

SHORT COMMUNICATION

E. A. Beljaev. *ACOSMERYX NAGA* MOORE (LEPIDOPTERA, SPHINGIDAE) – NEW SPECIES OF HAWKMOTHS FOR THE FAUNA OF RUSSIA. – Far Eastern Entomologist. 2003. N 131: 6-8.

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Hawkmoth *Acosmeryx naga* (Moore, [1858]) [1] is reported from Russia, Primorskii krai, for the first time. Ecological conditions near the collecting localities and way of immigration of the species are discussed. The author thank Mr. G. Grigoryev (St. Petersburg) and Dr. M. Omelko (Gornatayezhnaya Station, Ussuriisk) for providing of the available material. This research was supported by grants of the Far Eastern Branch of Russian Academy of Sciences (N 03-1-0-06-028 and N 03-3-A-06-018).

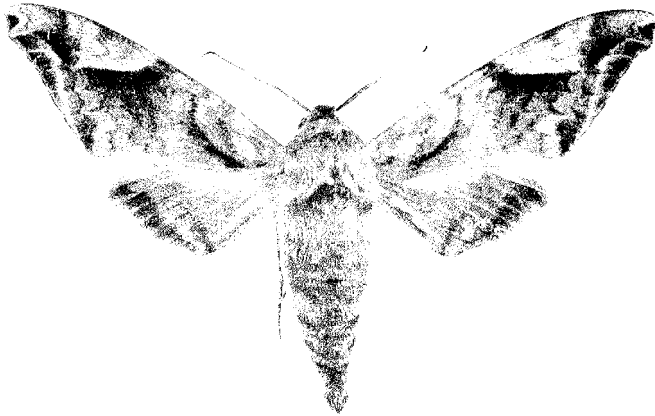


Fig. 1. *Acosmeryx naga*, male, from Krounovka river.

***Acosmeryx naga* (Moore, [1858])**

Fig. 1.

Philampelus naga Moore, [1858], in Horsfield & Moore, Cat. lepid. Insects Mus. Hon. East-India Company 1: 271.

MATERIAL. Russia, Primorskii krai: 5♂, 1♀, Ussuriisk district, 42 km SW of Ussuriisk, upper Krounovka river, 3.VI 2002, E. Beljaev leg.; 4♂, 1♀, Khasanskii district, 6 km NW of Zanadvorovka, Gusevskii Rudnik. 4, 9, 10, 18.VI 2003, G. Grigoryev leg.; 2♀, Ussuriisk district, 20km SE Ussuriisk, Gornotayozhnoe, 9.VI 2003, M. Omelko leg.

DISTRIBUTION. Russia (Southwest of Primorskii krai) (new record); Japan, Korea (Central and South), China (north to Hebei and Shanxi), Tajikistan, Afghanistan, northern Pakistan, northern and north-eastern India, Nepal, Bhutan, Thailand, northern Vietnam, Malaysia (Malaya Peninsula) [2].

BIOLOGY. In northern China there is one generation per year, with adults flying between April and June [3]. In South Korea fly period of the species from early May until mid August [4].

In south of Primorskii krai it fly from second half of May to mid of June, judge from condition of collected moths, which were moderately fresh or distorted more or less strongly.

HOST PLANTS. Recorded in Korea on *Stathmopoda*, *Ampelopsis*, *Vitis* (*Vitaceae*) [4]. In China (Shanxi) also recorded from *Actinidia chinensis* [5].

COMMENTS. The discovering of a new large hawkmoth in the Ussuri region – is unusual event because of long history and intensity of collecting of moths here [6]. So, this fact needs to be discussed in detail.

Environmental conditions in the collecting localities of the species were as follow. The collecting place on Krounka river is located in central part of basalt Borisovskoe (Shufanskoe) Plateau, which is eastern horn of East-Manchurian Mountainous Country, on altitude of 200 m in wide canyon with the bottom looks as wide dry valley covered with light forest with numerous grass and shrub clearing. This valley is characterised by abundance of xero- and termophilous trees: *Ulmus pumila*, *Malus mandshurica*, *Armeniaca mandshurica*, *Pyrus ussuriensis*, *Crataegus pinnatifida*, mixed with typical south Ussurian broad-leaved trees: *Quercus mongolica*, *Phellodendron amurense*, different species of *Salix*, *Populus koreana*, *Acer ginnala* and others. The liana *Vitis amirensis* is common here. From north the valley is bordered with very steep southern slope of ridge named as “*Khrebet Smerti*” (Ridge of Death). This slope looks as long band of almost vertical rocks covered discontinuously with oak (*Quercus mongolica*) forests with considerable participation of *Armeniaca mandshurica*, *Ulmus macrocarpa*, *Juniperus rigida*, *Tilia mandshurica*, *Acer mono*. This southern band of rocks serves as concentrator and reflector of the Sun heat and provides very high daytime temperatures near bottom of the rocks. Near this slope a screen for collecting of moths, lighted by mercury lamp (160 W) powered from portative generator, was located. Six specimens of the species were collected here during the first half of dark, cloudy and warm night with air temperature about 15-18°, just before and in the beginning of strong rain. Judge from the rate of flying on light of the hawkmoths, the collecting screen was located in or near place of their hatching.

