Russian Entomol. J. 27(3): 293–296

A new species of the genus *Taikona* Arita et O. Gorbunov, 2001 from the Malay Peninsula (Lepidoptera: Sesiidae)

Новый вид рода *Taikona* Arita et O. Gorbunov, 2001 с Малайского полуострова (Lepidoptera: Sesiidae)

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KEY WORDS: Lepidoptera, Sesiidae, Paranthrenini, Oriental Region, *Taikona polevoyi*, *Taikona actinidiae*, new species, new combination, systematics, Malaysia.

КЛЮЧЕВЫЕ СЛОВА: Lepidoptera, Sesiidae, Paranthrenini, Индо-Малайский регион, *Taikona polevoyi*, *Taikona actinidiae*, новый вид, новая комбинация, систематика, Малайзия.

ABSTRACT. A new clearwing moth species is described and illustrated from continental Malaysia: *Taikona polevoyi* **sp.n.** *Paranthrene actinidiae* Yang et Wang 1989 is transferred to the genus *Taikona* Arita et O. Gorbunov, 2001.

РЕЗЮМЕ. Дано иллюстрированное описание нового вида бабочки-стеклянницы из континентальной Малайзии — *Taikona polevoyi* **sp.n.** *Paranthrene actinidiae* Yang et Wang 1989 перенесён в состав рода *Taikona* Arita et O. Gorbunov, 2001.

Introduction

The genus *Taikona* Arita et O. Gorbunov, 2001 was established for a single Taiwanese species, *T. matsumurai* Arita et O. Gorbunov, 2001 [Arita, Gorbunov, 2001]. A decade later, Arita recordered this species from the Nanling National Nature Reserve, S China, Guangdong [Arita, 2011]. However, based by the image presented in that paper (pl. 3, fig. 28), this specimen belongs to another, still undescribed species of the genus *Taikona*. This becomes clear from a different pattern of coloration of the thorax and abdomen (cp. fig. 18 in Arita, Gorbunov [2001] and fig. 28 in Arita [2011]). Having studied the original description and available illustrations of *Paranthrene actinidiae* Yang et Wang 1989 from the Chinese province of Fujian, I come to the conclusion that this taxon is to be attributed to the genus *Taikona* and herewith I formally transfer it to this genus, *Taikona actinidiae* (Yang et Wang 1989), **comb.n.** Thus, at present I include the following three species into the genus: *T. matsumurai* Arita et O. Gorbunov, 2001 (type locality: Taiwan: Kaohsin Hsien, Tangchin), *T. actinidiae* (Yang et Wang 1989) (type locality: China: Fujian, Jianning), and *T. polevoyi* **sp.n.** (type locality: Malaysia: Pahang, Kauntan).

Kallies et al. [2014: 187], in their recent paper on Paranthrenini, wrote that "The genus *Taikona* is closely related to *Nokona*. It differs chiefly by its transparent forewings (usually but not always opaque in *Nokona*). Further study is required to establish whether *Taikona* is a separate genus or should be considered a synonym of *Nokona*". Of course, the genus *Taikona* is phylogenetically very close to the genus *Nokona* Matsumura, 1931 (type species: *Paranthrene yezonica* Matsumura, 1931, = *Sciapteron feralis* Leech, 1889) [Yata et al., 2017], but the forewings of all species of *Nokona* are not as transparent as in *Taikona*. It should be recalled that *Nokona* in the modern sense is a completely heterogeneous genus even within the eastern part of the Palaearctic [Gorbunov, 2016]. Increasing the species composition of the genus makes it possible to outline its following apomorphies: the almost completely transparent forewings, the extremely short veins R_4 and R_5, and the highly oblique cross-vein of both fore- and hindwing.

The type-series was collected by Mr. E. Polevoy (Moscow, Russia) using synthetic sex attractants produced by PHEROBANK®, Wijk bij Duurstede, the Netherlands.

