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Two new species of the genus *Stictane* Hampson, 1900 (Lepidoptera: Erebidae: Arctiinae) from Lombok Island (Lesser Sunda Islands)

Два новых вида рода *Stictane* Hampson, 1900 (Lepidoptera: Erebidae: Arctiinae) с острова Ломбок (Малые Зондские острова)

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КЛЮЧЕВЫЕ СЛОВА: Arctiinae, Lithosiini, Западная Нуса-Тенгара, Индонезия, Уоллесия, новые виды, биоразнообразие, таксономия.

ABSTRACT. Two new species of the genus *Stictane* Hampson, 1900, *S. maligani* **sp.n.** and *S. lombokensis* **sp.n.**, are described from Lombok Island. They are well differentiated from all known species by peculiarities of the structure of the male genitalia, including the presence of a developed distal costal process. Previously, no species of the genus *Stictane* were known from Lombok and neighboring islands.

РЕЗЮМЕ. Два новых вида рода *Stictane* Hampson, 1900, *S. maligani* **sp.n.** и *S. lombokensis* **sp.n.**, описаны с острова Ломбок. Они хорошо отличаются от всех известных видов особенностями строения гениталий самцов, в том числе наличием развитого дистального костального отростка. Ранее с Ломбока и соседних островов представители рода *Stictane* не были отмечены.

Introduction

The genus *Stictane*, with the type species *Pitane fractilinea* Snellen, 1880, was established by Hampson [1900]. Later, *Stictane* was placed in the Lithosiinae as a synonym of *Manoba* Walker, 1863 by Hampson [1914], although Hampson [1900] had previously placed *Manoba* as a synonym of *Nola* Leach, 1815. *Manoba* was returned to the Nolidae by Holloway & Miller [1995]. Finally, Holloway [2001] restored the generic status of *Stictane* Hampson, 1900. *Stictane* is distinct and truly lithosiine [Holloway, 2001].

The genus *Stictane* is characterized by small size of moths, with a forewing pattern usually consisting of a darker gray medial band and blackish spots at the end of the cell and in submarginal and subbasal rows, usually angled. Forewing veins R4 and R5 stalked for 1/2 length of R4; R3 and R4+5 stalked about 1/4 length of R3; hindwing vein Rs and M1 stalked for the half length of M1, from upper part of discal cell. Male genitalia with long and slender uncus, valva narrow, with developed saccular process; vesica with one or more cornuti [Holloway, 2001; Bayarsaikhan, Bae, 2021]. It should be noted that it is impossible to identify most species of *Stictane* with high reliability by external characters. However, peculiarities of the structure of male genitalia in this genus are extremely indicative.

Until recently, 38 species distributed in South, Southeast, and East Asia were considered within the genus *Stictane* [Holloway, 2001; Bucsek, 2012, 2014, 2020; Kirti *et al.*, 2013; Bayarsaikhan, Bae, 2015, 2021; Chen *et al.*, 2018; Bayarsaikhan *et al.*, 2019, 2022; Spitsyn, Bolotov, 2020]. Subsequently, fifteen species distributed in tropical Africa and Australasia were transferred from the genus *Manoba* Walker, 1863 to the genus *Stictane* [László *et al.*, 2022]. Of these, *Stictane major* (Kiriakoff, 1958) was later transferred to the new genus *Lithosiccia* Volynkin, 2023 [Volynkin, 2023b]. From the genus *Siccia* Walker, 1854 to the genus *Stictane* were transferred *S. dudai* Ivinskis et Saldaitis, 2008 and *S. decolorata* Toulgoët, 1954 [Volynkin, 2023a]. The genus

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Stictane now also includes *S. bipunctata* (Gaede, 1925) and *S. divisa* (Rothschild, 1913) described from New Guinea [Vos, 2024].

As already mentioned, most species of *Stictane*, 39, are distributed in Asia. In the north, members of the genus reach Japan (Honshu Island) and the extreme south of the Korean peninsula, where two species, *S. obscura* (Inoue, 1976) and *S. chinesica* (Draudt, 1931), have been recorded [Kishida, 2011; Bayarsaikhan *et al.*, 2020]. Three species are found in mainland China [Fang, 2000; Dubatolov *et al.*, 2012]. One species, *S. dudai* (Ivinskis et Saldaitis, 2008), is distributed in SouthWest Asia (Arabian Peninsula) [Ivinskis, Saldaitis, 2008; Volynkin, 2023a]. Four species (two of which are endemic to Sri Lanka) are found in South Asia [Kirti *et al.*, 2013; Bayarsaikhan, Bae, 2015]. To the east, members of the genus *Stictane* reach Taiwan and the Philippines, where one endemic species is found in each [Bayarsaikhan, Bae, 2015; Chen *et al.*, 2018]. To the southeast, representatives of this genus reach the New Guinea Island, where nine species have been recorded [László *et al.*, 2022; Vos, 2024], and one species (*S. taeniatus* (Rothschild, 1916)) has been described from Western Australia [László *et al.*, 2022]. Seven species are found in tropical Africa, including Madagascar [László *et al.*, 2022; Volynkin, 2023a].

