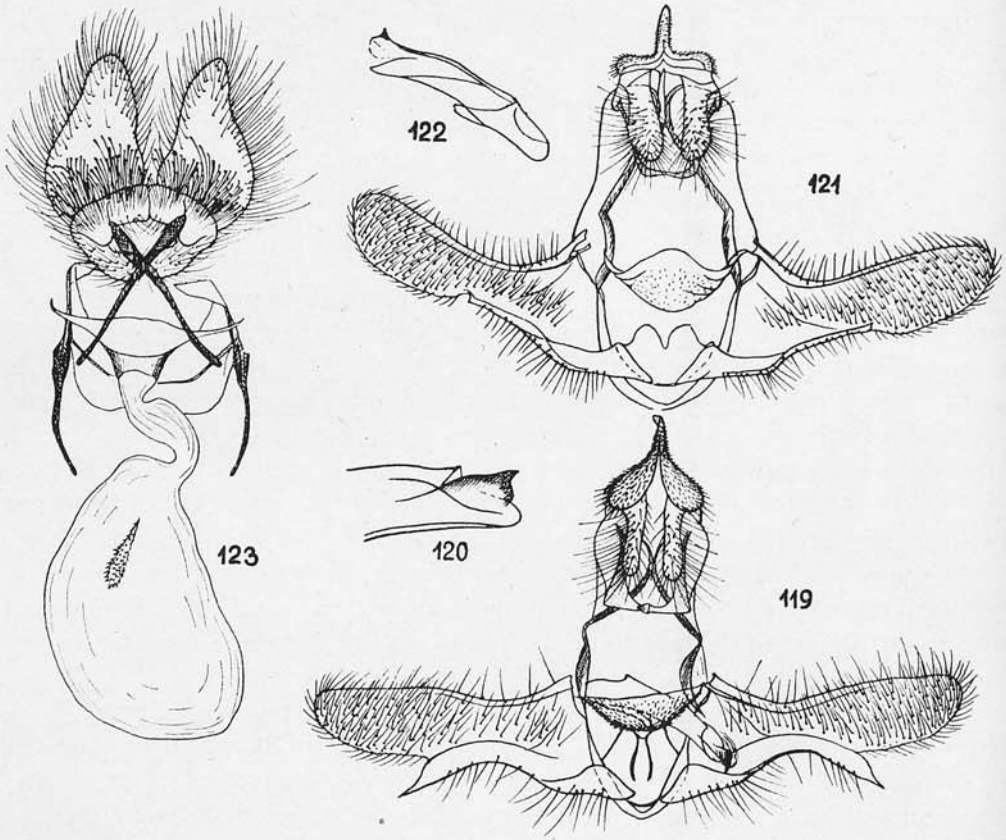
Comments. The types of *Eana darvaza* (OBR.) were probably lost during the war. I have asked Dr. V. I. KUZNETSOV of Leningrad and he stated that this material is neither in Kiev nor in the Zoological Museum in Leningrad. This species is closely related to *Eana osseana* (SCOP.), but differs from it by coloration and male genitalia. I suppose there are some bigger differences between these two species in the female genitalia. Unfortunately all examples known till now are males.

Eana darvaza batangiana ssp. n.

The shape of forewing as in typical form, however, costa seems to be more curved outwards. Ground colour of the forewing silver-ash, or silver-grey; fringes more whitish. Hindwing brownish grey, rather transparent, darker on peripheries; fringes white.

Holotype (male): „Batang, Tibet, Alpine Zone (ca. 5000 m.), 22. VI. 1938, H. HÖNE", G. Sl. 7614.

Paratype identically labelled as the holotype, both in the collection of the „Gr. ANTIPA" Museum in Bucharest.



Figs. 119—123. Male and female genitalia: 119 — *Eana darvaza* (OBR.), „Sarekanda, 4100 m., 1. VIII. 1953, Gebirge Badakschan, N. O. Afghanistan, J. KLAPPERICH", G. Sl. 5648, 120 — end of aedeagus of same specimen, 121 — *Eana rastrata* (MEYR.), typoid, „Paratype, 15. VIII. [19]00", G. Sl. 9433, 122 — aedeagus of same specimen, 123 — female genitalia of same species, „Saas, Switzerland, 6000', 15. VIII. [19]00, Type", G. Sl. 3681

Eana (Ablabia) osseana (SCOP.)

Phalaena osseana SCOPOLI, 1763, Ent. Carn.: 238.
(RAZ.: 275 pl. 26 fig. 77, 78, pl. 47 fig. 222, pl. 62 fig. 292)

Ssp. *niveosana* (PACK.).

Sciaphila niveosana PACKARD, 1866, Proc. Boston nat. Hist. Soc., **11:** 55; *Tortrix pratana*: CHRISTOPH, 1858, Stett. ent. Ztg., **19:** 113; *Sciaphila Ablabia osseana* (part.) WOCKE, 1871, Stgr.-Wck. Cat. Lep. eur. Faun.: 240; *Tortrix osseana* var. *niveosana*; KENNEL, 1910, Pal. Tortr.: 196 pl. 10 fig. 16; *Eana Ablabia osseana niveosana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99:** 120.

Forewing slenderer than in the typical form; apex accuminate. Ground colour dark brownish grey to very dark grey with delicate more or less visible silver shades. Pattern ill-defined or developed in basal and posterior portions of the wing; in the middle of the wing dark spot or elongate radial pattern. Fringes concolorous with the ground colour. Hindwing brownish grey; fringes pale grey to whitish.

This subspecies lives in North America and in Lapland.

Subgenus 2: *Eana* BILLB., s. str.

Type species: ***Tortrix penziana*** THUNBERG, 1791

Eana BILLBERG, 1820, Enum. Ins.: 90.

Male genitalia: valva long; sacculus slender, pointed terminally; uncus rather short, provided with very broad basal parts; aedeagus long, usually pointed; vesica without terminal sclerite.

Female genitalia: labia large, very often asymmetrical; lamella vaginalis with narrow lateral arms; introitus broad, cup-shaped, well sclerotized.

Many species belong to this subgenus. They are characterized by the presence of the pattern in the forewing, which can, however, be reduced in some species or aberrations. The species belonging in this subgenus are divided into three groups.

Group 1

Group type: *Eana canescana* (GUEN.)

I excluded four species listed by OBRAZTSOW (1956) as belonging in subgenus *Ablabia* HBN. and placed three of them in the present group. Their characteristic is the presence of very strong and well sclerotized thorn of the gnathos in the male genitalia.

Eana (Eana) rielana (RÉAL)

Cnephasia (Ablabia) rielana RÉAL, 1951, Bull. mens. Soc. linn. Lyon, **20:** 230 fig. 5. (RAZ.: 278 pl. 48 fig. 223)

Eana (Eana) hungariae RAZ.

Eana (Eana) hungariae RAZOWSKI, 1958, Acta zool. cracov., **2:** 568 pl. 53 fig. 7, pl. 57 fig. 31. (RAZ.: 279 pl. 26 fig. 79, pl. 48 fig. 226)

Eana (Eana) canescana (GUEN.)

Sciaphila canescana GUENÉE, 1845, Ann. Soc. ent. France, ser. 2, **3**: 166.
(RAZ.: 279 pl. 26 fig. 80, pl. 27 fig. 81, 82, pl. 48 fig. 225, 226, pl. 67 fig. 293)

Eana canescana (GUEN.) is a very variable species, and this variability concerns the colour and pattern of the forewing. The variability of the genitalia is very slight. There are three valid aberrations of *E. canescana* (GUEN.). *Eana filipievi* (RÉAL) cited by OBRAZTSOV and myself (1959) as an aberration was fixed by me (1961) as a good species.

Eana (Eana) filipievi (RÉAL)

Cnephasia Ablabia canescana ssp. *filipievi* RÉAL, 1953, Mull. mens. Soc. linn. Lyon, **22**: 52; *Eana canescana* ab. *filipievi*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 121; RAZOWSKI, 1959, Acta zool. cracov., **4**: 280; *Cnephasia penziana* f. *livonica* RÉAL (part.), 1953, Bull. mens. Soc. linn. Lyon, **22**: 56; *Nephodesme pyrenica* TOLL, 1954, Bull. Soc. ent. Mulhouse, **1954**: 45 fig. 1, 2, 4; *Eana pyrenaica*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 121; RAZOWSKI, 1959, Acta zool. cracov., **4**: 282 pl. 27 fig. 83, 84, pl. 49 fig. 227, pl. 62 fig. 294.

Cited in „European *Cnephasiini*" as *Eana pyrenaica* (TOLL). In 1961 *Nephodesme pyrenaica* TOLL and *Cnephasia penziana* f. *livonica* RÉAL were sunk, as synonyms of *Eana filipievi* RÉAL. Variability in this species is rather slight, however, in some specimens the reticulation of the forewing is strong, or the median fascia is more or less reduced. The coloration in the female is more constant than in the male, and females are easier determinable than males.

Group 2

Group type: *Eana nervana* (JOANN.)

Five species belong in this group. They are characterized by short sacculus and the presence of small dorsoterminal thorn of the aedeagus. In female genitalia the ductus bursae is rather shorter than that in other species of this subgenus.

Eana (Eana) nervana (JOANN.)

Cnephasia nervana JOANNIS, 1908, Bull. Soc. ent. France, **1908**: 190.
(RAZ.: 283 pl. 27 fig. 85, 86, pl. 49 fig. 228, pl. 62 fig. 295, pl. 63 fig. 296)

Eana (Eana) rastrata (MEYR.)

(Pl. XXIII, fig. 46)

Cnephasia rastrata MEYRICK, 1910, Ent. mo. Mag., **46**: 211; *Eana rastrata*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 122; RAZOWSKI, 1959, Acta zool. cracov., **4**: 302; *Cnephasia rastrata*; CLARKE, 1958, Cat. MEYR. Types, **3**: 88 pl. 44 fig. 3, 3 a-b; *Eana rastrata*; RAZOWSKI, 1961, Acta zool. cracov., **5**: 669.

Very similar to the preceding species in pattern and coloration. Forewing narrow, delicately broadening posteriorly; apex slightly pointed; termen oblique. Ground colour of the forewing brownish grey, delicately sprinkled with brownish especially in posterior portion of the wing. Basal area darkened with similar colour; post-basal fascia bent, incomplete, narrow; median fascia touching vein cu_2, broadened at costa. Strong shade in posterior third of costa, and several small brown spots before termen. Fringes a little darker than ground colour, divided with brownish. Hindwing brownish grey, rather pale, paler at base. Fringes concolorous with median part of the wing. Length of forewing 12—14 mm.

Male genitalia (figs. 121, 122). Valva broad at base, narrowed in the middle, enlarged in posterior portion. Sacculus very narrow with small pointed termination, shorter than that in *E. nervana* (JOANN.). Uncus delicate, rather shorter than in the mentioned species. Aedeagus short.

Female genitalia as on fig. 123.

Distribution. *Eana rastrata* (MEYR.) is known from the Alps (Saa-Tee) only. It appears in August at the altitude of 6000—7000 feet.

Comments. In „European *Cnephasiini*" I placed this species at the end of the systematic list as a doubtful species, and gave the original description. OBRAZTSOV (1956) placed it between *Eana joannisi* (SCHAW.) and *E. italica* (OBR.); however, it is correlated only with the latter species. In the following years I received some material from the British Museum (Nat. Hist.), and examined the paratype of *E. rastrata* (MEYR.). In 1961 I gave a key to the determination of the species of the present group, and stated that *E. rastrata* (MEYR.) is a good species, although, very similar to *E. nervana* (JOANN.), especially to its form *subnervana* RAZ., as the shape of the forewing shows.

Eana (Eana) maroccana FIL.

(Pl. XXIII, fig. 47)

Eana maroccana FILIPIEV, 1935, Zschrft. oesterr. Ent. Ver., **20**: 57; *Cnephasia maroccana*; RAZOWSKI, 1956, Zschrft. wien. Ent. Ges., **41**: 206, fig. 3, 4, pl. 20 fig. 1, 2; *Eana maroccana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 123.

Labial palpus rather long; median joint dilated posteriorly; terminal joint short. The colour of palpi and head pale greyish-brownish; thorax darker, more brownish. Forewing broad, slightly broadening posteriorly; costa arched outwards; apex rounded; termen more oblique in male than in female. Forewing in female less enlarged posteriorly than in male. Ground colour pale greyish with slight addition of brownish violet, delicately sprinkled and striped with brownish. Basal area a little darker than the rest of the wing; post-basal stripe narrow, strongly bent in the middle, atrophied beyond $^2/_3$ of the width of the wing; median fascia atrophied in its posterior portion, better developed in male than in female. Costa striped with brownish; delicate stripes and larger

shades (in the female) in posterior portion of the wing. Fringes concolorous with the ground colour, divided with brownish grey. These dividing stripes are more visible and darker in the male than in the female. Hindwing brownish grey, paler near the base. Fringes rather concolorous with the middle of the wing. Length of forewing about 13 mm.

Male genitalia (fig. 124). Valva narrow, broader in the basal part. Posterior portion of valva not enlarged in the middle, tapering terminad. Sacculus short, slightly arched in the middle with short free termination. Uncus slender; aedeagus rather long, bent, provided with well developed dorso-terminal thorn.

Female genitalia (fig. 125). Labia large; gonapophyses rather long, thin. Lamella vaginalis well developed, with long and pointed lateral arms. Introitus strongly sclerotized, rather short. Ductus bursae long in comparison with that in the preceding species; signum short and broad.

Distribution. This species is known only from its type locality from Morocco. Other localities in Europe mentioned by me (1956) refer to *E. italica* (OBR.), as I corrected in 1959.

Comments. *Eana maroccana* FIL. is closely related to *E. nervana* (JOANN.) and *E. rastrata* (MEYR.), and the genitalia of all those species show very slight differences. Moreover, the genitalia of *E. italica* (OBR.) are extremely similar to those in the species under consideration. Larger differences are in the shape of the wings and in the coloration. In this species the forewing is much larger than in all the remaining species of this group. In the coloration this species approaches *E. nervana* (JOANN.).

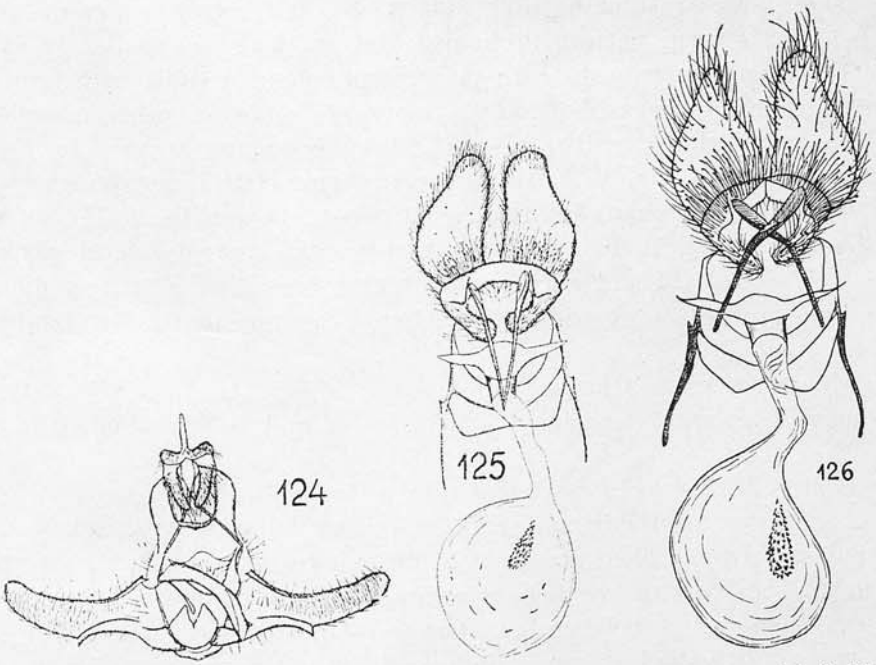
Eana (Eana) italica (OBR.)

Cnephasia (Eana) italica OBRAZTSOV, 1950, Eos, **26:** 314 fig. 10, 11, 12.
(RAZ.: 284 pl. 27 fig. 87, pl. 49 fig. 229, pl. 63 fig. 297)

Eana (Eana) cottiana (CHRÉT.)

Cnephasia cottiana CHRÉTIEN, 1898, Naturaliste, **1898:** 178.
(RAZ.: 285 pl. 27 fig. 88, pl. 28 fig. 89, pl. 49 fig. 230, pl. 63 fig. 298)

Easily distinguished by the coloration and male genitalia, which differ from those in all species of this group by the shape of the valva. The aedeagus is, however, very similar to that in the species mentioned before. The female genitalia of the *E. nervana* (JOANN.) — group shape. This species does not show any greater variability, but according to RÉAL's descriptions ab. *buvati* RÉAL and ssp. *pyreneana* RÉAL are valid forms. Unfortunately both are missing in the collection of the Muséum d'Histoire Naturelle in Paris, and I have had no possibility to examine those specimens.



Figs. 124—126. Male and female genitalia: 124 — *Eana maroccana* FIL., typoid, G. Sl. 5547, 125 — same species, female, typoid, G. Sl. 5548, 126 — *E. schoenmanni* RAZ., holotype, „Marokko, Gr. Atlas, Tachdirt, 2200—2900 m., 11—19. VII. 1933, ZERNY", G. Sl. 3179

Group 3

Group type: *Eana derivana* (LAH.)

The largest group of this subgenus. It includes grey coloured and well patterned species, sometimes very difficult for determination. The differences very often are only in the shape of the wings and in the pattern, or in female genitalia. The male genitalia are extremely similar to each other, however, sometimes very useful for determination.

Male genitalia: valva long with rather narrow posterior portions; sacculus slender, bent, pointed terminally (with few exceptions); aedeagus without dorsoterminal thorn, simple, or provided with small dents.

Eana (Eana) schönmanni RAZ.

(Pl. XXIII, fig. 48)

Eana schönmanni RAZOWSKI, 1959, Zschrft. wien. Ent. Ges., **44:** 85 fig. 7, pl. 3 fig. 6.

Labial palpus long, terminal joint long, pointed. The colour of palpi and head yellowish, front browner. Forewing not dilated posteriorly; costa strongly curved outwards in basal third, then rather straight, apex delicately rounded

termen short, slightly oblique and convex. Ground colour brownish yellow, sprinkled with brown; pattern ill-defined, only median fascia slightly visible, brownish. Fringes concolorous with the ground colour, divided with brownish. Hindwing rounded, apex short. The colour of hindwing whitish, yellowish orange in apex; fringes whitish. Length of forewing 9 mm.