Figures of the types were taken with a Sony α450 DSLR camera with a Minolta 50 Macro lens. The habitat of the new species was photographed with a Sony α350 DSLR camera with a Sony lens. The genitalic images

How to cite this article: Gorbunov O.G. 2018. A new species of the genus *Taikona* Arita et O. Gorbunov, 2001 from the Malay Peninsula (Lepidoptera, Sesiidae) // Russian Entomol. J. Vol.27. No.3. P.293–296. doi: 10.15298/rusentj.27.3.10

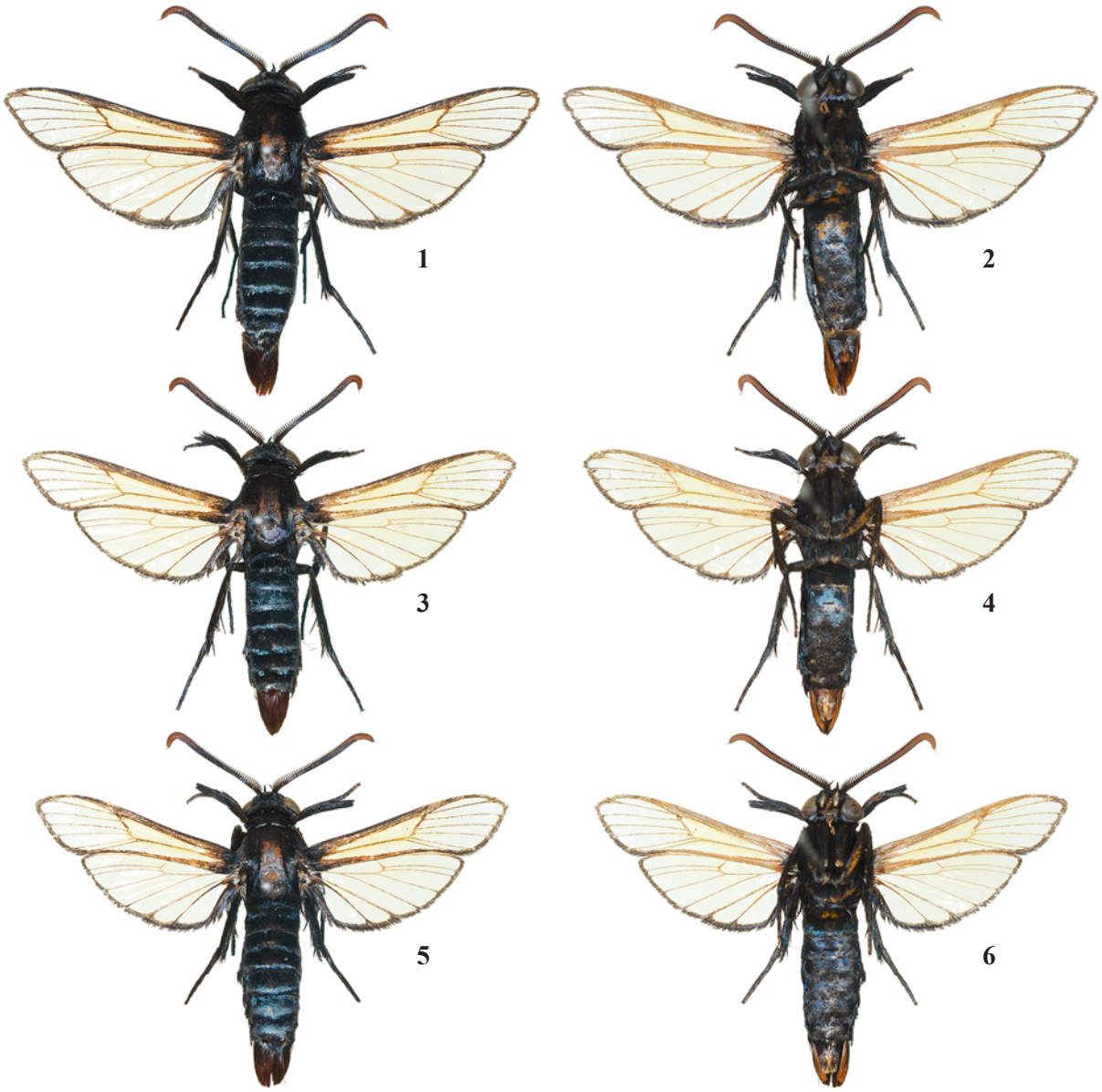
were obtained using a Keyence BZ-9000 Biorevo Fluorescence Microscope. Final processing of all illustrations was performed with Adobe® Photoshop® CS5.

The type-series is kept in the collection of A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences, Moscow, Russia (COGM). All labels of the holotype are shown in detail. Each label is separated by quotation marks, while lines on a label are shown separated by a slash ("/"). All pictures of the holotype are labeled with a number which consists of the name of the family, two consecutive digits and a year (e.g., SESIIDAE pictures №№ 0061-0062–2013). These numbers correspond to those of the illustrated specimens in the archives of the author. The genitalic preparation is appropriately numbered, placed in a microtube and pinned under the specimen. This number is also printed on a label (e.g., Preparation № OG–005-2018), pinned under the specimen and listed in the archives of the author.

