Pasiphila hyrcanica sp. n. (Geometridae, Larentiinae) – a new species from Azerbaijan and Iran

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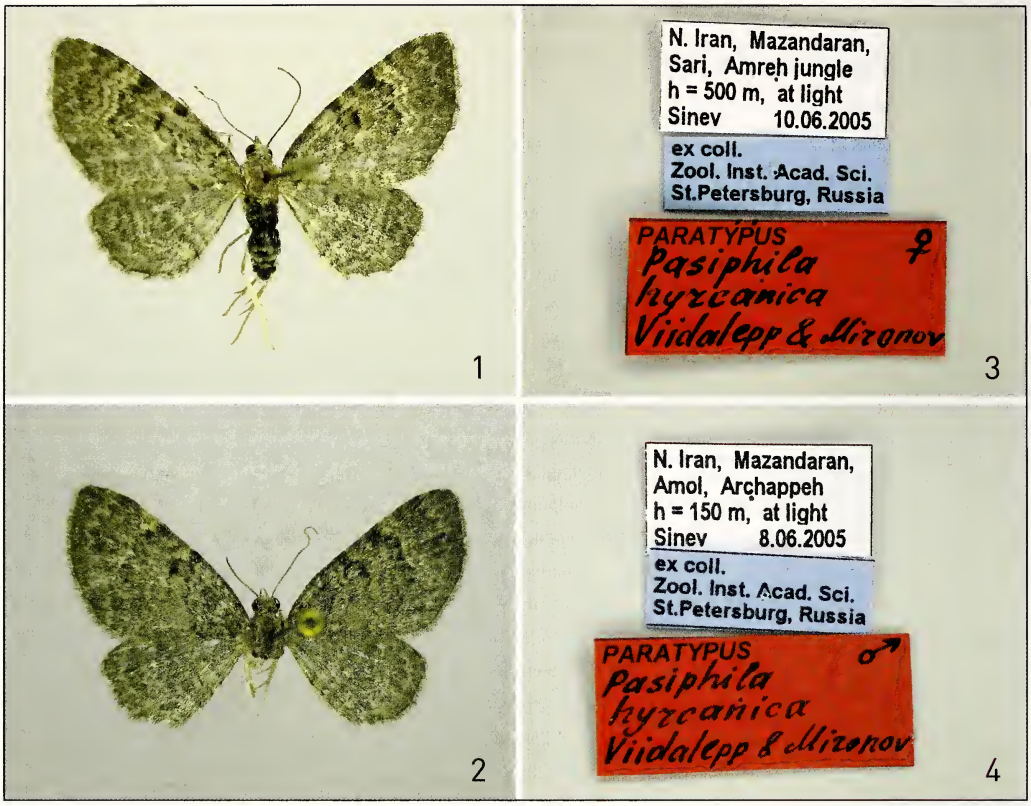
Abstract. A description of a new geometrid moth, *Pasiphila hyrcanica* Viidalepp & Mironov, sp. n. (Geometridae, Larentiinae), from south-eastern Azerbaijan (Talysh Mts.) and northern Iran (foothills of the Elburz mountains) is given. The holotype and some paratypes of the new taxon from Azerbaijan are kept in the collection of the Institute of Agriculture and Environment, Estonian Agricultural University Tartu (IAET), while other paratypes from Azerbaijan and Iran are kept in the collections of the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg, Russia (ZISP), of the Estonian Natural History Museum (NHMT) and in the private collection of T. Marnot, Tallinn.

Key words. Lepidoptera, Geometridae, *Pasiphila hyrcanica*, new species, Azerbaijan, Iran.