Female genitalia (fig. 126). Labia large, asymmetrical; gonapophyses thin, rather long. Lamella genitalis broad, concave in the middle of the proximal edge. Lamella vaginalis delicate, with narrow and pointed lateral parts. Introitus well sclerotized and very short. Ductus bursae as long as a diameter of the bursa, of constant width throughout. Signum short, broadening anteriorly.

Distribution: Great Atlas in Morocco.

Biology. The unique specimen was taken in mid-July at the altitude of 2200—2900 m.

Comments. This species resembles the species of the *nervana*-group by the shape of some parts of the female genitalia, but the lamella vaginalis is narrower than that in the mentioned group. It is difficult to judge about its systematic position on the basis of the female genitalia only. I suppose, however, that *Eana schönmanni* RAZ. belongs in the group of *E. derivana* (LAH.). The shape of the wings of this species is more similar to that in the species of the *derivana*-group than to that in the *nervana*-group. I place this species between these two groups.

The holotype is in the collection of the Naturhistorisches Museum in Vienna.

Eana (Eana) penziana (THNBG.)

Tortrix penziana THUNBERG & BECKLIN, 1791, Diss. Ent., **2**: 43, pl. 5 fig. 1.
(RAZ.: 287 pl. 28 fig. 90—94, pl. 50 fig. 231—234, pl. 51 fig. 235, pl. 63 fig. 299, pl. 64 fig. 300

This rather variable species is widely distributed in the Palaearctic Region. The variability of the pattern is, however, less than that of the male genitalia. Several forms of this species were described. I preserve as valid the aberrations *bellana* CURT. and *alpestris* RÉAL (the holotype of ab. *alpestris* RÉAL is really a valid aberration, but the allotype agrees well with the females of the typical *Eana penziana* (THNBG.). I described a form *amseli* RAZ., which differs externally as well as genitalically from the typical form. This form and form *colquhounana* BARRET are very difficult for the interpretation, and are perhaps good subspecies as *E. penziana fiorana* RAZ. from Abruzzi Mts. is.

It is necessary to show some differences between the specimens of *E. penziana* (THNBG.) forms from low lands and montainous regions. Near Poznań in Northern Poland occurs a very interesting form with broad primaries and rather dark colour and ill-defined pattern. Similarly coloured specimens are living in South Europe.

The variability of the male genitalia is great, but not correlated with the variability of the pattern and shape of the wings.

The descriptions (or redescriptions) of all the mentioned forms are in my paper (1959), notes on ab. *livonica* RÉAL are included in the description of *E. filipievi* (RÉAL), because these forms are conspecific.

Ssp. *viridescens* (RAZ.)

Cnephasia (Nephodesme) viridescens RAZOWSKI, 1957, Beitr. naturkde. Südwestdeutschl., **16:** 104 fig. 4; *Eana viridescens* RAZOWSKI, 1959, Acta zool. cracov., **4:** 290 pl. 28 fig. 95, pl. 51 fig. 236.

This subspecies has been described from one specimen collected in North Caucasus by M. A. RIABOV as a species closely related to *E. penziana* (THNBG.). In the collection of the Zoological Institute A. S. in Leningrad I have found 36 specimens collected in Caucasus (Avadhara in Abkhasia; distr. Tersk; environs of Kurush and Okiuz-tau in Daghestan). The subspecies differs strongly in the coloration and pattern from the typical form, but the differences in the male and female genitalia seem to be rather of subspecific range.

The moth appears in June, July and August at altitudes up to 2100 m.

Eana (Eana) incanana (STEPH.)

Cnephasia incanana STEPHENS, 1852, List. Spec. Anim. Brit. Mus., **10:** 101.
(RAZ.: 291 pl. 28 fig. 96, pl. 29 fig. 97, pl. 51 fig. 237, pl. 64 fig. 301)

The species listed by OBRAZTSOV in the subgenus *Ablabia* HBN. Both in OBRAZTSOV's and in my paper *E. infuscata* (RÉAL) is stated as an aberration of this species. It is however, a valid species and the characteristics of it are given below.

Eana (Eana) infuscata (RÉAL)

(Pl. XXIII, fig. 49)

Cnephasia incanana infuscata RÉAL, 1953, Bull. mens. Soc. linn. Lyon, **22:** 54; *Eana incanana* ab. *infuscata*; OBRAZTSOV, 1956, Tijdschr. Ent., **99:** 121; RAZOWSKI, 1959, Acta zool. cracov., **4:** 291; *Eana infuscata*; RAZOWSKI (bona spec.), 1961, Acta zool. cracov., **5:** 670.

Labial palpus, head and thorax dark brownish grey. Forewing broad; costa strongly arched outwards at base, then delicately curved; apex rounded; termen rather oblique, convex. Ground colour brownish grey with very delicate violet hue. The shape of the pattern as in *Eana incanana* (STEPH.), the colour, however, darker: dark brown-grey. In the middle of median fascia delicate rusty spot as in *E. derivana* (LAH.). Fringes similarly coloured as the ground colour of the wing. Hindwing brownish grey; fringes a little paler.

Female genitalia (fig. 127) very similar to those in *Eana incanana* (STEPH.). Lamella vaginalis large with narrow and pointed lateral arms. Introitus well sclerotized; ductus bursae long; signum long, narrow.

Distribution. Terra typica: Germany (Altemberg). This species was recorded from Central Europe and one specimen from Sarepta in East Europe. It appears in July (only date: Pieniny Mts. in Poland, 8. VII.).

Comments. The male genitalia of *E. infuscata* (RÉAL) are unknown till now, but I suppose there are no greater differences among the species under consideration and the remaining species of this group.

Eana (Eana) nevadensis (RBL.)

Cnephasia nevadensis REBEL, 1928, Zschrft. oesterr. Ent. Ver., **13**: 50.
(RAZ.: 293 pl. 29 fig. 98—101, pl. 51 fig. 238, pl. 64 fig. 302)

Eana (Eana) joannisi (SCHAW.)

Cnephasia joannisi SCHAWERDA, 1929, Zschrft. oesterr. Ent. Ver., **14**: 60 pl. 1 fig. 1, 2.
(RAZ.: 293 pl. 29 fig. 102, pl. 52 fig. 239, pl. 64 fig. 303)

Eana (Eana) dumonti (RÉAL)

Cnephasia (Nephodesme) joannisi dumonti RÉAL, 1953, Bull. mens. Soc. linn. Lyon, **22**: 53; *Eana (Eana) joannisi dumonti*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 122; *Eana (Eana) joannisi ? dumonti*; RAZOWSKI, 1959, Acta zool. cracov., **4**: 294; *Cnephasia (Nephodesme) legrandi* RÉAL, 1953, Bull. mens. Soc. linn. Lyon, **22**: 53 fig. 3; *Eana (Eana) legrandi*; RAZOWSKI, 1959, Acta zool. cracov., **4**: 300 pl. 66 fig. 311; *Eana dumonti*; RAZOWSKI, 1961, Acta zool. cracov., **5**: 671 fig. 1.

As I mentioned in 1961 there are no differences between the types of *Eana dumonti* (RÉAL) and *E. legrandi* (RÉAL). The genitalia of the allotype of *E. legrandi* (RÉAL) show some differences with the type of *E. dumonti* (RÉAL) and this specimen belongs to another undescribed species.

Eana (Eana) derivana (LAH.)

Sciaphila derivana LAHARPE, 1858, Faune Suisse, **6**: 55.
(RAZ.: 295 pl. 29 fig. 103, 104, pl. 52 fig. 240, pl. 65 fig. 304)

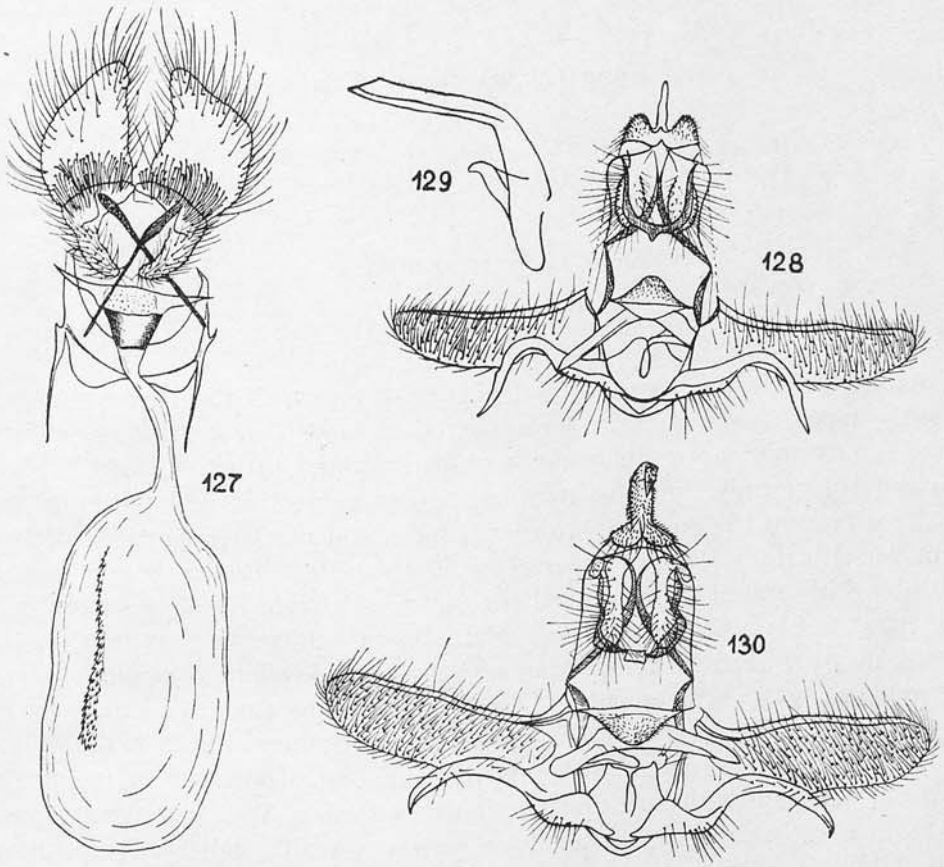
Eana (Eana) pallifrons RAZ.

(Pl. XXIV, fig. 50)

Eana (Eana) pallifrons RAZOWSKI, 1958, Acta zool. cracov., **2**: 569 pl. 54 fig. 9, pl. 57 fig. 34.

Labial palpus, head and thorax greyish. Forewing slightly broadening posteriorly; costa uniformly arched outwards; apex pointed; termen oblique. Ground colour whitish grey with slight bluish tint. Pattern grey-brown, con-

sisting of post-basal fascia, which is most distinct and strongly bent in the middle of a median fascia and rather poor developed pattern in the posterior portion of the wing. Fringes concolorous with the ground colour. Hindwing pale whitish, with a tinge of grey; fringes concolorous. Length of forewing 8 mm.



Figs. 127—130. Male and female genitalia: 127 — *Eana infuscata* (Rýaɪ), „Teriol sept., Ratis, 20. VII. [19]55, K. Burmann", G. Sl. 4375, 128 — *E. pallifrons* Raz., holotype, „Urga", G. Sl. 5101, 129 — aedeagus of same specimen, 130 — *E. caradjai* sp. n., holotype

Male genitalia (figs. 128, 129). Valva long, broadest at the base, tapering posteriorly and rounded apically. Sacculus slender and long, provided with very long and pointed free termination. Tegumen slender, slightly broadened apically; uncus well developed, slender, with large basal parts; socii broad, rounded; gnathos with small median projection; transtilla small, projecting in the middle. Aedeagus long and slender, strongly curved in the middle, pointed terminally.

Distribution. Only the holotype is known till now. It is recorded from Ulan-Bator, Mongolia.

Comments. This species is closely related to *E. viardi* (RÉAL) and differs by the absence of the small thorn in the end of the aedeagus. The shape of the sacculus is also different. Small differences are in the shape and in the coloration of the forewing. The biology and the female unknown. The type is preserved in the collection of the Institut für Spezielle Zoologie in Berlin.

Eana (Eana) viardi (RÉAL)

Cnephasia (Nephodesme) viardi RÉAL, 1953, Bull. mens. Soc. linn. Lyon, **22**: 54 fig. 8, 9. (RAZ.: 301 pl. 30 fig. 112, pl. 53 fig. 243, pl. 66 fig. 312)

Eana (Eana) caradjai sp. n.

(Pl. XXIV, fig. 51)

Labial palpus and head brownish grey; thorax a little darker. Forewing slightly expanding posteriorly; costa curved at base, then straight or delicately arched outwards; apex delicately rounded; termen rather straight, oblique. Ground colour grey, more or less dark, paler in median and posterior areas of the wing near the pattern, browner in basal and postbasal portions. Delicate transversal stripes all over the surface. Pattern dark brownish grey, spotted with blackish especially on ventral edges of the pattern. Basal spot very small; postbasal fascia well developed; median fascia similar to that in *Cnephasia alternella* STEPH. Fringes concolorous with the ground colour. Hindwing brownish to brownish grey; fringes paler. Length of forewing about 10 mm.

Male genitalia (fig. 130). Valva large, rounded terminally with well developed long costa; sacculus strong with large, broad base, strongly bent in posterior portion, provided with long and pointed termination. Tegumen slender; uncus large with rather short, rounded basal parts; transtilla delicate; juxta broad; socii large, broadening terminally; gnathos with long lateral arms and weakly sclerotized terminal plate. Aedeagus slightly bent, tapering posteriorly and pointed terminally, not longer than sacculus.

Female genitalia (fig. 131). Labia very large with broad posterior portions. Gonapophyses posteriores thin and very long, longer than gonapophyses anteriores. Lamella genitalis with broad tapering posteriorly, pointed lateral parts. Ostium large, rounded; surrounding area sculptured; introitus strongly sclerotized; ductus bursae long, broadening anteriorly; bursa copulatrix large; signum long, narrow.

Holotype (♂): „Mien Shan (Prov. Shansi) Mittlere Höhe, ca. 1500 m., 15. VI. 1937, H. HÖNE", G. Sl. 7486.

Typoids (4 males and females): labelled as the holotype or as the female G. Sl. 7482: „Mien Shan (Prov. Shansi) Obere Höhe, ca. 2000 m., 9. VIII. 1937. H. HÖNE".

Comments. The species was determined by A. CARADJA as „*Cnephasia chrysantheana*“ (= *C. alternella* STEPH.), some other examples were undetermined. All the mentioned material is preserved in the collection of the „Gr. ANTIPA“ Museum in Bucharest (some further examples, not stated as typoids in the collection present). The new species is similar to some *Cnephasia*-species in the shape of the wings and in the coloration, but it is closely related to *Eana incanana* (STEPH.). The species of the *Eana derivana*-group are distributed in Europe and in Palaearctic Asia. In Mongolia occurs *Eana pallifrons* RAZ., which resembles the new species in the coloration, (being however, much paler) and in the male genitalia, but the uncus in *E. pallifrons* RAZ. is much shorter, the valva narrower and the sacculus provided with shorter free termination. I name the new species in honour of Aristide CARADJA.

Eana (Eana) similis sp. n.

(Pl. XXIV, fig. 52)

Labial palpus very long (about 3) with terminal joint protruding. The colour of palpi and head brownish; vertex greyish; thorax grey with brown scales on tegulae. Forewing expanding posteriorly; costa delicately arched outwards throughout; apex pointed; termen straight, oblique. Ground colour ash-grey diffused with brownish at base and along dorsum, delicately striped transversely with brown all over the surface. Pattern brownish grey, rather dark. Postbasal fascia broad and straight to the middle, parallel to median fascia, ill-defined and very thin in posterior portion, atrophied at dorsum. Median fascia broad at costa, with anterior edge straight to the middle, paler and broader in dorsal portion. The pattern in posterior portion of the wing delicate, except costal parts. A row of delicate dots along the termen in the posterior portion. Fringes dark grey divided with brownish. Hindwing brownish grey with delicate yellowish hue, decidedly striped with brown-grey transversally, darker on peripheries. Fringes concolorous with the ground colour of the median portion of the wing. Length of forewing about 12 mm.

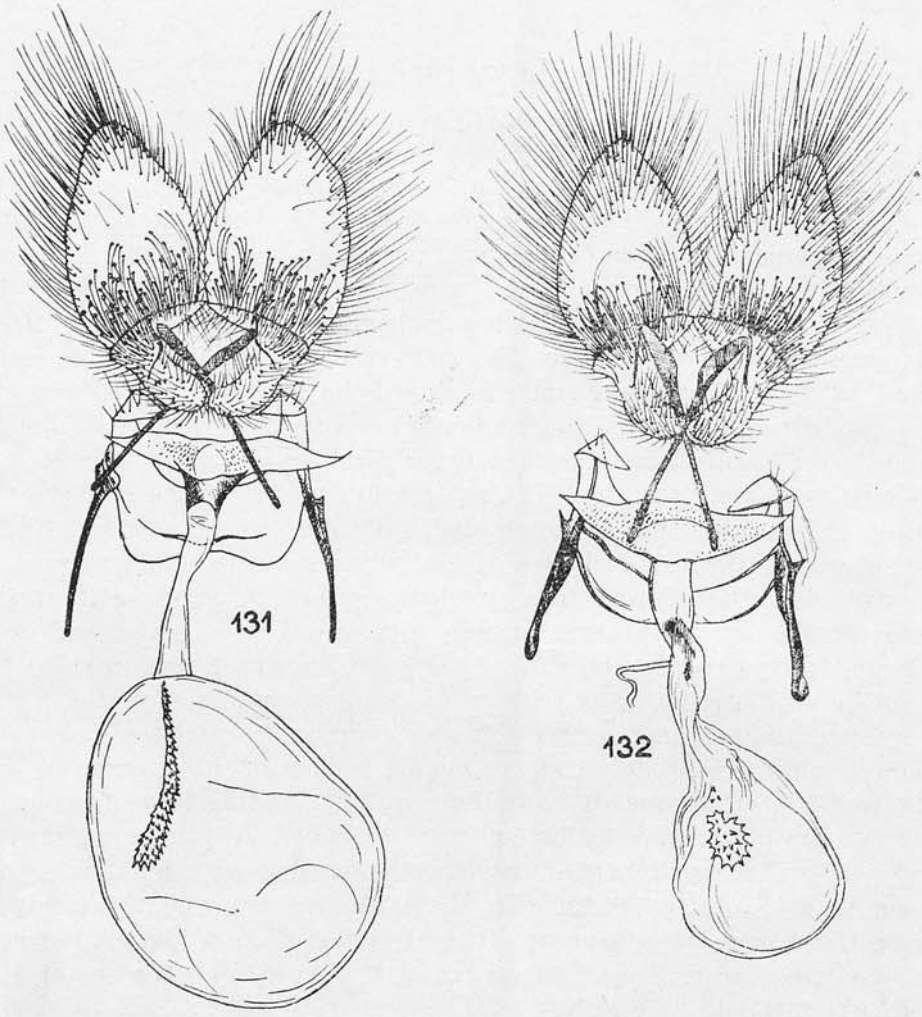
Female genitalia (fig. 132). Labia with very large posterior portions; gonapophyses posteriores long, rather thin; gonapophyses anteriores shorter. Lamella genitalis with strongly concave middle portion of the anterior edge; lamella vaginalis broad, rounded anteriorly, provided with strong median projection of the posterior edge. Lateral arms of lamella vaginalis rather short, broad, pointed terminally. Ostium wide; introitus strongly sclerotized, a little broader than the ductus bursae. The shape of the introitus rather similar to that in *Cnephasia alternella*-group. In posterior portion of ductus bursae irregular sclerite present. Ductus broad and short; bursa copulatrix rather small; signum short, broad anteriorly.

