Acta Zoologica Lituanica. Entomologia, 1998. Volumen 8. Numerus 3
ISSN 1392-1657

CONTRIBUTION TO THE KNOWLEDGE OF CENTRAL ASIATIC MICROLEPIDOPTERA WITH DESCRIPTION OF NEW SPECIES

Virginijus SRUOGA*, Jūratė PUPLESIENĖ**

*Department of Zoology, Vilnius Pedagogical University, Studentų 39, Vilnius 2034, Lithuania. E-mail: sruogavir@vpu.lt
**Institute of Ecology, Akademijos 2, Vilnius 2600, Lithuania. E-mail: jpl@ekoi.lt

Abstract. New data on leaf-mining Lepidoptera from Central Asia are presented. *Elachista levasi* Sruoga sp. n. from Turkmenistan is described. Descriptions of external features and male genitalia are presented and figured in detail. For the first time female of *Cosmiotes pallens* Sruoga and *C. amseli* Parenti are described and their genitalia figured. *C. kopetdagica* Sruoga is synonimized with *C. amseli* Parenti. Karyotypes of the leaf-mining Lepidoptera species *Ectoedemia spinosella* (Joannis), *Stigmella crataegella* (Klimesch), *Tischeria marginea* (Haworth), *T. angusticolella* (Duponchel), *T. rosella* Gerasimov, *Phyllonorycter connexella* (Zeller), *Ph. juglandicola* (Kuznetzov), *Ph. malella* (Gerasimov), *Ph. platani* (Staudinger), *Perittia tectusella* Sruoga, *Coleophora ornatipennella* (Hübner) are presented.
Key words: Lepidoptera, Elachistidae, new species, karyotypes, Central Asia.

INTRODUCTION

A decade ago, we started a research on leaf-mining Lepidoptera in Central Asia. Among other items, considerable attention was paid to the Elachistidae fauna and the karyology of the main leaf-mining moth families. Those had been investigated only incidentally for a long time.

First data on Central Asiatic Elachistidae, namely the discovery of one of the *Elachista* species, has been published by the Russian entomologist Gerasimov (1930). The investigations were renewed only after 50 years (Fig. 1). Parenti (1981) described 11 new species from Iran and Afghanistan. Five years later, Falkovitsh (1986) discovered a new genus, *Kumia*, and 3 new species from the deserts Karakum and Kizilkum. That contributed to the intensification of the studies of the family Elachistidae in the region. Our investigations in Central Asia started in 1988. Material was col-

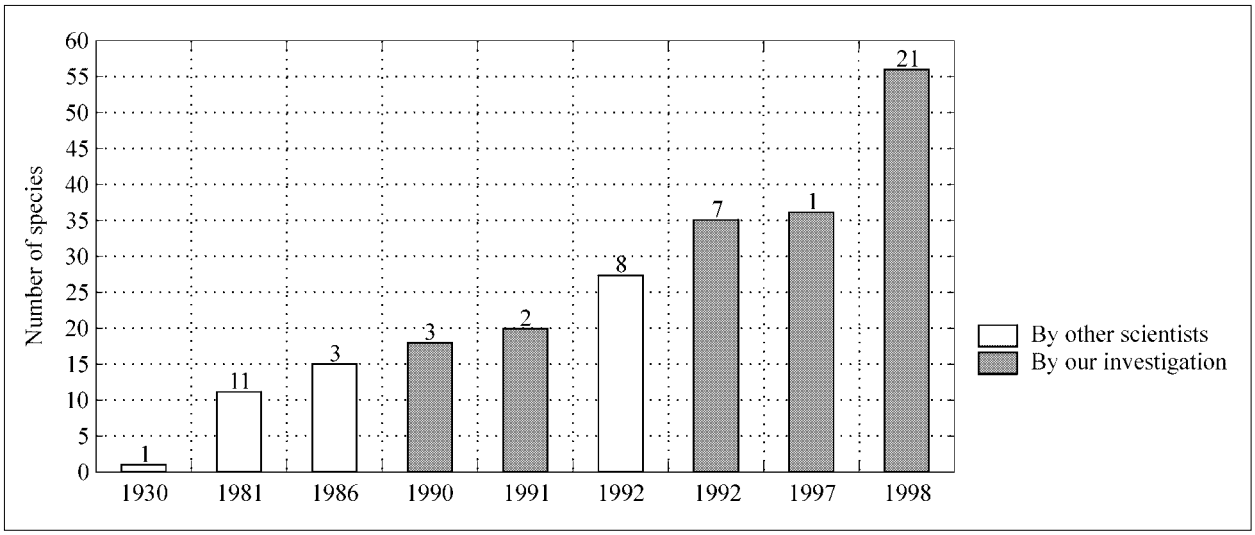


Figure 1. Investigation of Elachistidae in Central Asia. The figures above the columns show the number of the species discovered in the corresponding year; data of 1998 have been submitted for publication

lected during long-term expeditions in vast and unexplored areas of the Central Asiatic territories. In addition, the material from Saint Petersburg Zoological Institute, having been collected by several famous Russian entomologists since 1928, was examined. The data of our investigations on Elachistidae from the mentioned region have already been published in several publications (Sruoga, 1990, 1991, 1997, 1998; Sruoga, Puplesis, 1992; Diškus et al., 1994).
In this article we present new information obtained by examining material not identified earlier and collected during a long-term expedition to western Kopet Dag (38°18'-27'N, 56°17'-55'E) (Fig. 2 a, b). Previously data on karyotypes of leaf-mining Lepidoptera from Central Asia were scattered in several publications (Puplesiene, 1993, 1996; Puplesiene, Noreika 1993; Lukhtanov, Puplesiene, 1996). The names of some karyotyped species from Central Asia were used under numbers or the genus name only. The identification of the species karyologically described and presented in the present article had been under discussion for a long time and required much checking. Consequently, we are attempting here to submit some contributional data on karyotypes of leaf-mining Lepidoptera from Central Asia and elucidate the karyologically described species.

