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**FIRST RECORD OF *PSEUDOHADENA ARGYLLOSTIGMA* (VARGA & RONKAY, 1991) FOR KAZAKHSTAN, WITH A CATALOGUE OF THE GENUS *PSEUDOHADENA* ALPHÉRAKY, 1889 OF KAZAKHSTAN (LEPIDOPTERA, NOCTUIDAE)**

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A poorly-known noctuid species *Pseudohadena argyllostigma* (Varga & Ronkay, 1991) is recorded from North-East Kazakhstan. This is one of the few records of the species since its description, and the first from Kazakhstan. The adults, male and female genitalia and habitat of the species are illustrated, the check-list of species of the genus *Pseudohadena* Alphéraky, 1889 of Kazakhstan is presented.

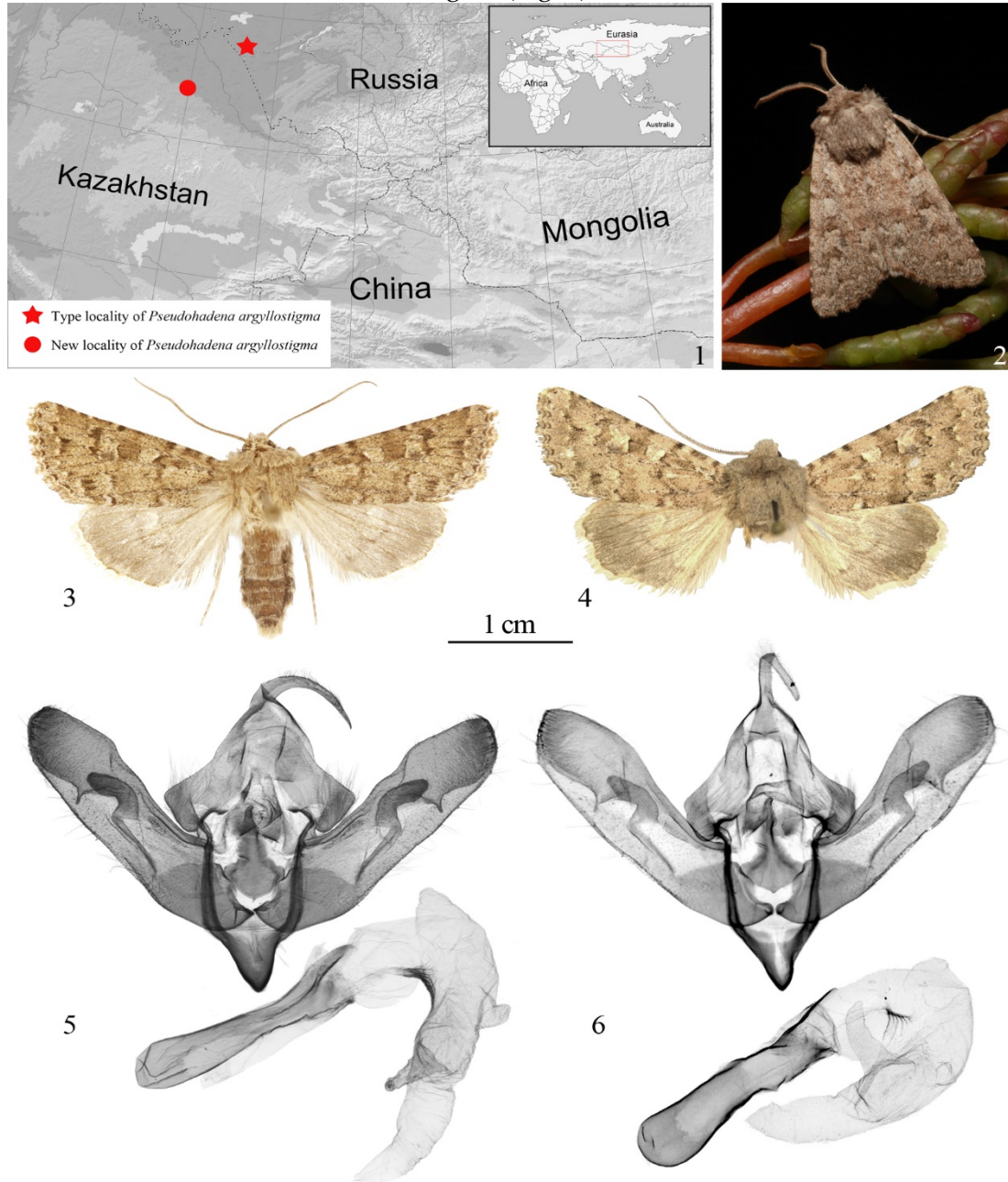
Key words: Lepidoptera, Noctuidae, Kazakhstan, new record.