Holotype (♀): „Chasseurs Thibétains, 1897, ex R. P. DÉJEAN“, G. Sl. 6924 (B. M. No. 9185).

Comments. The new species joins some features of the genitalia of *Eana* BILLB. and *Cnephasia* CURT., but those are of specific character only. The introitus is very characteristic, elongate, provided with very weak ventro-posterior edge (lamella antevaginalis). The lamella vaginalis and the bursa copulatrix (with the signum) of a normal *Eana*-shape. The new species resembles *Eana caradjai* sp. n. or *E. viardi* RAZ. superficially. The male genitalia unknown.

Eana (Eana) incognitana RAZ.

Eana (Eana) incognitana RAZOWSKI, 1959, Acta zool. cracov., **4**: 296 pl. 30 fig. 105, pl. 65 fig. 305.



Figs. 131—132. Female genitalia: 131 — *Eana caradjai* sp. n., typoid, G. Sl. 7482, 132 — *E. similis* sp. n., holotype

Eana (Eana) jäckhi RAZ.

Eana (Eana) jäckhi RAZOWSKI, 1959, Acta zool. cracov., **4**: 297 pl. 30 fig. 106, pl. 65 fig. 306.

Eana (Eana) rundiapicana RAZ.

Eana (Eana) rundiapicana RAZOWSKI, 1959, Acta zool. cracov., **4**: 297 pl. 30 fig. 107, pl. 65 fig. 307.

This species resembles the grey-brown coloured specimens of *Eana clercana* (JOANN.), and is perhaps conspecific with this species. There are, however, some features by which it differs from the mentioned species. This problem can be solved when more material shall be available.

Eana (Eana) clercana (JOANN.)

Cnephasia clercana JOANNIS, 1908, Bull. Soc. ent. France, **1809**: 192.
(RAZ.: 299 pl. 30 fig. 111, pl. 52 fig. 242, pl. 66 fig. 310)

I have got some specimens from Southern France, which are similar in colour to the preceding species, but very similar to *E. clercana* (JOANN.) genitalically. I cannot decide about the systematic position of those species but I suppose they are rather conspecific with *E. clercana* (JOANN.).

Eana (Eana) herzegovinae RAZ.

Eana (Eana) herzegovinae RAZOWSKI, 1959, Acta zool. cracov., **4**: 298 pl. 30 fig. 108, pl. 65 fig. 308.

Eana (Eana) cyanescana (RÉAL)

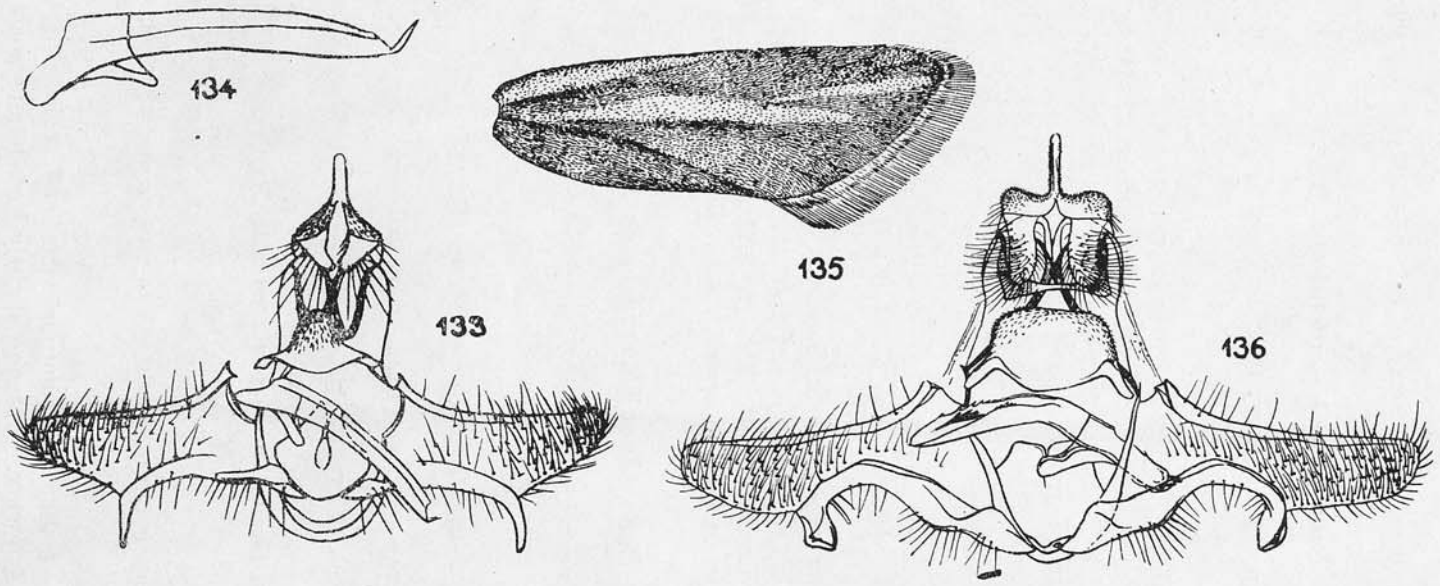
Cnephasia (Nephodesme) cyanescana RÉAL, 1953, Bull. mens. Soc. linn. Lyon., **22**: 54 fig. 8, 9.
(RAZ.: 298 pl. 30 fig. 109, 110, pl. 52 fig. 241, pl. 66 fig. 309)

Eana (Eana) samarcandae RAZ.

(Pl. XXV, fig. 53)

Eana (Eana) samarcandae RAZOWSKI, 1958, Acta zool. cracov., **2**: 568 pl. 54 fig. 8, pl. 62 fig. 33.

Labial palpus rather short, concolorous with head, a little darker than the ground colour of the forewing. Forewing slightly broadening posteriorly; costa strongly curved outwards in its basal portion, then nearly straight; apex delicate



Figs. 133—136: 133 — male genitalia of *Eana samarcandae* Raz., holotype, „Samarcand", 1. VI., G. Sl. 5152, 134 — aedeagus of same specimen, 135 — forewing of *E. andreana* (Kenn.), 136 — male genitalia of same species, „Oz. Zharkol, Akmolinsk. obl., 12. VII. 958, Falkovitsh", G. Sl. 8036

rounded; termen oblique, slightly convex. Ground colour more or less evenly grey-brown all over the surface of the forewing. Basal area slightly darker than the rest of the wing, limited by dark brown-black marginated pattern. This fascia is strongly bent in about the middle of the width of the wing, pointing towards the outer margin. Median fascia less distinct than the former one, more yellowish brown. Anterior margin of this fascia dark outlined, while the outer one, similarly to the pattern of the outer margin of the wing, is weakly sett off against the ground colour. Outer margin more darkly marginate. Fringes rather concolorous with ground colour. Hindwing trapezoid, slightly rounded apically, grey-brown with slight yellowish tint. Fringes a little paler. Lenght of forewing 8·5 mm.

Male genitalia (figs. 133, 134). Valva broad, rather short, strongly tapering posteriorly beyond the end of sacculus. Costa of valva well sclerotized. Sacculus long, reaching $^2/_3$ of the ventral edge of the valva, delicately curved beyond base and sinuate in the middle. Free termination of sacculus long, pointed. Uncus broad with large and rather oblique basal parts; socii short, broad, similar to those in *Cnephasia* CURT. Gnathos narrow; transtilla with very broad median projection; aedeagus very long, straight except basal portion, pointed apically.

Distribution. This species is known only from the holotype and is recorded from Samarkand.

Comments. *Eana samarcandae* RAZ. is very interesting, having some features similar to those in *Cnephasia* CURT. The shapes of the socii and uncus resemble rather those in the mentioned genus, but the shapes of the gnathos, the valvae and especially of the transtilla are characteristic of *Eana* BILLB. Habitus rather similar to that in *Cnephasia* CURT.

Female genitalia and biology (except time of appearance: June) are unknown.

Eana (Eana) andreana (KENN.)

Tortrix andreana KENNEL, 1919, Mitt. münch. Ent. Ges., **8** (**1917/18**): 64 pl. 2 fig. 16 *Cnephasia andreana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 112; ?? *Eana kuldjaënsis* RAZOWSKI, 1959, Zschrft. wien. Ent. Ges., **44**: 84 fig. 4, pl. 3 fig. 5.

Labial palpus about 3; basal joint short; median joint long, broadening posteriorly; terminal joint pointed. Palpi and head brownish grey; thorax a little darker. Forewing (fig. 135) slightly expanding posteriorly; costa gently curved outwards; apex delicately rounded; termen strongly oblique, rather straight. Ground colour dark grey to brownish grey, costa a little darker than median area of the wing, very slightly sprinkled with brown. The pattern ill-defined or completely atrophied. In some specimens ochreous subcostal stripe to $^1/_3$ and long median stripe to beyond the end of median cell. In two examples a delicate transverse median fascia and small brown points all over the surface of the wing present. Fringes a little paler than the ground colour, divided with brown especially in costal and postapical portions. Hindwing broad with short

rounded apex, brownish grey, paler in basal area; fringes pale brownish grey to greyish. Length of forewing about 10 mm.

Male genitalia (fig. 136). Valva broad, rather short, rounded apically; sacculus very strong, sinuate beyond the middle ventrally with strong bulbous free termination (horizontally situated when valva in usual position); tegumen well developed; uncus narrow; socii large, rather short; gnathos with broadened ventro-lateral corners; transtilla very strong, broad; aedeagus rather narrow, curved, pointed terminally; several small dents on dorsal edges beyond the middle and dentate sclerite of vesica present.

Female genitalia (fig. 137). Labia very broad, rounded posteriorly; anterior portions well developed; gonapophyses long; lamella vaginalis broad in middle, pointed into tips laterally; ostium bursae broad; ductus bursae broad especially in the posterior portion, where irregular sclerite is present; signum small, rounded.

Distribution. The type has been described from Uralsk; in the collection of the Zoological Institute A. S. in Leningrad there are 19 examples from Akmolinsk distr. (near lake Zharkol) and from Kazakhstan.

Biology. The moth appears in July and is polyphagous. The caterpillar has been collected by Dr. M. I. Falkovitsh in white cocoons made of silk and pieces of plant especially on *Flomis* sp.

Comments. The type (compared with mentioned specimens) is in the collection of the Zool. Mus. und Institut für Spezielle Zoologie in Berlin, the type of *E. kuldjaënsis* Raz. in the coll. of the Naturhistorisches Museum in Vienna.

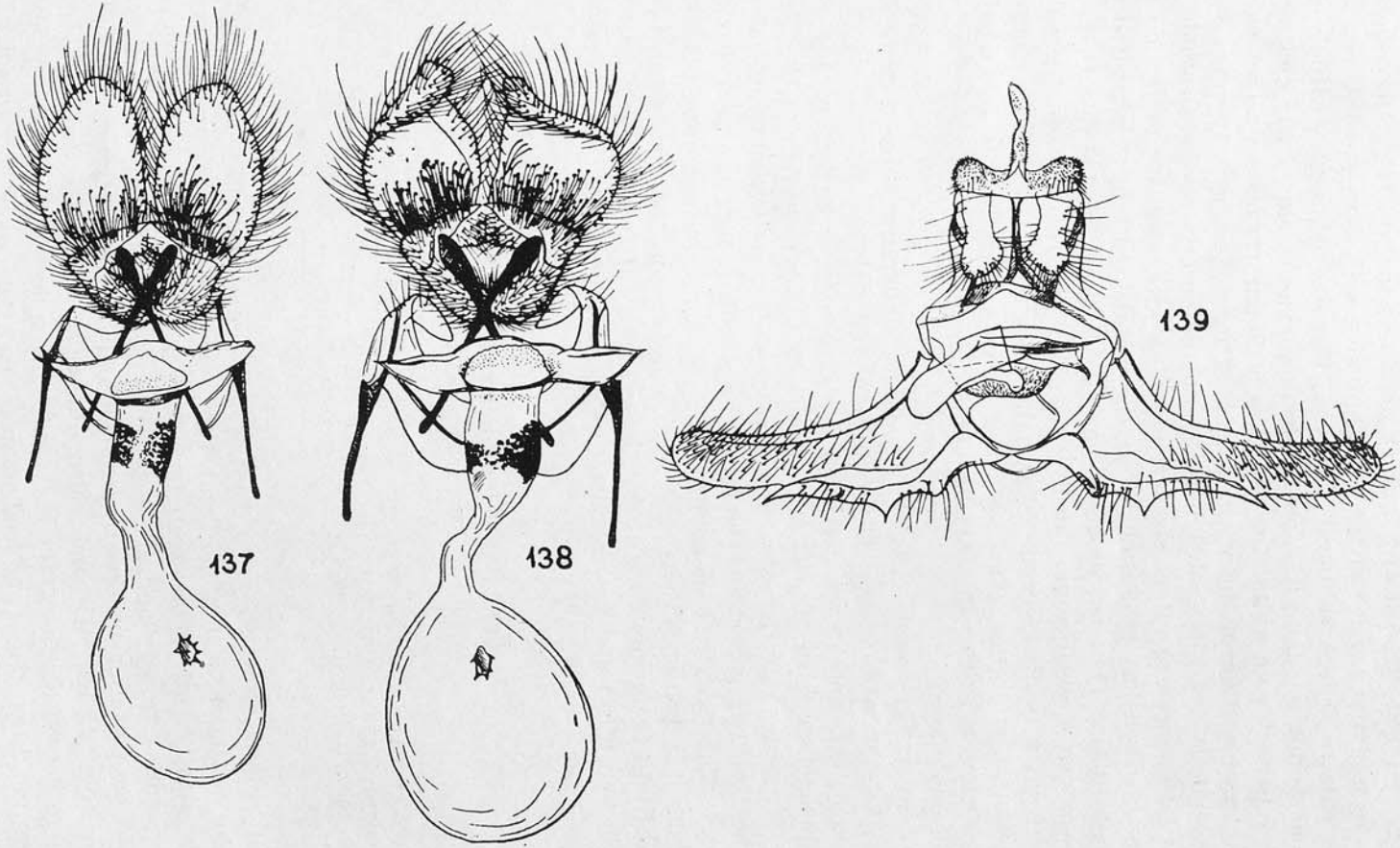
In 1959 I described *Eana kuldjaënsis* (pl. XVIII, fig. 54) from Kuldja (Western Thian). This specimen differs from *E. andreana* (Kenn.) in the shape and coloration of the forewing and in the shape of the aedeagus. In the collection of the Zoological Institute in Leningrad there is a female from Zailiiski Ala Tau that resembles *E. kuldjaënsis* Raz. superficially. The female genitalia differ from those in *E. andreana* (Kenn.). It seems to be possible that this female is conspecific with my species. Unfortunately I have no opportunity to examine further females of that species and decide if *E. kuldjaënsis* Raz. is a valid species or a synonym of *E. andreana* (Kenn.). The female genitalia of mentioned specimen (fig. 138) differ from those of *E. andreana* (Kenn.) by the shape of the lamella vaginalis, which is narrower and has longer lateral parts, and by the ductus bursae and its sclerite.

Eana (Eana) tibetana (Car.), comb. nov.

(Pl. XXV, fig. 55)

Exapate congelatella tibetana Caradja, 1939, Iris, **53**: 25; Obraztsov, 1956, Tijdschr. Ent., **99**: 119.

Labial palpus rather long, brownish; head and thorax dark grey with small addition of brown. Forewing very narrow at base, strongly expanding posteriorly; costa nearly straight, delicately curved in terminal portion; apex slightly pro-



Figs. 137—139. Male and female genitalia: 137 — *Eana andreana* (KENN.), „Oz. Zharkol, Akmolinskaia obl., 8. VII. 58, ex. l., FALKOVITSH", G. Sl. 277 (Len.), 138 — *Eana* sp.? (*kuldjaënsis* RAZ.), „Zailiiski, Ala Tau, Talgar, 8. VII. 1957, FALKOVITSH", G. Sl. 7739, 139 — *E. tibetana* (CAR.), type, „Batang (Tibet), Alpine Zone (ca. 5000 m.), 22. VI. 1938, H. HÖNE", G. Sl. 7612

truding, pointed; termen slightly concave beyond apex, oblique. Ground colour grey; costa and base suffused with dark grey; subterminal shade well developed; venation in posterior portion of the wing sprinkled with dark grey. A delicate ash-grey pattern before subterminal fascia. Fringres white-grey. Hindwing very broad, subtriangular with apex protruding. The colour of the hindwing white-grey to very pale white-brown, apex a little darker; fringes rather paler than the basal portion of the wing. Length of forewing about 12 mm.

Male genitalia (fig. 139). Valva long, tapering posteriorly beyond the middle, broad at base; sacculus rather slender, provided with angulate projection in 1/4 and pointed vertical projection before the middle ventrally, terminated in short, pointed tip. Tegumen broad; uncus long, slender, provided with very broad basal parts; socii large, broad terminally; transtilla broad. Aedeagus in comparison with the sacculus short, slightly curved, with long, pointed ventro-terminal projection. Two long (one twice as long as the other) well sclerotized thorns, similar in shape to cornuti present.

