

**DODIA MAJA SP. N., A NEW TIGER MOTH  
FROM THE MAGADAN TERRITORY, RUSSIA  
(LEPIDOPTERA, ARCTIIDAE)**

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A new species *Dodia maja* sp. n. (Lepidoptera, Arctiidae) is described from the Magadan region of Russia. Illustrations of adults, genitalia, and third-instar larva are provided. A diagnostic comparison is made with *Dodia kononenkoi*, *D. transbaikalensis*, *D. verticalis*, *D. albertae*, *D. tarandus*, *D. diaphana* and *D. sazanovi*.

Key words: Lepidoptera, Arctiinae, *Dodia*, new species, Russia

## INTRODUCTION

During an expedition to the Magadan territory in the summer of 2006 we found two interesting species of tiger moths during exploration of dry rocky habitats at higher elevations. The first *Dodia kononenkoi* TSHISTJAKOV et LAFONTAINE, 1984 was easily recognisable, but the second species didn't match any known Palaearctic or Arctic species. The weather conditions in the mountains north of the Magadan were very unstable, so we had to wait for rare sunny days in each location and then try to assemble as much material and data in the field as possible. Later on, comparisons with existing material and literature revealed these specimens to be a new species. The description of the new species is the subject of this paper.

## MATERIAL EXAMINED

We were unable to see type material of any *Dodia* species. However, for comparisons our own material was used and compared with photographs. Specimens for comparisons were collected at the following locations: *D. diaphana*, 8 ♂: Arzaity pass, W Tannu-Ola Mts., Tyva, Russia, and 4 ♂: Mt. Argalyg-Kozhagar, W Tannu-Ola Mts., Tyva, Russia, and 2 ♂: Uyukskiy Rdg. Sush village env., Zapadnyy Sayan, Tuva, Russia; 12 ♂: Khemtchegelig-Khem river, Tsagan-Shibetu Mts., Tyva, Russia; *Dodia diaphana arctica*, 3 ♂: Kupka, km 119 road to Omsukchan, Magadanskaia oblast, Russia; *D. albertae*, 13 ♂: km 67 – Dempster Hwy., Prospector Range, Yukon Territory, Canada, 5 ♂: km 153 – Dempster Hwy., Windy Pass, Yukon Territory, Canada, and 1 ♂: Goluboe ozero, Magadanskaia oblast, Russia; *Dodia sazanovi*, 20 ♂, 15 ♀: Mt. Argalyg-Kozhagar, W Tannu-Ola Mts, Tyva, Russia and 2 ♂, 2 ♀: Khr. Utug-Khaya Tsagan-Shibetu mts. Russia; *D. kononenkoi*, 6 ♂: Goluboe

ozero, Magadanskaia oblast, Russia, and 82 ♂, 4 ♀: km 463 Dempster Hwy., Yukon Territory, Canada; *D. transbaikalensis*, 3 ♂: Tsagan-Shibetu Mts., Khemtchegelig-Khem r., SW Tyva, Russia.

*Abbreviations of collections* – JRKS – coll. JURIJ REKELJ (Kranj, Slovenija); MČBS – coll. MARTIN ČESANEK (Bratislava, Slovakia); TKKS – coll. TONE KODRAN (Kranj, Slovenija).

### ***Dodia maja* REKELJ et ČESANEK, sp. n.**

**Holotype:** ♂, Russia, Far E. Magadanskaia oblast, Khasinskii okrug, Maimandzhinskii khrebet, Goluboe ozero, km 25 of road to Talaia village, 800–900 m, (61°06'41"N; 152°15'41"E), 7. – 8. July 2006, leg. J. REKELJ; deposited in the Hungarian Natural History Museum, Department of Zoology, Budapest, Hungary.

