

## Three new species of the genus *Agonopterix* (Lepidoptera: Depressariidae) from Nepal

## Три новых вида рода *Agonopterix* (Lepidoptera: Depressariidae) из Непала

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Three new species of the genus *Agonopterix* are described from Nepal. Hitherto only two species of this genus were recorded from the Himalayas: *A. costaemaculella* (Christoph, 1882) and *A. cyclas* (Meyrick, 1910) (Meyrick, 1910; Diakonoff, 1952).

Три новых вида рода *Agonopterix* описаны из Непала. До сих пор только два вида из этого рода были отмечены из Гималаев: *A. costaemaculella* (Christoph, 1882) and *A. cyclas* (Meyrick, 1910) (Meyrick, 1910; Diakonoff, 1952).

**Key words:** Nepal, moths, Lepidoptera, Depressariidae, *Agonopterix*, new species

**Ключевые слова:** Непал, чешуекрылые, Lepidoptera, Depressariidae, *Agonopterix*, новые виды

### INTRODUCTION

The genus *Agonopterix* Hübner, 1825 is represented by about 240 species distributed mainly in the northern hemisphere (Hannemann, 1953, 1976; Lvovsky, 2001, 2006). The majority of species are confined to the forests of boreal and temperate zones and rare in tropical regions. The adult moths usually are on the wing during the second half of summer and in autumn, then hibernate and fly again in spring when oviposition takes place. As an exception *A. costaemaculella* (Christoph, 1882) hibernates in pupa and may be in last instar larvae (Lubarskaya, 1964). The larvae feed under the rolled up margin of leave on the herbaceous plants mainly belonging to the families Apiaceae and Asteraceae, but sometimes also on the trees. Some species are very similar in the colouration and pattern of the wings, but well differ in the genital structures.

Hitherto only two species of the genus were recorded from the Himalayas: *Agonopterix costaemaculella* and *A. cyclas*

(Meyrick, 1910) (Meyrick, 1910; Diakonoff, 1952). Our study of the additional material collected in Nepal revealed three more still undescribed species which are considered below.

The type material of newly described species are deposited at the Zoologische Staatssammlung, Munich, Germany (ZSM), Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZIN), and Zoological Museum, University of Helsinki, Finland (ZMUH).