Female unknown.

Distribution. The species is known from Tibet. Four specimens were taken in Batang at the altitude of 5000 m. in June and July.

Comments. The species was described as a subspecies of *Exapate congelatella* (Cl.) from one specimen. The type is preserved in the collection of the „Gr. Antipa" Museum in Bucharest. Three further specimens without any labels are in the Caradja collection. One of them is rather dark coloured, nearly brown-grey. The pattern is ill-defined, but in costal and posterior portions of the wing it is well visible. As the male genitalia show, the species must be transferred into the genus *Eana* Billb. *Eana tibetana* (Car.) is closely related to *E. vetulana* (Chr.) and very similar to this species especially in the shape of the aedeagus and sacculus.

Eana (Eana) vetulana (Chr.)

(Pl. XXV, fig. 56)

Sciaphila vetulana Christoph, 1881, Bull. Soc. imp. nat. Moscou, **56**: 12 pl. 1 fig. 10; *Tortrix vetulana*; Kennel, 1910, Pal. Tortr.: 211 pl. 10 fig. 57—58; *(?)Cnephasia vetulana*; Obraztsov, 1956, Tijdschr. Ent., **99**: 112; *Eana vetulana*; Razowski, 1961, Acta zool. cracov., **5**: 669.

Labial palpus brownish grey; basal joint short; median joint strongly broadening posteriorly; terminal joint thin, pointed. Head brownish grey. Forewing slightly broadening posteriorly in male, rather uniformly broad in female; costa strongly arched outwards in basal third, delicately curved or straight in posterior portions; apex delicately rounded; termen strongly oblique, rather straight. Ground colour brownish-greyish to pale greyish-yellowish, rather variable, however, the most common form is that with brownish grey coloration. In postbasal and median areas black dots, sometimes completely

atrophied. Fringes concolorous with the ground colour or paler; in one male specimen yellowish. Hindwing broad; apex slightly protruding, brownish to grey-brown, paler at base. Fringes concolorous with the colour of the basal area. Length of forewing 10—12 mm.

Male genitalia (figs. 140—143). Valva broad at base, narrow in posterior portion, rounded apically. Costa of valva long, strongly sclerotized to the end. Sacculus broad in basal third, then concave provided with short, triangular free termination. A large, triangular, dentate projection in posterior half of sacculus ventrally. Tegumen with long, slender uncus, which is provided with very large basal parts. Latero-posterior corners of those parts decidedly protruding, rounded apically. Socii broad; gnathos delicate; transtilla with very broad central part; juxta large, well sclerotized. Aedeagus short; with dentate ventral termination and small lateral projection in the middle. Basal portion of aedeagus broad; anellus in about the middle of aedeagus.

Female genitalia (fig. 144). Labia with broad, strongly protruding apically posterior parts. Gonapophyses posteriores broad and short; gonapophyses anteriores short, thin, rather pointed terminally. Lamella genitalis with rounded anterior edge; lamella vaginalis with very broad lateral parts, which are rounded terminally and sculptured. Ostium large; introitus very heavily sclerotized, cup-like shaped; ductus bursae short, transparent; bursa copulatrix large, elongate; signum short, broad.

Biology unknown except the time of appearance of the moth: June (and probably July).

Distribution: Eastern Asia (Southern Ussuri, Amur, Korea, Japan).

Comments. I have discussed this species and placed it in the genus *Eana* BILLB. (1961). In OBRAZTSOV's catalogue the species is placed in the genus *Cnephasia* CURT. and marked with an asterisk, as the genitalia were known to the author. I suppose therefore that Dr. OBRAZTSOV has had another species, very similar to *Eana vetulana* (CHR.), before him. The male genitalia of the species are very characteristic of *Eana* BILLB., and there are no doubts that it belongs in the present genus. The female genitalia are very peculiar, especially in the shape of the lamella vaginalis, which is very broad, irregular in the shape of the edges, provided with rounded lateral corners and strongly sculptured. The moth is rather similar to the species of *Cnephasia* CURT. and to *Eana andreana* (KENN.) superficially.

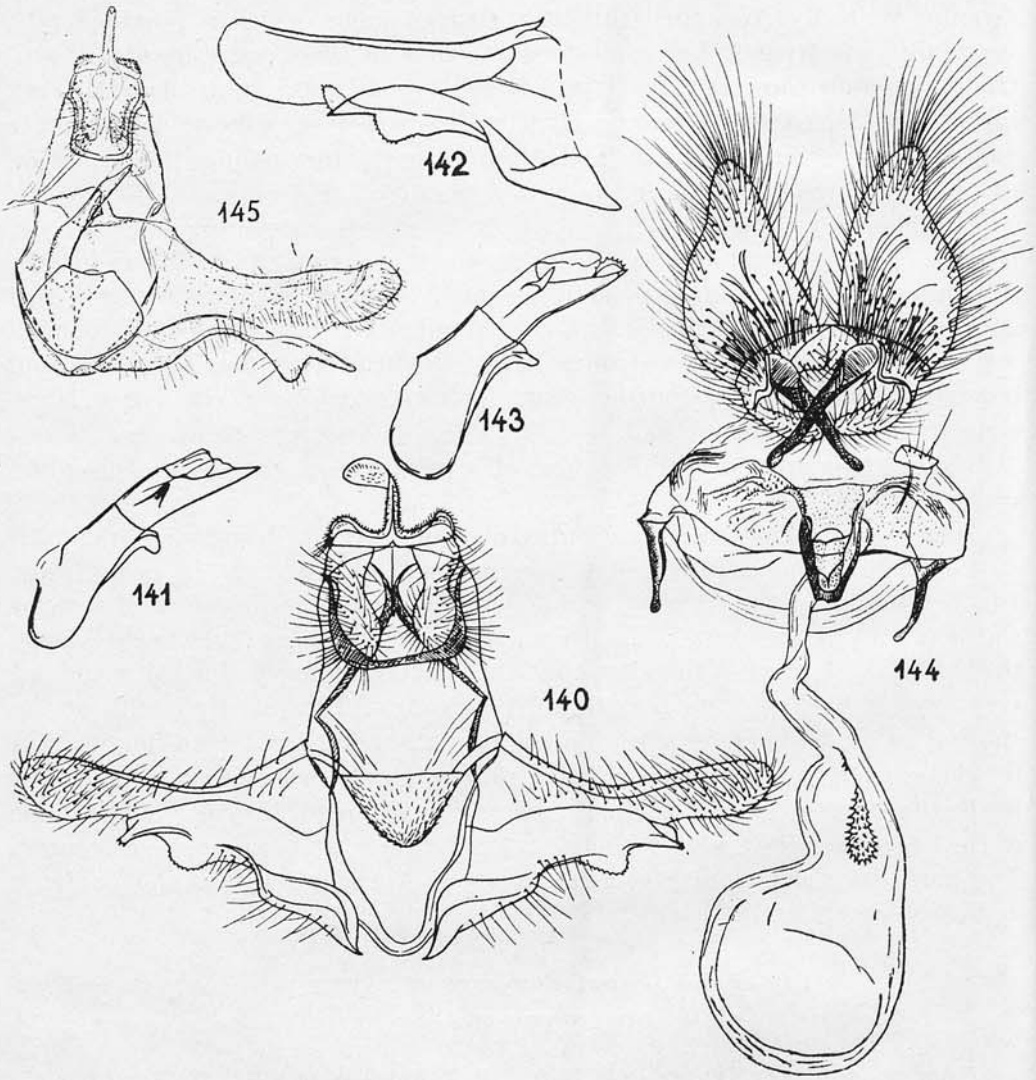
Eana (Eana) dominicana (KENN.)

(Pl. XXIV, fig. 57)

Doloploca dominicana KENNEL, 1919, Mitt. münch. Ent. Ges., **8** (1917/18): 64 pl. 2 fig. 17; *Eana dominicana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 123; OBRAZTSOV, 1957, ibid., **100**: 326.

Labial palpus long; median joint strongly broadened before end; terminal joint long. The colour of palpi brownish grey. Head and thorax similarly coloured; thorax, however, darker. Forewing strongly broadening posteriorly;

costa rather straight, delicately concave in the middle; apex rather pointed; termen very slightly convex, oblique. Ground colour grey with very slight brownish tint, sprinkled with dark grey. Delicate dark grey stripes along costa and dorsum and in posterior portion of the wing; in median portion the stripes are very delicate. Fringes concolorous with the ground colour of the wing. Hindwing pale brownish grey, slightly darkened on the preipheries. Fringes concolorous with the ground colour of the median portion of the wing.



Figs. 140—144. Male and female genitalia of *Eana vetulana* (Chr.): 140 — male, „Raddé, Amur, E. Siberia, Max Korb, 1905, Caradja [No.] 71886", G. Sl. 6927, 141 — aedeagus of same specimen, 142 — same species, left valva, „Vinogradovka, Ussur. K[rai], 26—27. VI. 929, Diakonov, Filip.", G. Sl. 4919, 143 — aedeagus of same species, 144 — female, „Vinogradovka, Ussur. Kr., 23—24. VI. 929, Diakon.-Fil.", G. Sl. 4920

Distribution: Dsharkent (Illi territory), Central Asia.

Comments. Three examples were taken in the end of May and mid-July. KENNEL did not designate the type of this species. OBRAZTSOV (1957) discussed the species on the basis of two „Cotypes" which are preserved in the Zoologische Sammlung der Bayerischen Staates in Munich. One of them agrees with the drawing in KENNEL's publication. KENNEL used to label „Type" for all specimens of new species. These specimens are labelled „cotype", but the labels were given later by the workers of the Munich Museum. I designate therefore the specimen illustrated in KENNEL's paper (in KENNEL's handwriting „*Doloploca dominicana* n. sp.") as a lectotype. The third specimen of this species is lost. The other specimen is somewhat different than the lectotype (forewing not dilated posteriorly, ground colour paler, pattern more distinct) and seems to be a female, but KENNEL stated that all three specimens are males.

Eana (Eana) agricolana (KENN.)

Doloploca agricolana KENNEL, 1919, Mitt. münch. Ent. Ges., **8 (1917/18)**: 65 pl. 2 fig. 18; *Eana (Eana) agricolana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 123; OBRAZTSOV, 1957, ibid., **100**: 326.

This species is unknown to me. The original description is as follows: „Steht der vorigen nahe *[dominicana]*, der Flügelschnitt ist der gleiche. Spanneweite 19—20 mm. Kopf, Thorax und Abdomen sind gleichfarbig bleich rötlichgrau. Die Vorderflügel, mit ziemlichen Seidenglanz, sind rötlichgrau, gegen die Wurzel hin intensiver rötlichbraun, dunkler als der Thorax; an der Costa stehen schwärzliche Schrägstrichel und Pünktchen, einige auch in der Mittelzelle und im Saumfeld, 5—6 grössere und dunklere längs des Dorsum bis vor den Tornus. Die Fransen sind der Fläche fast gleichfärbig, mit dunklerer Saum- und Teilungslinie. Die Hinterflügel, dünn beschuppt und glänzend, sind blass rötlichgrau, ihre Fransen weisslich mit gelblicher Teilungslinie. Hab. Korla.".

Dr. M. I. FALKOVITSH has kindly sent me the drawing of the male genitalia of this species. The type (without abdomen) has been compared with that example. A short description of the male genitalia of *E. agricolana* (KENN.) as follows: tegumen slender; uncus long, slender; gnathos delicate; socii elongate, rather slender. Valva long, slightly tapering posteriorly with costa well sclerotized; sacculus strong with broad basal portion and large ventral projection subterminally; free termination long, slender. Aedeagus long, tapering posteriorly and pointed terminally; strongly sclerotized thorn present (fig. 145).

The specimen examined by Dr. FALKOVITSH is labelled as follows: „Dshungarski Alatau, Topolievka, 2500 m. 1. VII. 1957, leg. I. M. KERZHNER".

Eana (Eana) antiphila (MEYR.)

Cnephasia antiphila MEYRICK, 1913, Ent. Mitt., **2**: 298; *Eana (Eana) antiphila*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 123.

This species is unknown to me. OBRAZTSOV placed it in the genus *Eana* BILLB. according to MEYRICK's note, that it is allied to *E. cottiana* (CHRÉT.). The original description is as follows: „♀. 23 mm. Head and thorax white. Palpi $2^1/_4$, white, median area tinged with grey. Abdomen whitish. Forewings elongate, costa slightly arched, apex obtuse, termen hardly rounded, oblique; white; some minute fine dark fuscous strigulae along dorsum; three or four small dark fuscous strigulae in disc towards base; outer edge of basal patch partially marked with blackish strigulae, acutely angulated and prominent in middle, where it forms a fuscous spot; central fascia narrow, fuscous, marked with blackish strigulae on edges, rather oblique, angulated outwards in middle and inwards below this; a series of blackish dots from $^3/_5$ of costa to tornus, obtusely angulated below middle, dots larger and stronger below this, angle crossed anteriorly by three other dots; a fuscous spot and several blackish dots towards costa posteriorly; a fuscous streak spotted with blackish along lower $^2/_3$ of termen; cilia white, with brownish subbasal line sprinkled with blackish, and apical third pale brownish. Hindwings light grey, whitish-tinged towards base; cilia white, with fuscous subbasal line. One specimen, in May Allied to *cottiana*".

? Eana (Eana) biruptana (CHRÉT.)

Cnephasia biruptana CHRÉTIEN, 1922 Oberthür's Étud. Lép. Comp., **19**: 345; *Eana biruptana*; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 121.

This species is unknown to me. The type is probably lost. The original description of *Eana biruptana* (CHRÉT.) is as follows:

„*Cnephasia biruptana*, n. sp.

18 mm. — Ailes supérieures blanchâtres, assombries par des écailles brunes et des écailles noires parsemées, avec deux bandes transverses brun ocracé: la première au quart, très étroite, anguleuse sur la médiane, étranglée au pli, arrêtée à la dorsale, brun ocracé, bordée d'écailles noires; la deuxième avant le milieu, oblique, coupée en trois tronçons, interrompue à la cellule discoïdale et au pli, formant ainsi trois taches, la costale grande et subtriangulaire, la centrale rectangulaire, oblique du côté de la base, la dorsale petite, toutes les trois brun ocracé bordées d'écailles noires; une ombre allongée oblique descend de l'apex jusqu'à la première interruption de la bande médiane, indiquée par de l'ocracé fauve sans écailles noires dans la cellule discoïdale; ligne terminale épaisse ou maculaire noire. Franges blanches traversées par deux bandelettes brunes.

Ailes inférieures gris brun. Franges blanches, avec une fine ligne de partage brune près de leur base.

Tête et thorax gris taché de brun; antennes brun ocracé; palpes gris ocracé; pattes blanc crème; tarses brunâtres.

Groupe de Cn. derivana, Lah.; très distincte par sa première bande très étroite, sa deuxième deux fois rompue, sa tache centrale rectangulaire.

Un sujet de Haute-Reraya, Grand-Atlas (Alluaud)".

Doloploca Hbn.

Type species: ***Phalaena Tortrix punctulana*** Schiffermüller & Denis, 1776

Doloploca Hübner, 1825, Verz. bek. Schmett.: 77.
(Raz.: 303)

Labial palpus short with slender median joint and short terminal joint Antenna delicately ciliate, very slightly in female; tongue short or ill-defined' yet present. Forewing broad, expanding posteriorly; costa arched outwards; apex rounded. All veins in the forewing separate; r_5 to apex; r_2 rather in middle between r_1 and r_3. Internal vein of the median cell from before r_1, additional internal vein present. All veins in hindwing present; rr very near to m_1; m_2 far to m_3; m_3-cu_1 from one point.

Male genitalia. Valva broad at base, slender in posterior portion. Sacculus strongly developed, long, sinuate beyond middle ventrally. Tegumen broad; uncus slender with strongly projected lateral ends of basal parts (with exception of those in *D. characterana* (Snell.). Gnathos very weak; socii delicate, slender; transtilla broad, minutely spined; aedeagus long and thin.

Female genitalia. Labia with large and flat posterior portions, similar to those in *Cnephasia* Curt. s. str.; lamella vaginalis with narrow lateral arms; introitus broad; ductus bursae short; signum very small or lacking (?).

Caterpillar (according to Swatschek's diagnosis): „Double crowns of hooks present. Bristles I and III on separate warts, bristle VI present. On mesothorax bristle IIIa dorsocaudal to bristle III. The distances between bristles VIII larger on ninth than on eight abdominal segment. Stigma of second abdominal segment larger than the base of bristle III. On eight abdominal segment bristle III dorsocranial to stigma. On the anal shield bristles rather separate from the edge".

Comments. Three species belong in this genus. *Doloploca characterana* (Snell.) differs in many features from the two remaining species. *D. lineata* Walsm. is referable to *Cnephasia* Curt., and *D. schawerdai* Rbl. to *Oxypteron* Stgr.

Doloploca punctulana (Schiff. & Den.)

Phalaena Tortrix punctulana Schiffermüller & Denis, 1776, Syst. Verz. Schmett. Wien.: 130.
(Raz.: 304 pl. 31 fig. 113, 114, pl. 53 fig. 244, pl. 67 fig. 313)

150
148
146
147
149

Doloploca praeviella (ERSCH.)

Cheimatophila praeviella ERSCHOFF, 1877, Horae Soc. ent. Ross., **12 (1876)**: 341; *Doloploca praeviella*; KENNEL, 1910, Pal. Tortr.: 222 pl. 11 fig. 12; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 124.

Labial palpus about twice as long as diameter of the eye, slender; basal joint short; median joint long, slightly expanding posteriorly; terminal joint short. Tongue longer and thinner in female than in male. The colour of palpi and head grey; thorax brownish grey. Forewing broadening posteriorly; costa curved outwards; apex delicately rounded; termen oblique (about 60°), nearly straight. Ground colour grey to brownish grey, striped with grey-brown and spotted similarly. Costa darker near middle and in dorsal portion. An elongate, more yellowish pattern radially from the base to $^1/_3$ of the length of the wing and similarly coloured bar in terminal area of median cell. Fringes paler than ground colour. Hindwing pale brownish grey with fringes a little paler. Length of forewing about 12 mm.

Male genitalia (figs. 146, 147). Valva very broad at base, slender in posterior portion, broadened before the end. Sacculus strong, decidedly bent and sinuate beyond the middle with the end curved downwards, bifurcate ventrally. Uncus long, pointed, with very long lateral projections of basal parts; gnathos very delicate with ill-defined termination; socii very slender, weak; transtilla broad, spined minutely. Aedeagus long, tapering posteriorly, bent. Juxta broad.

