

Review of the Gracillariidae (Lepidoptera) of the Gissarskiy Ridge (Central Asia, Tajikistan) with the descriptions of two new species of *Phyllonorycter*

Remigijus NOREIKA & Rimantas PUPLESIS

Zoologijos katedra VPI, g. Studentu 39, Vilnius-34, Lithuania

Summary

Thirty one species of the leaf-mining family Gracillariidae are reported from the Gissarskiy Ridge in Central Asia (Tajikistan). *Phyllonorycter raikhonae* NOREIKA, sp. n. and *Ph. hissarella* NOREIKA, sp. n. are described. Figures of 21 species and short diagnoses of 20 species are provided.

Résumé

Étude de 31 espèces de Gracillariidae mineuses de feuilles de la région Gissarskiy Ridge (Tadjikistan, Asie Centrale). Description de *Phyllonorycter raikhonae* NOREIKA, sp. n. et *Ph. hissarella* NOREIKA, sp. n. Figures de 21 espèces et brèves diagnoses de 20 espèces.

Zusammenfassung

Es werden 31 Arten der blattminierender Gracillariidae von der Gissarskiy Gebirgskam (Tadzhikistan) gemeldet. Neu beschrieben wird *Phyllonorycter raikhonae* NOREIKA, sp. n. und *Ph. hissarella* NOREIKA, sp. n. Kurzdiagnosen 20 Arten und Abbildungen 21 Arten werden beigelegt.

Introduction

The family Gracillariidae has a world-wide distribution and has been studied to the greatest extent in Europe and the Far East (Japan and fareastern Russia). The first scanty data on this family from the Central Asiatic part of the former Soviet Union was obtained in the early XX century. A. M. GERASIMOV (1930, 1931) was the first, who recorded seven species from Uzbekistan and Kyrgyzstan. Three of them were new species described in the genus *Lithocolletis* HÜBNER (now all placed in *Phyllonorycter* HÜBNER): *L. malella*, *L. fainae* and *L. pruinoseella*.

One new species described by GERASIMOV in 1930, *Gracilaria impic-tipennella*, will be synonymised with *Caloptilia flava* (STAUDINGER, 1870) (NOREIKA & PUPLESIS, in press).

Another new species was originally described in the genus *Coristium* (sic!) ZELLER, but recently this species (*C. eximipalpella* GERASIMOV) has been placed in the genus *Polymitia* by TRIBERTI (1986). Two new subspecies were also described by GERASIMOV: *Phyllonorycter corylifoliella turanica* and *Ph. connexella asiatica*. A short survey on the Gracillariidae of the Central Asiatic part of the U.S.S.R. was published later (GERASIMOV, 1932). A further new species, *Parornix persicella* DANILEVSKY, was described on material from Bukhara, in the region of Dushanbe and Western Kopet-Dag (DANILEVSKY, 1955). A full review of the Gracillariidae, with the description of more new species, was published by KUZNETSOV after collecting expeditions to Turkmenistan (KUZNETSOV, 1956.) However, data on Gracillariidae from the Gissarskiy Ridge (Tajikistan) were absent in the articles mentioned above. Extensive and excellent material has been received from expeditions undertaken by Dr. R. M. SHERNIYAZOVA (see SHERNIYAZOVA, 1982; 1984) and Prof. Dr. V. I. KUZNETSOV in the southern part of the Gissarskiy Ridge. Many new species were described on the basis of this material (KUZNETSOV, 1975; 1978; 1981). A considerable number of Gracillariidae species were also collected between 1986 and 1991 at the Varzob Mountain Botanical Station at Kondara (30 km N Dushanbe) and in the areas around Ziddi (60 km N Dushanbe) and Gissar (30 km W Dushanbe). This material should provide more data on the Gracillariidae of Tajikistan.

DEPOSITORIES: The type material of the new species and all other material mentioned in this article are deposited in the collection of the minological research laboratory at the Department of Zoology, Pedagogical Institute, Vilnius. Some paratypes of *Phyllonorycter hissarella* NOREIKA sp. n. are deposited in the collection of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg and in the National Museum of Natural History, Leiden, Netherlands.

Check-list of the Gracillariidae occurring on the Gissarskiy Ridge

***Micrurapteryx* SPULER, 1910**

1. *M. tortuosella* KUZNETSOV & TRISTAN, 1985

***Polymitia* TRIBERTI, 1986**

2. *P. eximipalpella* (GERASIMOV, 1930)

***Gracilaria* HAWORTH, 1828**

3. *G. loriolella* FREY, 1881

***Caloptilia* HÜBNER, 1825**

4. *C. cuculipennella* (HÜBNER, 1796)
5. *C. stigmatella* (FABRICIUS, 1781)
6. *C. acerivorella* (KUZNETSOV, 1956)
7. *C. roscipennella* (HÜBNER, 1796)

***Aspilapteryx* SPULER, 1910**

8. *A. tringipennella* (ZELLER, 1839)

***Parornix* SPULER, 1910**

9. *P. cotoneasterella* KUZNETSOV, 1978
10. *P. asiatica* NOREIKA, 1991
11. *P. persicella* DANILEVSKY, 1955

***Phyllonorycter* HÜBNER, 1822**

12. *Ph. medicaginella* (GERASIMOV, 1930)
13. *Ph. fabaceaella* (KUZNETSOV, 1978)
14. *Ph. millierella* (STAUDINGER, 1871)
15. *Ph. raikhonae* NOREIKA, sp. n.
16. *Ph. pastorella fainae* (GERASIMOV, 1931)
17. *Ph. populifoliella* (TREITSCHKE, 1833)
18. *Ph. populi* (FILIPJEV, 1926)
- *19. *Ph. saliciphaga* (KUZNETSOV, 1975)
- *20. *Ph. obliquifascia* (FILIPJEV, 1926)
21. *Ph. populicola* (KUZNETSOV, 1975)
22. *Ph. asiatica* (GERASIMOV, 1931)
23. *Ph. pruinosaella* (GERASIMOV, 1931)
24. *Ph. aceripestis* (KUZNETSOV, 1978)
25. *Ph. aceriphaga* (KUZNETSOV, 1975)
26. *Ph. juglandicola* (KUZNETSOV, 1975)
27. *Ph. platani* (STAUDINGER, 1870)
28. *Ph. malella* (GERASIMOV, 1931)
29. *Ph. corylifoliella* (HÜBNER, 1796)
30. *Ph. turanica* (GERASIMOV, 1931)
31. *Ph. hissarella* NOREIKA, sp. n.

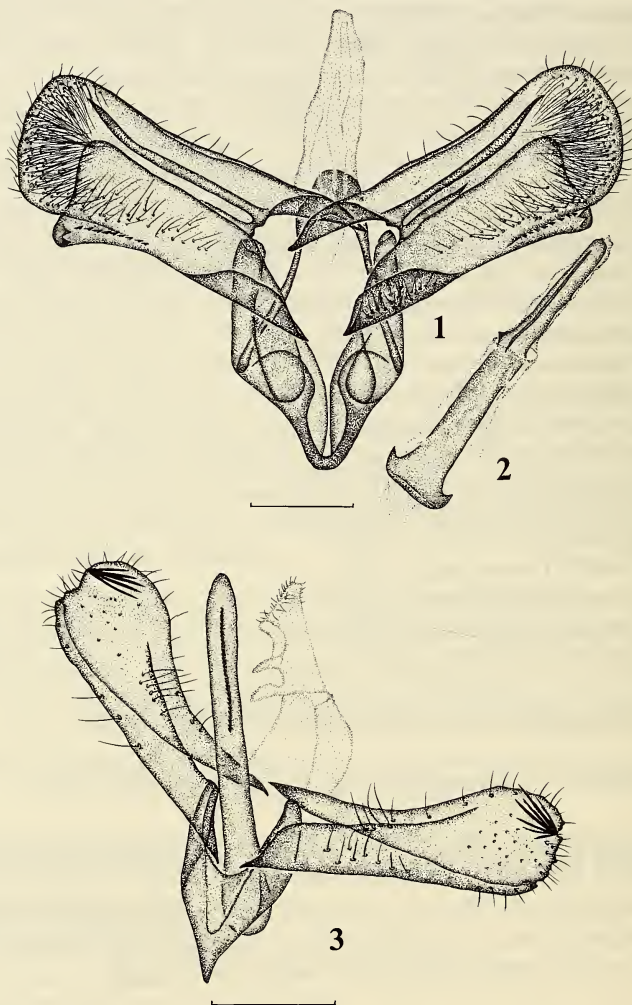
Review of the species occurring on the Gissarskiy Ridge

1. *Micrurapteryx tortuosella* KUZN. & TRISTAN (Figs 1-2)

Externally similar to *M. gradatella* (HERRICH-SCHÄFFER), but can be separated by the bright white costal striae and the dorsal band on the forewings (KUZNETSOV & TRISTAN, 1985). Male genitalia (Figs 1-2) can be distinguished from the similar *M. sophorella* KUZNETSOV by the presence of a small tooth on the aedeagus (Fig. 2).