### TAXONOMY

Order **LEPIDOPTERA**

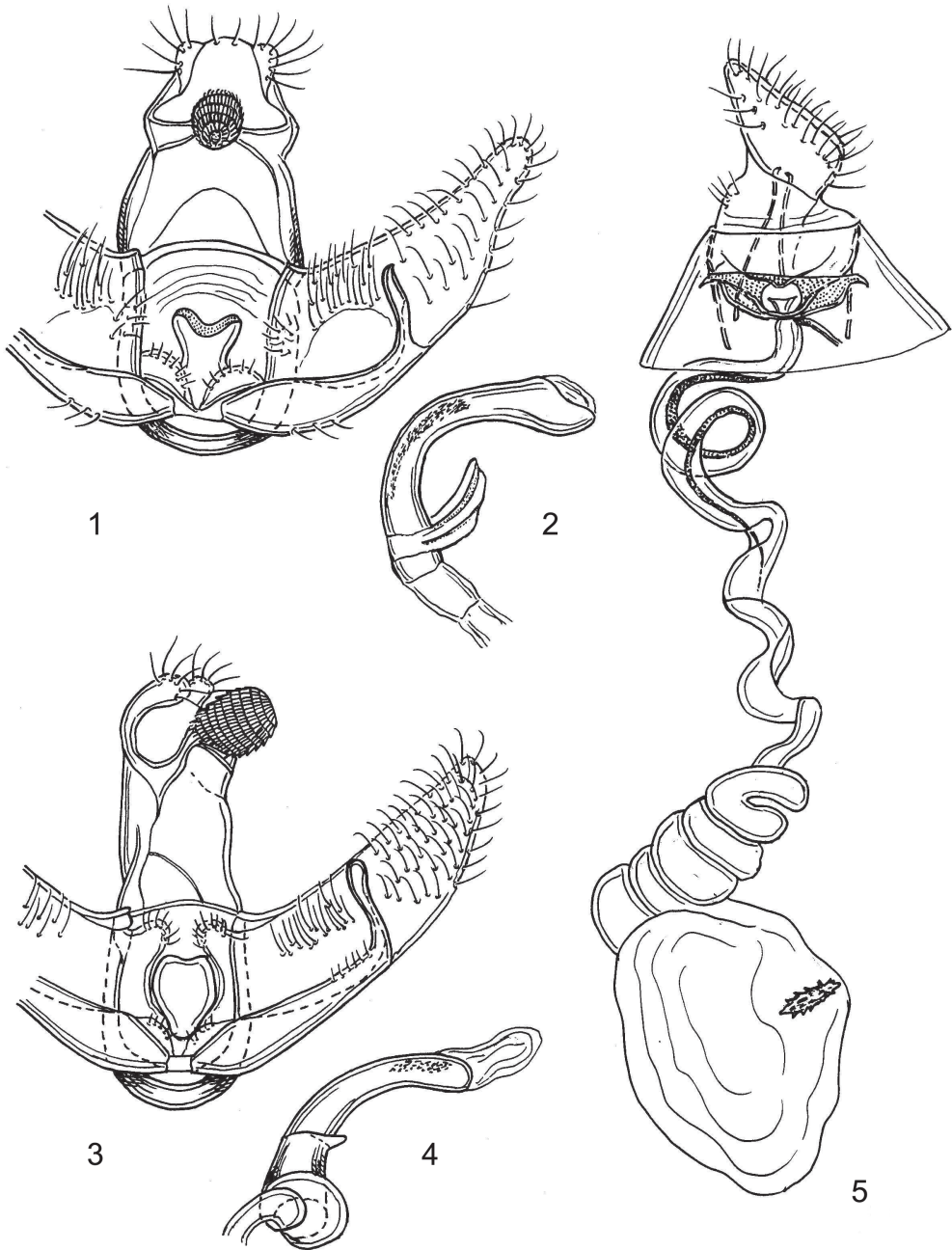
Family **DEPRESSARIIDAE**

*Agonopterix* Hübner, 1825

*Agonopterix dierli* sp. nov.

(Figs 1–2)

*Holotype*. Male; **Nepal**, “Prov. Nr 3, East Khumjung, 3800 m”, 12 July 1964; leg. W. Dierl; “gen. prep. No. 15 (det. Lvovsky)”; ZSM.



**Figs 1–5.** *Agonopterix* spp., genitalia. 1–2, *A. dierli* sp. nov.; 3–5, *A. parinkini* sp. nov. Male genitalia without aedeagus (1, 3); aedeagus (2, 4); female genitalia (5).

*Paratypes.* 7 males; same locality as for holotype; 2 males collected 12 July 1964 – ZIN, 5 males collected 12–14 July 1964 – ZSM. 1 male; **Nepal**, *Khumbu*, Khumdzung, 3900 m, 24 July 1962; leg. G. Ebert and H. Falkner; ZIN. 2 males; **Nepal**, Tanga, 3900 m, 29 July 1962; leg. G. Ebert and H. Falkner; ZSM, ZIN. 3 males; **Nepal**, East Pangpoche, 4000 m, 4 July 1964; leg. W. Dierl; ZSM.

*Description.* Forewing length 10–12 mm, wingspan 20–24 mm. Head and thorax black. Hind margin of thorax with white point. Labial palpi upcurved, with white and black scales; second segment rather narrow and twice longer than apical one. Forewing white with dark specks and large black spot above discal vein reaching costal margin of the wing; discal point is not marked; black dotted line along costal and outer margin. Hindwing white.

Male genitalia (Figs 1, 2). Socii small. Gnathos nearly rounded. Transtilla narrow. Lower margin of valva slightly concave near apex. Cuiller (sclerotized process at the distal end of sacculus) nearly straight and do not reach upper margin of valva. Aedeagus strongly curved, 4 times longer than cuiller, with large caulis and tiny cornuti.

*Diagnosis.* The new species is close to *Agonopterix malaisei* (Diakonoff, 1952) (= *Cryptolechia malaisei* Diakonoff) described from Myanmar (Burma), differing by the absence of the ochreous-pink tint of the forewing and the absence of the short black stripe near the base of the forewing. The large black spot above the discal vein of the forewing is absent in *A. malaisei*. Male genitalia in *A. malaisei* have shorter valva and aedeagus, the latter being only 2 times longer than the cuiller.

*Etymology.* The species is named after the late Dr. Wolfgang Dierl, the collector of the type series.

***Agonopterix parinkini* sp. nov.**  
(Figs 3–5)

*Holotype.* Male; **Nepal**, “*Prov. Nr 3*, East Bujan, Dudh Kosi Tal, 2900 m”, 18–19 July 1964; leg. W. Dierl”; “gen. prep. No. 16 (det. Lvovsky)”; ZSM.

*Paratypes.* 6 males and 2 females; same data as for holotype; 5 males and 1 female – ZSM, 1 male and 1 female – ZIN. 1 male; **Nepal**, East Pulschuk, 2500 m, 16 June 1967; leg. Dierl, Forster, Schacht; ZSM. 1 male; **Nepal**, East Jubing, 1600 m, 8 May 1964; leg. W. Dierl; ZIN.

*Description.* Forewing length 8.5–11 mm, wingspan 18–23 mm. Head, thorax and base of forewing black. Labial palpi upcurved, with pale yellow and brown scales; second segment rather narrow and 1.5 times longer than apical one. Forewing white with pale yellow tint and dark specks; discal point white surrounding with large fuscous spot; black spot at costal margin near apex and black point in the middle of cell; black dotted line along costal and outer margins. Hindwing white or pale grey.