Female genitalia (fig. 148). Labia elongate with long posterior parts. Lamella vaginalis narrow with lateral parts elongate and pointed. Ostium rounded; introitus very large, well sclerotized and broad; ductus bursae short, no signum in examined specimen.

Biology unknown except time of appearance of the moth: April—May.

Distribution. South regions of Central and East Siberia, and Dshungarian Ala Tau.

Comments. The type of this species („Kachtak, 14. V. 69") is in the collection of the Zoological Institute A. S. in Leningrad. In that collection there are several specimens with rather grey colour of the forewing and some examples very similar in coloration to *Doloploca buraetica* STGR., but smaller.

Figs. 145—150. Male and female genitalia: 145 — *Eana agricolana* (KENN.), „Dshungarski Alatau, Topolievka, 2500 m., 1. VII. 1957, I. M. KERZHNER leg.", 146 — *Doloploca praeviella* (ERSCH.), „4 km. S. W., Toplievka, Sarkandskovo r-na, 4. V. 1957, V. KUZNETSOV", G. Sl. 7731 (Len.), 147 — aedeagus of same specimen, 148 — same species, female, „Dshungar. Ala Tau, g. Guturbei, 5. V. 1957, V. I. KUZNETSOV", G. Sl. 7731 (Len.), 149 — *D. buraetica* STGR., „Iakovlevka, Spass. u., Ussur. Kr[ai], 1. V. 926, DIAKON., FILIPIEV", G. Sl. 8042, 150 — same species, female, „Iakovlevka, Spass. u., Ussur. Kr., 10. V. 926, DIAKON., FILIPIEV", G. Sl. 8041

Doloploca buraetica STGR.

(Pl. XXVI, fig. 58)

Doloploca buraetica STAUDINGER, 1892, Iris, **5**: 388; KENNEL, 1910, Pal. Tortr.: 222 pl. 11 fig. 14; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 124 (as sp. incertae sedis).

Labial palpus about twice as long as diameter of the eye, brownish grey to brownish; head and thorax a little darker. Forewing broader and more expanding posteriorly in male than in female; costa curved outwards; apex delicately rounded; termen strongly oblique, rather straight. Ground colour brownish grey to brownish with ochreous grey shade or stripe along the wing medially and ill-defined shade in subterminal portion of the wing. The pattern very slight in male, better developed in female which has paler, more yellowish grey or cream ground colour. The pattern in female is rather similar to that in *D. punctulana* (SCHIFF. & DEN.). Fringes concolorous with ground colour of the wing. Hindwing broader in male than in female, brownish grey, cream brownish or brownish. Fringes concolorous with the basal portion of the wing. Length of forewing about 15 mm. in male, about 13 mm. in female.

Male genitalia (fig. 149) very similar to those in preceding species but larger, valva with less curved sacculus.

Female genitalia (fig. 150) also very similar to those in *D. praeviella* (ERSCH.) but labia more rounded terminally; gonapophyses rather longer; lamella vaginalis broader; introitus longer and not so broad, strongly sclerotized in median portion. Ductus bursae broad; bursa copulatrix elongate, rather small; signum very delicate.

Distribution. The type (coll. Institut für Spezielle Zoologie und Zoologisches Museum in Berlin) is recorded from Daur (Kentei); other specimens examined: Ussuri Territory, Vinogradovka and Vladivostok. The moths were taken from mid-April till mid-May.

Comments. The differences between those species are very slight both in pattern and genitalia. In the male genitalia of *Doloploca praeviella* (ERSCH.) the sacculus is strongly curved ventrad (fig. 151) and shorter than in the species under consideration (fig. 152). The differences in the female genitalia seem to be greatte.

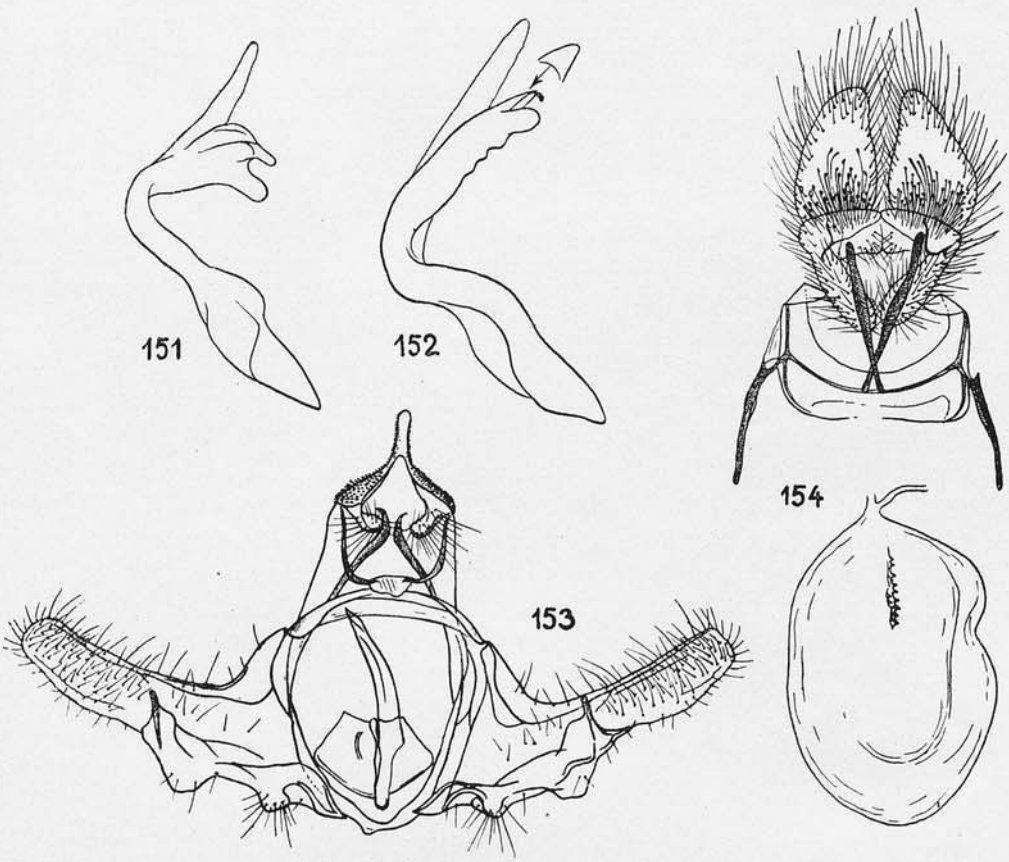
Doloploca characterana SNELL.

(Pl. XXVI, fig. 59, 60)

Doloploca characterana SNELLEN, 1883, Tijdschr. Ent., **26**: 191 pl. 11 fig. 5, 5a; KENNEL, 1910, Pal. Tortr.: 222 pl. 11 fig. 13; OBRAZTSOV, 1956, Tijdschr. Ent., **99**: 124.

Labial palpus rather short, brownish grey in colour. Head and thorax concolorous with palpi. Forewing broader in the male than in the female. In the hindwing veins *rr* and m_1 very short stalked. Male: forewing strongly

broadening posteriorly; costa delicately arched outwards; apex rounded; termen rather straight, oblique. Ground colour pale brownish grey to whitish grey especially in median and dorsal portions of the wing. Costa and posterior portion of the wing more brownish grey. Postbasal fascia atrophied at edges, very dis-



Figs. 151—154. Male and female genitalia: 151 — valva of *Doloploca praeviella* (Ersch.), ventrally, 152 — valva of *D. buraetica* Stgr., ventrally, 153 — *D. characterana* Snell., „Sutshan, 95, leg. Dörr, ex. coll. Stgr.", G. Sl. 3273 (Berl.), 154 — same species, female, „Usch. Sutsuktie, iu.-z. Kiutiei, Mongolia, 12. VI. 924, Kozlov", G. Sl. 4918

tinct in median portion, dark brown with rusty scales and blackish edges, tinged with grey anteriorly in the middle, strongly protruding posteriorly. A large brownish pattern edged anteriorly with well developed line and ill-defined posteriorly in dorso-posterior portion of the wing. Fringes concolorous with the ground colour in the posterior portion of the wing. Hindwing very broad with apex slightly protruding and rounded, pale brownish grey; fringes a little paler. Female: forewing narrow; costa strongly curved; apex pointed; termen strongly oblique, rather straight. Ground colour darker than in male; pattern browner, well developed. Only median projection of postbasal fascia

preserved in examined specimen. Hindwing more elongate than in the male, browner. Length of forewing 14 mm. in male, 12 mm. in female.

Male genitalia (fig. 153). Valva broad at base, rather narrow beyond the middle, rounded apically. Sacculus strong, broad at base and before the end. Two small ventral irregular projections and slender, pointed termination present. Tegumen rather delicate; uncus slender, rather long with narrow, not protruding laterally basal parts; socii large; gnathos with slender arms and rather well developed median plate; transtilla broad, simple. Aedeagus shorter than sacculus, tapering posteriorly, pointed terminally; juxta large.

Female genitalia (fig. 154). Labia with large posterior portions and very long anterior portions. Gonapophyses posteriores longer than gonapophyses anteriores. Lamella genitalis broad; lamella vaginalis unfortunately lost during preparation. Ductus bursae narrow; bursa copulatrix large, ovate; signum very delicate, short.

Distribution and biology. The moth appears in June. It is known from Amur territory and Mongolia.

Comments. The species has been described as *Doloploca*-species, but its systematic position is unclear. In the hindwing veins rr-m_1 are short stalked but in other species of *Doloploca* HBN. they are separate. The shape of the wings and pattern are rather characteristic of *Doloploca*-species, especially in the male. The male genitalia differ from those in other species of *Doloploca* HBN. by the shape of the uncus, the gnathos and the valva. The sacculus is not bifurcate terminally but pointed in a tip. The female genitalia rather of *Doloploca*-shape. This species resembles rather some representatives of the genus *Eana* BILLB. The correct systematic position of *D. characterana* SNELL. shall be probably fixed in some future time, when some additional scientific material from Eastern Asia is available.

Euledereria FERN.

Type species: ***Tortrix alpicolana*** FRÖLICH, 1830

Euledereria FERNALD, 1908, Gen. Tortr.: 59.
(RAZ.: 309)

Labial palpus long, about three times as long as the diameter of the eye; second joint strongly broadening posteriorly; terminal joint short. Antenna with well developed bristles in the male; tongue normally developed. Sexual dimorphism very distinct; female with decidedly reduced wings. Male: forewing elongate, rather not expanding posteriorly; costa delicately arched outwards; apex pointed; termen oblique (about 60°). All veins separate, rarely m_3 stalked with cu_1; r_1 from beyond $^1/_3$ of median cell; r_5 just beyond apex. Hindwing broad, rr-m_1 and m_3-cu_1 from one point or stalked; m_2 parallel to m_3. Female: forewing lanceolate, broadest in the middle, acuminate apically. Venation as in male, but median and cubital veins shorter than in the male, and cu_1-cu_2

approximate at the wing's margin. Hindwing strongly modified, very narrow. Vein *sc* well developed, long; *rr* stalked to $^1/_3$ with m_1; m_2 long; m_3 stalked with cu_1, very short; cu_2 very short.

Male genitalia. Valva broad at base, tapering posteriorly. Sacculus well developed, long, bifurcate terminally. Tegumen very slender; uncus delicate; gnathos weak; juxta large; aedeagus long.

Female genitalia. Labia with very broad posterior parts; gonapophyses rather short. Lamella vaginalis with narrow lateral parts and large, rounded ostium. Ductus bursae strongly sclerotized except anterior portion, provided with sack. Bursa copulatrix transparent; signum absent.

Biology. Early stages and foodplant unknown. The moths fly in May, June and July. The females probably not flying.

Distribution. Central Europe — Alps, and according to REAL's note also in the Pyrénées.

Comments. *Euledereria* FERN. is one of four genera of the *Cnephasiini* in which sexual dimorphism is distinct. In *Oxypteron* STGR. females have the wings much narrower and more pointed than the males. In this genus the forewing of the female is not so much lanceolate and pointed as in the females of *Exapate* HBN. and *Epicnephasia* DANIL. and the hindwing is long, but very narrow. In all mentioned genera the genitalia are typical of the *Cnephasia*-group.

Euledereria alpicolana (FRÖL.)

Tortrix alpicolana FRÖLICH, 1830, HÜBNER's & GEYER's Samml. Europ. Schmett.: 16 pl. 52 fig. 328, 329.
(RAZ.: 310 pl. 31 fig. 20, pl. 32 fig. 121, pl. 54 fig. 247, pl. 67 fig. 316)

Trachysmia GUEN.

Type species: *Tortrix rigana* SODOFFSKY, 1829

Trachysmia GUENÉE, 1845, Ann. Soc. ent. France, sér. 2, **3**: 164.
(RAZ.: 312)

Labial palpus with broad second joint and short terminal joint. Antenna short bristled; bristles very short in female. Tongue short. Forewing delicately expanding posteriorly; costa arched outwards; apex delicately rounded; termen oblique. Vein r_1 from before middle of median cell; the distance between r_1-r_2 about twice as long as between r_2-r_3; r_5 to termen. Hindwing broad, rounded with short apex. Vein *rr* stalked to beyond $^1/_3$ with m_1, from one point or very near to each other at the median cell; m_3-cu_1 near to each other or from one point.

Male genitalia. Valva very broad at base, narrow in posterior portion. Sacculus provided with pointed free termination which has neither small hairs nor spines at the end. Tegumen normally developed; uncus and socii long; gnathos delicate, terminated in small median plate; transtilla strong with

strongly protruding and minutely spined central part. Aedeagus very long, tapering posteriorly; anellus very short; juxta well developed and sclerotized.

Female genitalia. Labia of normal *Tortricidae*-shape, thin, elongate. Lamella vaginalis small, rounded anteriorly. Ductus bursae with long, strongly sclerotized median band; bursa copulatrix large; signum consisting of several groups of spines in a row across the bursa copulatrix.

Caterpillar (after SWATSCHEK): „bristle VI of ninth abdominal segment present, the distances between bristles VIII not larger than in either abdominal segment. Bristle VIII is on mesothorax well separated from costa. Bristles II of eighth abdominal segment at no larger distances to each other than bristles I; bristle III dorsocranial to stigma. The stigmas on 2nd to 7th abdominal segments not larger than bases of bristles III". In addition to this diagnosis, the characteristic of the caterpillar of *T. rigana* (SODOFF.), the only species of this genus, is given in SWATSCHEK's paper (p. 67).

Biology. Imagines appear in April, and in second generation in July and August. The caterpillar feeds in May and June, then in September. Food plant *Anemone* L.

Distribution: Europe with the exception of Great Britain and Northern Regions, Ural and Siberia.

Trachysmia rigana (SODOFF.)

Tortrix rigana SODOFFSKY, 1829, Bull. Soc. imp. Nat. Moscou, **1**: 144 pl. 3 fig. 5. (RAZ.: 313 pl. 32 fig. 122—124, pl. 54 fig. 248, pl. 67 fig. 317)

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STRESZCZENIE

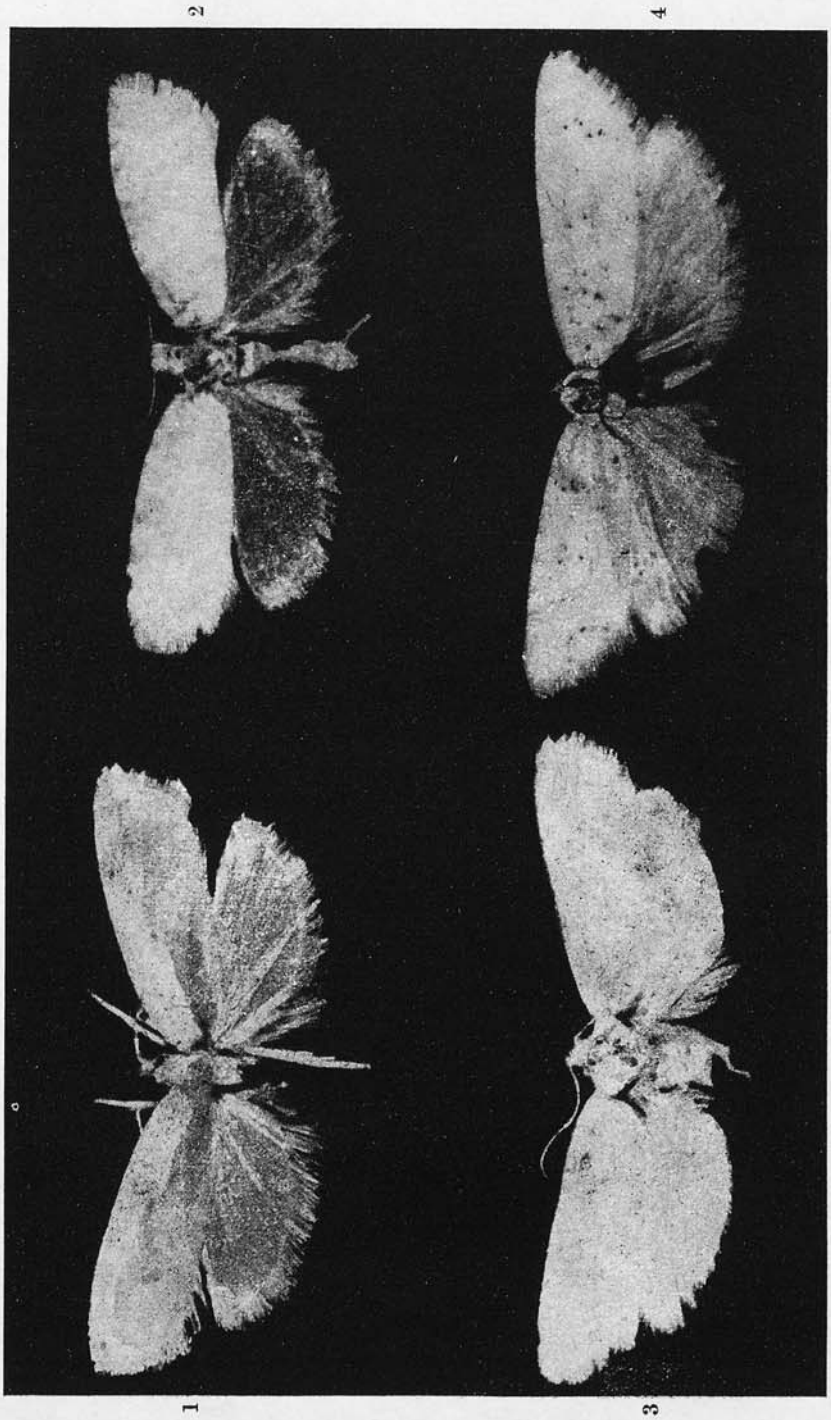
W niniejszym opracowaniu będącym uzupełnieniem pracy „European Species of *Cnephasiini*" autor wprowadza skorygowany układ systematyczny tej grupy zwójkówek, podaje jej charakterystykę, dane morfologiczne, biologiczne i nieco uwag o charakterze zoogeograficznym. W części systematycznej tej pracy autor podaje charakterystyki poszczególnych rodzajów i gatunków uporządkowanych według nowego układu systematycznego oraz dane o ich rozmieszczeniu geograficznym i biologii. Szereg gatunków zostało zsynonimizowanych, przeniesionych do innych rodzajów, plemion lub nawet rodzin. Jako nowe zostały opisane następujące gatunki: *Cnephasia korvaci* sp. n., *Oxypteron algerianum* sp. n., *Eana caradjai* sp. n., *E. similis* sp. n. oraz nowy rodzaj *Kawabea* gen. n. dla *Tortricodes ignavana* Chr.