The richest region for *Stictane* diversity is the Indochinese peninsula (including Malay peninsula), where 26 species have been recorded, many of them recently described [Bucsek, 2012, 2014, 2020; Bayarsaikhan, Bae, 2015, 2021; Bayarsaikhan *et al.*, 2019, 2022].

Nine species have been recorded in the Greater Sunda Islands, including one in Java, six in Borneo, and three in Sumatra, with some species occurring on more than one island, as well as on the Sundaland mainland [Holloway, 2001; Bucsek, 2012, 2014; Bayarsaikhan, Bae, 2015]. In the Lesser Sunda Islands, members of the genus *Stictane* have only recently been recorded on Flores, where three endemic species have been described [Spitsyn, Bolotov, 2020].

During research on Lombok Island in 2024, the author collected specimens belonging to the genus *Stictane*, whose unique sets of characters indicate that they belong to yet undescribed species. This article describes of two new endemic species of *Stictane*, *S. maligani* **sp.n.** and *S. lombokensis* **sp.n.**, from Lombok Island.

Materials and methods

All specimens in the present study were collected by the author at night on light traps using LepiLED® UV lamps.

For genitalia preparation, each specimen was prepared by boiling the abdomen in 10% KOH for 5 minutes. Photographs of the specimens were taken using a Sony SLT-A65 digital camera with a Sony 2.8/50 macro lens. The genitalia of *Stictane* species were photographed using a Zeiss Stemi 2000-C stereomicroscope with a Zeiss AxioCam ERc5s microscope camera.

The material mentioned in this study is deposited in the private collection of Evgeny S. Koshkin (Khabarovsk, Russia) (EKC) and will be transferred to the collection of the Zoological Institute of the Russian Academy of Sciences (St. Petersburg, Russia) (ZISP).

Taxonomic account

Stictane maligani Koshkin **sp.n.**
urn:lsid:zoobank.org:act:
Fig. 1A, C.

TYPE MATERIAL. Holotype: ♂, Indonesia, West Nusa Tenggara province, Lombok Island, near Sembalun Bumbung vill., 8°24'12" S, 116°32'11" E, 1400 m, 28.VIII.2024, leg. Evgeny S. Koshkin (ex EKC, will be deposited in ZISP).

DIAGNOSIS. The new species clearly differs from all other congeners by the combination of the following features in the male genitalia: 1) short uncus; 2) apically pointed valva, sharply narrowed in the distal half, and straight costa; 3) presence of a distal costal process on at least one of the valva; 4) vesica with a large, spine-like cornutus, equal to the aedeagus tube. The distal costal process is present in only two other species of the genus *Stictane*, *S. transversana* Bayarsaikhan et Bae, 2019 and *S. lombokensis* **sp.n.** At the same time, in *S. transversana* it is short, and the distal part of the valva is broadened, costa with medial projection, distal saccular process of different shape, uncus longer, apical cornutus short, and at the base of the vesica presence of a row of numerous small cornuti. In *S. lombokensis* **sp.n.**, the uncus and distal costal process are longer than in *S. maligani* **sp.n.**, and a finger-like medial process of the costa is present; the structure of the vesica and the forewing pattern are also different. Based on the external characters, *S. maligani* **sp.n.** is most similar to *S. argenteus* Bucsek, 2014, described from peninsular Malaysia. However, the structure of the genitalia of these species is quite different.

DESCRIPTION. *Adult*. *Male* (Fig. 1A). Wingspan 15.5 mm. Forewing length 7.5 mm. Antennae bipectinate, fuscous gray. Labial palpus very short, slender, fuscous gray. Proboscis short, light brown. Head, thorax, patagium, tegula, abdomen fuscous gray; legs brown. Forewing narrow, with rounded apex. Forewing ground color silver gray with sparse dark scales. Subbasal area with curved series of three black spots. Medial band broad, discontinuous, contains two or three dark gray spots; spot near costal margin is triangular. Two black discal spots parallel to outer margin of wing. Postmedial series of seven black dots is semicircular. Terminal series of spots is black. Large dark gray triangular spot at apex. Hindwing pale gray. Cilia on fore and hind wings pale gray. Underside of forewing dark gray with slightly translucent upperside dark pattern; hindwing pale gray. *Male genitalia* (Fig. 1C). Uncus short, slender, pointed at tip. Tegumen broad, v-shaped. Saccus U-shaped. Valva elongate, broad, strongly tapering in distal half. Left valva longer than right one. Costa straight, on right valva with hook-shaped, slightly curved distal process. Left costa lacking distal process. Apex of valva pointed, sparsely covered with long setae.