* The taxa *saliciphaga* KUZNETSOV, 1975 and *obliquifascia* FILIPJEV, 1926 are now considered to belong in the genus *cameraria* CHAPMAN, 1902.

MATERIAL EXAMINED : 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 1200 m, 27.VI.1986, R. PUPLESIS, 1 ♂, same locality, 30.VII.1990, V. SRUOGA ; 1 ♂, same locality, 8.VIII.1990, J. PUPLESIENE ; 5 ♂♂, 1 ♀, same locality, 20.VI -8.VII.1991, V. SRUOGA ; 1 ♀, same locality, 18.VIII.1991, R. NOREIKA ; 2 ♂♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kvak), 1900 m, 3.IX.1990, larva on *Medicago* sp., N 5068, ex. p. 24.IX.1990, R. NOREIKA.



Figs 1-3. Male genitalia. 1 — *Micrurapteryx tortuosella* KUZN. & TRISTAN, general view ; 2 — idem, aedeagus ; 3 — *Polymitia eximipalpella* (GRSM.). Scale 0.2 mm.

2. *Polymitia eximipalpella* (GERASIMOV) (Fig. 3)

Only two species are described in the genus *Polymitia* (TRIBERTI, 1986). *P. eximipalpella* differs externally from the closely related *P. laristana* TRIBERTI by the presence of a distinct pale band along the dorsal margin of forewing and by the blackish spot of raised scales near the middle of the ventral area. Also, the male genitalia of *P. eximipalpella* are characterised by the absence of distinct teeth on the ventral margin of the valva and by the presence of thin setae only on the central area of the valva (Fig. 3). In *P. laristana* the central area of the valva is covered with setae, but also scales (TRIBERTI, 1986).

MATERIAL EXAMINED: 4 ♂♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 1200 m, 6-7.VIII.1986, R. PUPLESIS; 1 ♂, same locality, 23.VIII.1989, R. NOREIKA; 4 ♂♂, 9 ♀♀, same locality, 5-30.VII.1990, V. SRUOGA; 1 ♀, same locality, 5.VIII.1990, R. PUPLESIS; 1 ♀, Tajikistan, 60 km N Dushanbe, env. Ziddi, 1900 m, 7.VIII.1990, V. SRUOGA.

3. *Gracillaria loriolella* FREY

This species was recorded for the Gissarskiy ridge by KUZNETSOV (1981) and SHERNIYAZOVA (1982).

4. *Caloptilia cuculipennella* (HÜBNER)

MATERIAL EXAMINED: 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 1200 m, 12.VIII.1990, R. NOREIKA.

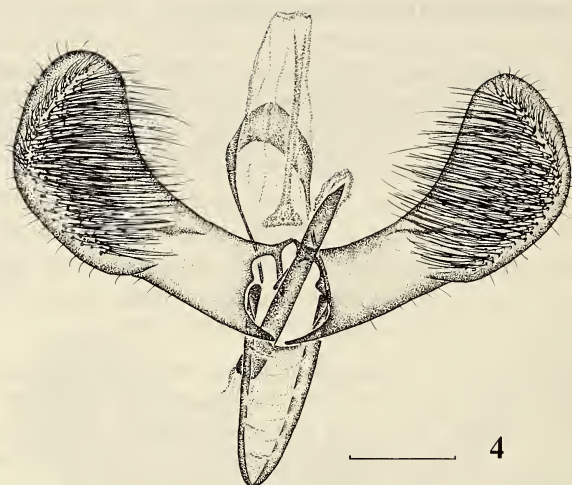
5. *Caloptilia stigmatella* (FABRICIUS)

MATERIAL EXAMINED: 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 20.VIII.1990, R. NOREIKA; 1 ♂, same locality, 6.IX.1990, larva on *Salix blackii*, N5069, ex. p. 10.X.1990, R. NOREIKA; 2 ♂♂, 4 ♀♀, same locality, 12.VI- 7.VII.1991, V. SRUOGA.

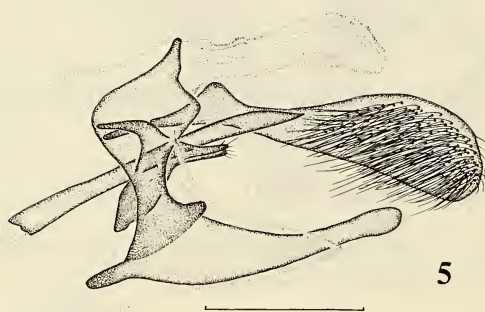
6. *Caloptilia acerivorella* (KUZNETSOV) (Fig. 4)

Easily separated from the similar *C. hemidactylella* (FABRICIUS) by the lighter colour of the head and the forewings. Male genitalia (Fig. 4) are characterised by the pointed uncus and aedeagus. Saccus widely rounded anteriorly.

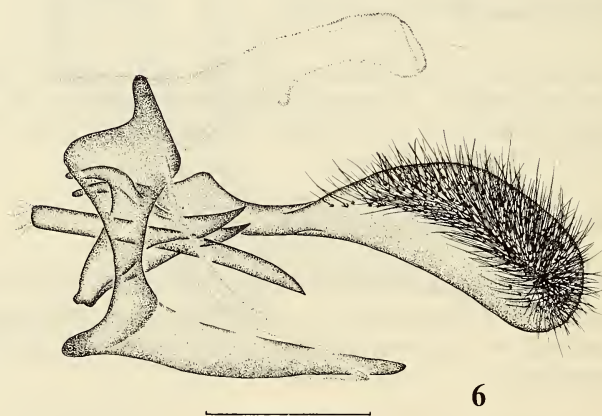
MATERIAL EXAMINED: 1 ♂, 11 ♀♀, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 1200 m, 4.VII-22.VIII.1986, R. PUPLESIS; 24 ♂♂, 14 ♀♀, same locality, 17-23.VIII.1989, R. NOREIKA; 23 ♂♂, 6 ♀♀, same locality, 14.VIII-



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Figs 4-6. Male genitalia. 4 — *Caloptilia acerivorella* (Kuzn.); 5 — *Parornix cotoneastrella* Kuzn.; 6 — *P. asiatica* Noreika. Scale 0.2 mm.

4.IX.1990, R. NOREIKA ; 14 ♂♂, 38 ♀♀, same locality, 18.VII-9.VIII.1990, V. SRUOGA ; 8 ♂♂, 9 ♀♀, same locality, 4-29.VII.1990, R. PUPLESIS ; 2 ♂♂, 5 ♀♀, same locality, 4-8.VIII.1990, J. PUPLESIENE ; 1 ♂, Tajikistan, 60 km N Dushanbe, env. Ziddi, 2000 m, 19.VIII.1989, larva on *Acer regeli*, N5034, ex. p. 14.IX.1989, R. NOREIKA ; 7 ♂♂, 7 ♀♀, Tajikistan, env. Dushanbe, 30 km N Gissar (Hanaka), 1100 m, 23.VII.1990, V. SRUOGA ; 1 ♂, 1 ♀, same data, R. PUPLESIS.