The collecting site on Gusevskii Rudnik is placed 30 km southward of the previous locality, on the southeast edge of the same Plateau and on the same altitude. However the nature of this location differs strongly. Settlement Gusevskii Rudnik is located on the Plateau on open place in humid oak-broadleaved forest with participation of *Abies holophylla*, *Carpinus cordata*, *Kalopanax septemlobus*, *Betula schmidtii*, *Acer pseudosieboldianum*, *Weigela praecox*. The place has strong influence of sea, as result strong fogs are common here and daytime temperatures are markedly lower than on Krounka river. Five specimens were captured here during two weeks of regular collecting on light of mercury lamp (250 W). The specimens came flying to screen in cloudy and warm nights only. The infrequent fly of the hawkmoth indicates a remoteness of its hatching from the collecting place. Possibly, the moths could fly from long chains of southern rocks, similar to that on Krounka river, bordered basins of *Amba* and *Gryasnaya* rivers in the neighbourhood of Gusevskii Rudnik, in 5 km west and northwest of the settlement.

Gornotayozhnoe village is placed more than 60 km east of the previous localities, in south-west outskirts of the Sikhote-Alin Mountainous Country. Environment in the locality are characterized by predominance of secondary oak-broadleaved forests common for southern Sikhote-Alin territory and by subcontinental climate with high summer temperatures. Two females only were collected on light here.

A question on existence of the species in Primorskii krai is opened. High number of specimens, including female, which were collected for the short time in Krounovka river, and early time of its flying testify to hatching of the moths from hibernated pupas near the collecting place. However in 2003 in the in the same locality and almost in the same time (from

30.V. to 1.VI.) the hawkmoth was not found. Possibly it might have been result of cool nights with temperatures (6-8°C), which could oppress flying activity of the southern moth.

Collecting of markedly battered, solitary moths in Gusevskii Rudnik in 2003 could be treated as testimony to regular migration of the species in Primorskii krai, as it is presumed for some hawkmoths, as follow: *Macroglossum pyrrhostictum* Butler, 1875; *M. saga* Butler, 1878; *Agrius convolvuli* (Linnaeus, 1758) and others (personal unpublished data). However common way of migration of southern moths and butterflies lies along the sea coast through traditional localities of insect collecting such as Andreevka, Vityaz, Ryazanovka, Bezverkhovo (Sidemi), Kedrovaya Pad Reserve. Nevertheless this large and noticeable hawkmoth never had been reported from them.

Capturing of the hawkmoth in Gornotayozhnoe, where insects are collected regularly almost one hundred years, undoubtedly need to be treated as migration of the species. Taking in the account of absence of its registration in the enumerated southwest coastal localities, only migration from the west, from or through Borisovskoe Plateau, can be supposed.

On the whole, analysis of the enumerated facts allows suppose recent immigration of the species in the western part of Primorskii krai, and current spread of the species on eastward, in forest territories with height summer temperatures. I incline to treat *Acosmeryx naga* inhabits territory of Borisovskoe Plateau, at least two last years. Possibly, it inhabits most thermal sites along steep southern slopes of canyons. Temperatures near bottom of the slopes could be enough for the growth of this thermophilous hawkmoth species. The immigration of *Acosmeryx naga* in the territory of Primorskii krai goes with tendency to the global warming.

1. Horsfield, T. & Moore, F. 1857 [1858]. A catalogue of the lepidopterous Insects in the Museum of the Hon. East-India Company. Vol. 1. London : Allen.

2. Pittaway A.R., Kitching I.J. 2000-2003. Sphingidae of the Eastern Palaearctic (including Siberia, the Russian Far East, China, Mongolia, the Korean Peninsula and Japan) – <http://tpittaway.tripod.com/china/china.htm>.

3. Yang, C.Z. 1978. Moths of northern China. Vol. 2. Beijing Agricultural University, Beijing. P. 301-527. (In Chinese).

4. Park, K.T., Kim, S.S., Tshistjakov, Yu.A. & Kwon, Y.D. 1999. Illustrated Catalogue of Moths of Korea (I) (Sphingidae, Bombycoidea, Notodontidae). In Park, K.T. (ed.). Insects of Korea. Series 4. Seoul, South Korea: Korea Research Institute of Bioscience and Biotechnology & Center for Insect Systematics. P. i-iv, 1-359, pl. 1-23. (In Korean & English).

5. Li, C. & Guo, W. 1990. The sphinx moths (Lepidoptera: Sphingidae) of Shanxi province and amino acid composition analysis of medical species. – Journal of Shanxi University (Natural Sciences and Education) 13: 439-443. (In Chinese).

6. Tshistjakov Yu.A. 2001. [Family Sphingidae – Hawkmoths] – Ponomarenko M.G., Beljaev, E.A., Lelej, A.S. & Nemkov, P.G. (eds.). [Key to the insects of Russian Far East. Vol. V. Trichoptera, Lepidoptera. Pt. 3]. Vladivostok: Dal'nauka. P. 487-524. (In Russian).

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