Introduction

The tribe Eupitheciini includes at least 39 genera and more than 1.700 species distributed worldwide. Of these, four genera and 133 species have been recorded from Europe (Mironov 2003). They are small, often greyish or brownish moths and their larvae feed on flowers and seeds rather than on leaves. Species belonging to the genus *Pasiphila* are characterized by having the forewing vein R_1 short and almost completely united with Sc and a short accessory cell without transverse vein. Their male genitalia, are characterized by the vesica of the phallus bearing two apical horn-like cornuti and numerous minute spines. The Catalogue of the Geometridae of the World (Scoble et al. 1999) includes 36 species of the genus *Pasiphila*. The majority of them, at least 27 species, are distributed in New Zealand and only 8 species are presently known from the Palaearctic Region. Holloway (1997) discussed the diagnostic characters of *Pasiphila* Meyrick, 1883 and of the related taxa *Gymnodisca* Warren, 1894 and *Rhinoprora* Warren, 1894, considering the Indo-Australian fauna. He stressed the different conformation of male antennae, that are fasciculate in *Pasiphila* and filiform in *Gymnodisca* (= *Rhinoprora*), and combined ten Bornean and Indo-Australian species under the subgenus *Gymnodisca* of *Pasiphila*. In this article we describe one new species, *Pasiphila* (*Gymnodisca*) *hyrcanica* Viidalepp & Mironov, sp. n., from the territory of Azerbaijan and Iran. The species was mentioned earlier as *Rhinoprora talyshensis* (nom. nud.) in the list of species of the tribe *Eupitheciini* of the U.S.S.R. (Mironov 1990) and in the checklist of Geometridae of the former U.S.S.R. (Viidalepp 1996).



Figs. 1–4. *Pasiphila hyrcanica* sp. n. **1.** Paratype ♀, N. Iran, Sari, ZISP. **2.** Paratype ♂, N. Iran, Amol, ZISP. **3.** Labels of paratype ♀, N. Iran, Sari. **4.** Labels of paratype ♂, N. Iran, Amol.

Pasiphila hyrcanica Viidalepp & Mironov, sp. n.

Material. Holotype ♂. [**Azerbaijan**] Talysh Mts. 20.vi.1984 | Dasdatuk leg. Marnot (coll. IAET). – Paratypes: ♂ Talysh, leg. Prasolov (coll. IAET); 5♂, 7♀ Talysh, 20.–29.vi.1984, Dashdatyuk, leg. Marnot & Lindt (slides nos 1759, 3191) (coll. IAET, Marnot and Lindt); 1♂, 4♀ Talysh, 17.–26.vi.1984, Lerik, leg. Jürivete, Lindt (coll. IAET, NHMT); 1♀ Talysh, 30.vi.1984, Alekseevka [village] leg. Lindt, (coll. NHMT); 1♀ Talysh (Mts.), Hyrcansky Forest, Alekseevka vill., on the glade at day, 13.v.1964, leg. Zaguljaev (ZISP); 1♀ Lenkoran, Avrora vill., Hyrcansky Forest, forest zone, at light, 23.v.1964, leg. Zaguljaev (ZISP); 1♂, N. **Iran**, Mazandaran, Amol, Archappeh, 150 m, at light, 8.vi.2005, leg. Sinev, (ZISP); 6♀ Mazandaran, Sari, Amreh jungle, 500 m, at light, leg. Sinev, 10.vi.2005 (ZISP). 2♀ Iran, prov. Mazandarăn, 1 km E of Razan, 1190 m, 9.v.2000, leg. Szabó & Hentschel (coll. Sommerer, Munich).

Description. (Figs. 1–4). Wingspan 16–19 mm; length of forewing 8–10 mm. Labial palpi elongate and narrow, lanceolate-oblong, about 1.5 times longer than diameter of eye, pale grey irrorated by black scales. Frons, vertex and nothum pale grey or grey. Forewing broad with slightly arched costa, evenly curved terminal margin and more or less obtuse apex; ground colour grey; transverse lines blackish grey; antemedial line evenly curved; medial line dentated, inconspicuous; postmedial line angled twice between costa and M3 (as in *P. rectangulata* (Linnaeus, 1758), but less prominent than in this species); terminal area slightly darker with inconspicuous whitish subterminal line; terminal line narrow, blackish; discal dot distinct, intensely black, obliquely ovoid.