7. *Caloptilia roscipennella* (HÜBNER)

MATERIAL EXAMINED : 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 1200 m, 13.VI.1991, V. SRUOGA.

8. *Aspilapteryx tringipennella* (ZELLER)

MATERIAL EXAMINED : 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 1200 m, 20.VIII.1989, V. SRUOGA.

9. *Parornix cotoneasterella* KUZNETSOV (Fig. 5)

It differs from other species of the *P. devoniella* (STANTON) species-group by the small size, slender cucullus of the valva and the reduced tegumen (Fig. 5).

MATERIAL EXAMINED : 2 ♂♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 17.VIII.1986, R. PUPLESIS ; 13 ♂♂, same locality, 17-23.VIII.1989, R. NOREIKA ; 2 ♂♂, 2 ♀♀, same locality, 12.VIII-2.IX.1990, R. NOREIKA ; 24 ♂♂, 3 ♀♀, same locality 5.VII-10.VIII.1990, V. SRUOGA ; 1 ♂, same locality, 7.VIII.1990, R. PUPLESIS ; 1 ♂, Tajikistan, env. Nurek (Zardolu), 6.VIII.1990, R. PUPLESIS.

10. *Parornix asiatica* NOREIKA (Fig. 6)

This species, which was recently described from Turkmenistan, can be distinguished from the superficially very similar *P. cotoneasterella* KUZNETSOV by the larger cucullus of the valva and by the shape of the vinculum (Fig. 6).

MATERIAL EXAMINED : 20 ♂♂ (holotype and paratypes), Turkmenistan, Kugitangtau, env. Svintsovy Rudnik, 12-13.VIII.1989, R. NOREIKA ; 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 1200 m, 20.VII.1990, R. PUPLESIS ; 1 ♂, same locality, 5.VII.1990, R. PUPLESIS ; 1 ♂, same locality, 9.VIII.1990, R. NOREIKA ; 2 ♂♂, Tajikistan, env. Dushanbe, 30 km N Gissar (Hanaka), 1100 m, 23.VII.1990, R. PUPLESIS.

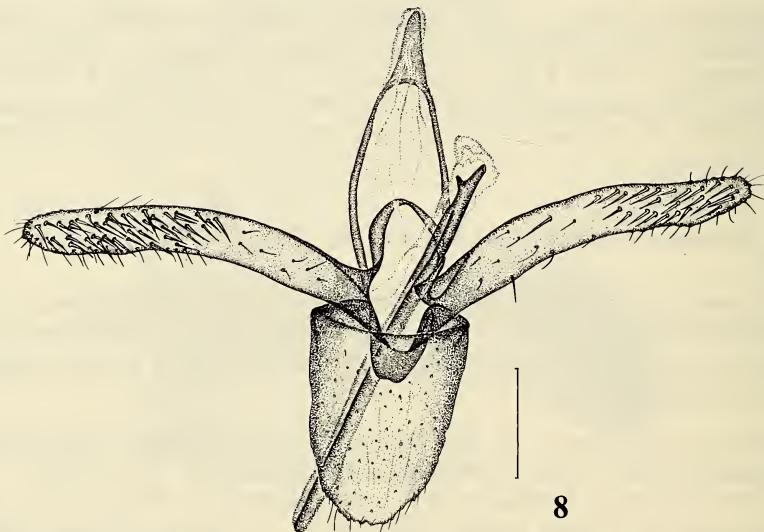
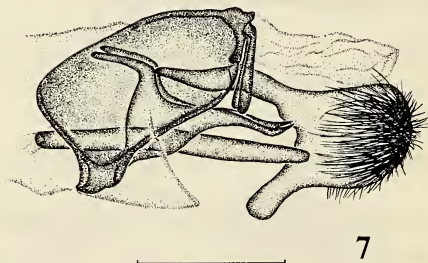
11. *Parornix persicella* DANILEVSKY (Fig. 7)

Externally resembles *P. finitimella* (ZELLER) and *P. torquilella* (ZELLER), but the male genitalia can be separated by the long strongly sclerotized socii without setae (Fig. 7).

MATERIAL EXAMINED : 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 17.VIII.1989, R. NOREIKA ; 1 ♂, same locality, 23.VII.1990, R. PUPLESIS.

12. *Phyllonorycter medicaginella* (GERASIMOV)

MATERIAL EXAMINED : 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 15.VIII.1986, R. PUPLESIS ; 1 ♂, same locality, 5.VIII.1990, R. PUPLESIS.



Figs 7, 8. Male genitalia. 7 — *Parornix persicella* DANIL.; 8 — *Phyllonorycter fabaceaella* (KUZN.). Scale 0.2 mm.

13. *Phyllonorycter fabaceaella* (KUZNETSOV) (Fig. 8)

Very similar to *P. cerasinella* (REUTTI), but the forewing mediobasal streak is short. From the similar *Ph. pomiella* (GERASIMOV) it differs by the broad 8th sternite.

MATERIAL EXAMINED : 1 ♂, Tajikistan, 30 km N. Dushanbe, env. Varzob (Kondara), 14.VIII.1990, R. NOREIKA.

14. *Phyllonorycter millierella* (STAUDINGER)

MATERIAL EXAMINED : 8 ♂♂, 2 ♀♀, Tajikistan, 30 km N. Dushanbe, env. Varzob (Kondara), 2-22.VIII.1986, R. PUPLESIS ; 34 ♂♂, 14 ♀♀, same locality, 15-23.VIII.1989, R. Noreika ; 1 ♂, same locality, 20.VIII.1989, V. SRUOGA ; 1 ♂, 3 ♀♀, same locality, 15-20.VIII.1990, R. NOREIKA ; 7 ♂♂, 5 ♀♀, same locality, 15.VII-8.VIII.1990, V. SRUOGA ; 1 ♂, same locality, 5.VIII.1990, R. PUPLESIS ; 1 ♂, same locality, 8.VIII.1991, J. PUPLESIENE.

15. *Phyllonorycter raikhonae* NOREIKA, sp. n. (Figs 9-12)

HOLOTYPE : ♂, Tajikistan, 60 km N Dushanbe, Ziddi, 2000 m, 19.VIII.1989, R. NOREIKA.

PARATYPES : 1 ♂, same data as holotype, R. NOREIKA ; 2 ♂♂, 1 ♀, same locality, 24.VII-7.VIII.1990, R. PUPLESIS ; 2 ♀♀, same locality, 7.VIII.1990, V. SRUOGA ; 4 ♀♀, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 1200 m, 17-18.VIII.1990, R. NOREIKA ; 1 ♂, 8 ♀♀, same locality, 15.VII-10.VIII.1990, V. SRUOGA ; 5 ♀♀, same locality, 4-8.VIII.1990, J. PUPLESIENE ; 1 ♂, 1 ♀, same locality, 5.VIII.1990, R. PUPLESIS ; 1 ♂, 4 ♀♀, same locality, 4.VII-3.VIII.1991, V. SRUOGA ; 1 ♂, same locality, 18.VIII.1991, R. NOREIKA ; 1 ♂, 1 ♀, Tajikistan, env. Dushanbe, 30 km N Gissar (Hanaka), 1100 m, 23.VII.1990, R. PUPLESIS.

DIAGNOSIS : Closely related to *P. montanella* BRADLEY (see Figs 13, 14 and BRADLEY, 1980) and *P. emberizaepennella* (BOUCHÉ). Distinguished from *Ph. montanella* by the distinctly shorter and straighter apical projection (style) of the valva and by the well-developed arm-like projection of the aedeagus (Figs 11, 12). From *Ph. emberizaepennella* it is easily distinguished by the presence of broad arm-like projections beyond the point of articulation with the juxta, and the longer 8th sternite. Unlike in *Ph. emberizaepennella*, the juxta of the new species is apically pointed.

DESCRIPTION : Wingspan 6.2-6.4 mm. Face white. Palpi brown on upperside, whitish on underside. Tuft on head brownish, Antenna creamy white, distinctly ringed with blackish brown. Thorax brown with some creamy white scales laterally (Fig. 9). Tegulae covered in

creamy brown scales. Forewing similar in markings to *Ph. emberizaepennella*, but ochreous scales present beyond white striae. Cilia creamy. Hindwing brownish.