Material and methods

The terminology of external features of moths and their genitalia mostly follows that of Traugott-Olsen & Nielsen (1977).
For chromosomal preparations, the testes of final instar male larvae and the ovaries of adult females were used. Larvae of leaf-mining Lepidoptera were collected on host plants and reared under laboratory conditions until suitable age. Adult females were light-trapped. Both testes and ovaries were fixed in Carnoy fixation (1:3), stained with 2% acetoorcein and then squashed. Chromosome observations were carried out in metaphases of primary spermatocytes and oocytes (MI) and in metaphases of secondary spermatocytes (MII).
The spelling of locality names follows the *Times Atlas of the World* (concise edition, 1994).
Abbreviations for institutions:
BMNH - Natural History Museum, London (UK).
VPU - Vilnius Pedagogical University (Lithuania).

Figure 2a. Habitat of the species collected in Khoshdemir canyon in western Kopet Dag ridge (Turkmenistan) in early April

Figure 2b. Habitat of the species collected in Khoshdemir canyon in western Kopet Dag ridge (Turkmenistan) in July

Results

Elachista levasi Sruoga sp. n.

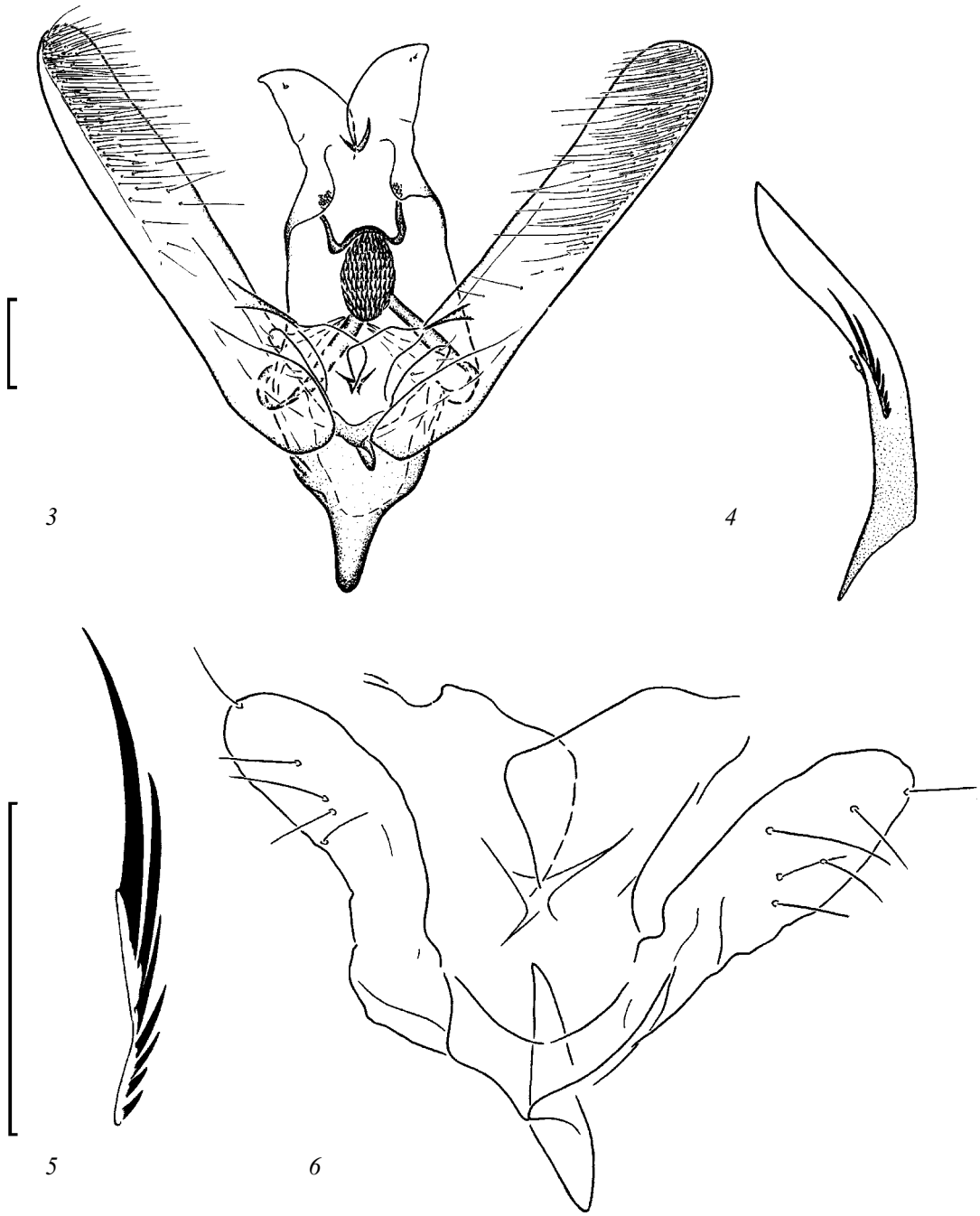
Type material. Holotype: ♂, Turkmenistan, W. Kopet Dag, 40 km E Garrygala, 16 06 1993, Sruoga leg. (VPU).