Description

Taikona polevoyi O. Gorbunov, **sp.n.**
Figs 1–12.

MATERIAL. **Holotype** ♂ (Figs 1–2) with labels: "Malaysia, Pahang Prov., / Kauntan, Swiss Garden / Resort, 03°55′ N, 103°22′ E, / 07.III.2011, / E. Polevoy leg.", "SESIIDAE / Pictures №№ / 0061-



Figs 1–6. Variability of males of *Taikona polevoyi* **sp.n.**: 1–2 — holotype, alar expanse 36.0 mm, Sesiidae pictures №№ 0061–2013, 0062–2013; 3–4 — paratype, alar expanse 33.2 mm, Sesiidae pictures №№ 0063–2013, 0064–2013; 5–6 — paratype, alar expanse 31.8 mm, Sesiidae pictures №№ 0065–2013, 0066–2013; 1, 3, 5 — upside; 2, 4, 6 — underside.

Рис. 1–6. Изменчивость самцов *Taikona polevoyi* **sp.n.**: 1–2 — голотип, размах крыльев 36,0 мм, Sesiidae снимки №№ 0061–2013, 0062–2013; 3–4 — паратип, размах крыльев 33,2 мм, Sesiidae снимки №№ 0063–2013, 0064–2013; 5–6 — паратип, размах крыльев 31.8 мм, Sesiidae снимки №№ 0065–2013, 0066–2013; 1, 3, 5 — сверху; 2, 4, 6 — снизу.

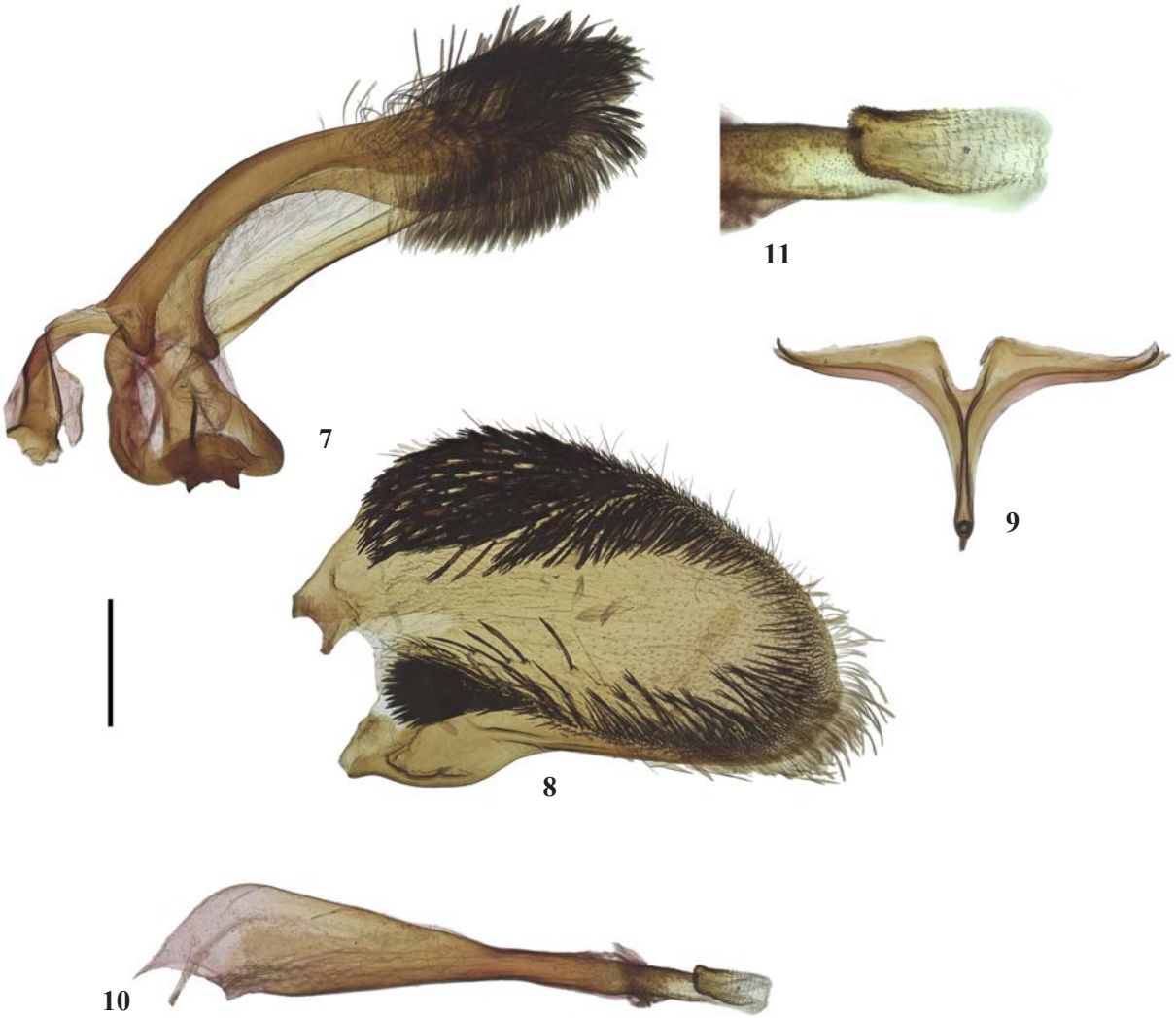
0062–2013 / Photo by O. Gorbunov", "Genitalia examined / by O. Gorbunov / Preparation № / OG–005-2018", "HOLOTYPUS ♂ / *Nokona polevoyi* / O. Gorbunov, 2018 / O. Gorbunov des., 2016".