MALE GENITALIA (Figs 11, 12) : Symmetrical. Tegumen simple. Uncus slightly tapering apically. Valva tapered, curved apically into rather long projection. Vinculum widely rounded. 8th sternite long, wide, almost truncate apically. Aedeagus slightly curved with well-developed arm-like projections a little beyond point of articulation with juxta. Juxta pointed at apex.

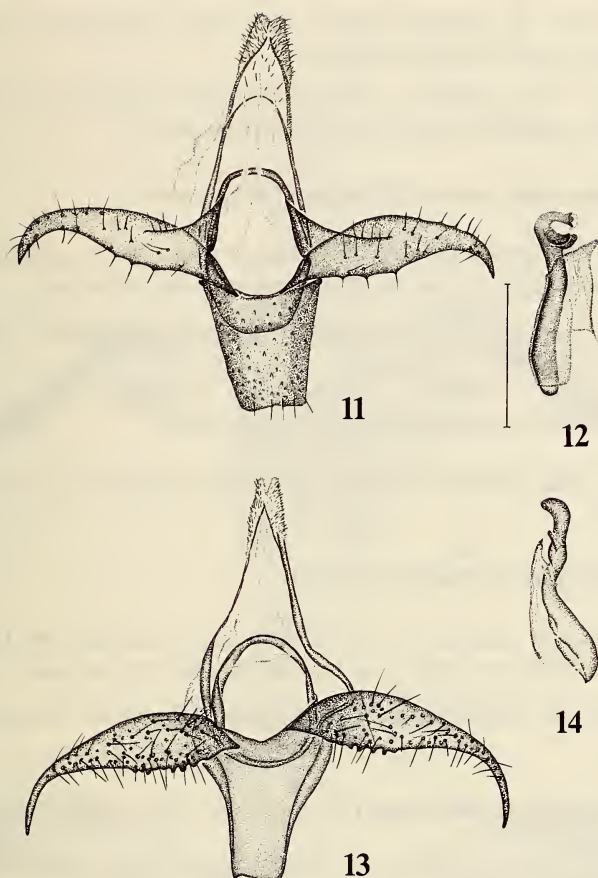


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Figs 9, 10. *Phyllonorycter raikhonae* sp. n. 9 — imago, holotype (scale 1.0 mm) ; 10 — female genitalia, paratype (scale 0.2 mm).



Figs 11-14. Male genitalia. 11 — *Phyllonorycter raikhonae* sp. n., holotype, general view ; 12 — idem, aedeagus (scale 0.2 mm) ; 13 — *Ph. montanella* BRADLEY, general view (after BRADLEY, 1980) ; 14 — idem, aedeagus (scale unknown).

FEMALE GENITALIA (Fig. 10). Symmetrical. Papillae analis moderate, covered with long setae. Anterior apophyses present, but very short. Posterior apophyses very long. Ostium small, cone-shaped. Ductus bursae membranous, very narrow. Corpus bursae small, oval, with characteristic signum.

BIOLOGY : Hostplant *Lonicera* sp. Larvae mine leaves in June-July and probably also in autumn. Mine is on the underside of the leaf, in a fold. Adults fly July-August.

DISTRIBUTION : At present known only from Tajikistan (throughout central part of the Gissarskiy ridge).

ETYMOLOGY : The species is named after the Tajikistan entomologist Dr. Raikhon Makhmudzhanovna SHERNIYAZOVA.

16. *Phyllonorycter pastorella fainae* (GERASIMOV)

Similar to *Ph. armeniella* (KUZNETSOV) and *Ph. populiabae* (KUZNETSOV), but differs by the horn-like process on the valva.

MATERIAL EXAMINED : 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 5.IX.1990, R. NOREIKA

17. *Phyllonorycter populifoliella* (TREITSCHKE)

The species was recorded for the Gissarskiy ridge by SHERNIYAZOVA (1984).

18. *Phyllonorycter populi* (FILIPJEV)

Recognised from related *Ph. chicanella* (STAUDINGER) by the slightly curved valva with two teeth and by the bilobed 8th sternite.

The species was recorded for the Gissarskiy Ridge by SHERNIYAZOVA (1984).

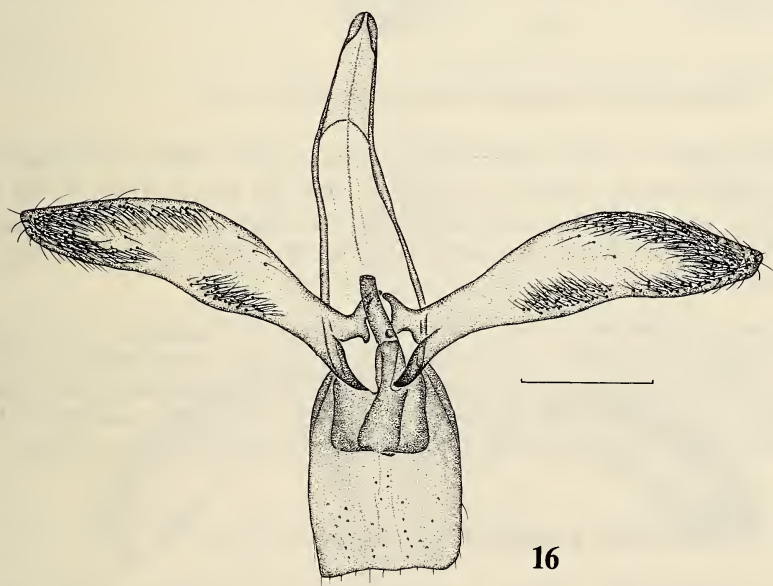
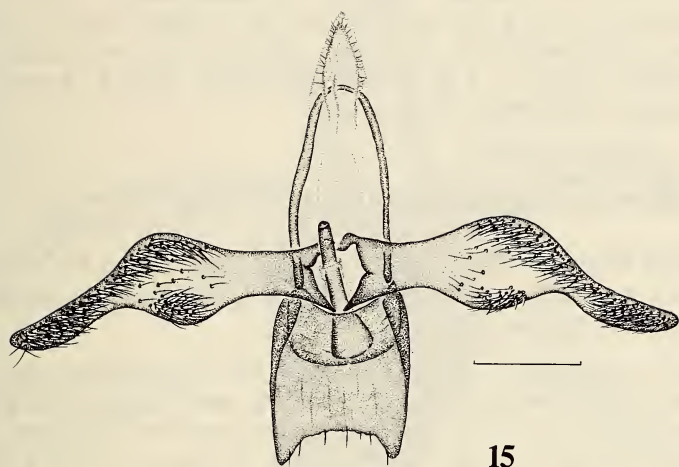
19. *Phyllonorycter saliciphaga* (KUZNETSOV) (Fig. 15)

Externally closely resembles *Ph. obliquifascia* (FILIPJEV), but differs by the shape of the valva ; this is slender at the base and apex, but roundly widened in the middle (Fig. 15).

MATERIAL EXAMINED : 6 ♂♂, 1 ♀, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 27.VI-20.VIII.1986, R. PUPLESIS, 17 ♂♂, 23 ♀♀, same locality, 17-23.VIII.1989, R. NOREIKA ; 1 ♂, same locality, 4.XI.1989, larva on *Salix* sp., N5042, ex. p. 1.III.1990, R. PUPLESIS ; 7 ♂♂, 12 ♀♀, same locality, 14.VIII-2.IX.1990, R. NOREIKA, 13 ♂♂, 10 ♀♀, same locality, 20.VII-9.VIII.1990, V. SRUOGA ; 4 ♂♂, 4 ♀♀, same locality, 5-8.VIII.1990, J. PUPLESIENE ; 2 ♂♂, Tajikistan, env. Nurek (Zardolu), 6.VIII.1990, V. SRUOGA.

20. *Phyllonorycter obliquifascia* (FILIPJEV) (Fig. 16)

Externally similar to *Ph. saliciphaga* (KUZNETSOV) and *Ph. millierella* (STAUDINGER), but differs in the male genitalia, primarily by the long, but not apically narrowed valva (Fig. 16).



