

First record of *Thiodia caradjana* KENNEL, 1916 (Lepidoptera: Tortricidae) to the fauna of Europe; new records of Tortricidae to the fauna of Romania

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Abstract

Thiodia caradjana KENNEL, 1916 is mentioned for the first time to the fauna of Europe from the south-eastern part of Romania, further 9 species are new records to the fauna of Romania: *Cochylimorpha fucatana* (SNELLEN, 1883), *Cochylis salebrana* (MANN, 1862), *Cochylis defessana* (MANN, 1861), *Propiomorpha rhodophana* (HERRICH-SCHÄFFER, 1851), *Exapate duratella* HEYDEN, 1864, *Lobesia indusiana* (ZELLER, 1857), *Argyroplote noricanus* (HERRICH-SCHÄFFER, 1851), *Olethreutes concretanus* (WOCKE, 1862) and *Ancylis subarcuana* (DOUGLAS, 1847).

Rezumat

Prima semnalare a speciei *Thiodia caradjana* KENNEL, 1916 (Lepidoptera: Tortricidae) în fauna Europei; noi semnalări de Tortricidae în fauna României

Thiodia caradjana KENNEL, 1916 a fost menționată pentru prima dată în fauna Europei din sud-estul României, alte 9 noi specii aparținând familiei Tortricidae sunt semnalate pentru prima dată în fauna României, anume: *Cochylimorpha fucatana* (SNELLEN, 1883), *Cochylis salebrana* (MANN, 1862), *Cochylis defessana* (MANN, 1861), *Propiomorpha rhodophana* (HERRICH-SCHÄFFER, 1851), *Exapate duratella* HEYDEN, 1864, *Lobesia indusiana* (ZELLER, 1857), *Argyroplote noricanus* (HERRICH-SCHÄFFER, 1851), *Olethreutes concretanus* (WOCKE, 1862) și *Ancylis subarcuana* (DOUGLAS, 1847).

Keywords: *Thiodia caradjana*, first record, new records, Tortricidae, Fauna of Romania

After the publication of the checklist of the Romanian microlepidoptera (POPESCU-GORJ 1984) several interesting Tortricidae species were recorded from the country: *Ceratoxanthus rakosyella* WIESER & HUEMER, 2000 was described as new for the science (WIESER & HUEMER 2000), *Cochylimorpha subwolniana* (DANILEVSKII, 1962) was mentioned for the first time from Europe (KOVÁCS & KOVÁCS 1998, NEUMANN 2000), *Cochylimorpha fucosa* (RAZOWSKI, 1970) (KOVÁCS & al. 1999), *Cochylimorpha magnicitrana* (BRUAND, 1859), *Cochylimorpha alternana* (STEPHENS, 1834), *Aethes moribundana* (STAUDINGER, 1859), *Aethes decimana* ([DENIS & SCHIFFERMÜLLER, 1775]) (KOVÁCS & KOVÁCS 1996b), *Aethes caucasica* AMSEL, 1959 (KOVÁCS & KOVÁCS 1996a), *Aterpia circumfluxana* (CHRISTOPH, 1881) (NEUMANN 2000) and *Cydia albipicta* (SAUTER, 1968) (KOVÁCS & KOVÁCS 1991) were new records for the Romanian fauna.

As a result of successful collecting activity in various habitats and the revision of the Cochylini material of different collections we found further remarkable species, ten of them are presented here as new for the fauna of Romania, *Thiodia caradjana* KENNEL, 1916 being new for the fauna of Europe as well.

Cochylini

Cochylimorpha fucatana (SNELLEN, 1883), (Figs. 1 – 3)

Material examined: - 2 ♂♂ 3 ♀♀: Munții Baraolt, Ariușd, 650 m, 6. VI. 1984. (1 ♂, 1 ♀), (genitalia preparation no. 524/♂/ KOVÁCS); 26. V. 1996. (♀); 2. VI. 1996. (♀), (genitalia preparation no. 1347/♀/ KOVÁCS); Câmpia Transilvaniei, Viișoara (Câmpia Turzii), 4. V. 2000. (♂), legit & coll. S. KOVÁCS & Z. KOVÁCS, 1 ♀ in coll. Cs. SZABÓKY (Budapest).

Wing expansion: 17-21 mm. The ground colour of the fore wing is ochre, the drawings are yellowish brown to dark brown (Fig. 1). The male genitalia (Fig. 2) can be characterized by the divided median part of the transtilla, the narrow tip of the valvae and the large aedeagus. The female genitalia (Fig. 3) is recognizable by the long and large ductus bursae and the signa formed by a long, ribbon like sclerit and small spines as well.

Larva and host-plant are unknown. According to RAZOWSKI (1970: 163) the flight period extends from June to July, but we collected them from the beginning of May to the beginning of June. The specimens were collected in steppe habitats by

night on light and by daytime with the net.