Paratypes (2 ♂♂), 1 ♂ (Figs 3–4) with labels: "Malaysia, Pahang Prov., / Kauntan, Swiss Garden / Resort, 03°55′ N, 103°22′ E, / 10.III.2011, / E. Polevoy leg.", "SESIIDAE / Pictures №№ / 0063-0064–2013 / Photo by O. Gorbunov", "PARATYPUS ♂ / *Nokona polevoyi* / O. Gorbunov, 2018 / O. Gorbunov des., 2016"; 1 ♂ (Figs 5–6) with labels: "Malaysia, Pahang Prov., / Kauntan, Swiss Garden / Resort, 03°552 N, 103°222 E, / 07.III.2011, / E. Polevoy leg.", "SESIIDAE / Pictures №№ / 0065-0066–2013 / Photo by O. Gorbunov", "PARATYPUS ♂ / *Nokona polevoyi* / O. Gorbunov, 2018 / O. Gorbunov des., 2016".

DESCRIPTION. **Male** (holotype) (Figs 1–2). Alar expanse 36.0 mm; body length 22.5 mm; forewing 16.2 mm; antenna 8.7 mm.

Head with antenna black with dark violet sheen dorsally and light brown both ventrally and apically, scapus black with dark violet sheen; frons entirely dark brown to black with bronze-violet sheen; vertex and labial palpus black with dark violet sheen; occipital fringe black with dark violet sheen with a tuft of white hairs at ocellus.

Thorax with patagia black with dark violet sheen; tegula, meso- and metathorax entirely black with bronze-violet sheen; thorax laterally black with dark violet sheen; posteriorly both metepimeron and metameron black with dark violet sheen covered with long black and white hairs. Legs with neck plate black with greenish-violet sheen and an admixture of a few snow-white scales; fore coxa black with greenish-violet sheen; other parts of legs black with dark violet sheen. Forewing transparent; basally dull black; costal and anal margins, CuA-stem, veins R_4–CuA_2 and cross-vein narrowly black with dark violet sheen and an admixture of individual light brown scales; outer margin extremely narrow, about ½ times as broad as cilia, dark brown to black with dark violet sheen; cilia dark brown to black with bronze-violet sheen; ventrally costal and anal margins, CuA-stem, veins R_4–CuA_2 and cross-vein narrowly light brown; outer margin dark brown to black with dark violet sheen; cilia dark brown to black with bronze-violet sheen. Hindwing transparent; dorsally veins narrowly light brown with an admixture of dark brown scales in distal half (vein 1A entirely dark brown to black with dark violet sheen); discal spot undeveloped; outer margin narrow, dark



Figs 7–11. Male genitalia of *Taikona polev* [redacted]e, genitalia preparation № OG–005-2018: 7 — tegumen-uncus complex; 8 — valva; 9 — saccus; 10 — aedeagus; 11 — [redacted] 0.5 mm for 7–10 and 0.25 for 11.