Figs 15-16. Male genitalia. *Phyllonorycter saliciphaga* (KUZN.); 16 — *Ph. obliquifascia* (FIL.). Scale 0.2 mm.

MATERIAL EXAMINED : 6 ♂♂, 9 ♀♀, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 28.VI-21.VIII.1986, R. PUPLESIS ; 5 ♂♂, 1 ♀, same locality, 17-23.VIII.1989, R. NOREIKA ; 7 ♂♂, 14 ♀♀, same locality, 14-20.VIII.1990, R. NOREIKA ; 5 ♂♂, 5 ♀♀, same locality, 15.VIII.1990, larvae on *Populus afghanica*, N5054 and N5071, R. NOREIKA ; 2 ♂♂, 15 ♀♀, same locality, 9.VII-9.VIII.1990, V. SRUOGA ; 1 ♂, same locality, 20.VII. 1990, R. PUPLESIS, 1 ♂, same locality, 8.VIII.1990, J. PUPLESIENE.

21. *Phyllonorycter populicola* (KUZNETSOV) (Fig. 17)

Externally similar to *Ph. populialbae* (KUZNETSOV) and *Ph. comparella* (ZELLER), but differs from both species in the absence of the dark apical spot on the forewing.

MATERIAL EXAMINED : 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 8.VIII.1986, R. PUPLESIS ; 1 ♂, 2 ♀♀, same locality, 15-20.VIII.1990, R. NOREIKA ; 2 ♂♂, 1 ♀, same locality, 15.VIII.1990, larva on *Populus afghanica*, N 5060, ex. p. 23.VIII-14.IX.1990, R. NOREIKA ; 1 ♂, 4 ♀♀, same locality, 23.VII-14.VIII.1990, V. SRUOGA ; 1 ♂, same locality, 8.VIII.1990, J. PUPLESIENE.

22. *Phyllonorycter asiatica* (GERASIMOV) (Fig. 18)

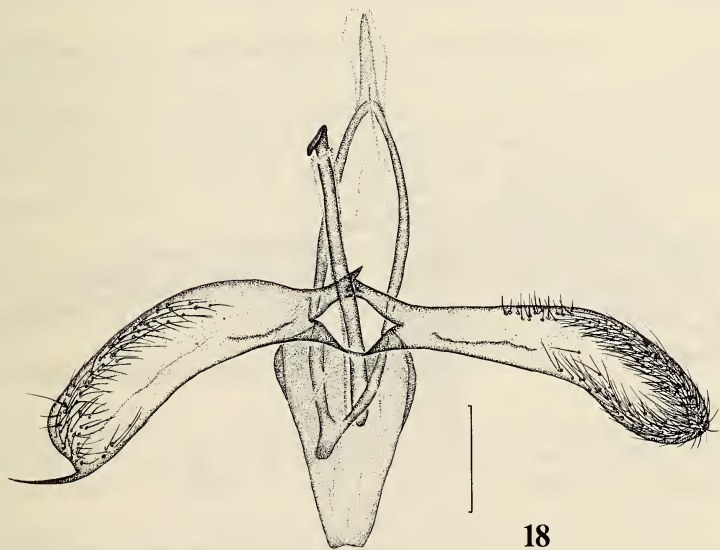
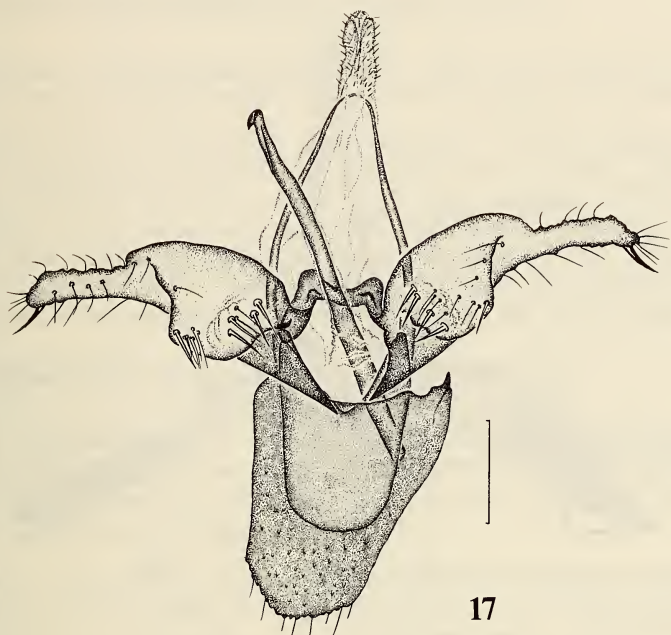
Most similar to *Ph. connexella* (ZELLER), but differs externally by the paler ground colour of forewing and the colouration of the flagellum, which has no annulation. In the male genitalia, *Ph. asiatica* is distinguished from *Ph. connexella* by the longer proximal process of the vinculum.

MATERIAL EXAMINED : 1 ♂, Tajikistan. 30 km N Dushanbe, env. Varzob (Kondara), 9.VIII.1986, R. PUPLESIS ; 2 ♂♂, 10 ♀♀, same locality, 12.VIII-6.IX.1990, R. NOREIKA ; 2 ♀♀, same locality, 6.IX.1990, larvae on *Salix blakii*, N5067, ex. p. 15.IX.1990, R. NOREIKA ; 3 ♂♂, 9 ♀♀, same locality, 21.VII-10.VIII.1990, V. SRUOGA ; 1 ♀, same locality, 8.VIII. 1990, J. PUPLESIENE.

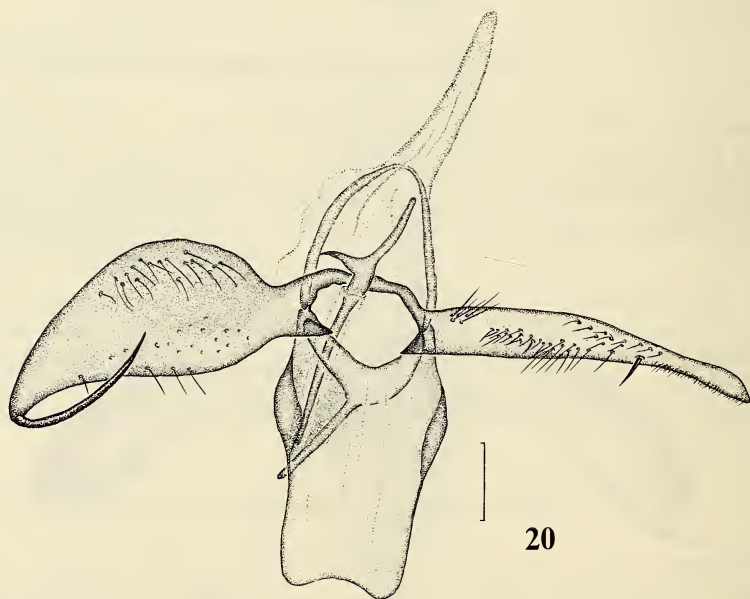
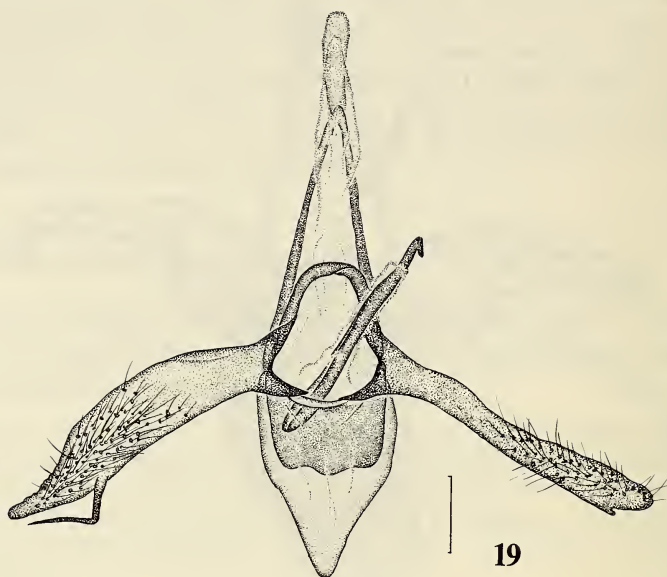
23. *Phyllonorycter pruinosa* (GERASIMOV) (Fig. 19)

Very characteristic species ; among Salicaceae feeding species easily recognisable by the marked asymmetry of the valvae and by the long spine on the left valva (Fig. 19).

