



Review of East Asian *Heliosia* (Lepidoptera: Erebidae: Arctiinae: Lithosiini) species, with description of a new genus

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Abstract

Oriental species currently classified in the genus *Heliosia* Hampson, 1900 but in fact belonging to Nudariini are separated into the new genus *Paraheliosia* **gen. nov.**: *Paraheliosia elegans* (Reich, 1937) comb. nov. (type species) from South-East China; *P. rufa* (Leech, 1890) comb. nov. from North China (nominotypical subspecies) and Primorskiy Kray of Russia (*P. r. ussuriensis* (O. Bang-Haas, 1927) comb. nov.); and *P. novirufa* (Fang, 1992) comb. nov. from Sichuan. Presence of two strong apical spines at juxta apex and basal costal valve processes looks to be well marked autapomorphic characters of the new genus. *Heliosia punctata* Fang, 1992 is transferred into Elachistidae, Aeolanthinae but to unknown genus.

Key words: Lepidoptera, Erebidae, Arctiinae, Lithosiini, new genus, China, Russia, Primorskiy Kray, Oriental Region, Palaearctic Region

Introduction

The genus *Heliosia* Hampson, 1900 was established for four Lithosiinae species: *H. rufa* (Leech, 1890) from China, *H. jucunda* (Walker, 1854) from Australia (originally stated as the type species), and two new species, *H. monosticta* Hampson, 1900 from Borneo and *H. crocopera* Hampson, 1900 from New Guinea (Hampson, 1900). One of these species, *Heliosia monosticta* was later transferred to the genus *Heliohemonia* Bucsek, 2012 (Bucsek, 2012). Another species originally assigned to *Heliosia*, *H. alba* Hampson, 1914 (Hampson, 1914) was subsequently transferred to *Poliosia* Hampson, 1900, Lithosiini (Inoue & Kishida, 1992) then to *Aemene* Walker, 1854, Cisthenini (Bucsek, 2012). *Heliosia punctinigra* van Eecke, 1920 was described from Java; according to the original description it is similar to *Heliohemonia monosticta* (Hampson, 1900), however the types (Fig. 1–2), females, looks to be very different from the latter species and until the male genitalia of this species can be studied, the generic position of *H. punctinigra* is uncertain. This species looks not to be related to other East Asian species: *Heliosia elegans* (Reich, 1937), *H. rufa* (Leech, 1890), *H. novirufa* Fang, 1992, and *Heliosia punctata* Fang, 1992 that are discussed in this article. Australian species of the nominotypical *Heliosia* and their relatives are not included.

Holloway (2001) studied male genitalia of the type species of the genus *Heliosia*, *H. jucunda* (Walker, 1854), and found it to be related to *Narosodes* Moore, [1887]; he considered them to be “unassigned, possibly apomorphic genera” as a group different from the known tribes: Lithosiini, Nudariini, and Cisthenini. However, a complex of species from China and adjacent territories currently classified in *Heliosia* has a different male genitalia structure and belongs to the tribe Nudariini. As there are no known genera that might include these species, a new genus is established here to accommodate the species, and a review of the included species is provided.

Fang (1992) described one more species in the genus *Heliosia*, *H. punctata* Fang, 1992, from Sichuan, Emeishan (Omeishan) (Fig. 3–4). However, it has male genitalia (Fig. 16, 19) quite different from any Lithosiini species. According to the view by S. Sinev and A. Lvovsky (St.-Petersburg, Russia), this species might be a member of subfamily Aeolanthinae within Elachistidae but to unknown genus: it has similar valve structure, but also a distinct uncus that is absent in *Aeolanthes* Meyrick, 1907 (Clarke, 1955).

Male genitalia (Figs 17–18): According to the figure in Fang (2000), the male genitalia are very similar to those of *P. rufa*, but there are at least 4 strong spines and cornuti at the apical part of the aedeagus, while in the original description only two strong apical spines were figured. Juxta absence on Fang's figures in the original description (Fang, 1992) and in Fang (2000) (Figs 17–18) might be due to the male genitalia being damaged or the author's inaccuracy.

Remarks. The species differs from others of the genus by a wide dark pattern on the forewings, and absence of a dark pattern of the hindwings. There is a question how many strong apical spines are present on the aedeagus apex. In any case, there are several such spines, while in similar *P. rufa* there is a single apical spine.

Distribution. China: Zhejiang (Fang, 2000).

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