Formerly was only known from the easternmost corner of Europe (southern Ural), Central Asia, Mongolia and Russian Far East (NUPONEN K. & al. 2001: 98, RAZOWSKI 1970: 165). This newly discovered populations in the Transylvanian Basin represent the westernmost ones of the range of this species.

***Cochylis salebrana* (MANN, 1862)**, (Figs. 4 and 5) (Synonym: *Cochylis millierana* PEYERIMHOFF, 1877)

Material examined: - 5 ♂♂: Dobrogea, Rezervația Canaraua Fetii, 12-13. VII. 1993. (♂); Dobrogea, Munții Măcin, Culmea Pricopanului, 3-4. VIII. 1994. (♂), (genitalia preparation no. 748/♂/KOVÁCS); 14-15. IX. 1994. (2 ♂♂); 27-28. VI. 1997. (♂), legit & coll. S. KOVÁCS & Z. KOVÁCS.

Wing expansion: 13-17 mm. The ground colour of the fore wing is yellowish white, the drawings are rusty, brown and dark gray (Fig. 4). The male genitalia (Fig. 5) can be characterized by the wide valvae with a crooked process on the base of sacculus. Differs from the similar *Cochylis hybridella* (HÜBNER, [1813]) by its mainly rusty drawings and the large subapical transverse fascia. Another similar species, *Cochylis molliculana* ZELLER, 1847 was not yet mentioned from Romania.

Larva and host-plant are unknown. The two generations are on the wing in May-June and August-September respectively. The specimens were collected by night on light on warm, xerothermic rocky slopes, dry grasslands at low altitudes.

It is a Mediterranean species, widely distributed in southern Europe and Asia Minor. In Romania was only found in the southeastern part of the country.

***Cochylis defessana* (MANN, 1861)**, (Figs. 6 and 7) (Synonym: *Cochylis centaureana* STAUDINGER, 1880)

Material examined: - 1 ♀: Eforie Sud, 25. VIII. 1949. (♀), (genitalia preparation no. 799/♀/KOVÁCS), legit & coll. A. POPESCU-GORJ, det. J. RAZOWSKI.

Wing expansion: 12 mm. The ground colour of the fore wing is yellowish white, the drawings are yellowish brown and dark brown (Fig. 6). The wide antrum represents the main differential character of the female genitalia (Fig. 7). Differs from *Cochylis posterana* Zeller, 1847 by its smaller size, and the mainly yellowish brown drawings. The also very similar *Cochylis faustana* (KENNEL, 1919) was not

yet mentioned from Romania.

The larvae are feeding on *Centaurea* species. Adults are on the wing in two generations in May-June and July-August (RAZOWSKI 1970). However, the single female specimen found in Romania was correctly identified already by RAZOWSKI, the species wasn't included in the list of the Romanian microlepidoptera (POPESCU-GORJ 1984).

Widely distributed in Asia Minor and Central Asia, in Europe were recorded only from Bulgaria and Greece. The single Romanian locality where it was found lies at the Black Sea coast.

Cnephasiini

***Propiromorpha rhodophana* (HERRICH-SCHÄFFER, 1851)**, (Figs. 8 and 9)

Material examined: - 1 ♀: Carpații Orientali, Cheile Bicazului, 1250 m, 26-28. VI. 1989. (♀), (genitalia preparation no. 440/♀/KOVÁCS), legit & coll. S. KOVÁCS & Z. KOVÁCS.

Wing expansion: 14 mm. The ground colour of the fore wing is pinkish white, the drawings are brownish gray (Fig. 8). The female genitalia (Fig. 9) has a wide sterigma, an U-shaped ostium bursae and a large signum. Differs from the similar *Xerocnephasia rigana* (SODOFFSKY, 1829) by the pinkish white ground colour and by the median transverse fascia divided in two large spots.