MATERIAL EXAMINED : 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 20.VIII.1990, R. NOREIKA.



Figs 17, 18. Male genitalia. 17 — *Phyllonorycter populicola* (KUZN.); 18 — *Ph. asiatica* (GRSM.). Scale 0.2 mm.



Figs 19, 20. Male genitalia. 19 — *Phyllonorycter pruinosa* (GRSM.); 20 — *Ph. aceripestis* (KUZN.). Scale 0.2 mm.

24. *Phyllonorycter aceripestis* (KUZNETSOV) (Fig. 20)

Very similar to *Ph. geniculella* (RAGONOT), but can be easily separated by the male genitalia, primarily by the very long saccus (Fig. 20).

MATERIAL EXAMINED : 15 ♂♂, 9 ♀♀, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 4.VII-22.VIII.1986, R. PUPLESIS ; 26 ♂♂, 7 ♀♀, same locality, 17.VIII.1989, R. NOREIKA ; 3 ♀♀, same locality, 5.VIII.1990, R. PUPLESIS ; 15 ♀♀, same locality, 15.VII-10.VIII.1990, V. SRUOGA ; 9 ♂♂, 10 ♀♀, same locality, 12.VIII-5.IX.1990, R. NOREIKA ; 2 ♂♂, 10 ♀♀, same locality, 5-8.VIII.1990, J. PUPLESIENE ; 1 ♀, Tajikistan, env. Nurek (Zardolu), 6.VIII.1990, V. SRUOGA ; 1 ♂, same locality, 10.VII.1990, R. PUPLESIS.

25. *Phyllonorycter aceriphaga* (KUZNETSOV) (Fig. 21)

Can be distinguished from all other species associated trophically with maple by the basal band on the forewing and the rather simple structure of the symmetrical genitalia (Fig. 21). The long proximal projection of the vinculum is very characteristic.

MATERIAL EXAMINED : 2 ♂♂, 1 ♀, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 7-20.VIII.1986, R. PUPLESIS ; 2 ♂♂, 1 ♀, same locality, 18-20.VIII.1989, R. NOREIKA ; 2 ♂♂, 3 ♀♀, same locality, 12.VIII-5.IX.1990, R. NOREIKA ; 10 ♂♂, 8 ♀♀, same locality, 15.VII-6.VIII.1990, V. SRUOGA.

26. *Phyllonorycter juglandicola* (KUZNETSOV) (Fig. 22)

Most similar to *Ph. kleemannella* (FABRICIUS), but differs by the smaller size, the lighter colour of the forewing and head and also by the shape of the broadened valva as well as by the wide apical barb of the aedeagus (Fig. 22).

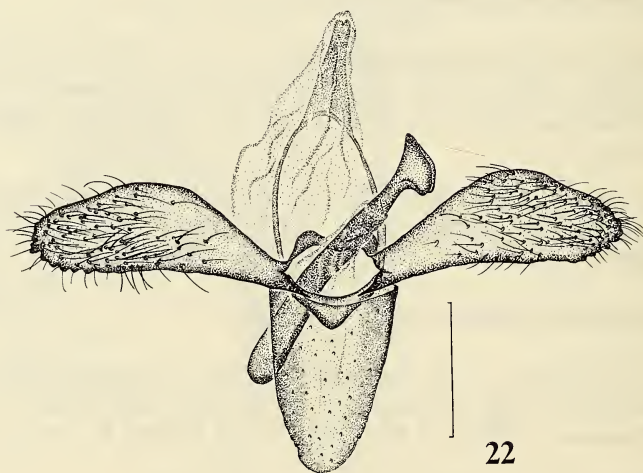
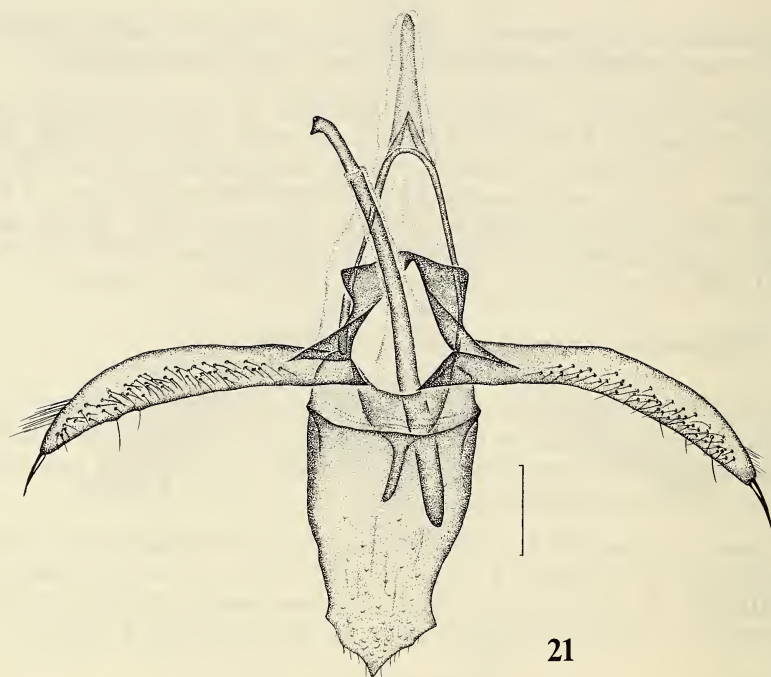
MATERIAL EXAMINED : 2 ♂♂, Tajikistan, 30 km N Dushanbe, 13.VIII.1990, pupa on *Juglans regia*, N 5055, ex. p. 18.VIII.1990, R. NOREIKA ; 1 ♂, 3 ♀♀, same locality, 28.VII-10.VIII.1990, V. SRUOGA.

27. *Phyllonorycter platani* (STAUDINGER)

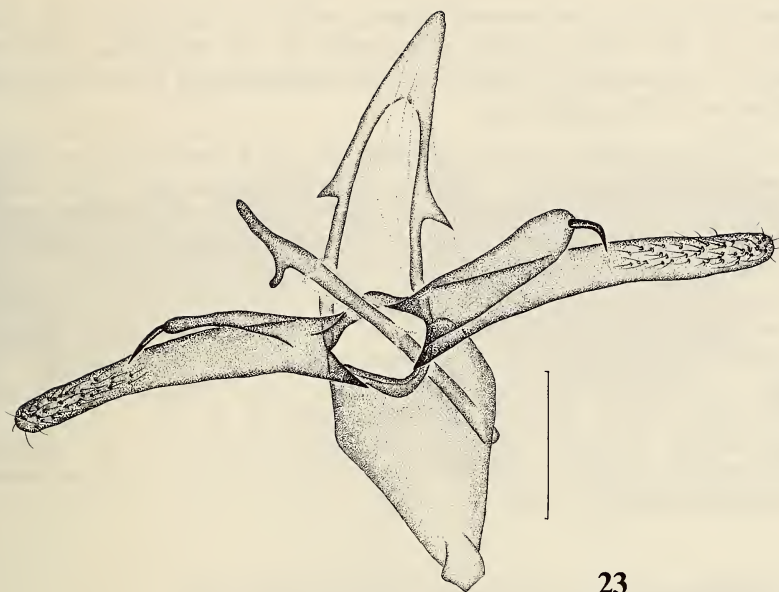
MATERIAL EXAMINED : 1 ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 23.VIII.1989, R. NOREIKA ; 3 ♂♂, 3 ♀♀, same locality, 7.XI.1989, pupa on *Platanus orientalis*, N 5040, ex. p. 25.I-4.II.1990, R. PUPLESIS.