Diagnosis. The new species is mostly similar to *E. bigorrensis* Traugott-Olsen, *E. dispilella* Zeller and *E. distigmatella* Frey. From the two latter it superficially differs by an entirely white and spotless forewing, while from all the above mentioned similar species by male genitalia as well. *E. levasi* differs from *E. bigorrensis* (paratype slide no. 24886 in BMNH) by the shorter proximal process of the juxta and the shape of the juxta lobes: the medial margin making an approximately 90° turn into the apical margin, whereas of 180° turn in *E. bigorrensis*. 7 cornuti gradually increasing in length are on the common base in the new species, whereas in *E. bigorrensis* there is one large separated cornutus and a group of 7-8 smaller ones on the common base. The gnathos are narrower in *E. levasi* than in *E. bigorrensis*. The new species differs from *E. dispilella* (lectotype slide no. 19364 in BMNH) by a more elaborated, spatula-like saccus, longer gnathos and slightly bent and longer cornuti (in *E. dispilella* they are straight and shorter) and also by the shape of the juxta. From *E. distigmatella* (lectotype slide no. 19395 in BMNH) it differs by wider uncus lobes, whereas in *E. levasi* the base of the uncus is obviously narrower than in other similar species.

Male. Wingspan: 8.6 mm. Head and neck tufts white, vertex with weak beige tinge. Antennal scape and pecten white, few basal segments of flagellum whitish, apical part of flagellum remains brownish. Thorax white, weakly suffused with beige, tegulae white, only anterior part with beige tinge. Forewing and its cilia white, spotless, underside brownish. Hindwing and its cilia white, underside light beige.

Female unknown.

Male genitalia (Figs. 3-6). Valva narrow and long, with almost parallel sides. Uncus lobes broad, strongly curved to pointed apices, incision between uncus lobes with strongly sclerotised bottom. Tegumen obviously wider than basal part of uncus. Gnathos oval-shaped. Vinculum with strongly sclerotised lateral margins, saccus long and narrow, spatula-shaped. Juxta lobe with almost straight medial and apical margin. Laterally lobe abruptly narrowed into



Figures 3-6. Male genitalia of *Elachista levasi* Sruoga sp. n.; holotype no. VS150: 3 - general view (aedeagus removed); 4 - aedeagus; scale bar 0.1 mm; 5 - cornuti; 6 - juxta and digitate process; scale bar 0.1 mm

short process. Digitate process slightly widened in medial part, sparsely setose. Aedeagus shorter than valva, strongly curved at middle, apex pointed; 7 cornuti on common base gradually increasing in length towards apex of aedeagus.

Biology. Holotype was captured in mid June. Otherwise unknown.

Distribution. Occur in Turkmenistan (western Kopet Dag ridge).

Etymology. The new species is named in honour of my friend, Mr. Levas Saulius Bražionis (Lithuania).

Cosmiotes pallens Sruoga, 1990

The species was originally described from a single male specimen (Sruoga, 1990). Since our material includes female specimens at present, here we are providing the description of the female.

Diagnosis. The species is mostly close to *C. ksarella*

(Crétien), but differs in male genitalia by larger gnathos, the shape of the distal part of the aedeagus and by cornuti. The distal spine of the sacculus (contrary to *C. ksarella*) is closer to the apex of the valva.

Wingspan: 6-8 mm. Head: frons and neck tufts white to creamy, vertex sometimes with few yellowish brown tipped scales. Labial palpi creamish white above and brownish beneath. Antennal scape dark brown or slightly mottled in shed specimens; pecten creamish; flagellum in basal half distinctly ringed by dark brown and light creamish scales, apically light scales gradually turn to greyish; distal part of flagellum slightly serrated. Thorax whitish creamy to creamy with some yellowish brown tipped scales; tegulae dark brown anteriorly and paler posteriorly (to whitish creamy). Forewing, ground colour whitish to whitish creamy, more or less mottled by yellowish brown tipped scales. Dark brown scales beyond middle form two irregular spots near costal and tornal margins (spot near tornal margin is more distinct in brighter moths). Some dark brown scales abundantly present in apical part, where often form irregular spot. Basal part of forewing paler, costal margin dark brown; some scales of same colour form blurred spot near tornal margin. Cilia grey; cilia line blackish brown. Hindwing brownish grey; cilia grey.

Female genitalia (Figs 7-10). Papillae anales setose mostly in ventral side. Apophyses posteriores slightly longer than anteriores. Antrum rather wide, tapering to colliculum, slightly longer than apophyses posteriores, ventral margin deeply incised and V-shaped. Dorsal wall and inner side of antrum bears tiny spines. Colliculum almost as long as antrum, one side more sclerotised. Corpus bursae membranous, provided with small internal spines. Signum narrow and bent, with two large opposed teeth and (not always) small additional ones. Sometimes signum may look straight or variously bent because of projection when mounted in preparation slide. Anterior margin of sternite VIIth usually not reinforced, just sometimes and not very much.

Biology. Apparently it is bivoltine, adults fly from mid April to mid August. Otherwise unknown.

Distribution. Known from Turkmenistan (western Kopet Dag ridge) only, where it is relatively abundant.

C. amseli Parenti, 1981

Cosmiotes kopetdagica Sruoga, 1990:83. **Syn. n.**

The species was originally described from a single male specimen from Afghanistan, 22 km E Kabul (Parenti, 1981). Since our material collected in Turkmenistan includes female specimens, here we are providing the description of the female.

Diagnosis. This dark-coloured *Cosmiotes* species is conspicuously distinguishable from its congeners by very large and wide gnathos and a large thorn-shaped cornutus.