РЕЗЮМЕ

В данной работе, являющейся дополнением работы „European Species of *Cnephasiini*," автор вводит исправленный систематический порядок этой группы листовёрток, даёт её характеристику, морфологические и биологические данные и несколько замечаний зоогеографического характера. В систематической части этой работы автор приводит характеристику отдельных родов и видов, согласно новому систематическому порядку и данные о их географическом размещении и биологии. Ряд видов ссинонимизированы и отнесены к иным родам, племёнем либо даже семействам. Как новые описаны следующие виды: *Cnephasia korvaci* sp. n., *Oxypteron algerianum* sp. n., *Eana caradjai* sp. n., *E. similis* sp. n. и новый род *Kawabea* gen. n. дла *Tortricoves ignavana* Chr.

Plate XII

Fig. 1. *Synochoneura ochriclivis* MEYR. [China], 18. VII.
Fig. 2. *Isotrias joannisana* (TUR.), type.
Fig. 3. *Cnephasia zelleri* (CHR.).
Fig. 4. *Cnephasia maraschana* CAR., typoid.



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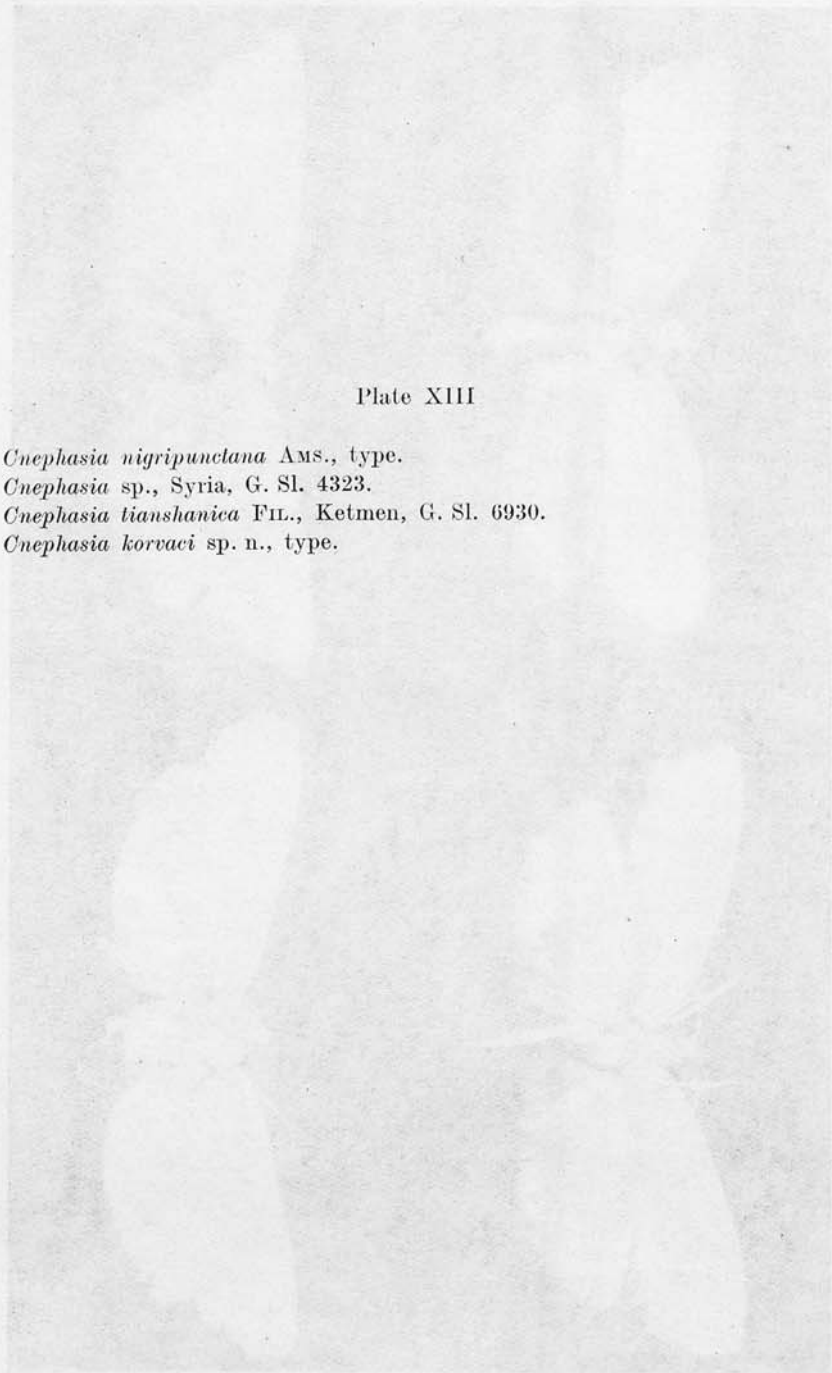

Plate XIII

Fig. 5. *Cnephasia nigripunctana* Ams., type.
Fig. 6. *Cnephasia* sp., Syria, G. Sl. 4323.
Fig. 7. *Cnephasia tianshanica* Fil., Ketmen, G. Sl. 6930.
Fig. 8. *Cnephasia korvaci* sp. n., type.

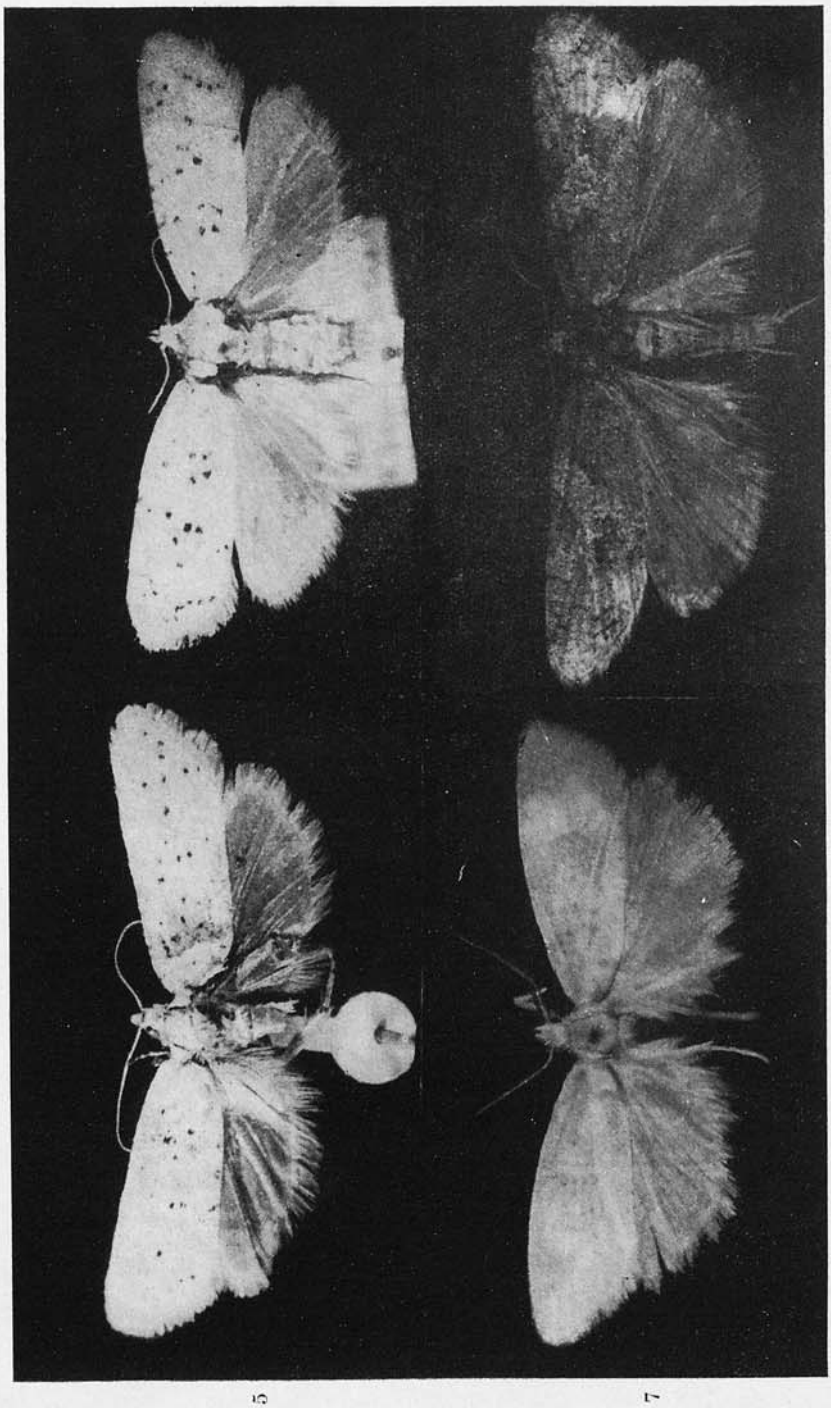

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Plate XIV

Fig. 9. *Cnephasia jozefi* Raz., holotype, Prov. d'Oran.
Fig. 10. *Cnephasia virginana* (Kenn.), Iran, Fars.
Fig. 11. *Cnephasia tremewani* Raz., type.
Fig. 12. *Cnephasia fiorii* Raz., holotype, Tripolitania.

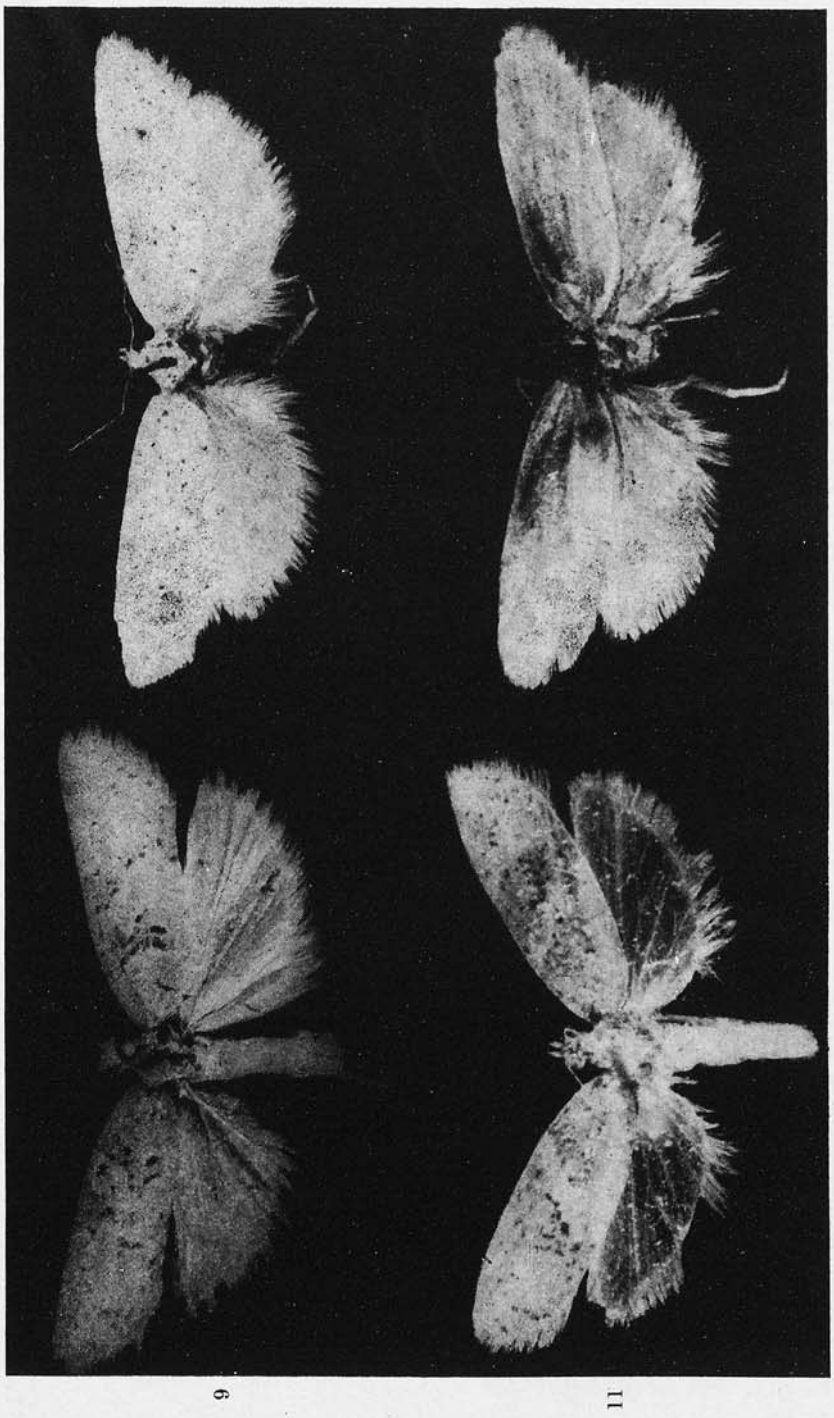

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Plate XV

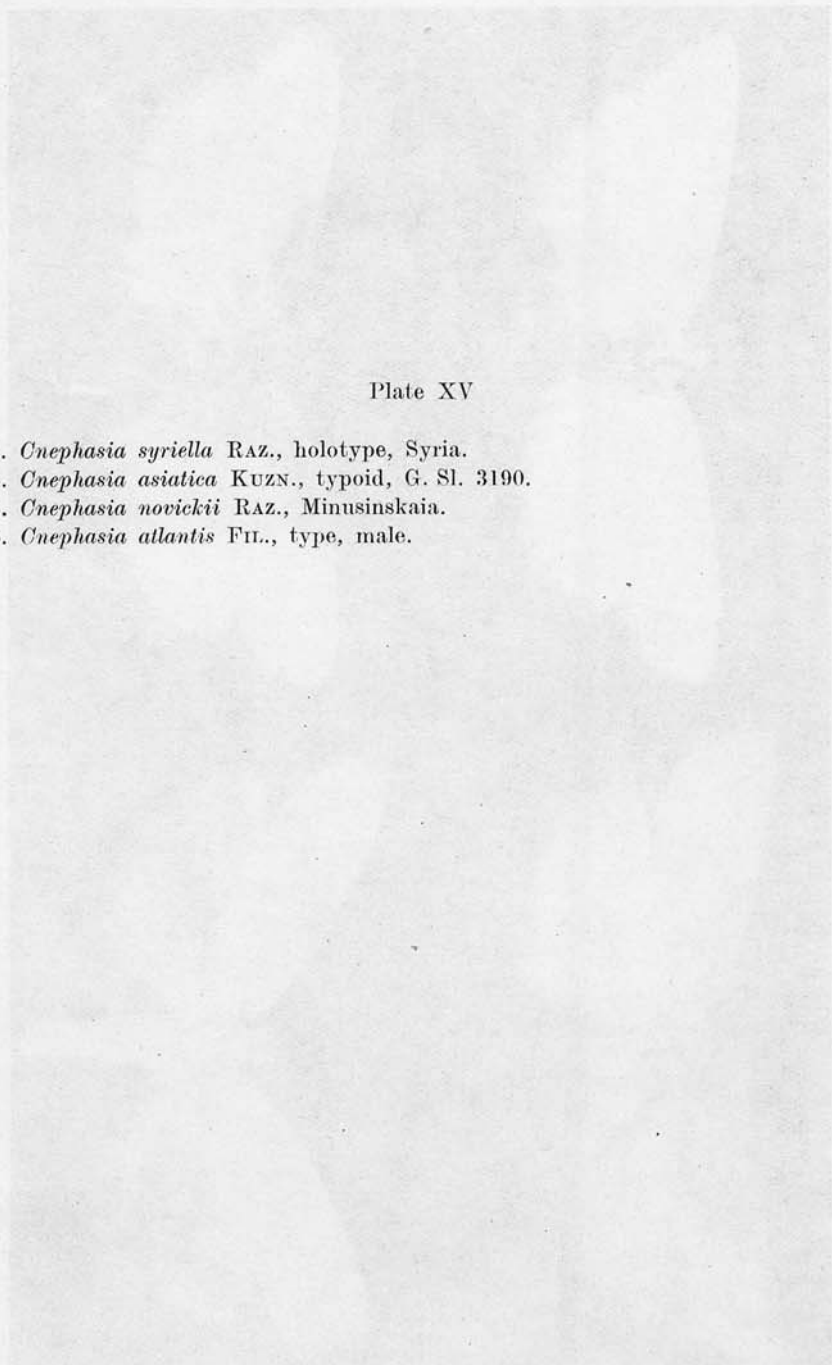
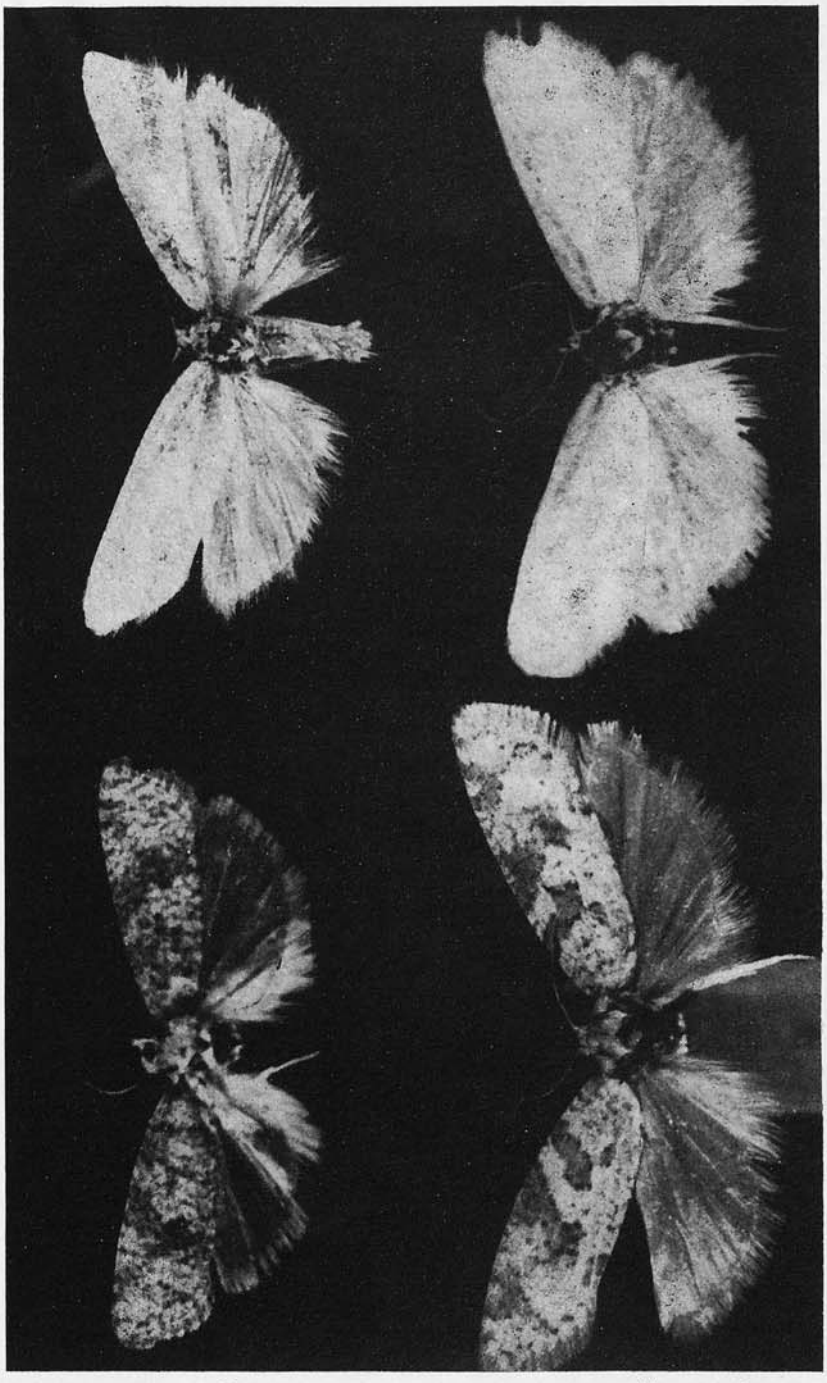