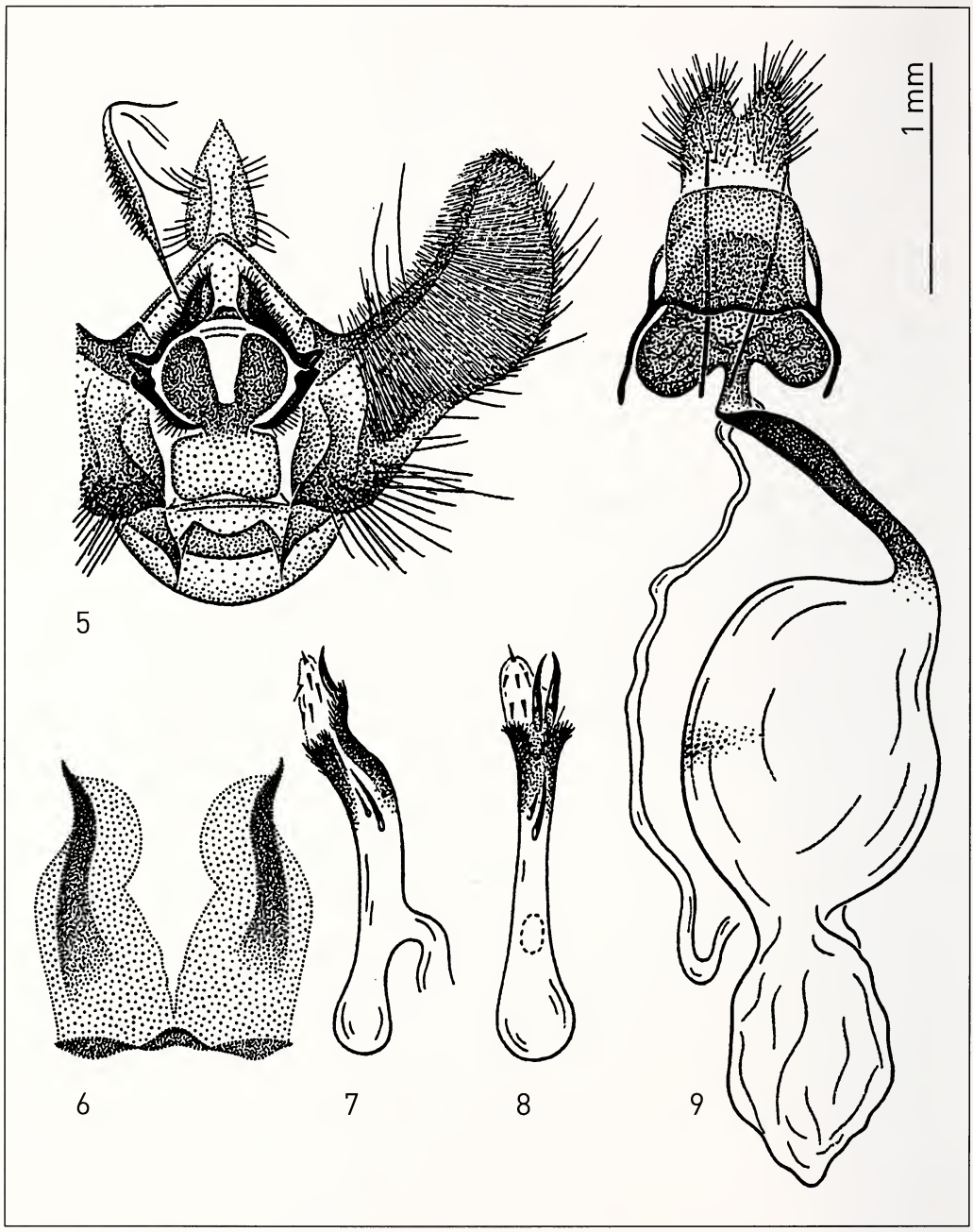
Fringe short, slightly chequered pale and dark grey. Hindwing of the same colour of the forewing, with indistinct transverse lines; postmedial line forming an angle near M3 vein; terminal area usually slightly darker, with very inconspicuous pale subterminal line; discal dot small, pale, rounded or ovoid, sometimes indistinct; terminal line and fringes as in forewing. Underside of wings paler than upperside; pattern similar to the upperside but inconspicuous, with the exception of the postmedial lines and discal dots on both fore- and hindwings. The postmedial lines are often distinct, broader and darker, more blackish than on the upperside. Abdomen covered with a mixture of pale grey and black scales.

Male genitalia (Figs. 5–8). Uncus elongate, broadened basally, membranous with numerous pores and some long setae. Anal tube thin, with elongate patch of short stout setae. Valve relatively short, with smoothly curved ventral margin, medially slightly broadened. Anterior arms of labides without membranous papillae, but covered with medium-sized setae on each apex. Juxta broad, rectangulate, with heavily sclerotized broad and elongated apical lobes. Vinculum large, broad, semicircular. Phallus thin and elongated, slightly curved, with broadened anterior end, shorter than length of valve. Vesica armed with two apical horn-like cornuti, one thin spine-like cornutus near ductus ejaculatorius base and some small spine-like cornuti. Sternite A8 large, broad, with narrow, heavily sclerotized basal margin and two broad apical rods which are curved, pointed and sclerotized to their apices.