Wingspan: 6.5-7.5 mm. Head: vertex and neck tufts mottled due to greyish brown or blackish brown tipped scales; frons whitish, with some brownish tipped scales, background layer of frons scales with some metallic lustre. Labial palpi white above and brownish grey bellow. Antenna distinctly ringed by blackish brown and white scales, flagellum slightly serrated apically. Thorax and tegulae blackish brown, posterior margins whitish. Forewing grey-brown to blackish brown, slightly mottled by whitish base of scales. White medial fascia narrow and indistinct, area just beyond fascia suffused by blackish scales. Tornal and costal spots near apex of wing are white and small. Cilia grey; cilia line blackish brown. Hindwing greyish brown; cilia grey.

Female genitalia (Figs. 11-13). Apophyses posteriores longer than anteriores. Antrum longer than apophyses posteriores, slightly widened in middle, ventral margin with very deep V-shaped incision; dorsal wall and inner side bears very small and thin spines. Colliculum strongly sclerotised, long and curved. Ductus bursae membranous, strongly folded just beyond corpus bursae. Signum longitudinal and bent, with two large opposed teeth and small additional ones. Signum may look straight because of projection when mounted in preparation slide.

Biology. Adults fly in late May to mid August. Otherwise unknown.

Distribution. Afghanistan, southern Tajikistan and Turkmenistan (western Kopet Dag ridge).

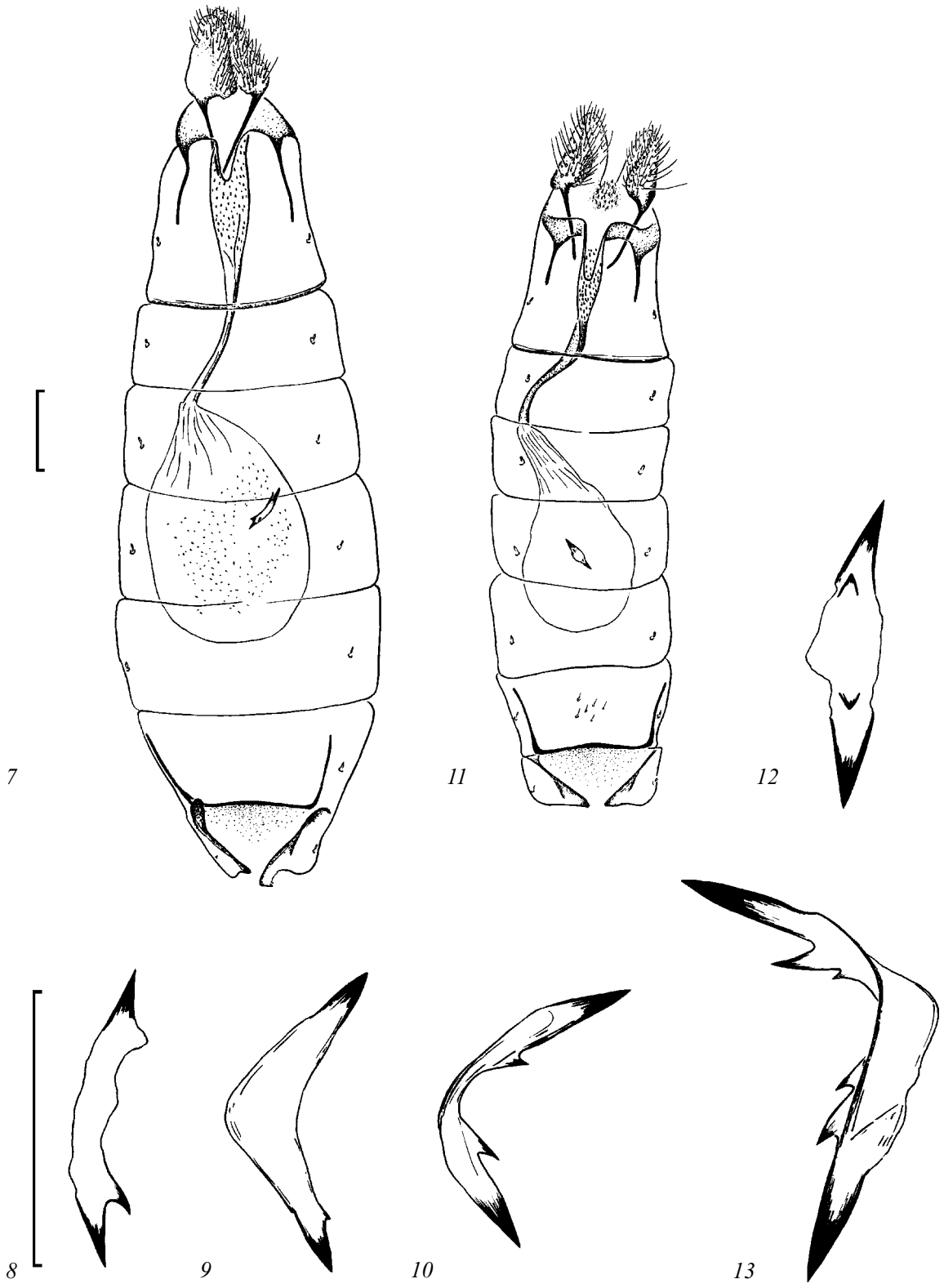
Contribution to the karyotype descriptions of Central Asiatic Microlepidoptera

Ectoedemia spinosella (Joannis, 1908).