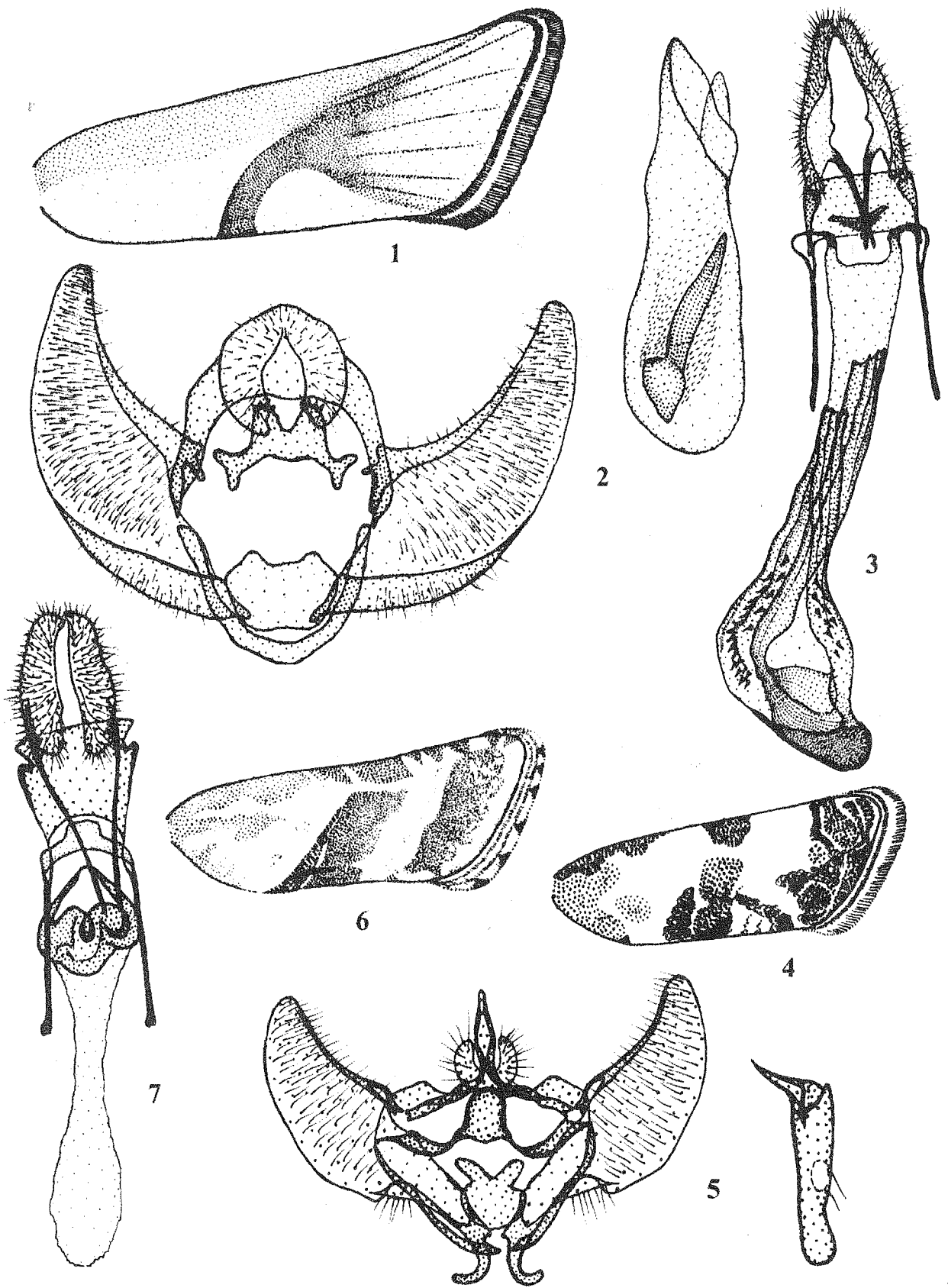
The larvae are feeding on *Clematis integrifolia* L., the adults are on the wing in April-June. The single specimen was collected by night on light in a rocky xerotherm mountain habitat at medium high altitude.

Widely distributed in the Palaearctic region, occurs in the majority of the Mediterranean countries, but only in Austria in Central Europe (RAZOWSKI 2001: 46). This new record from the Eastern Carpathians represents the northernmost known locality of the distribution of this species in Europe.