**Paratypes:** 1 ♀, Russia, Far E. Magadanskaia oblast, Khasinskii okrug, Maimandzhinskii khrebet, Goluboe ozero, km 25 of road to Talaia village, 800–900 m, (61°06'41"N; 152°15'41"E), 7–8. July 2006, leg. J. REKELJ, (JRKS). 1 ♂, Russia, Far E. Magadanskaia oblast, Omsukchanskii raion Omsukchanskii khrebet., Kapranovskii pass (1300 m), env. road to Osadochnyl village 1000–1200 m, (62°09'39"N; 155°17'23"E), 29. June–6. July 2006, leg. J. REKELJ, (JRKS); 3 ♂♂, 29. June–6. July 2006, leg. M. ČESANEK, (MČBS); 2 ♂♂, 29.6.–6.7.2006, leg. T. KODRAN, det. J. REKELJ, (TKKS). 2 ♂♂, Russia, Far E. Magadanskaia oblast, Khasinskii okrug, gory Del – Urekchen, Karamken pass, 800–900 m, (60°19'N; 151°11'5"E), 17–19. June 2006, leg. J. REKELJ, (JRKS).

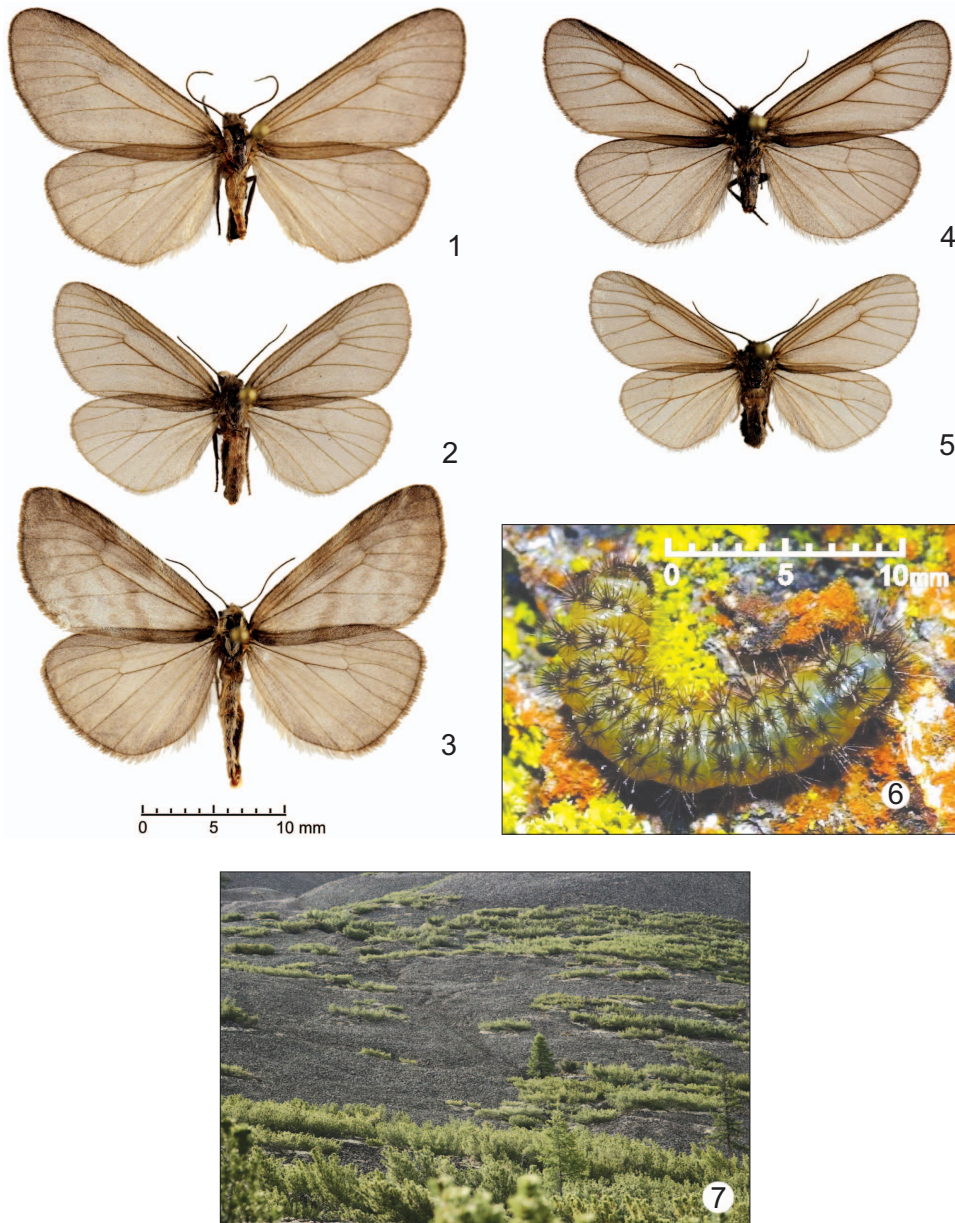
**Description** – Male (Fig. 4): body completely black. Wings translucent, black-gray, entirely without pattern, veins darker than ground colour. Forewings powdered darker at base, near wing margin and along discal vein. Forewing length: 14.5 to 16 mm.