Рис. 7–11. Гениталии самца *Taikona polev* [redacted]я, препарат гениталий № OG–005-2018: 7 — тегумен-ункус комплекс; 8 — вальва; 9 — саккус; 10 — эдеагус; 11 — [redacted] аб 0,5 для рис. 7–10 и 0,25 для 11.

brown with dark violet sheen, about 1/3 as broad as cilia (somewhat broader between veins CuP–1A); cilia dark brown to black with bronze-violet sheen; ventrally veins light brown, outer margin dark brown with dark violet sheen; cilia dark brown to black with bronze-violet sheen.

Abdomen dorsally entirely black with dark bluish-violet sheen; tergite 3 with a few show-white scales laterodistally; ventrally dark brown with dark bluish-violet sheen; sternites 1+2 and 3 each with a few white scales at distal margin; anal tuft dark brown to black with dense admixture of dark red-brown scales, more bright ventrally.

Male genitalia (holotype) (genital preparation № OG–005-2018) (Figs 7–11). Uncus narrow, distinctly broadened distally, densely covered with flat scales in broadened distal part; tegumen narrow; gnathos narrow, with double tooth; tuba analis with subscaphium narrowly sclerotized (Fig. 7); valva (Fig. 8) triangular-oval, densely covered with hand-shaped setae at dorsal margin in basal half, short simple setae at distal margin and hand-shaped setae at ventral margin in distal half; crista sacculi low, densely covered with strong pointed setae; saccus (Fig. 9) about as long as vinculum, straight, somewhat pointed basally; aedeagus (Fig. 10) rather broad, slightly longer than valva, with a flat well-sclerotized carina penis dorsodistally; vesica (Fig. 11) with numerous rows of minute flat cornuti.

Female. Unknown.

INDIVIDUAL VARIABILITY. The specimens of the type series (Figs 1–6) are practically invariable in the coloration of various parts of the body. The individual size is variable as follows: alar expanse 31.8–36.0 mm; body length 20.0–22.5 mm; forewing 14.2–16.2 mm; antenna 8.0–8.7 mm.

DIFFERENTIAL DIAGNOSIS. This new species is easily distinguishable from all other congeners by the absence of coloured (yellow or yellow-orange) scales on the head, thorax, legs and abdomen. Species of the genus *Taikona* can be identified using the following key based on the external characters:

1 Head, thorax, legs and abdomen with neither yellow nor yellow-orange scales ... *T. polevoyi* O. Gorbunov, **sp.n.**
— Head, thorax, legs and abdomen with yellow or yellow-orange scales 2
2 Outer margin of forewing undeveloped; discal spot of hindwing undeveloped; abdomen dorsally with tergites 2, 4 and 6 each with a narrow yellow stripe distally .... *T. matsumurai* Arita et O. Gorbunov, 2001
— Outer margin of forewing narrow, but present; discal spot of hindwing narrow, with parallel margins; abdomen dorsally with tergites 2 and 3 each with a narrow yellow stripe distally, tergite 6 entirely yellow .... *T. actinidiae* (Yang et Wang, 1989), **comb.n.**

BIONOMICS. The host plant and larval bionomics are unknown. The type series was collected with the use of artificial sex attractants in the beginning of March. They were active slightly before noon at about 10–12 a.m. local time.

HABITAT. The type series was collected in forest thickets on sand dunes by sea shore (Fig. 12).

Fig. 12. Habitat of *Taikona polevoyi* **sp.n.** Malaysia, Pahang Prov., Kauntan, Swiss Garden Resort, 03°55′ N, 103°22′ E, 07.III.2011. Photo by E. Polevoy.

Рис. 12. Биотоп *Taikona polevoyi* **sp.n.** Малайзия, провинция Паханг, Куантан, Швейцарский сад, 03°55′ с.ш., 103°22′ в.д., 07.III.2011. Фото Е. Полевого.

DISTRIBUTION. Known only from the type locality in the continental part of Malaysia.

ETYMOLOGY. This new species is named after my friend Mr. Eugeniy Polevoy (Moscow, Russia) who collected the type series.

ACKNOWLEDGEMENTS. I express my cordial gratitude to Mr. Eugeniy Polevoy (Moscow, Russia) for his kind support to my study of Oriental Sesiidae. I also thank Dr. Sergei I. Golovatch (Moscow, Russia) for his linguistic help.

The study was conducted using the equipment of the Joint Usage Center “Instrumental methods in ecology” at the A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences (Moscow, Russia).

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