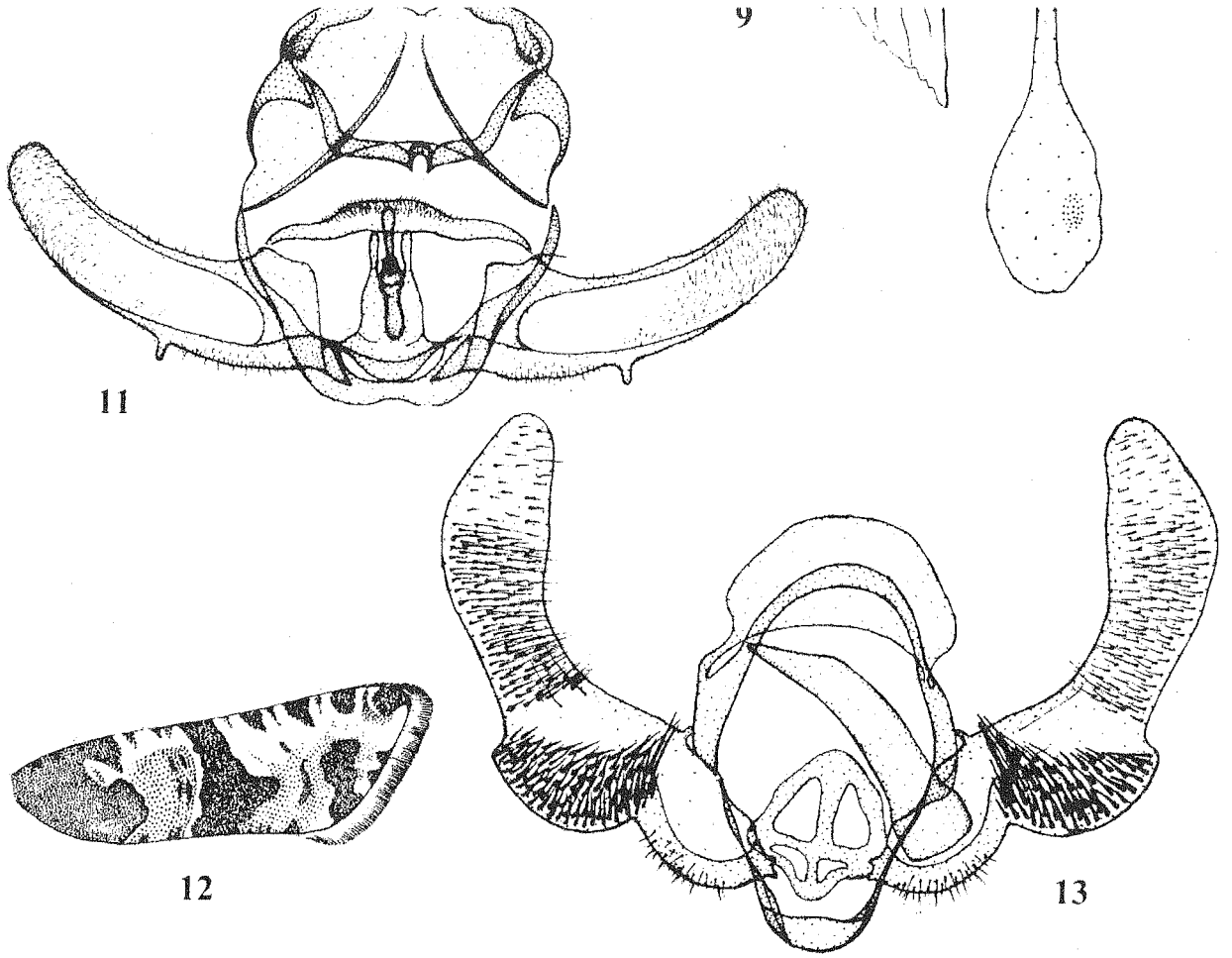
***Exapate duratella* HEYDEN, 1864**, (Figs. 10 and 11)

Material examined: - 1 ♂: Carpații Orientali, Depresiunea Ciucului, Miercurea Ciuc, 600 m, 1. XI. 2001. (♂), (genitalia preparation no. 1432/♂/KOVÁCS), legit & coll. S. KOVÁCS & Z. KOVÁCS.