## INTRODUCTION

The Palearctic genus *Pseudohadena* Alphéraky, 1889 belongs to the family Noctuidae Latreille, 1809, subfamily Xyleninae Guenée, 1837, tribe Xylenini, subtribe Pseudohadenina Guenée, 1837 (Fibiger & Hacker, 2007). The genus was erected by Alphéraky (1889) for *Hadena armata* Alphéraky, 1887, its representatives are distributed in Central Asia, Near East and North Africa. Earlier, the genus *Pseudohadena* treated widely (Ronkay & Varga, 1989; 1993; Yela & Ronkay, 1992), but it was re-described and revised by Ronkay et al. (1995). In this paper many species previously included to *Pseudohadena* were assigned to other newly described genera *Eremohadena* Ronkay, Varga & Fábíán, 1995 and *Graphantha* Ronkay, Varga & Fábíán, 1995. Later, one more related genus *Orohadena* Ronkay, Varga & Gyulai, 2002 was described and *Graphantha* was synonymized with *Rhiza* Staudinger, 1889 (Ronkay et al., 2002; Fibiger & Hacker, 2007). At present, the genus *Pseudohadena* includes 20 described species and subdivided into 3 subgenera: *Pseudohadena*, *Pseudopseustis* Hampson, 1910 and *Jaxartia* Püngeler, 1914 (Ronkay et al., 1995; Ronkay et al., 2002). Many species of the genus were described in last three decades (Varga & Ronkay, 1991; Ronkay et al., 1995; Ronkay et al., 2002; Ebert & Hacker, 2002; Shirvani et al., 2007; Pekarsky, 2012).

*Pseudohadena argyllostigma* (Varga & Ronkay, 1991) was described from steppes of southern part of West Siberia (Varga & Ronkay, 1991) and was known only from the type locality (SW of Novosibirsk Region, vicinity of Lake Krotovaya Lyaga), to the present time. In the course of faunistical studies on Noctuidae of North-East

Kazakhstan, a series of *P. argyllostigma* has been collected by senior author in the Ekibastuz District of the Pavlodar Region (Fig. 1).



Figures 1–6. *Pseudohadena argyllostigma*: 1) distribution map of the species; 2) adult in nature; 3) male, NE Kazakhstan, Pavlodar Region (coll. STP); 4) holotype male, West Siberian Plain (coll. SZMN); 5, male genitalia, NE Kazakhstan, Pavlodar Region, slide AV1604 Volynkin; 6) male genitalia of the holotype, slide RL3696 Ronkay.

## MATERIAL AND METHODS

The moths were collected using ultraviolet and mercury light-traps. The genitalia were dissected and mounted in euparal on glass slides. Photos of the genitalia were made using the microscope Zeiss Stemi 2000-C and the camera Zeiss AxioCam Erc 5c, and processed in Adobe Photoshop CS4® software. Photos of imago were taken using the camera Canon EOS 5D Mark II / EF 24–70mm f/2.8L USM. Acronyms of collections are as follows: STP – private collection of Sergey Titov (Pavlodar, Kazakhstan); SZMN – Siberian Zoological Museum, Institute of Systematics and Ecology of Animals of the Siberian Branch of the Russian Academy of Sciences (Novosibirsk, Russia).

## RESULTS AND DISCUSSION

*Pseudohadena (Pseudohadena) argyllostigma* (Varga & Ronkay, 1991)

**Type material examined:** holotype male, "USSR, W Siberia, Prov. Novosibirsk, Krotovaia Lyaga, 13 km NW Karasuk, 6–7.IX.1981, leg. Dubatolov" (handwritten) / "Holotypus *Pseudopseustis argyllostigma* Ronkay & Varga, det. L. Ronkay/90" / "gen. prep. No. 3693 male, det. L. Ronkay" (Coll. SZMN); **paratype** female, same data as the holotype, but gen. prep. No. 3680 female L. Ronkay (Coll. SZMN). **New material examined:** 6 males, 1 female, "11.IX.2015, N.E. Kazakhstan, Pavlodar Region, Ekibastuz District, village Karazhar, steppe, delta of Olenty, Lake Auliekol, N 52°11.958', E 74°43.486', h = 125 m. At light. Titov S.V. leg." Slides AV1604 Volynkin (male) AV1769 Volynkin (female). (Coll. STP). 1 male, same locality and collector, but 19.IX.2015 (Coll. STP).

Determination of the collected specimens was made in comparison with the type specimens. The adults and the genitalia (Figs 2, 3, 5, 7) have no differences from the type ones (Figs 4, 6). In Kazakhstan the species inhabits shores of steppe lakes with saline soils and vegetation with dominance of *Salsola*, *Achnatherum* and *Selitraria* species (Fig. 8). *P. argyllostigma* is a representative of the autumnal phenological complex, the specimens were collected in middle September together with *Oxytripia orbiculosa* (Esper, 1799), *Hydraecia osseola* Staudinger, 1882, *Sidemia spilogramma* (Rambur, 1871), *Rhizedra lutosa* (Hübner, [1803]), *Xylena vetusta* (Hübner, [1813]), *X. exsoleta* (Linnaeus, 1758), *Eugnorisma miniago* (Freyer, 1839), etc.