**Male genitalia** (Figs 10, 13, 14, 17, 18): uncus simple, slightly constricted in the middle, tapered at apex and toward base. Aedeagus about 5 times as long as wide and 2/3 as long as valve, cylindrical, slightly curved on basal third, without setae apically. Vesica with one big apical diverticulum and one small, adjacent to opening of seminal duct. Vesica with two spine clusters: one bigger near opening of seminal duct with 10 to 14 spines, and the second one smaller on the opposite side with 5 to 8 spines. Apical pouch evenly covered with short setae which are a little bigger near spine clusters and opening of seminal duct. Base of seminal duct with small lightly sclerotized plate. Dorsal margin of valve narrow, with a shallow rectangular groove near base. Apex of valve simple, with a small rounded process dorsally and a big triangular process ventrally. Groove between those processes shallow or almost missing.

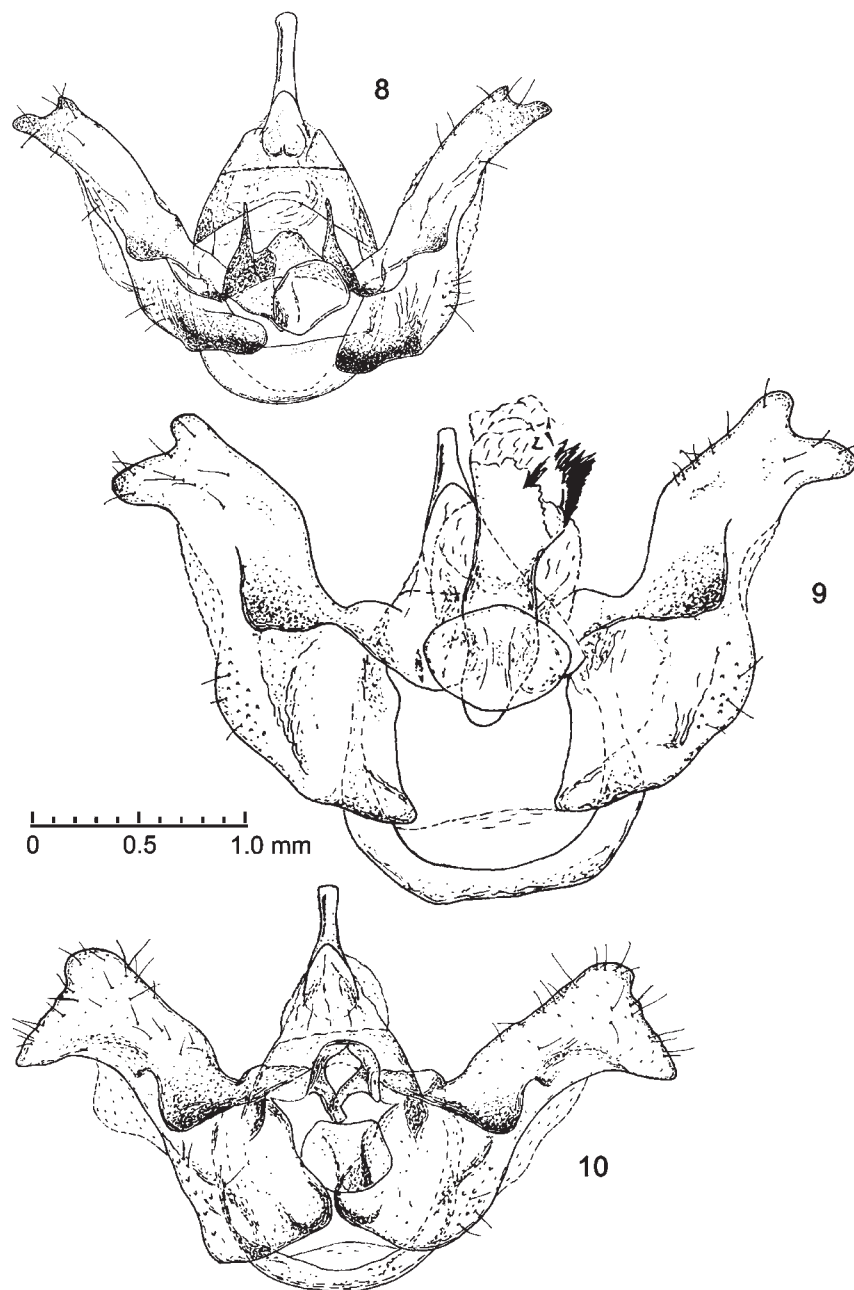
**Female** (Fig. 5): head, prothoracic collar, tegulae and thorax black, abdomen lighter dark gray at the base and ventrally. Wings translucent, black-grey, but lighter than those of male, without pattern. Forewings slightly darker at the base and along discal vein. Forewing length: 12 mm.