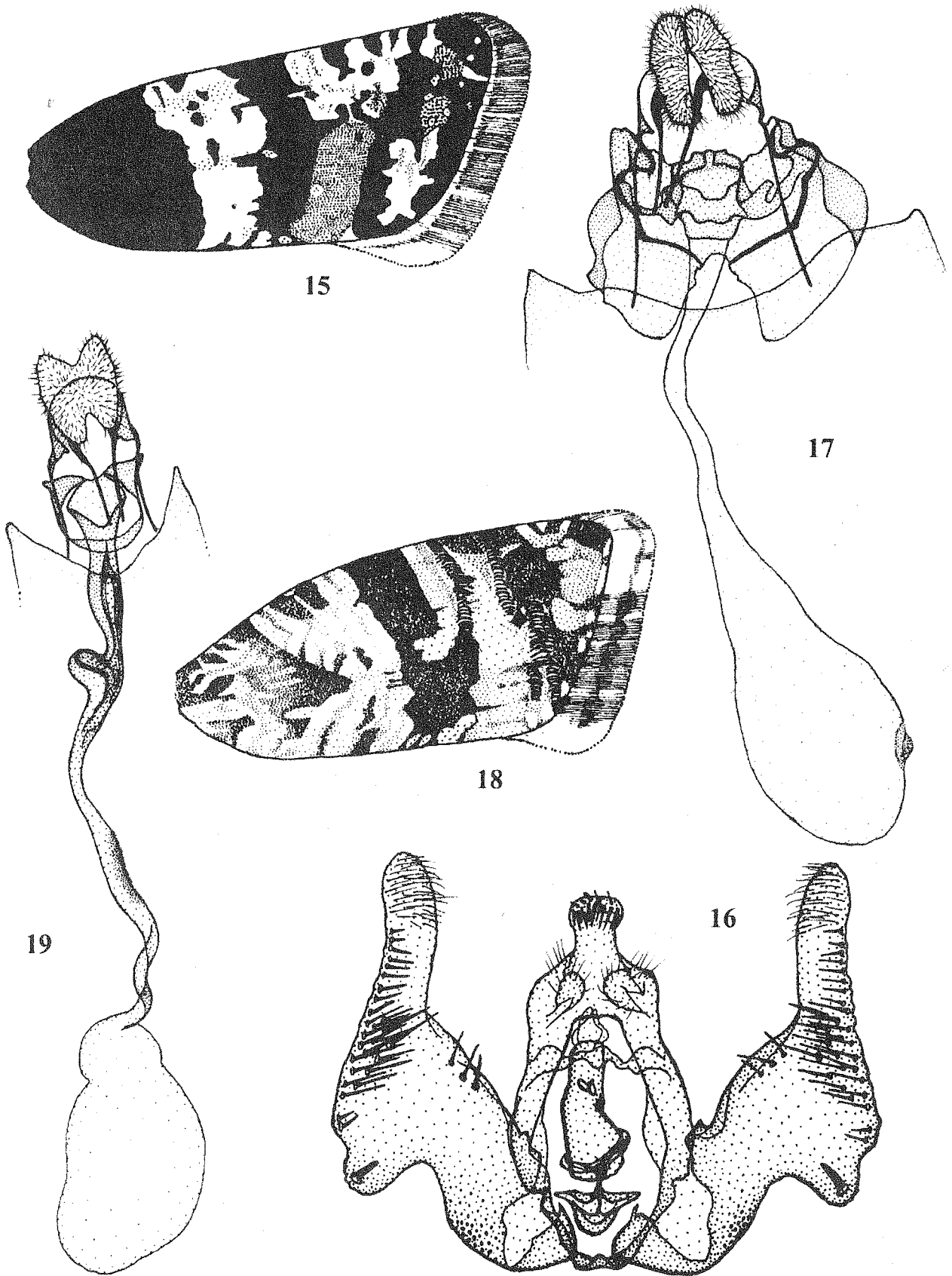
Wing expansion: 22 mm. The ground colour of the fore wing is light brownish gray, the drawings are dark brownish gray (Fig. 10). The triangular uncus, the small socii and the angled gnathos branches are the main differential characters of the male genitalia (Fig. 11). By the similar *Exapate congelatella*



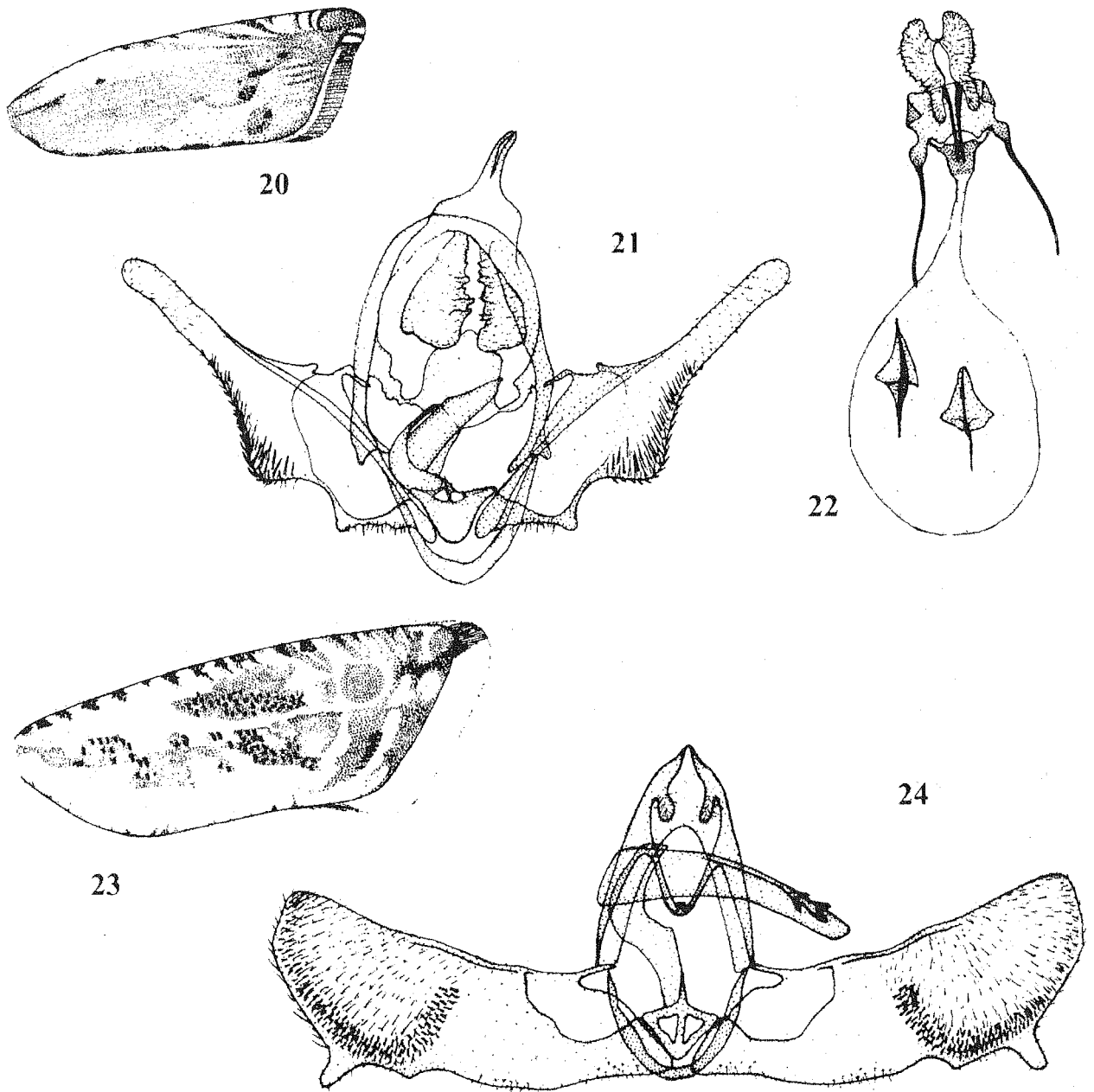
Figs. 1-7: 1-3: *Cochylimorpha fucatana* (Snellen, 1883): 1 - fore wing of male; 2 - male genitalia; 3 - female genitalia; 4-5: *Cochylis salebrana* (Mann, 1862): 4 - fore wing of male; 5 - male genitalia; 6-7: *Cochylis defessana* (Mann, 1861): 6 - fore wing of female; 7 - female genitalia.