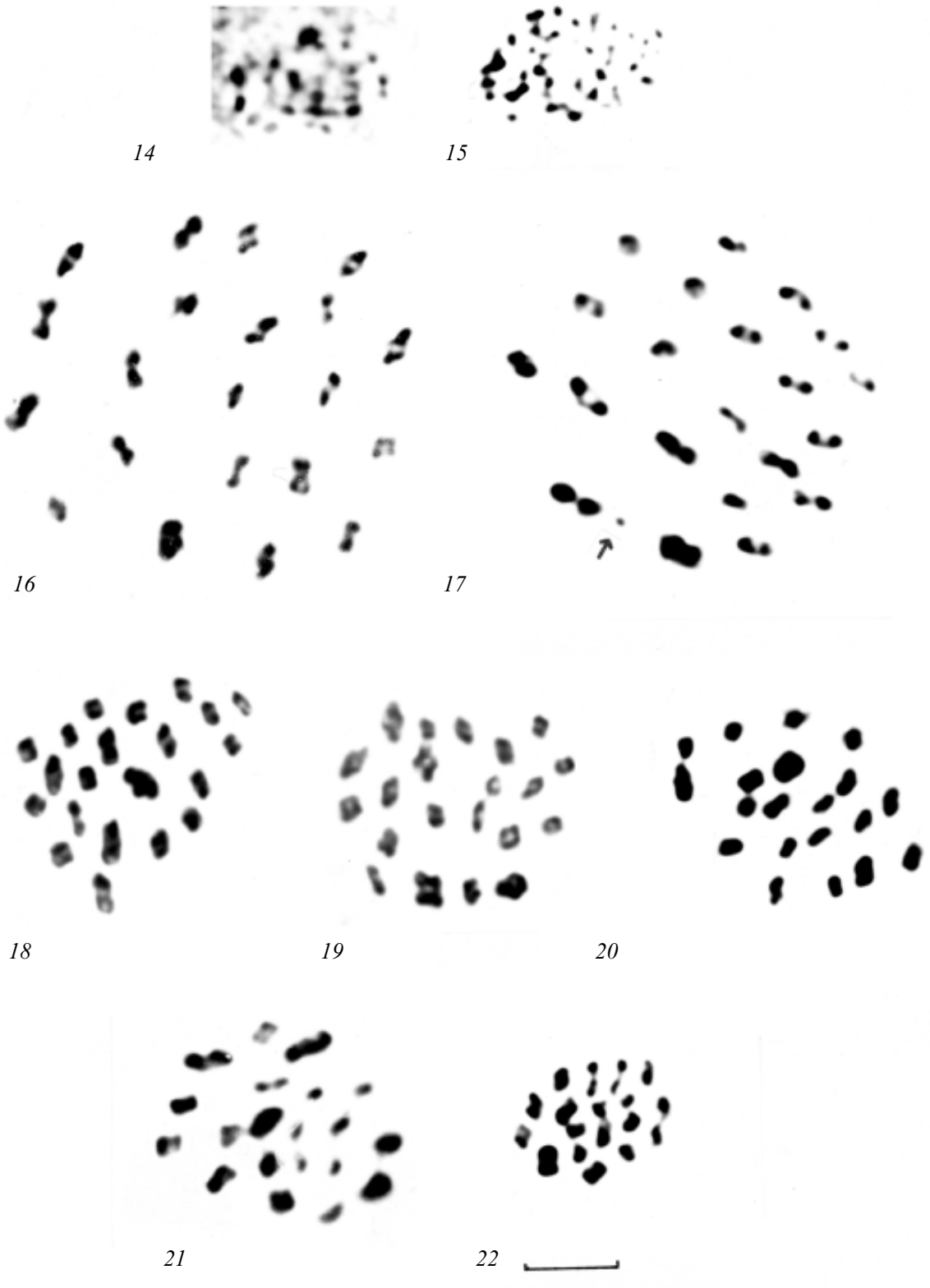
Larvae were collected on *Cerasus microcarpa*.

Turkmenistan, W. Kopet Dag, 40 km E Garrygala, 23 06 1993 and 13 08 1993.

The ontogenetic phase of the beginning of maturation divisions is unknown. Few metaphases were observed in mid-pupa. Haploid chromosome number in metaphase I (M I) was recorded as 31, based on the counts of chromosomes in four cells of three males. The bivalents are small and variable in size. The bivalents in the complement can be divided into three groups according to the size. Non homolo-



Figures 7-13. Female genitalia of *Cosmiotes* spp.: 7-10 - *C. pallens*; 11 - 13 - *C. amseli.* 7, 11 - general view; scale bar 0.2 mm. 8-10, 12, 13 - signum scale bar 0.1 mm.



Figures 14-22. Meiotic chromosomes of the Microlepidoptera species from Central Asia:
14 - *Ectoedemia spinosella* in M I; 15 - *Stigmella crataegella* in M I; 16, 17 - *Tischeria marginea* in M I; 17 - the arrow indicates an isopycnotic mosaic univalent; 18, 19 - *Tischeria angusticolella* in M I; 19 - delayed chiasmata are still observed in some bivalents; 20, 21 - *T. rosella* in M I; 22 - *T. rosella* in M II; scale bar ca. 5 mkm.

gous telomeric associations between the bivalents were clearly observed. Two or three bivalents sometimes form clumps. The gradation in size diminution goes to extremely small (almost invisible dust) units (Fig. 14).