**Female genitalia** (Figs 16, 19): ovipositor lobes rounded. Unforked anterior portion of anterior apophyses very short about 1/2 as long as forked portion. Posterior apophyses thorn-like shape, slightly longer than unforked anterior portion of anterior apophyses. Ostium bursae well sclerotized, simple. Ductus bursae long, cylindrical, weakly sclerotized, more strongly laterally on the first third. Corpus bursae circular, with two signa laterally one on each side.

**Distribution:** At present *Dodia maja* is known only from far eastern Magadanskaia oblast. However, similar biotopes are widespread and the species is probably more widely distributed.

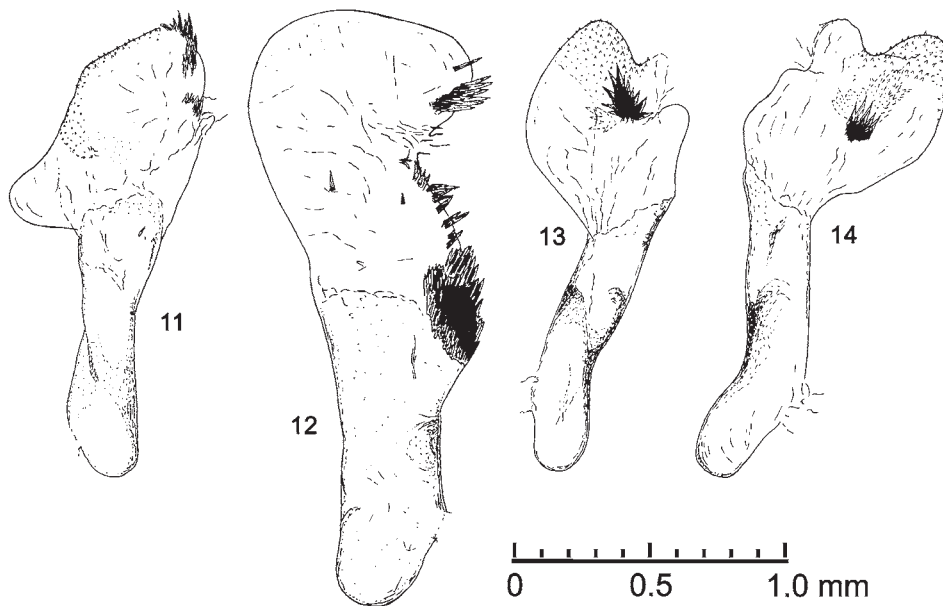


**Figs 1–7.** Adults of *Dodia* sp.: 1–2 = *D. kononenkoi* TSHISTJAKOV et LAFONTAINE, 1984: 1 = male, Magadanskaia oblast, Russia; 2 = female, Yukon Territory, Canada; 3 = *D. albertae* DYAR, 1901, male, Yukon Territory, Canada; 4 = *D. maja* sp. n., holotype, male, Magadanskaia oblast, Russia; 5 = *D. maja* sp. n., paratype, female; 6 = third instar larva in laboratory; 7 = habitat – dry rocky tundra above Goluboe ozero