Figs. 8-14: 8-9: *Propiomorpha rhodophana* (Herrich-Schäffer, 1851): 8 - fore wing of female; 9 - female genitalia; 10-11: *Exapate duratella* Heyden, 1864: 10 - fore wing of male; 11 - male genitalia; 12-14: *Lobesia indusiana* (Zeller, 1857): 12 - fore wing of female; 13 - male genitalia; 14 - female genitalia.



Figs. 15-19: 15-17: *Argyroploce noricanus* (Herrich-Schäffer, 1851): 15 - fore wing of male; 16 - male genitalia; 17 - female genitalia; 18-19: *Olethreutes concretanus* (Wocke, 1862): 18 - fore wing of female; 19 - female genitalia.



Figs. 20–24: 20–22: *Ancyliis subarcuana* (Douglas, 1847): 20 – fore wing of male; 21 – male genitalia; 22 – female genitalia; 23–24: *Thiodia caradjana* Kennel, 1916: 23 – fore wing of male; 24 – male genitalia.

(CLERCK, 1759) the ground colour and the drawings are yellowish brown, the uncus and the gnathos are rounded and the socii long.

The host-plant of the larvae is *Larix decidua* L. (RAZOWSKI 2001: 47). This very late autumnal species begins its flight period only after the first frosty days at the end of October. The single specimen was collected by night on light in the park of the town where old larches are growing as well.

It is an European species, restricted to the main mountain chains of the Alps and the Pyrenees. This first Carpathian record is coming from a

medium high mountain area dominated by spruce and fir forests, where the larch is only an introduced species. Further studies will decide if this species occurs also in the few natural larch forests of the Romanian Carpathians. Its sister species, *Exapate congelatella* (CLERCK, 1759), widely distributed in the taiga zone of the Eurasian continent and in the coniferous forests of the Central European mountains is similarly unknown from Romania, probably due to the lacking of the collecting activity in this very late period of the year.

Olethreutini

Lobesia indusiana (ZELLER, 1857), (Figs. 12 – 14), (Synonyma: *Lobesia statticeana* MILLIÈRE, 1868, *Lobesia cognata* OBRAZTSOV)

Material examined: - 11 ♂♂, 19 ♀♀: Dobrogea, Chituc, Vadu (Black Sea coast), 28. VIII. 1999. (4 ♂♂), (genitalia preparation no. 899/♂/ KOVÁCS); 15-20. IX. 1999. ex larva (*Statice gmelini*), (3 ♂♂); Dobrogea, Cetatea Histria, 25-26. VIII. 1999. (2 ♂♂, 14 ♀♀), (genitalia preparation no. 1447/♀/ KOVÁCS); 11. VIII. 2001. (2 ♂♂, 5 ♀♀), legit & coll. S. KOVÁCS & Z. KOVÁCS.