Stigmella crataegella (Klimesch, 1936).
Larvae were collected on *Crataegus oxyacantha*.
Turkmenistan, W. Kopet Dag, 40 km E Garrygala, 08 06 1993.
The ontogenetic phase of the beginning of maturation divisions is unknown. Few metaphases were observed in mid-pupa. Haploid chromosome number in metaphase I (M I) was recorded as 31, based on the counts of chromosomes in two cells of two males. The bivalents are rather small, and show the gradation in size diminution until extremely tiny ones. Two or three bivalents sometimes form clumps (Fig. 15).

Tischeria marginea (Haworth, 1828).
Larvae were collected on *Rubus idaeus, R. caesius.*
Turkmenistan, Ashkhabad, 01 12 1991.
Primary spermatocytal divisions were observed in late larvae and early prepupa. Haploid chromosome number 21 is determined based on the counts of chromosomes of sixteen metaphases I in four males (Fig. 16). The bivalents are large in comparison with Nepticulidae and show delayed chiasmata. Chiasmata do not undergo complete terminalisation during diakinesis in this species. In three metaphases, a small additional isopycnotic univalent was observed (Fig. 17). The distribution of this element is mosaic. There is no primary evidence it to be a B chromosome, but we consider it part of a chromosomal complement. The rest bivalents are comparatively large and show a smoothly descending series. Some bivalents may show an irregular shape (Figs 16, 17), which probably is the result of heterozygosity by chromosomal rearrangements.
Note: Earlier karyological characteristics of this species were presented under the name of *Tischeria* sp. (Puplesiene, 1994) and *Paratischeria diskusi* Pupl. (Lukhtanov, Puplesiene, 1996) due to the misidentification of *Tischeria marginea*.

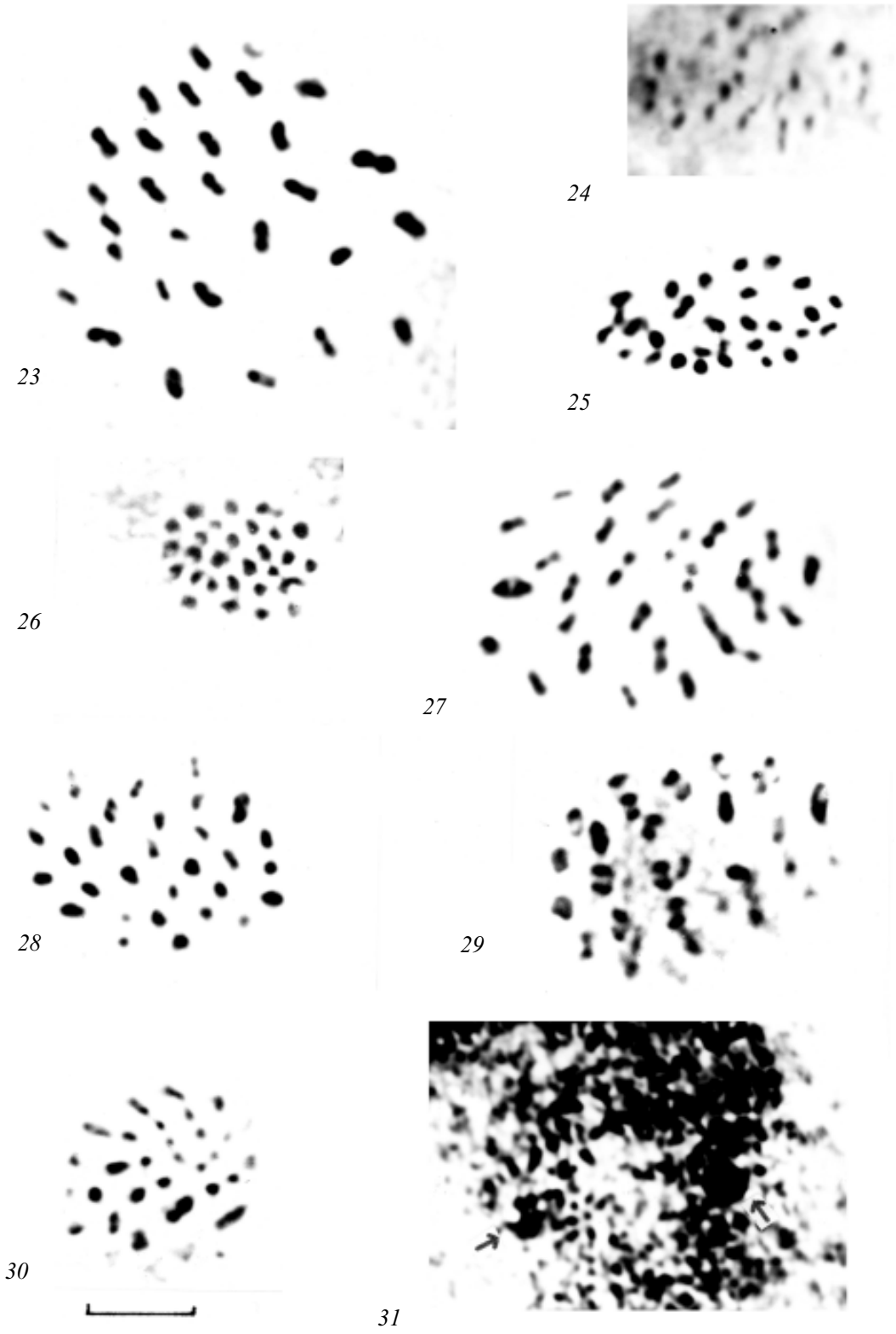
Tischeria angusticolella (Duponchel, 1843).
Larvae were collected on *Rosa canina, R. rugosa* and cultivated races.
Turkmenistan, W. Kopet Dag, 40 km E Garrygala, 09-11 08 1993.
First primary spermatocyte divisions were discerned in pupa. Haploid chromosome number 21 is based on the counts of 21 metaphases in one specimen. The bivalents in the complement are large in comparison with other miners. The largest bivalents show delayed chiasmata. The bivalents in the complement show more or less smoothly descending series (Figs 18, 19).
Note: Earlier karyological characteristics of this species were presented under the name of *Paratischeria sp.* N 4268 (Lukhtanov, Puplesiene, 1996) due to the misidentification of *Tischeria angusticolella.*