The collecting site located on the northeastern limits of the Kazakhstan Uplands, near their border with the West Siberian Plain. This is the first report for Kazakhstan and the second known locality of the species increasing the species' range of more than 270 km to the south-east (Fig. 1). *P. argyllostigma* is a ninth species of the genus known from Kazakhstan. The catalogue of *Pseudohadena* taxa of Kazakhstan is given below.

**A catalogue of *Pseudohadena* Alphéraky, 1889 taxa from Kazakhstan**

**Subgenus *Pseudohadena* Alphéraky, 1889**

Type species: *Hadena armata* Alphéraky, 1887

***Pseudohadena (Pseudohadena) arenacea* Ronkay, Varga & Fábíán, 1995**

*Pseudohadena arenacea* Ronkay, Varga & Fábíán, 1995, *Acta Zoologica Academiae Scientiarum Hungaricae* 41(3): 258, figs 1, 2, 21, 22 (Type locality: "Kazakhstan, Prov. Almaty, 22 km N of Masak, 600 m").

Distribution: Southern Ural, Kazakhstan (western, southern and southeastern parts).



Figures 7–8. *Pseudohadena argyllostigma*: 7) female genitalia, NE Kazakhstan, Pavlodar Region, slide AV1769 Volynkin; 8) habitat, NE Kazakhstan, Pavlodar Region, shores of Lake Auliekol, N 52°11.958', E 74°43.486'.

***Pseudohadena (Pseudohadena) armata* (Alphéraky, 1887)**

*Hadena armata* Alphéraky, 1887, *Entomologische Zeitung. Entomologische Vereine zu Stettin* 48: 170 (Type locality: "Turkestan").

Distribution: SE European Russia, West Siberia, Kazakhstan, Turkmenistan, Tajikistan.

***Pseudohadena (Pseudohadena) argyllostigma* (Varga & Ronkay, 1991)**

*Pseudopseustis argyllostigma* Varga & Ronkay, 1991, *Acta Zoologica Hungarica* 37 (3–4): 288, pl. II, fig 25, text figs 72, 73 (Type locality: USSR, W Siberia, vic. Lake Krotovaia Lyaga 13 km W of Karasuk").

Distribution: West Siberia and North-East Kazakhstan.

**Subgenus *Jaxartia* Püngeler, 1914**

Type species: *Jaxartia elinguis* Püngeler, 1914

***Pseudohadena (Jaxartia) striolata* (Filipjev, 1949)**



*Jaxarthia striolata* Filipjev, 1949, *Entomological Review* 30: 248 (Type locality: Turkmenistan, Repetek).

Distribution: Turkmenistan, Kazakhstan (western and southeastern parts).

***Pseudohadena (Jaxartia) elinguis* (Püngeler, 1914)**

*Jaxartia elinguis* Püngeler, 1914, *Deutsche entomologische Zeitschrift Iris* 44, pl. 2, fig. 6 (Type locality: [South Kazakhstan] "Syr-Daria, Baigacum").

Distribution: Turkmenistan, Kazakhstan (western and southern parts).

***Pseudohadena (Jaxartia) anatine* Pekarsky, 2012**

*Pseudohadena (Jaxartia) anatine* Pekarsky, 2012, *ZooKeys* 187: 10 (Type locality: "S.W. Kazakhstan, Ustyurt Res., Kendyrli (spring), 128 m").

Distribution: West Kazakhstan (Ustyurt Plateau).

***Pseudohadena (Jaxartia) evanida evanida* Püngeler, 1914**

*Pseudohadena evanida* Püngeler, 1914, *Deutsche entomologische Zeitschrift Iris* 44, pl. 2, fig. 5 (Type locality: [South Kazakhstan] "Syr-Daria, Baigacum").

Distribution: South Kazakhstan (Syrdarya River valley).

***Pseudohadena (Jaxartia) evanida psammoxantha* Ronkay, Varga & Fábíán, 1995**

*Pseudohadena (Jaxartia) evanida psammoxantha* Ronkay, Varga & Fábíán, 1995, *Acta Zoologica Academiae Scientiarum Hungaricae* 41(3): 273, figs 9, 10, 18, 37, 38 (Type locality: "Kazakhstan, Prov. Taldikurgan, Kumkala desert, 15 km W Aktau Mt., 500 m").

Distribution: South-East Kazakhstan.

***Pseudohadena (Jaxartia) gorbunovi* Pekarsky, 2012**

*Pseudohadena (Jaxartia) gorbunovi* Pekarsky, 2012, *ZooKeys* 187: 13 (Type locality: "SW Kazakhstan, Ustyurt Res., 4 km S of Kokesem cordon, 316 m").

Distribution: West Kazakhstan (Ustyurt Plateau).

***Pseudohadena (Jaxartia) cymatodes* (Boursin, 1954)**

*Pseudopseustis cymatodes* Boursin, 1954, *Zeitschrift der Wiener entomologischen Gesellschaft* 39: 185 (Type locality: [W Kazakhstan, Emba river] "Emba-Fluss (Nordost-Kaspian)").

Distribution: Southern Ural, Kazakhstan (western and southeastern parts).

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