Wing expansion: 9-15 mm. The ground colour of the fore wing is yellowish white; the drawings are rusty and light gray (Fig. 12). The main differential characters of the male genitalia (Fig. 13) are the large gnathos, the triangular tip of valvae and the large, rounded terminal process of sacculus with strong setae. The well sclerotized wedge-like antrum, the small and rounded corpus bursae with a weakly sclerotized rounded signum characterize the female genitalia (Fig. 14). Having a very characteristic wing pattern it is easy to recognize.

The host-plant of the larvae is *Statice gmelini* WILLD. Adults were collected in large number by night on light, in saline coastal marshes at the end of August. Some specimens emerged from pupae on the foodplant.

Distributed only in coastal regions of southern Europe and in Central Asia (KUZNETSOV 1978: 452).

Argyroploce noricanus (HERRICH-SCHÄFFER, 1851), (Figs. 15 – 17)

Material examined: - 4 ♂♂, 3 ♀♀: Carpații Meridionali, Munții Făgăraș, Capra, 2400 m, 8. VIII. 1992. (1 ♂, 1 ♀); Carpații Meridionali, Munții Făgăraș, Paltinu, 2350 m, 29. VII. 1994. (3 ♂♂, 2 ♀♀), (genitalia preparation no. 444/♂ and 513/♀/ KOVÁCS), legit & coll. S. KOVÁCS & Z. KOVÁCS.

Wing expansion: 15-17 mm. The ground colour of the fore wing is yellowish white, the drawings are black and dark grey with bluish shine (Fig. 15). By the male genitalia (Fig. 16) the largely excavated ventral margin followed by the strong tooth on the large, triangular terminal process of the sacculus are very characteristic. The female genitalia (Fig. 17) has a very large, well sclerotized complex antrum and a small and rounded corpus bursae with a weakly sclerotized hat like signum.

By the similar *Aterpia sieversiana* (NOLCKEN, 1870), *Loxotermia bipunctana* (FABRICIUS, 1794) and *Phiaris dissolutana* (STANGE, 1866) the draw-

ings are very extended, the ground colour is reduced only to narrow lines or small spots. Excepting *L. bipunctana* F. none of these species were mentioned from Romania so far.

Probable host-plant of the larvae is *Dryas octopetala* L. Adults are on the wing from the end of June to August. The specimens were collected on daytime by netting. Moths were hiding in the small and rare vegetation of the sunny rocky slopes in the alpine zone of the Carpathians between 2300 and 2400 m above sea level.

This arctoalpine species is widely distributed in the northernmost part of Europe (Norway, Sweden, Finland and Russia) and very local in the alpine zone of the Alps, Tatra and the Balkan Mountains.

Olethreutes concretanus (WOCKE, 1862), (Figs. 18 and 19), (Synonym: *Phiaris stagnicolana* PREISSECKER, 1914)

Material examined: - 1 ♀: Carpații Meridionali, Munții Harghita, Luci (peat-bog), 1100 m, 11. VI. 1988. (♀), (genitalia preparation no. 514/♀/ KOVÁCS), legit & coll. S. KOVÁCS & Z. KOVÁCS.

Wing expansion: 13 mm. The ground colour of the fore wing is white. Light and dark brown, orange and silvery lines with metallic shine represent the drawing (Fig. 18). The female genitalia (Fig. 19) has a large sterigma, a funnel-shaped antrum, a long, distally well sclerotized ductus bursae and a rounded corpus bursae without signum.

By the similar *Phiaris dissolutana* (Stange, 1866) and *Phiaris turfosana* (HERRICH-SCHÄFFER, 1851) the orange postmedian fascia is missing.

The single specimen was collected on daytime in a peat-bog.

Larva is feeding on *Betula* and *Vaccinium*. Adults are flying in May and beginning of June.

This boreomontane species with Holarctic distribution is widespread in the northern Europe (Norway, Sweden, Finland and Russia), Siberia and Alaska, but very rare in the mountains of Central Europe, formerly being known only from the Austrian Alps.

Enarmoniini

Ancylis subarcuana (DOUGLAS, 1847), (Figs. 20 – 22), (Synonym: *Phoxopteris inornatana* HERRICH-SCHÄFFER, 1851)

Material examined: - 2 ♂♂, 1 ♀: Carpații Orientali, Mestecănișul de la Reci, 540 m, 9. V. 1983. (1 ♂, 1 ♀), (genitalia preparation no. 1451/♀/ KOVÁCS); 12. V. 1983. (♂), (genitalia preparation no. 1450/♂/ KOVÁCS), legit & coll. S. KOVÁCS & Z.

KOVÁCS.

Wing expansion: 13-15 mm. The ground colour of the fore wing is light grey, the drawings are light and dark brown (Fig. 20). The male genitalia (Fig. 21) is characterized by the large and rounded ventral part of the cucullus, and the large and medially folded gnathos. By the female genitalia (Fig. 22) the signa are slender.