Male genitalia (Figs 3, 4). Socii small. Gnathos nearly rounded. Transtilla narrow. Lower margin of valva slightly convex in distal part. Cuiller with rounded apex reaching upper margin of valva. Aedeagus curved, 2.5 times longer than cuiller, with small caulis and tiny cornuti.

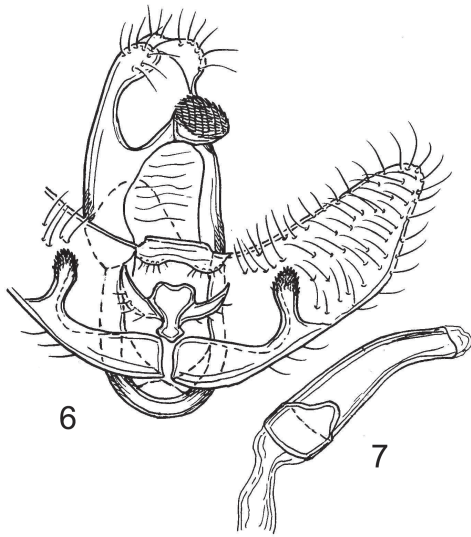
Female genitalia (Fig. 5). Ovipositor short. Ostium opens in the fold between 7 and 8 sternites. Ductus bursae very long and spirally curved, with sclerotized filament in distal part. Signum sclerotized and elongated, with small teeth.

*Diagnosis.* The new species is close to *Agonopterix dierli* sp. nov., differing by the white discal point and black spots at the costal margin near the apex and at the base of the forewing. The hind margin of the thorax is without a white point. In male genitalia, it differs by having a longer cuiller reaching the upper margin of the valva and aedeagus with a very small caulis.

*Etymology.* The species is named in the memory of a Russian zoologist Alexandr Petrovich Parinkin.

***Agonopterix mikkolai* sp. nov.**  
(Figs 6, 7)

*Holotype.* Male; **Nepal**, “Kathmandu, Phulchoki Mt., 1700 m”, 26 February 1995; leg. K. Mikkola and A. Wikberg; “gen. prep. No. 145”; ZMUH.



Figs 6–7. *Agonopterix mikkolai* sp. nov. Male genitalia without aedeagus (6); aedeagus (7).

**Description.** Forewing length 12 mm, wingspan 25 mm. Head pale brown, thorax and base of forewing white. Labial palpi upcurved, with white and brown scales; second segment rather narrow and 1.4 times longer than apical one. Forewing pale brown with black specks at the anterior half of the wing; discal point is not marked in the middle of cell. Basal half of hindwing white, outer half pale grey.

Male genitalia (Figs 6, 7). Gnathos nearly rounded. Transtilla narrow. Cuiller rather thick and short, does not reach upper margin of valva. Apex of cuiller rounded, covered by tiny teeth. Aedeagus slightly curved, 3 times longer than cuiller, with small caulis and without cornuti.

**Diagnosis.** The new species is close to *Agonopterix malaisei* (Diakonoff, 1952), differing by the white colour of thorax and base of the forewing and by the absence of the black discal point. In male genitalia, it differs by numerous teeth on the apex of the cuiller.

**Etymology.** The species is named after Finnish entomologist Dr. Kauri Mikkola, the collector of holotype.

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#### REFERENCES

- Diakonoff, A.N.** 1952. Entomological results from the Swedish expedition 1934 to Burma and British India. *Arkiv för Zoologi*, **3**(6): 59–94.
- Hannemann, H.J.** 1953. Natürliche Gruppierung der europäischen Arten der Gattung *Depressaria* s. l. (Lep. Oecoph.). *Mitteilungen aus dem Zoologischen Museum in Berlin*, **29**(2): 269–373.
- Hannemann, H.J.** 1976. Depressarien-Studien (Lep., Oecophoridae). *Deutsche entomologische Zeitschrift*, N. F. **23** (4–5): 233–252.
- Lubarskaya, V.N.** 1964. New data about pest of *Phellodendron amurense* Rupr. *Reports of Far Eastern Department of SO AN SSSR, Vladivostok*, **23**: 107–110. (In Russian).
- Lvovsky, A.L.** 2001. A review of the flat moths of the genus *Agonopterix* Hbn. (Lepidoptera, Depressariidae) from the fauna of Russia. *Trudy Zoologicheskogo Instituta Rossiyskoy Akademii Nauk*, **291**: 47–96. (In Russian).
- Lvovsky, A.L.** 2006. Check-list of the broad-winged and flat moths (Lepidoptera: Oecophoridae, Chimabachidae, Amphisbatidae, Depressariidae) of the fauna of Russia and adjacent countries. *Trudy Zoologicheskogo Instituta Rossiyskoy Akademii Nauk*, **307**: 1–118. (In Russian).
- Meyrick, E.** 1910. Descriptions of Indian Micro-Lepidoptera. *The Journal of the Bombay Natural History Society*, **20**: 143–168.

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