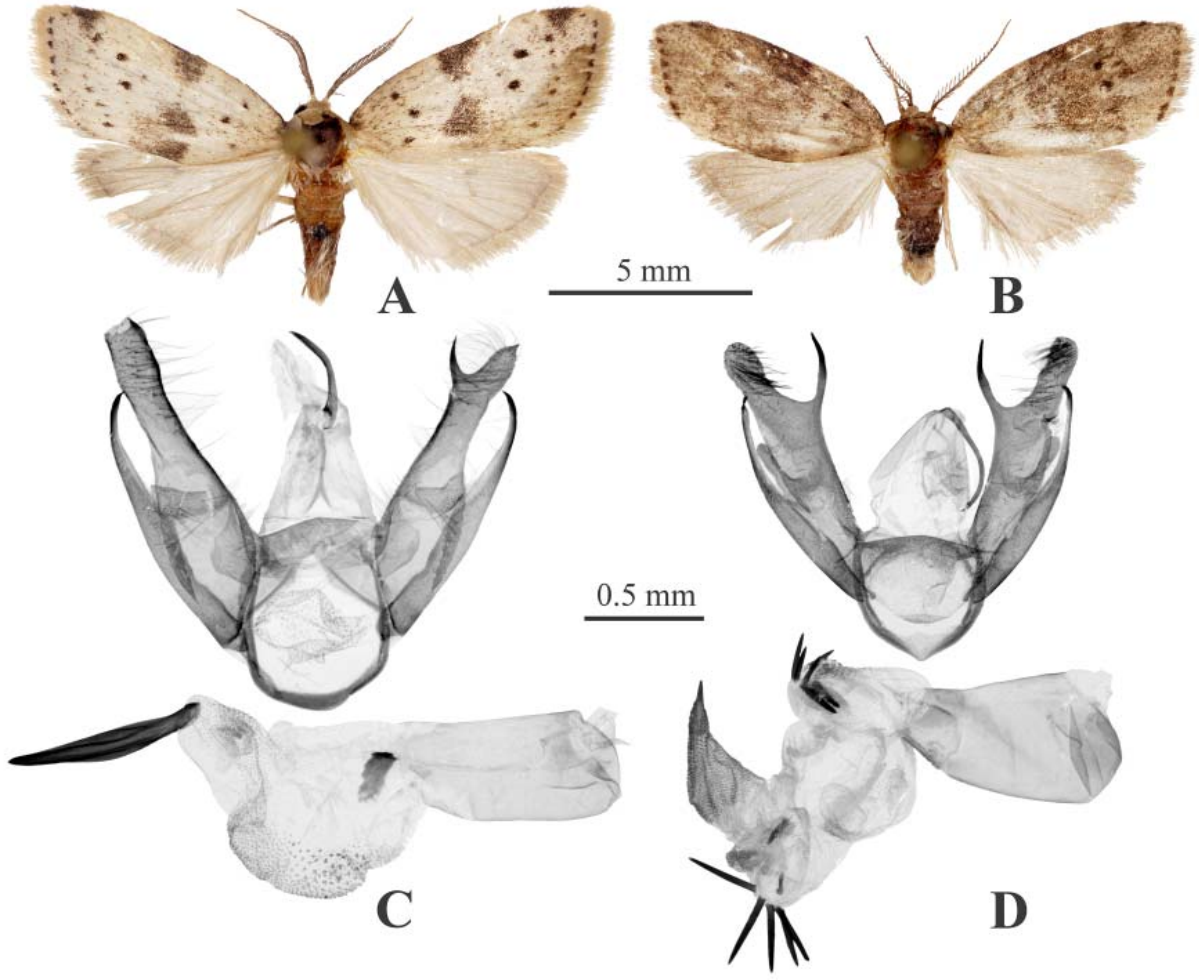

Fig. 1. *Stictane* spp.: A, C — *S. maligani* Koshkin **sp.n.**, male, holotype (A — adult, C — genitalia); B, D — *S. lombokensis* Koshkin **sp.n.**, male, holotype (B — adult, D — genitalia).
Рис. 1. *Stictane* spp.: A, C — *S. maligani* Koshkin **sp.n.**, самец, голотип (A — имаго, C — гениталии); B, D — *S. lombokensis* Koshkin **sp.n.**, самец, голотип (B — имаго, D — гениталии).

Distal saccular process thin, hook-shaped, slightly curved inwards, shorter than apex of valva. Juxta weakly sclerotized, broad, its apical part slightly angular. Aedeagus straight, short and thick. Vesica longer than aedeagus, sack-shaped, with narrow finely scobinated apical diverticulum, bearing a single large spine-like cornutus with several ribs. Cornutus is equal to aedeagus tube. Medial diverticulum large, semiglobular, strongly scobinated. Sclerotized plate at base of vesica. *Female*. Unknown.