Similar to *Ancylis geminana* (Donovan, 1806) and *Ancylis diminutana* (Haworth, [1811]), but smaller and with lighter drawing.

Larvae are feeding on *Salix*, adults are on the wing in two generations from April to May and July to August, respectively. The specimens were collected on daytime.

Widely distributed in Northern-, very rare in Central-Europe. This newly discovered population in the southern part of the Eastern Carpathians represents probably the southernmost one of the range of this species in Europe.

Eucosmini

Thiodia caradjana KENNEL, 1916, (Figs. 23 and 24)

Material examined: - 1 ♂: Dobrogea, Munții Măcin, Culmea Pricopanului, 150 m, 27-28. V. 1994. (♂), (genitalia preparation no. 635/♂/ KOVÁCS), legit & coll. S. KOVÁCS & Z. KOVÁCS.

Wing expansion: 16 mm. The ground colour of the fore wing is yellow, the drawings are brownish yellow (Fig. 23). The male genitalia (Fig. 24) can be characterized by the almost straight sacculus and the large, finger-like process of the cucullus.

By the similar *Thiodia citrana* (HÜBNER, 1799) and *Thiodia major* (REBEL, 1903) the longitudinal fascia between the cell and the apex isn't divided in rounded spots and the process of the cucullus is not so slender.

Larva and host-plant are unknown. The specimen was collected by night on light on a very hot steppe-like rocky slope.

Formerly was only known from the Caucasus and the surrounding areas (KUZNETSOV 1978: 563). This is the first mention of the species from Europe.

REFERENCES

KOVÁCS Z. & KOVÁCS S. 1991. Espèces de Laspeyresiini (Lepidoptera, Tortricidae) nouvelles pour

la faune de Roumanie. Trav. Mus. Hist. nat. „Grigore Antipa“, Bucharest. 31: 117-122.

KOVÁCS Z. & KOVÁCS S. 1996a. The occurrence of *Aethes caucasica* (Amsel, 1959) (Lepidoptera: Tortricidae: Cochylini) in Transylvania (Romania). Folia ent. hung. 57: 85-89, Budapest.

KOVÁCS Z. & KOVÁCS S. 1996b. Noi semnalări de Cochylini (Lepidoptera: Tortricidae) din fauna României. Bul. inf. Soc. lepid. rom. 7 (1-2): 7-12, Cluj.

KOVÁCS Z. & KOVÁCS S. 1998. Noutăți faunistice, confirmări, infirmări și substituiți de specii. Bul. inf. Soc. lepid. rom., 9 (3-4): 194, Cluj.

KOVÁCS Z., KOVÁCS S. & SZABÓ GY. 1999. The occurrence of *Cochylimorpha fucosa* (Razowski, 1970) (Lepidoptera: Tortricidae: Cochylini) in Romania. Trav. Mus. natl. Hist. nat. „Grigore Antipa” 41: 309-313, București.

KUZNETSOV V. I. 1978. Tortricidae. In: MEDVEDEV G. S., (Ed.): Opređelitel' Nasekomâh Evropeiskoi Ciasi SSSR. Nauka, Leningrad, 4 (1): 193-680.

NEUMANN H. 2000. Specii rare și specii noi de microlépidoptere în fauna României. Analele Banatului – Științele nat. 5: 131-143, Timișoara.

NUPPONEN K., JUNNILAINEN J., NUPPONEN T. & OLSCHWANG V. 2001. The cochyliid fauna of the Southern Ural Mountains, with description of *Cochylimorpha ignicolorana* Junnilainen & K. Nupponen sp. n. (Lepidoptera: Tortricidae: Cochylini). Entomol. Fennica 12: 94-107.

POPESCU-GORJ A. 1984. La liste systématique des espèces de Microlépidoptères signalées dans la faune de Roumanie. Mise à jour de leur classification et nomenclature. Trav. Mus. natl. Hist. nat. „Grigore Antipa”, 24: 111 – 162.

RAZOWSKI, J., 1970 – Cochyliidae. In: AMSSEL, H. G., GREGOR, F., REISSER, H.: Microlepidoptera Palaearctica. 3. Wien.

RAZOWSKI, J., 1996 – Tortricidae. In: KARSHOLT, O., RAZOWSKI, J.: The Lepidoptera of Europe. A Distributional Checklist. Apollo Books. Stenstrup.

RAZOWSKI J. 2001. Die Tortriciden (Lepidoptera, Tortricidae) Mitteleuropas. Bestimmung – Verbreitung – Flugstandort – Lebensweise der Raupen. pp. 319, Bratislava.

WIESER C., HUEMER P. 2000. *Ceratoxanthia rakosyella* sp. n., eine bemerkenswerte neue Schmetterlingsart aus Rumänien (Lepidoptera, Tortricidae). Entomol. rom., 4: 5-9, Cluj, 1999.

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