28. *Phyllonorycter malella* (GERASIMOV) (Fig. 23)

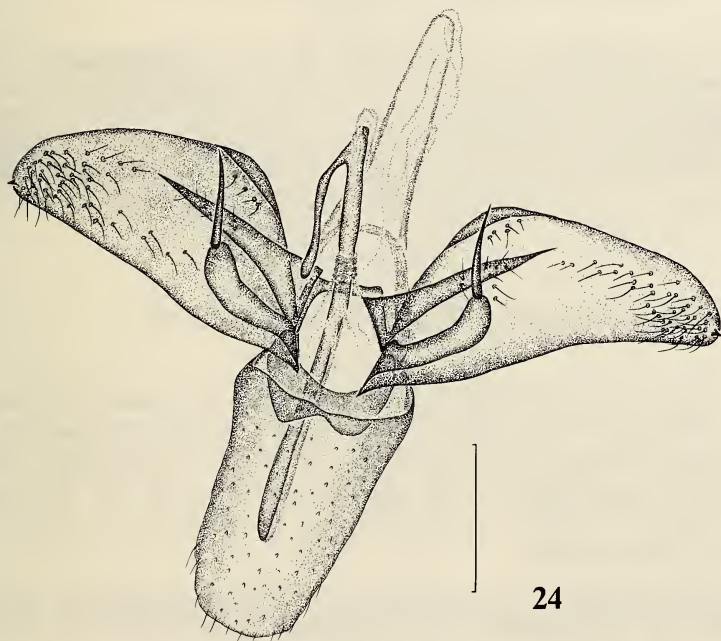
Externally similar to *Ph. blancardella* (FABRICIUS), *Ph. oxyacanthae* (FREY) and *Ph. cydoniella* (DENIS & SCHIFFERMÜLLER), but easily



Figs 21-22. Male genitalia. 21 — *Phyllonorycter aceriphaga* (KUZN.); 22 — *Ph. juglandicola* (KUZN.). Scale 0.2 mm.



23



24

Figs 23, 24. Male genitalia. 23 — *Phyllonorycter malella* (GRSM.); 24 — *Ph. corylifoliella* (HÜBN.). Scale 0.2 mm.

separated by the medio-basal streak, which is not edged with black scales. In the male genitalia it is similar to *Ph. mespilella* (HÜBNER) and *Ph. blancardella* (FABRICIUS), but distinguished by the very wide projection of the right valva.

MATERIAL EXAMINED : 2 ♂♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 14-20.VIII.1986, R. PUPLESIS ; 3 ♂♂, 4 ♀♀, same locality, 4.XI.1989, larvae on *Cotoneaster hissarica*, N 5039, ex. p. 24.I-9.III.1990, R. PUPLESIS ; 3 ♂♂, 2 ♀♀, same locality, 15-23.VIII.1990, pupa on *Malus sieversii*, N5053 and N 5065, ex. p. 17.VIII-2.IX.1990, R. NOREIKA ; 1 ♀, same locality, 15.VIII.1990, pupa on *Cydonia oblonga*, N 5057, ex. p. 18.VIII.1990, R. NOREIKA ; 1 ♂, the same locality, 23.VIII.1990, pupa on *Cotoneaster hissarica*, N 5064, ex. p. 28. VIII.1990, R. NOREIKA ; 1 ♂, same locality, 23.VIII.1990, pupa on *Crataegus hissarica*, N 5066, ex. p. 31.VIII.1990, R. NOREIKA ; 2 ♂♂, 3 ♀♀, same locality, 18.VIII-5.IX.1990 (at light), R. NOREIKA ; 5 ♂♂, 3 ♀♀, same locality, 15.VII-10. VIII.1990 (at light), V. SRUOGA ; 1 ♂, Tajikistan, env. Nurek (Zardolu), 6.VIII.1990 (at light), R. PUPLESIS ; 1 ♀, same locality, 6.VIII.1990 (at light), V. SRUOGA.

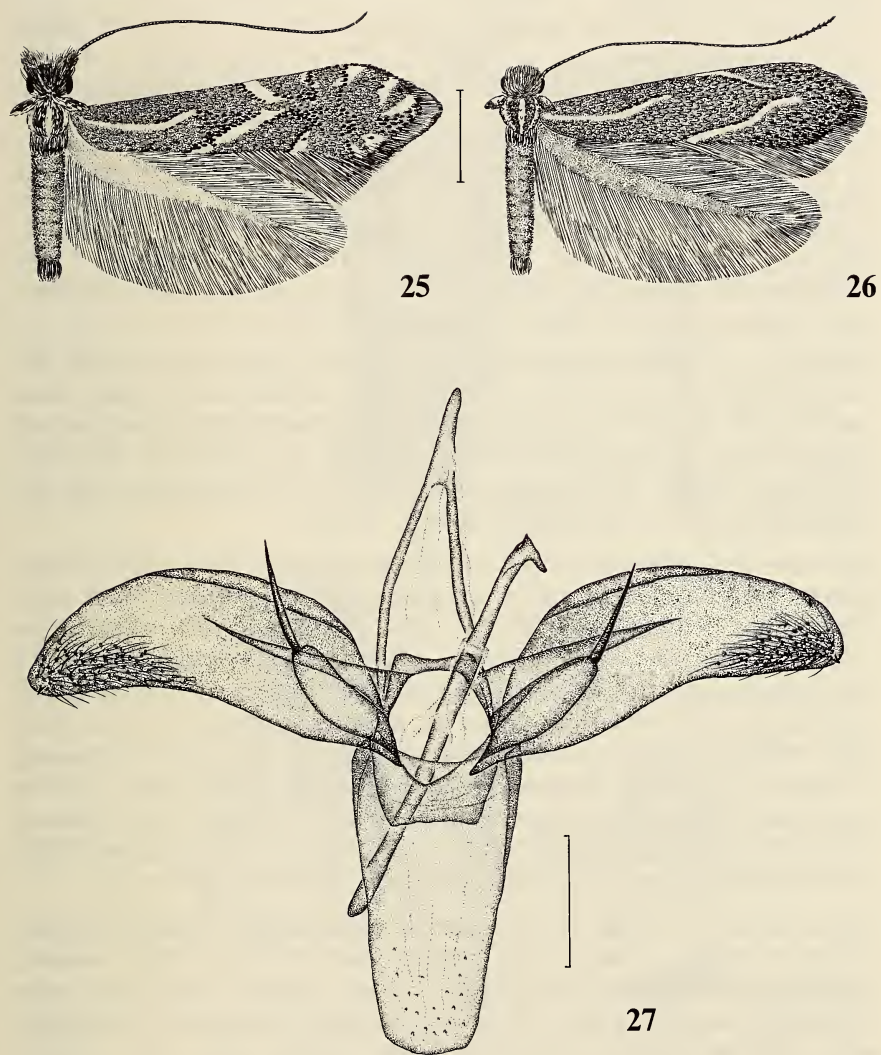
29. *Phyllonorycter corylifoliella* (HÜBNER) (Fig. 24)

MATERIAL EXAMINED : 2 ♂♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 14-20.VIII.1986, R. PUPLESIS ; 2 ♂♂, 6 ♀♀, same locality, 12.VIII-1.IX.1990, R. NOREIKA ; 3 ♀♀, same locality, 27.VII-10.VIII.1990, V. SRUOGA ; 1 ♀, same locality, 4.XI.1989, larva on *Crataegus hissarica*, N 5041, ex. p. 15.II.1990, R. PUPLESIS ; 2 ♀, Tajikistan, env. Nurek (Zardolu), 6.VIII.1990, R. PUPLESIS ; 2 ♂♂, 1 ♀, same locality, 6.VIII.1990, V. SRUOGA ; 1 ♀, same data, J. PUPLESIE NE.