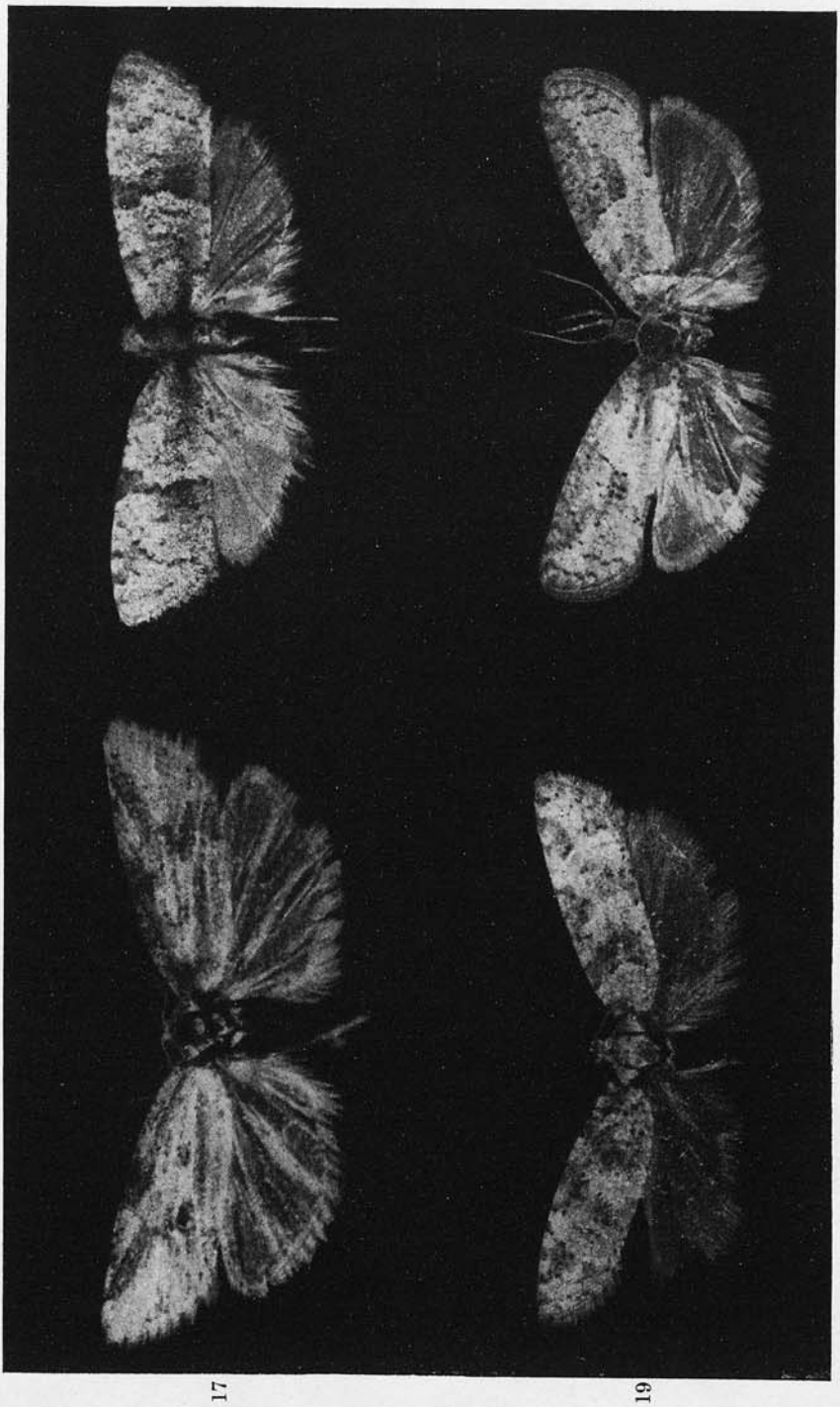
Fig. 13. *Cnephasia syriella* Raz., holotype, Syria.
Fig. 14. *Cnephasia asiatica* Kuzn., typoid, G. Sl. 3190.
Fig. 15. *Cnephasia novickii* Raz., Minusinskaia.
Fig. 16. *Cnephasia atlantis* Fil., type, male.



J. Razowski

Plate XVI

Fig. 17. *Cnephasia atlantis* Fil., female.
Fig. 18. *Cnephasia divisana* Raz., holotype, Crete.
Fig. 19. *Cnephasia grandis* (Osth.), Iran.
Fig. 20. *Cnephasia pumicana hagiosana* Raz., holotype.



J. Razowski

Plate XVII

Fig. 21. *Cnephasia kenneli* Obr., Eibes.
Fig. 22. *Cnephasia fulturata* Rbl., type.
Fig. 23. *Cnephasia tripolitana* Raz., typoid, Tripolitania.
Fig. 24. *Cnephasia semibrunneata* (Joann.), Italy.

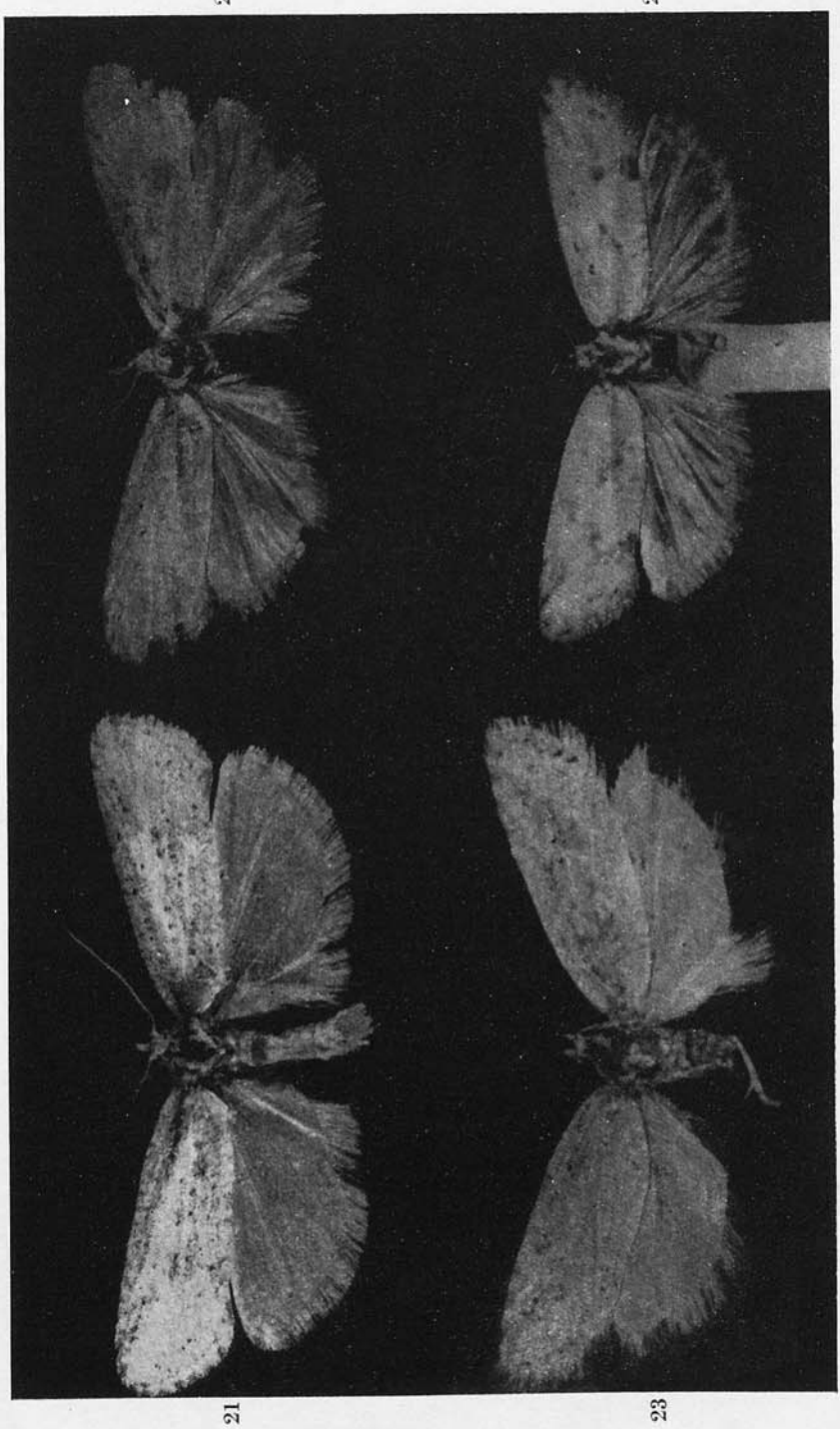


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Plate XVIII

Fig. 25. *Cnephasia amseli* (D. Luc.), Sicily.
Fig. 26. *Cnephasia sedana agathana* (Kenn.), type, Juldus.
Fig. 27. *Cnephasia sedana pirizanica* n. n., type.
Fig. 28. *Cnephasia stachi* Raz., holotype, Samarcanda.

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Plate XIX

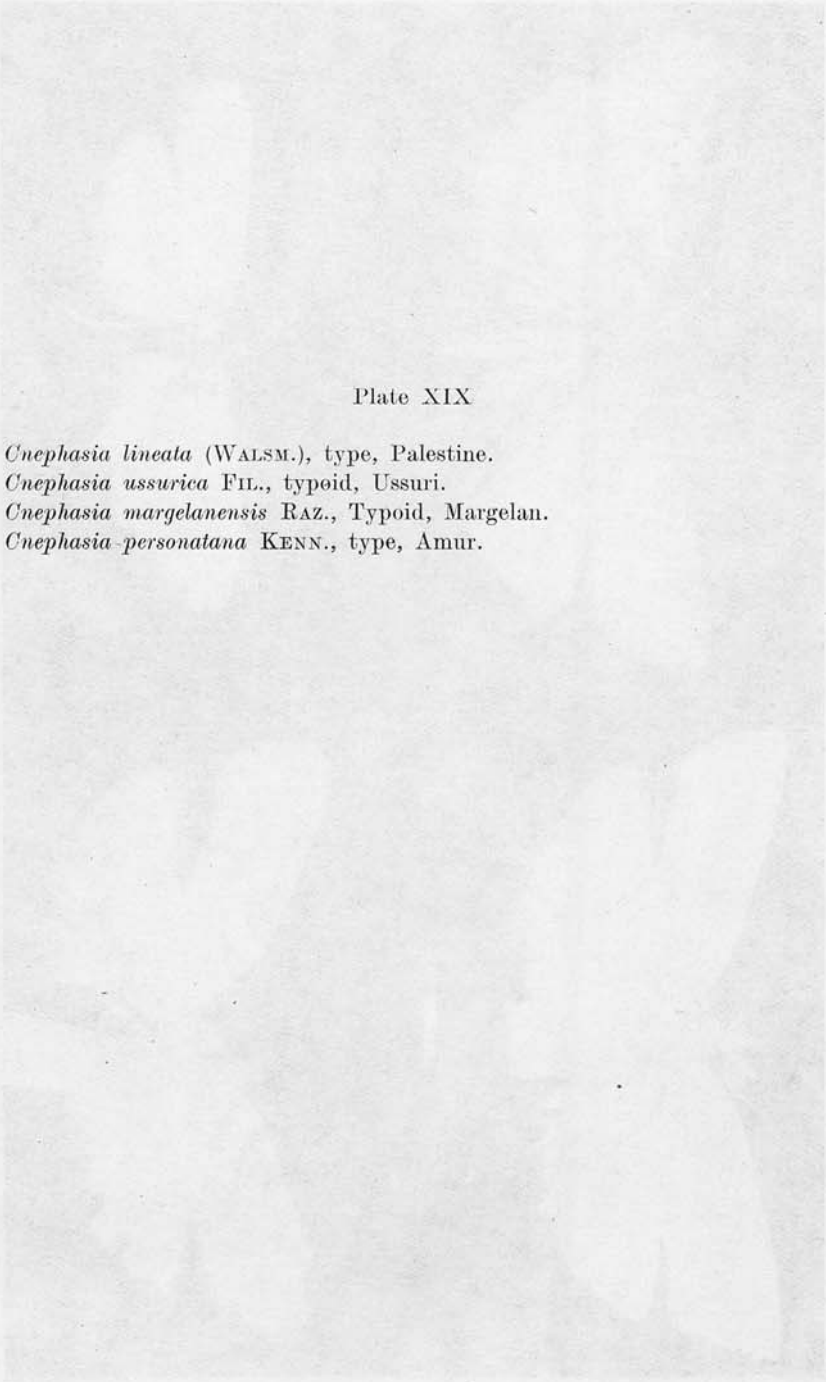

Fig. 29. *Cnephasia lineata* (WALSM.), type, Palestine.
Fig. 30. *Cnephasia ussurica* FIL., typoid, Ussuri.
Fig. 31. *Cnephasia margelanensis* RAZ., Typoid, Margelan.
Fig. 32. *Cnephasia personatana* KENN., type, Amur.

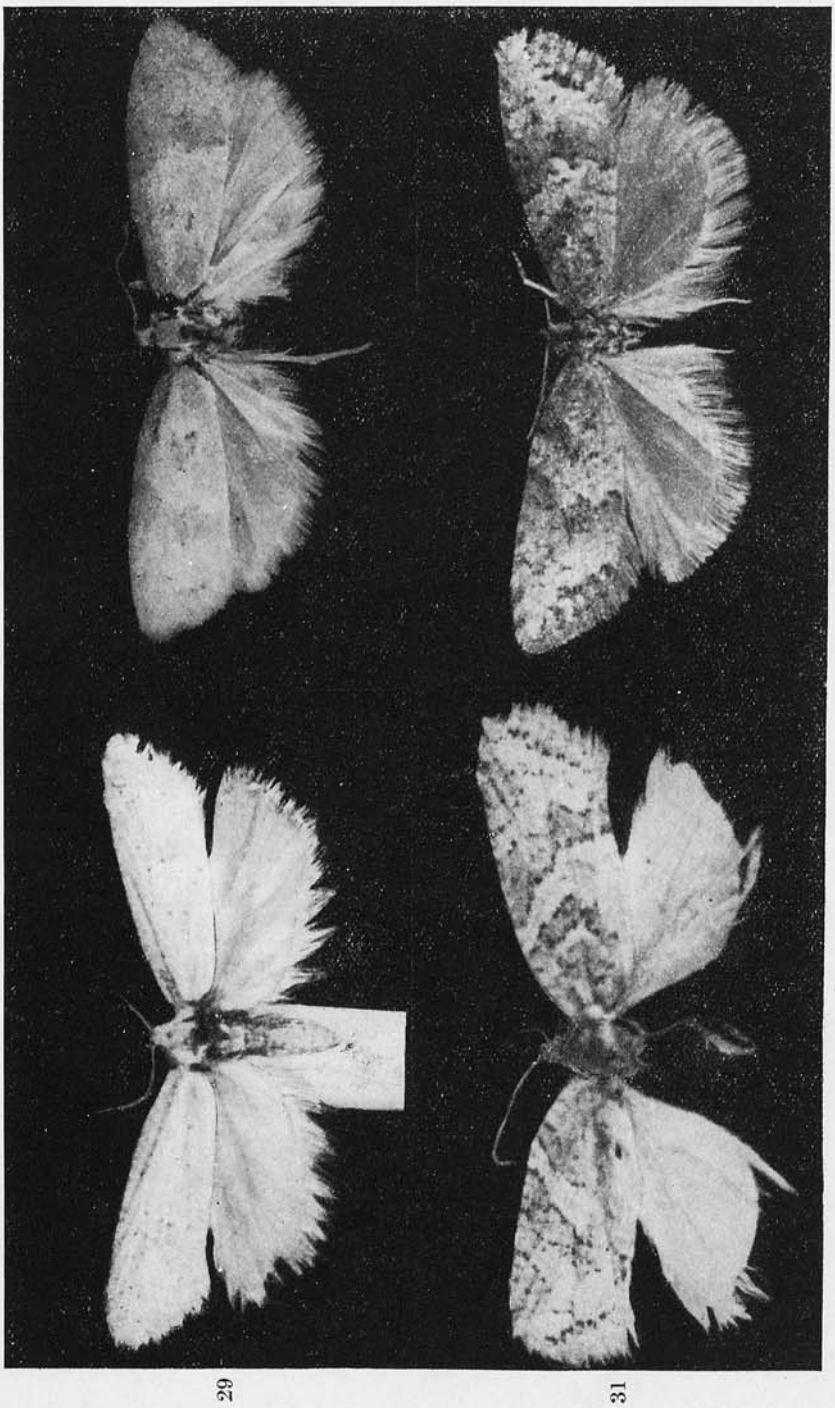

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Plate XX

Fig. 33. *Cnephasia clarkei* Raz., typoid, Kashmir.
Fig. 34. *Cnephasia clarkei* Raz., typoid, female.
Fig. 35. *Cnephasia zernyi* Raz., holotype, Morocco.
Fig. 36. *Oporopsamma stenoptera* (Fil.), Amur terrytory.