Female genitalia (Fig. 9). Bursa copulatrix large, ovate, membranous, with large globular membranous diverticulum at base, armed with small, rather indistinct scobinate signa in the medial part. Ductus bursae thin and elongated, inclined to one side, heavily sclerotized. Ductus seminalis long and thin, membranous, attached to the posterior part of the ductus bursae near to the border with the antrum. Colliculum absent. Antrum narrow, slightly sclerotized. Lamella antevaginalis large, almost inversely heart-shaped, heavily sclerotized and wrinkled. Tergite A8 almost quadrate, with narrowly sclerotized anterior margin and rounded posterior corners. Anterior and posterior apophyses relatively short and thin, but anterior apophyses slightly thicker than posterior ones. Basal arms of anterior apophyses thin, slightly broadened to apices. Papillae anales large, elongated, tapering to tips.

Habitat. The species was collected in the northern slopes of the Elburz Range along the southern coast of the Caspian Sea and in Talysh Mts., at the altitude of about 150–500 m above sea level, in the humid hyrcanic forests. Most specimens were collected at light during the night; only one specimen was collected in the daytime. The natural vegetation of the area consists of the broad-leaved humid hyrcanic forest with *Quercus castaneifolia*, *Fagus orientalis*, *Tilia begonifolia* and also *Crataegus meyeri*, *C. microphylla*, *C. kyrtostyla*, *Pyrus grossheimii*, *Malus orientalis*, *Prunus divaricata* and *P. spinosa* dominating.

Life history. The moths were collected from the mid-May to late June together with *Pasiphila rectangulata* (Linnaeus, 1758) and *Chloroclystis v-ata* (Haworth, 1809). The foodplants are unknown, but the larvae may feed on flower buds or flowers of *Prunus* or *Crataegus*.



Figs. 5–9. Male and female genitalia of *Pasiphila hyrcanica* sp. n. **5.** Male genitalia. **6.** Male eighth sternite. **7–8.** Phallus lateral and ventral, with vesica semi-everted (slide no. 1759, IAET). **9.** Female genitalia (slide no. 3191, IAET).

Distribution. The species is known from the northern slopes of the Elburz Range along the southern coast of the Caspian Sea (North Iran), including Talysh Mts. (south-eastern Azerbaijan).

Derivatio nominis. The name of the new species is derived from that of Hyrcanian biogeographical province, where the species is distributed. Initially the same species was supposed to be a local endemic of Talysh Mts. and mentioned in literature as *Pasiphila talyshensis* Viidalepp (*nomen nudum*) (Mironov, 1990). The subsequent citation (Viidalepp 1996) does not validate this name (ICZN 11.5.2), and we propose for the species a new name, *Pasiphila hyrcanica* Viidalepp & Mironov. Talysh area is merely northern periphery of the Hyrcanian province, and the new name will indicate wider distribution of the species in the province.

Differential diagnosis. This species is externally very similar to *Pasiphila chloerata* (Mabille, 1870) and can easily be confused with the latter. It differs from *P. chloerata* and *P. rectangulata* in the straighter course of dark postmedial line underneath and for having larger black discal spots. However, the male genitalia of *P. hyrcanica* may be easily distinguished by the elongated patch of stout setae on the ventral surface of the anal tube, the narrowly rounded apex of valve, the longer and broader apical lobes of juxta, the longer and slimmer phallus and the shape of the eighth sternite with broader lyre-shaped apical arms than in *P. chloerata*. Female genitalia differ in the shape of bursa copulatrix, in having one patch of very small, indistinct scobinate signa, and for the inclined and sclerotized ductus bursae, the narrower antrum and the almost inversely heart-shaped wrinkled lamella antevaginalis. In our opinion, *P. hyrcanica* must be placed near to *P. chloerata* (Mabille, 1870) and *P. subcinctata* (Prout, 1915) in the list of species of the genus *Pasiphila*, based on external similarity to both these species and on the basis of the structure of the male and female genitalia.

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