30. *Phyllonorycter turanica* (GERASIMOV) (Figs 26-27)

Very similar to *Ph. corylifoliella* (HÜBNER) and *Ph. hissarella* NOREIKA, sp. n. From the latter it differs by the short, broad valva and by the narrowed 8th sternite (see Figs 27, 28) ; from *Ph. corylifoliella* it differs by the short apical barb of the aedeagus (see Figs 24, 27). The species was recorded for the Gissarskiy Ridge by KUZNETSOV (1981) and SHERNIYAZOVA (1984).

MATERIAL EXAMINED : 2 ♂♂, Uzbekistan, Osh, 27.IV.1930 and 21. IX.1930, A. GERASIMOV (paratypes) ; 1 ♂, Uzbekistan, Kitab, 20.VI.1926, larva on *Malus* sp., A. GERASIMOV ; 1 ♂, Tajikistan, Stalinabad (now Dushanbe), 13.VIII.1953, larva on *Malus* sp., V. KUZNETSOV ; 1 ♂, Turkmenistan, Kara-Kala, 14.VI. 1953, V. KUZNETSOV.



Figs 25-27. *Phyllonorycter* spp. 25 — *Ph. hissarella* sp. n., imago, holotype ; 26 — *Ph. turanica* (GRSM.), imago (scale 1.0 mm) ; 27 — idem, male genitalia (scale 0.2 mm).

31. *Phyllonorycter hissarella* NOREIKA, sp. n. (Figs 25, 28-32)

HOLOTYPE: ♂, Tajikistan, 30 km N Dushanbe, env. Varzob (Kondara), 15.VIII.90, R. NOREIKA.

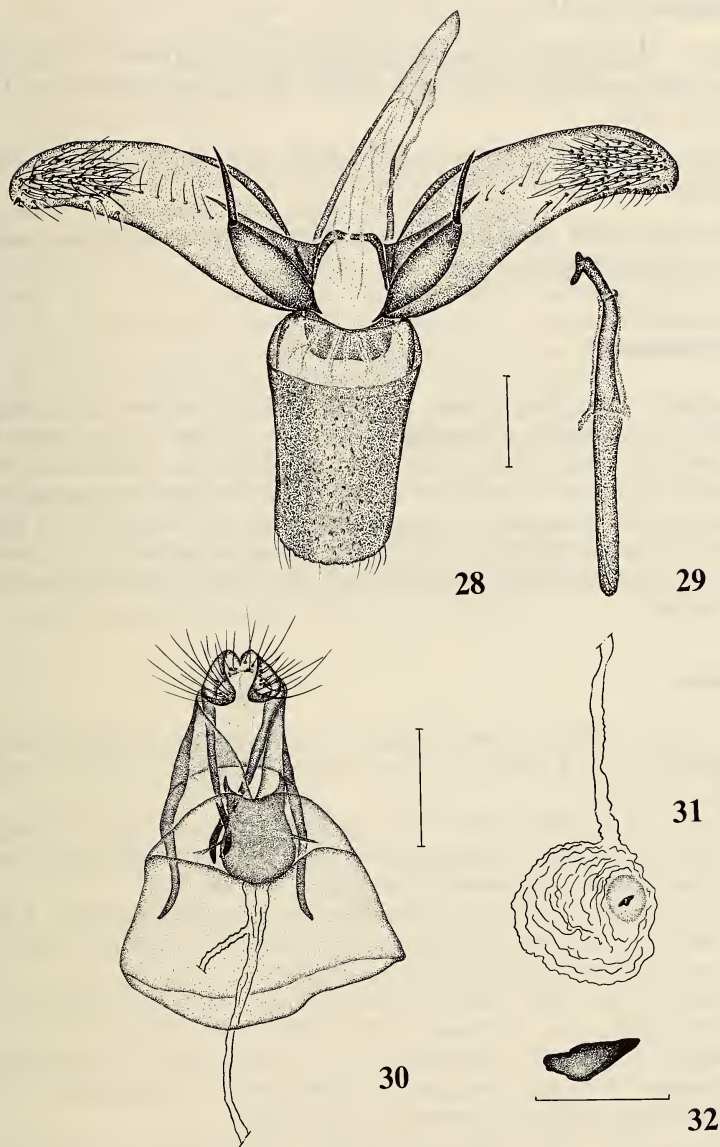
PARATYPES: 2 ♂♂, same locality as holotype, 10.VII-8. VIII.1971, larvae on *Cotoneaster hissarica*, ex. p. 3-18.VIII. 1971, R. SHERNIYAZOVA; 15 ♂♂, 2 ♀♀, same locality, 2-22. VII.1986, R. PUPLESIS; 15 ♂♂, 2 ♀♀, same locality, 17-18. VIII.1989, R. NOREIKA; 2 ♂♂, 1 ♀, same locality, 17.VIII. 1989, V. SRUOGA; 19 ♂♂, 36 ♀♀, same locality, 12.VIII.-4. IX.1990, R. NOREIKA; 18 ♂♂, 8 ♀♀, same locality, 18.VII-10.VIII.1990, V. SRUOGA; 6 ♂♂, same locality, 20.VII-5.VIII. 1990, R. PUPLESIS; 4 ♂♂, 7 ♀♀, same locality, 4-8.VIII. 1990, J. PUPLESIENE; 2 ♂♂, 5 ♀♀, same locality, 13-27.VI. 1991, V. SRUOGA; 2 ♂♂, 1 ♀, same locality, 18-19.VIII.1991, R. NOREIKA 2 ♂♂, Tajikistan, env. Nurek (Zardolu), 6.VIII. 1990, R. PUPLESIS; 2 ♂♂, Tajikistan, env. Dushanbe, 30 km N Gissar (Hanaka), 23.VII.1990, V. SRUOGA.

DIAGNOSIS: Closely related to *Ph. turanica* (GERASIMOV) and *Ph. corylifoliella* (HÜBNER), but differs by the slender and longer valva (see Fig. 28). From *Ph. turanica* it is distinguished by the apically curved aedeagus and the broad 8th sternite (see Figs 27, 28); from *Ph. corylifoliella* it differs by the short apical barb of the aedeagus and the trapezium-shaped vinculum (see figs 24, 28, 29).

DESCRIPTION: Wingspan 7.1-8.5 mm. Face shining white. Palpi creamy white. Tuft on head creamy. Antenna creamy whitish, with dark annulations on upperside. Thorax golden-ochreous with white stripe or blotch. Tegulae yellow-ochreous. Forewing yellow-ochreous with 4 costal striae and 3-4 dorsal striae, usually bright white. First costal and dorsal striae very long. Often black scales scattered over the wing apex forming a shadow around the striae. Medio-basal streak extending to basal 2/3 of wing, slender, nearly parallel to costal streak, or bent proximally. Sometimes apical blackish spot not distinct, but confused with dark scales surrounding apical striae. Cilia brownish cream. Cilia-line blackish, narrow. Hindwing brownish, cilia brownish cream.

MALE GENITALIA (Figs 28, 29). Almost symmetrical. Tegumen simple, rounded apically. Uncus long, slightly curved. Valva rather slender, tapering apically. Dorsal margin more or less straight. Some short setae distributed on apical part of valva. Transtilla developed. 8th sternite wide, rounded apically. Aedeagus a little shorter than valva, slightly broadened in middle and with short beak-shaped projection on apex.

FEMALE GENITALIA (Figs 30-32). Symmetrical. Papillae analis moderately short, covered with long setae. Apophysis posterioris and A. anterioris long, more sclerotized at apex. Sinus vaginalis large, broadly rounded proximally. Ductus bursae slender, long, membranous along



Figs 28-32. *Phyllonorycter hissarella* sp. n. 28 — male genitalia, general view ; 29 — idem, aedeagus ; 30 — female genitalia, paratype, general view without bursa ; 31 — idem, bursa copulatrix ; 32 — idem, signum.

whole length. Corpus bursae globular with small round sclerite and tiny signum (Fig. 31).

BIOLOGY : Hostplant *Cotoneaster hissarica*. Larvae mine leaves in July-August and probably in autumn, adults fly in June-September. Otherwise unknown.

DISTRIBUTION : At present known only from mountains of Central Tajikistan.

ETYMOLOGY : The species is named after the local Tajikistan name of the Gissarskiy Ridge (Hissar).

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