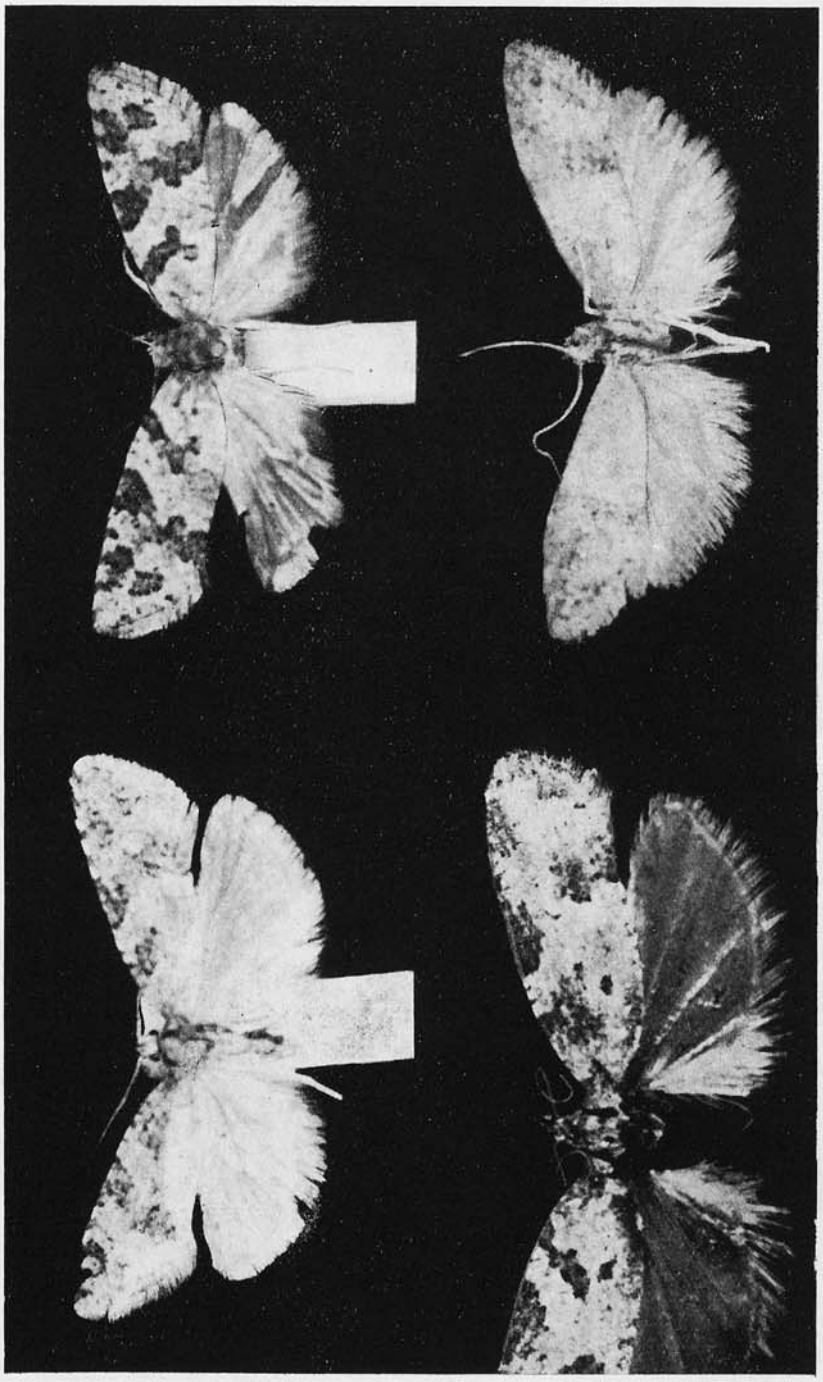

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Plate XXI

Fig. 37. *Oporopsamma adanana* (KENN.), Irkutsk.
Fig. 38. *Oxypteron palmoni* AMS., Iran, Shiraz.
Fig. 39. *Oxypteron schawerdai* (RBL.), type.
Fig. 40. *Oxypteron politum* (WALSM.), type.

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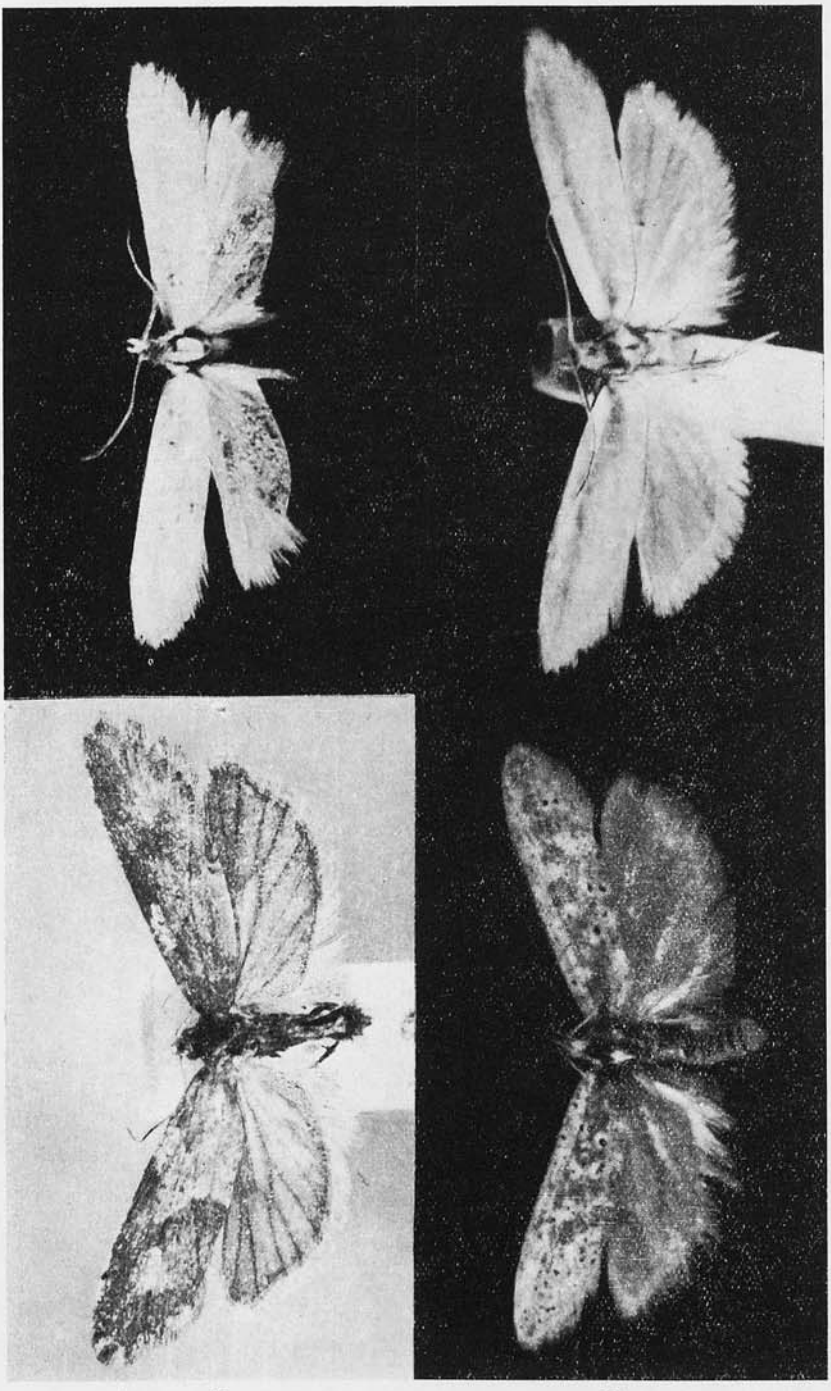

37 39

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Plate XXII

Fig. 41. *Oxypteron algerianum* sp. n., typoid.
Fig. 42. *Oxypteron eremicum* (WALSM.), type of *O. partitanum* CHRÉT.
Fig. 43. *Kawabea ignavana* (CHR.), Japan.
Fig. 44. *Kawabea razowskii* (KAW.), typoid, Japan, Tokyo.

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Plate XXIII

Fig. 45. *Eana darvaza* (Obr.), Pamir.
Fig. 46. *Eana rastrata* (Meyr.), typoid, Switzerland.
Fig. 47. *Eana maroccana* Fil., typoid, Morokko.
Fig. 48. *Eana schönmanni* Raz., holotype, Morokko.

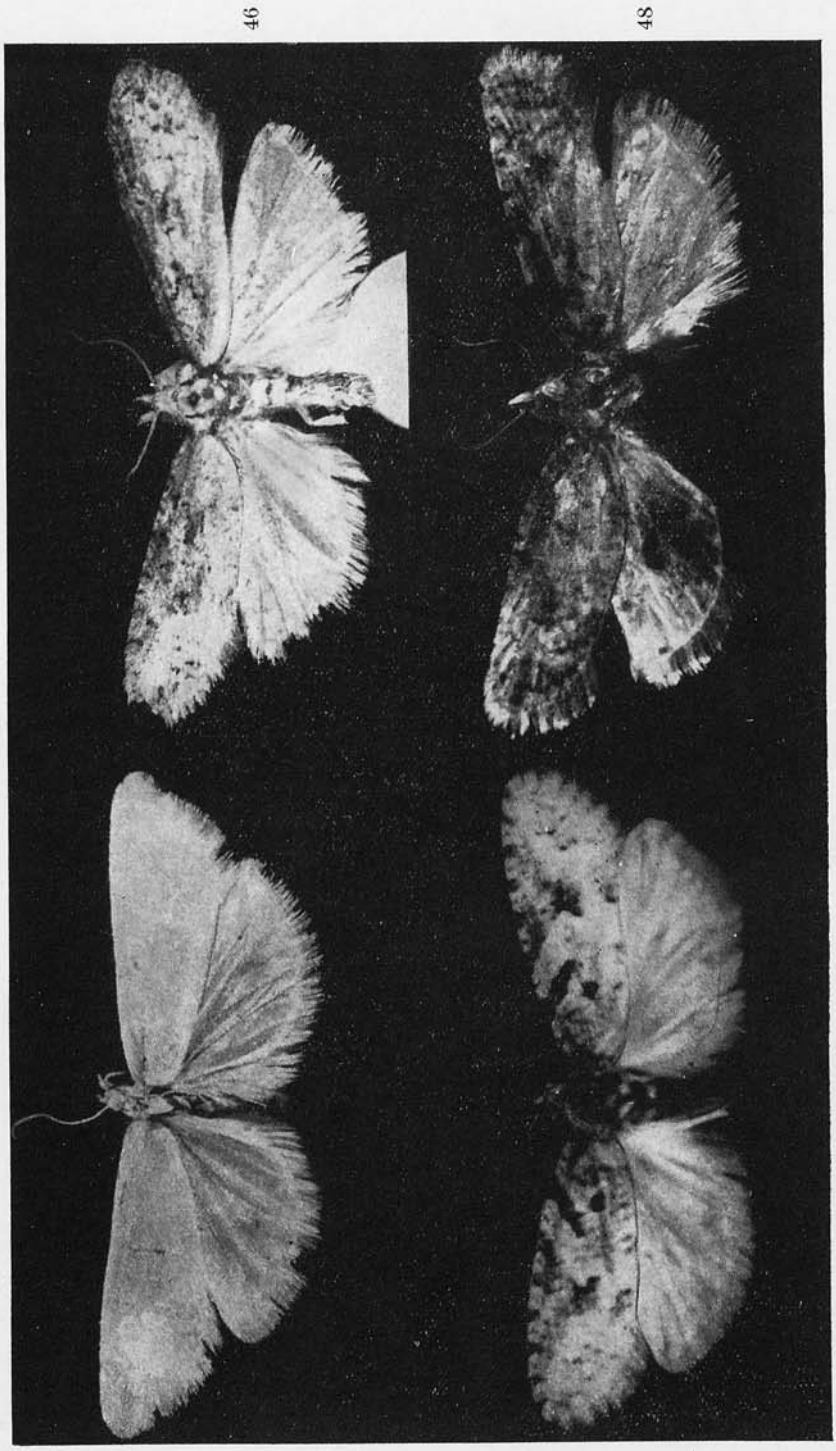

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Plate XXIV

Fig. 49. *Eana infuscata* (RÉAL), Tirol.
Fig. 50. *Eana pallifrons* RAZ., holotype, Mongolia.
Fig. 51. *Eana caradjai* sp. n., typoid, Mien-Shan, China.
Fig. 52. *Eana similis* sp. n., holotype, Tibet.

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Plate XXV

Fig. 53. *Eana samarcandae* Raz., holotype, Samarcanda.
Fig. 54. *Eana kuldjaensis* Raz., holotype, Kuldsha.
Fig. 55. *Eana tibetana* (Car.), type.
Fig. 56. *Eana vetulana* (Chr.), Amur terrytory.

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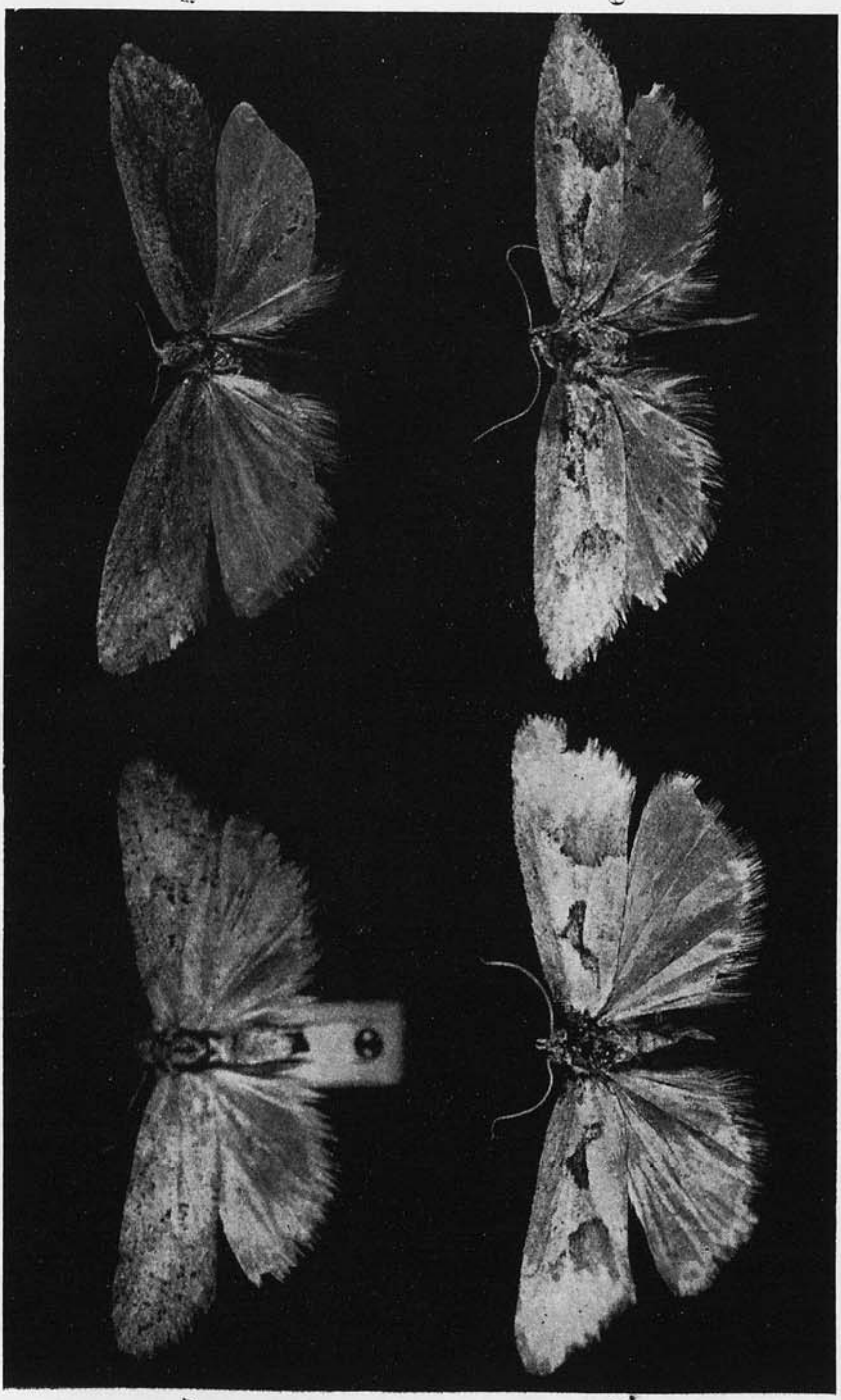
Plate XXVI

Fig. 57. *Eana dominicana* (KENN.), paratype.
Fig. 58. *Doloploca buraetica* STGR., type.
Fig. 59. *Doloploca characterana* SNELL., male, Sutshan.
Fig. 60. *Doloploca characterana* SNELL., female, Mongolia.



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