Tischeria rosella Gerasimov, 1937.
Larvae were collected on *Rosa* spp.
Turkmenistan, W. Kopet Dag, 40 km E Garrygala, 14 08 1993.
Meiotic divisions of spermatogenesis were observed in early pupa. Twenty elements were counted in six metaphases of four males. The first bivalent in the descending series stands out in the complement. The rest ones show the gradation in size diminution (Figs 20-22). We assume that this karyotype is a derivative from the type bearing 21 elements in the haploid complement. In this case, fusion is the most probable way in the karyotype rearrangement.
Note: Earlier karyological characteristics of this species were presented under the name of *Paratischeria* sp. N 4336 (Lukhtanov, Puplesiene, 1996) due to the misidentification of *Tischeria rosella.*

Phyllonorycter connexella (Zeller, 1846).
Karyotypes (Fig. 23) of this species were described earlier, and the karyological characteristics were analysed under the name of *Ph. asiatica* (Gerasimov, 1931) (Puplesiene, Noreika, 1993; Lukhtanov, Puplesiene, 1996) due to the misidentification of *Phyllonorycter connexella.*

Phyllonorycter juglandicola (Kuznetzov, 1975).
Larvae were collected on *Juglans regia*.
Tajikistan, Varzob, 01 08 1990.
Spermatocyte divisions were observed in last instar larvae. Haploid chromosome number 30 was determined on the basis of the counts of six metaphases in three males. The bivalents are comparatively small and show the gradation in size diminution (Fig. 24).

Phyllonorycter malella (Gerasimov, 1931).
Larvae were collected on *Malus domestica*.
Tajikistan, Varzob, 01 08 1990.
Plates of metaphase II (M II) were found in last instar larvae. Haploid chromosome number 30 was determined after examination of 9 M II in three males. Chromosomes are small and gradually decreasing in size (Fig. 25).



Figures 23-31. Meiotic chromosomes of the Microlepidoptera species from Central Asia:
23 - *Phyllonorycter connexella* in M I; 24 - *Ph. juglandicola* in M II; 25 - *Ph. malella* in M II; 26 - *Ph. platani* in M II; 27, 28 - *Perittia tectusella* in M I; 29 - *Coleophora ornatipennella* in M I of oogenesis; 30 - *C. ornatipennella* in M II of oogenesis; 31 - two heteropycnotic bodies of sex chromatin in an interphase nucleus of a follicle cell from *C. ornatipennella*; scale bar ca. 5 mkm.

Phyllonorycter platani (Staudinger, 1870).
Larvae were collected on *Platanus orientalis*.
Turkmenistan, W. Kopet Dag, 40 km E Garrygala, 15 06 1993.
Spermatocyte divisions were observed in last instar larvae. Haploid chromosome number 30 was determined on the basis of the counts of five metaphases in three males. The bivalents are comparatively small and show the gradation in size diminution (Fig. 26).

Perittia tectusella Sruoga, 1997.
Since the taxonomic status of this species for a long time was under discussion, the karyotype of this species was described under the name of *Perittia* sp. (Puplesiene, 1996).
Karyological characteristics of this species were presented under the name of *P. weberella* (Puplesiene, 1994; Lukhtanov, Puplesiene, 1996). After re-examination, this species is under the name of *P. tectusella* (Sruoga, 1997). Haploid chromosome number is 30 (Figs 27, 28).

Coleophora ornatipennella (Hübner, 1796).
The karyotype was determined in unfertilised eggs of female imago, but not feeding larvae. The host plant of this species is known as *Holcus, Briza, Bromus, Dactylis* (Razowski, 1990), *Salvia* (Falkovitsh, 1996).
Turkmenistan, W. Kopet Dag, 40 km E Garrygala, 13 06 1993.
Metaphases I were observed in ripe unfertilised eggs of imago females after taking out the chorion and the yolk. The bivalents, consisting of pairs of separate univalents, oriented in parallel were observed. It confirms the idea of achiasmatic meiosis in Lepidoptera (Suomalainen, 1965; Suomalainen et al, 1973, Sorsa, Suomalainen, 1975). Haploid chromosome number is 29, and it was determined after the examination of six metaphases I (M I) in four females. One bivalent is large, approximately 1.5 times as large as the second one. The largest bivalent is homomorphic and does not show any difference neither in size or shape, nor in picnosis. The rest bivalents show the gradation in size diminution (Figs 29, 30). Two chromatic bodies were found in follicle cells of females *Coleophora ornatipennella* (Fig. 31). The sex determination mechanism is XX♂/ XY♀.

Acknowledgements

The authors thank very much Prof. R. Puplesis for comparing the figures of new species with the type material in BMNH. We also express lots of thanks to Dr. R. Noreika, Dr. H. W. Van der Wolf and Dr. P. Ivinskis for valuable consultations.