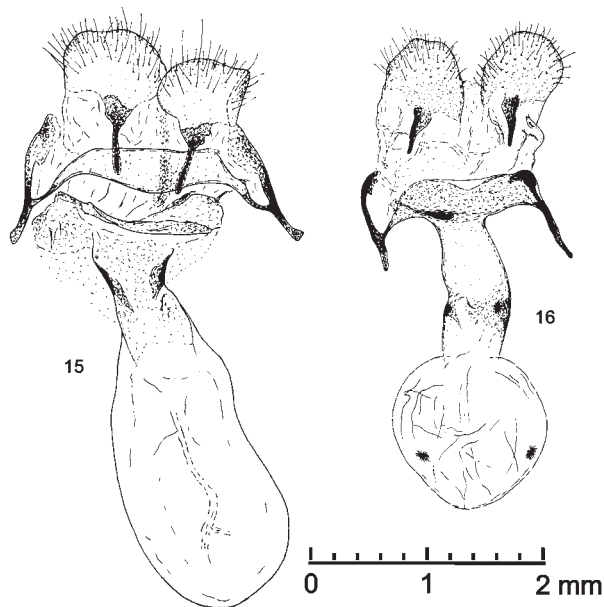


**Figs 6–7.** Male genitalia of *Dodia* sp.: 8 = *D. albertae* DYAR, 1901, Yukon Territory, Canada; 9 = *D. kononenkoi* TSHISTIAKOV et LAFONTAINE, 1984, Magadanskaia oblast, Russia; 10 = *D. maja* sp. n., holotype

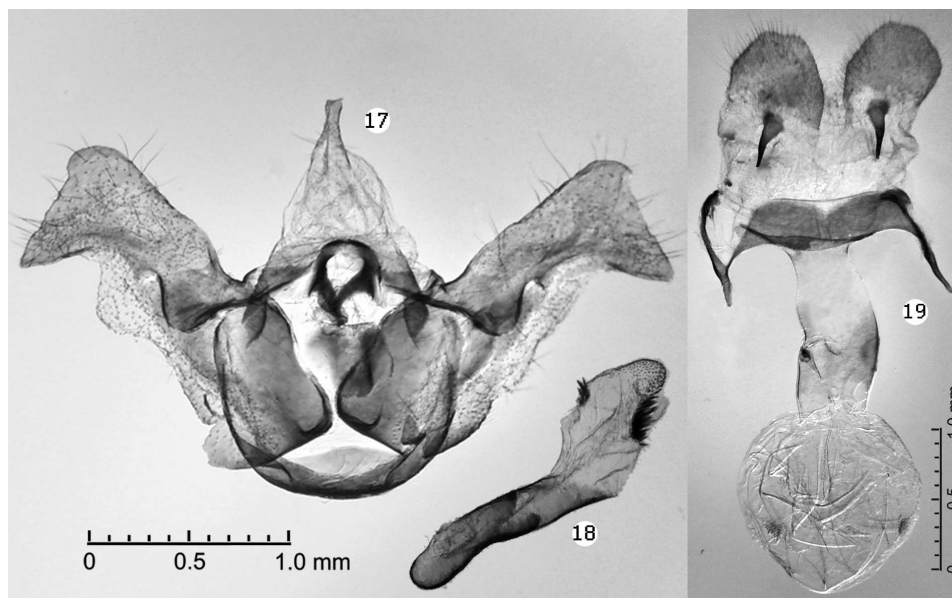
Ecology: Adults were collected between mid June and early July. The moths are local, occurring on areas of dry tundra, southwest-facing rocky slopes exposed to the sun above the tree line or in glades with small groups of low coniferous trees (Fig. 7). Adults are active at nightfall, but they can also fly during cloudy periods of the day. They are strong, but languid fliers and barely distinguishable from the background of overgrown lichens on the rocks, especially in the evening. Moths are not attracted to light traps, probably because of their short evening flight period when artificial light is not strong enough to attract them. The female waits for the male hidden under or between rocks. One female was observed after she laid her first big batch of 20 eggs close to the cocoon. In captivity this female laid four more groups of 5 to 10 eggs. Initially the eggs are orange-yellow turning to pale yellow after about 8 days. Caterpillars hatch from the eggs after 10 to 14 days. The first three instars of larva have a black head, pale yellow body and black setae (Fig. 6). Rearing under laboratory conditions is relatively simple with *Taraxacum* and *Plantago* supplied as food. Winter hibernation was unfortunately unsuccessful.