ECOLOGY. A specimen of the new species was collected in a mountainous disturbed deciduous forest at an altitude of 1400 m (Fig. 2), where it occurs sympatrically with *Stictane lombokensis* **sp.n.**

DISTRIBUTION. The new species is known only from the type locality in the northeastern part of Lombok Island (Lesser Sunda Islands, Indonesia).

ETYMOLOGY. The new species is named after Russian mining engineer Vasily Panteleimonovich Malygin (Maligan in Indonesian) (1865 – ?), who led an anti-Dutch revolt on Lombok Island in 1894.

Stictane lombokensis Koshkin **sp.n.**
urn:lsid:zoobank.org:act:
Fig. 1B, D.

TYPE MATERIAL. Holotype: ♂, Indonesia, West Nusa Tenggara province, Lombok Island, near Sembalun Bumbung vill., 8°24'11" S, 116°32'11" E, 1415 m, 29.VIII.2024, leg. Evgeny S. Koshkin (ex EKC, will be deposited in ZISP).

DIAGNOSIS. The new species clearly differs from all known species of the genus *Stictane* in the presence of a long, spine-like, apically pointed distal process and a long finger-like medial process of the costa, and in the structure of the vesica. The vesica bears a single pointed cornutus on a long apical diverticulum and two clusters of spine-like cornuti (six in each) at the base and in the distal part of the vesica. The distal costal process is present in only two other species of the genus *Stictane*, *S. transversana* Bayarsaikhan et Bae, 2019 (distributed in Cambodia) and *S. maligani* **sp.n.** However, unlike

them, in *S. lombokensis* **sp.n.** the distal costal process is at least twice as long, the apex of the valva is rounded (not pointed), the vesica has a different structure, and the pattern of the forewing is also dissimilar. Besides *S. lombokensis* **sp.n.**, the type species of this genus, *S. fractilinea* (Snellen, 1880), also has a distinct medial process of the costa, but it is thinner and spine-like.

DESCRIPTION. *Adult*. *Male* (Fig. 1B). Wingspan 14.5 mm. Forewing length 7 mm. Antennae bipectinate, brown. Labial palpus very short, slender, brown. Proboscis short, yellowish. Head, thorax, patagium, tegula, abdomen and legs brown. Forewing narrow, slightly pointed apically, dark brown, with diffuse pattern. Transverse lines and bands absent. Pattern consists of three black dots at base and two black discal spots; terminal series of spots is dark. Hindwing lighter than forewing, pale gray, slightly darker at outer margin. Cilia on fore and hind wings gray. Underside of forewing dark gray, hindwing pale gray. *Male genitalia* (Fig. 1D). Uncus long, slender, pointed at tip. Tegumen v-shaped. Saccus U-shaped, with slightly protruding apex. Valva elongate, broad, tapering in distal part, which is densely setose. Apex of valva rounded. Costa straight, its distal process long, spine-like, apically pointed, slightly curved. Distal saccular process thin, spine-like, slightly curved at apex, shorter than apex of valva. Medial process of costa weakly sclerotized, long, finger-like, directed distally. Juxta weakly sclerotized, broad and oval. Aedeagus straight, short, thick, strongly tapering distally. Vesica longer than aedeagus, sack-shaped, with four diverticula. Apical diverticulum long, narrow, tapering to apex, strongly scobinated, with single short cornutus. Basal diverticulum sack-shaped, with cluster of six short spine-like cornuti and small scobinate zone. Medial semiglobular diverticulum also with six spine-like cornuti, which are about twice as long as the cornuti of subbasal cluster; distal part with scobinate zone and one small cornutus. Subbasal diverticulum semiglobular, with small zones of fine scobination. *Female*. Unknown.

ECOLOGY. A specimen of the new species was collected in a mountainous disturbed deciduous forest at an altitude of about 1400 m (Fig. 2), where it occurs sympatrically with *Stictane maligani* **sp.n.**

DISTRIBUTION. The new species is known only from the type locality in the northeastern part of Lombok Island (Lesser Sunda Islands, Indonesia).

Fig. 2. Habitat of *Stictane maligani* Koshkin **sp.n.** and *S. lombokensis* Koshkin **sp.n.**, the type locality, 28.VIII.2024.
Рис. 2. Биотоп *Stictane maligani* Koshkin **sp.n.** и *S. lombokensis* Koshkin **sp.n.**, типовая местность, 28.VIII.2024.

ETYMOLOGY. The new species is named after Lombok Island, where it was collected.

Competing interests. Author declares no competing interests.

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