References

Diškus A., Puplesis R., Sruoga V., Puplesienė J. 1994. The results of leaf-mining Lepidoptera collections in the Persian province (Western Kopet Dag, 1993). In *IX European Congress of Lepidopterology*. Lednice, 35-37.
Falkovitsh M. I. 1986. Lepidoptera of Kul'dzhuktau mountains and the foothills valley (south western Kizilkum). *Proceedings of the entomological society of USSR* 67: 131-186 (in Russian).
Falkovitsh M. I. 1996. Host-plant relationships of casebearers (Lepidoptera, Coleophoridae). I. *Ent. Obozr.* 75(4): 732-755 (in Russian).
Gerasimov A. 1930. Zur Lepidopteren-Fauna Mittel-Asiens. I. Microheterocera aus dem District Kaschka-Darja (SO-Buchara). *Ann. Mus. Zool. Acad. Sci. USSR*, Leningrad 31(1): 21-48.
Lukhtanov V. A., Puplesiene Yu. V. [Puplesiene J.]. 1996. Karyotypical peculiarities and main features of karyotype evolution in lepidopterans of the nepticuloid, tischerioid, gelechioid and tineoid complexes (Lepidoptera: Nepticuloidea, Tischerioidea, Gelechioidea s. l., Psychoidea-Gracillarioidea). *Ent. Obozr.* 75 (2): 310-323 (in Russian).
Parenti U. 1981. Nuove specie di Elachistidi paleartici (Lepidoptera, Elachistidae). I. *Bull. Mus. Zool.* Univ. Torino 4: 49-64.
Puplesiene J. 1993. Brief survey of karyotypes of mining moths (Lepidoptera). *Ent. Obozr*. 72 (2): 295-303 (in Russian).
Puplesiene J. 1996. Chromosome numbers in four species of mining Lepidoptera (Heliozelidae, Bucculatricidae, Gracillariidae, Elachistidae). In *Research of Lithuanian entomologist (to the thirty years of Lithuanian Entomological Society),* 90-98.
Puplesiene J., Noreika R. 1993. A brief karyological review of the Gracillariidae (Lepidoptera). *Phegea* 21(2): 55-63.
Razowski J. 1990. *Motyle (Lepidoptera) Polski*. Monografie fauny Polski 18: 1-270.
Sorsa M., Suomalainen E. 1975. Electron microscopy of chromatin elimination in Cidaria (Lepidoptera). *Hereditas* 80: 35-40.
Sruoga V. 1990. Seven new species of Elachistidae (Lepidoptera) from the USSR. *Tijdschrift voor Entomologie* 133 (1): 75-84.
Sruoga V. 1991. On the fauna of the gramineal elachistid moths (Lepidoptera, Elachistidae) of the USSR. *Ent. Obozr.* 70 (2): 444-454 (in Russian).

Sruoga V. 1997. A new species of *Perittia* Stainton (Lepidoptera, Elachistidae) from Central Asia. *Phegea* 25 (3): 129-134.

Sruoga V. 1998. Elachistidae of Central Asia and the affinities with the European fauna. In *XIth European Congress of Lepidopterology*, Malle, 95-96.

Sruoga V. A., Puplesis R. K. 1992. New species of gramineal elachistid moths (Lepidoptera, Elachistidae) from middle Asia and Kazakhstan. *Ent. Obozr.* 71(2): 428-441 (in Russian).

Suomalainen E. 1965. On the chromosomes of the geometrid moth genus *Cidaria*. *Chromosoma (Berl.)* 16: 166-184.

Suomalainen E., Cook L. M., Turner J. R. G. 1973. Achiasmatic oogenesis in the Heliconiine butterflies. *Hereditas* 74: 302-304.

Traugott-Olsen E., Nielsen E. S. 1977. The Elachistidae (Lepidoptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* 6: 1-299.

Nauji duomenys apie Centrinės Azijos drugius (Microlepidoptera) ir naujos rūšies aprašymas

V. Sruoga, J. Puplesienė

Santrauka

Pateikiami nauji duomenys apie minuojančius drugius iš Centrinės Azijos. Aprašoma nauja rūšis *Elachista levasi* (Sruoga) sp. n. iš Turkmėnijos. Pirmą kartą aprašomos *Cosmiotes pallens* (Sruoga) ir *C. amseli* Parenti patelės. Pateikiami minuojančių drugių *Ectoedemia spinosella* (Joannis), *Stigmella crataegella* (Klimesch), *Tischeria marginea* (Haworth), *T. angusticolella* (Duponchel), *T. rosella* (Gerasimov), *Phyllonorycter connexella* (Zeller), *Ph. juglandicola* (Kuznetzov), *Ph. malella* (Gerasimov), *Ph. platani* (Staudinger), *Perittia tectusella* Sruoga ir *Coleophora ornatipennella* (Hübner) kariotipiniai duomenys.

К познанию микрочешуекрылых Центральной Азии с описанием нового вида

В. Сруога, Ю. Пуплясене

Резюме

Приводятся новые данные о минирующих чешуекрылых из Центральной Азии. Описан новый вид *Elachista levasi* Sruoga sp. n. из Туркменистана. Впервые описаны самки *Cosmiotes pallens* Sruoga и *C. amseli* Parenti. Приводятся кариотипы 11 видов минирующих чешуекрылых: *Ectoedemia spinosella* (Joannis), *Stigmella crataegella* (Klimesch), *Tischeria marginea* (Haworth), *T. angusticolella* (Duponchel), *T. rosella* Gerasimov, *Phyllonorycter connexella* (Zeller), *Ph. juglandicola* (Kuznetzov), *Ph. malella* (Gerasimov), *Ph. platani* (Staudinger), *Perittia tectusella* Sruoga, *Coleophora ornatipennella* (Hübner).

Received: 10 July, 1998