**Figs 11–14.** Male genitalia – aedeagus with everted vesica of *Dodia* sp.: 11 = *D. albertae* DYAR, 1901, Yukon Territory, Canada; 12 = *D. kononenkoi* TSHISTJAKOV et LAFONTAINE, 1984, Magadanskaia oblast, Russia; 13–14 = from both sides, *D. maja* sp. n., holotype



**Figs 15–16.** Female genitalia of *Dodia* sp.: 15 = *D. kononenkoi* TSHISTJAKOV et LAFONTAINE, 1984, Yukon Territory, Canada; 16 = *D. maja* sp. n., paratype



**Figs 17–19.** Genitalia of *D. maja* sp. n.: 17 = ♂, holotype; 18 = aedeagus with vesica everted, holotype; 19 = ♀, paratype

Diagnosis – The new species is distinguishable from *D. kononenkoi* TSHISTJAKOV et LAFONTAINE, 1984 (Figs 1, 2) [compared with photographs of paratype, and our own material] by the darker colour of its body and wings, smaller size, shape of dorsal margin and apex of valve, and different morphology of the vesica (Figs 9, 12). From *D. transbaikalensis* TSHISTJAKOV, 1988 [compared with illustrations of holotype, and our own material] the new species is distinguishable by its smaller size, darker colour of the body and wings, dark and non-translucent veins, different shape of the uncus and valves, and different morphology of the vesica. The differences between the female of *D. maja* sp. n. and *D. verticalis* LAFONTAINE et TROUBRIDGE, 2000 [compared with photographs of holotype] are in size and colour of wings and body. The forewing and hindwing are completely without pattern as opposed to *D. verticalis*. Adults can be easily distinguished from those of *D. albertae* DYAR, 1901 (Fig. 3) [compared with photographs of lectotype – shown by TSHISTJAKOV & LAFONTAINE (1984), and our own material] and *D. tarandus* MACAULAY et SCHMIDT, 2009 [compared with illustrations of holotype] by the lack of pattern on the forewings, and by different morphology of the uncus, valves and vesica. From *D. diaphana* EVERSMANN, 1848 [compared with illustrations – shown by TSHISTJAKOV (1988), and our own material] the new species is distinguishable by a disparity of colour on the prothoracic collar and abdomen, and also by the different structures of genitalia on both species. *D. maja* sp. n. can be easily distinguished from *D. sazonomi* DUBATOLOV, 1990 [compared with illustrations of holotype, and our own material] by difference in size of wings. Forewing length at males of *D. sazonomi* just to 11 mm (forewing length of males at *D. maja*: 14.5 to 16 mm), females of *D. sazonomi* are flightless with forewing length 5 mm (forewing length of females at *D. maja*: 12 mm). Internally, differences are in shape of the uncus and valves, and in morphology of the vesica.

Etymology: The new species is dedicated to author's wife, MAJA REKELJ.

## DISCUSSION

Regarding the ecology, *D. maja* and *D. kononenkoi* have been found only on dry rocky tundra hillsides. These two species are quite rare and cohabit with other moths, including Noctuidae *Hyptioxesta penthima* ERSCHOFF, 1870. At the type locality, Goluboe ozero, we found *D. maja* and *D. kononenkoi* flying together in the same location at the same time. At lower elevations near the lake in wet tundra habitat, a third species, *D. albertae* DYAR, was also found. In the other two locations adults were collected individually during cloudy periods of the day. Only one

female was found crawling on the top of a rock. Unfortunately despite several days of searching under rocks no female of *D. kononenkoi* was found.

Because of the external appearance, basic characteristics of the genitalia and the similar flight characteristics *D. maja* sp. n. is most closely related to the *D. kononenkoi* – *D. transbaikalensis* TSHISTJAKOV et LAFONTAINE, 1984 group. Similarity of the aedeagus and vesica with *D. albertae* DYAR, 1901 – *D. diaphana* EVERSMANN, 1848 group, exclude exchange with any species of the former group, but also indicates a smaller relationship with this one. Genitalia of the *D. kononenkoi* – *D. transbaikalensis* group and *D. albertae* – *D. diaphana* group were described and illustrated by TSHISTJAKOV (1988).

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