

# A new *Spilosoma* species found in the Arfak Mountains, Papua Barat, Indonesia and *Immetalia mokndoma* transferred to *Spilosoma* (Lepidoptera: Erebididae, Arctiinae, Arctiini)

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**Abstract:** A new species in the subfamily Arctiinae is described, *Spilosoma sinnemorum* spec. nov. It is the only known specimen so far of this species and was found in the Arfak Mountains during a recent expedition in 2011 by Mrs Jannie and Mr Siep Sinnema. The genitalia and habitus of the imago are depicted. *Immetalia mokndoma* De Vos, 2013 (originally Noctuidae, Agaristinae) is transferred from *Immetalia* Jordan, 1896 to *Spilosoma* Curtis, 1825 (Erebididae, Arctiinae, Arctiini) and appears to be closely allied.

**Rangkuman:** Spesies yang baru dalam subfamili Arctiinae dipertelakan, *Spilosoma sinnemorum* spec. nov. Ini merupakan satu-satunya spesimen yang sampai sekarang diketahui dan ditemukan di pegunungan Arfak pada suatu ekspedisi pada tahun 2011 oleh Ibu Jannie dan Bapak Siep Sinnema. Gambar dari genitalia dan habitus imago disajikan. *Immetalia mokndoma* De Vos, 2013 (semula Noctuidae, Agaristinae) dipindahkan dari genus *Immetalia* Jordan, 1896 ke *Spilosoma* Curtis, 1825 (Erebididae, Arctiinae, Arctiini) dan ternyata relasinya dekat.

**Key-words:** *Spilosoma*, *Immetalia*, new species, transfer, Papua Barat, Arfak Mountains

## Introduction

Recently *Immetalia mokndoma* De Vos, 2013 (figs 1-2) was described and was considered to belong to Agaristinae (Noctuidae) because of the characteristic metallic blue shimmer on the abdomen and wings, but unfortunately some important distinguishing characters were overlooked. With the recent discovery of another new species, which is closely allied to *mokndoma*, it turned out that both belong to the Arctiini (Erebididae, Arctiinae). *Immetalia mokndoma* De Vos, 2013 is therefore transferred to the genus *Spilosoma* Curtis, 1825 comb. nov. Both are for the time being positioned in the genus *Spilosoma* but show some different

features compared to the *Spilosoma* s.str. species (De Vos & Suhartawan, 2011). The genetic material of *Spilosoma mokndoma* (De Vos, 1913) comb. nov. and that of *S. sinnemorum* spec. nov. has been sampled and will soon be analysed which should reveal their alliance and true generic position.

## Abbreviations

Fwl. – Forewing length

RMNH – Naturalis Biodiversity Center (formerly Rijksmuseum voor Natuurlijke Historie), Leiden, The Netherlands.

### *Spilosoma sinnemorum* spec. nov.

(Figs 3-4, 6, 10-12)

Holotype: ♂, Indonesia, Papua Barat, Birdshead Peninsula, Arfak Mountains, Demaisi, 1°110'S – 133°153'E, 1737 m, 14.xi.2011, PIF expedition, leg. Sinnema. RMNH.INS.558005 [RMNH].

### Diagnosis

A large species with a cream coloured fascia on the dark brown forewing, and bright white basal area on the metallic blue iridescent hindwing.

### Description

Fwl. ♂ 23.7 mm. Head dorsally black, rough hairy scaled, ventrally yellow. Labial palpa short with rough, black scales, antennae black, filiform. Thorax and tegulae dorsally black, patagia black with a faint blue shimmer and with a yellow posterior rim. Thorax ventrally yellow, laterally black. Forelegs with coxa large, white, edged with yellow. All legs with femur, tibia and tarsae black with metallic blue scales and longitudinal white stripes. Abdomen dorsally metallic dark blue with a slightly greenish shimmer, ventrally metallic dark blue, with a central cream-white band and with the anterior rim of the segments of the same colour. Anal tuft of abdomen yolk-yellow.

Forewing rather narrow and long. Background colour dark brown with on the upperside an oblique but straight cream-white subbasal fascia, running from dorsum to costa but just not touching it. Underside of forewing metallic dark blue, fainting to black at the margin and costa. Subbasal fascia white, running to costal vein and interrupted by the dark cubital vein, with a bluish white longitudinal streak crossing the lower part of the fascia. Near costa an irregular bluish white submarginal patch.

Hindwing slightly lobed in ternal area. Base of hindwing pure white which is divided by the cubital vein in a longer anterior part and a shorter posterior part,

which is again divided by the anal vein forming a smaller dorsal part. The metallic dark blue marginal half at the border with the white basal half irregularly greyish black coloured. Underside almost identical to upperside, but tornal area with greyish dark brown scales.

### Genitalia

[♂ prep. RMNH558005] Uncus stretched triangular with a blunt apex. Tegumen with strong rim and behind uncus strongly arched. Vinculum with rounded and undep saccus. Posteriorly juxta at one-fifth constricted, with large globular lower part and more sclerotized v-shaped upper part. Valvae rather short, broad and apically rounded, at tegumen with a bristled knob. Sacculus in the middle of valve with strongly arched crest. Cucullus in apical half of valve with two rather long and narrow costal processes, in the centre of apical half with a pair of similar processes but directed in v-shape, and apically with a pair of knobs. Valvae at inner side on sacculus and apically with few setae.

Aedeagus rather straight with a conspicuous split division at the apical third with a sharp apex. Everted vesica stretched triangular shaped, in the middle with an irregular field of tiny sclerotized drops.

Female unknown.

### Distribution

The only known specimen so far was collected on the Birdshhead Peninsula in the Arfak Mountains.

### Etymology

The species is named in honour of Mrs. Jannie and Mr. Siep Sinnema, who collected the unique specimen of *Spilosoma sinnemorum* spec. nov. during the recent expedition of the Papua Insects Foundation in 2011.

### Discussion

Both species, *Spilosoma mokndoma* (De Vos, 2013) comb. nov. and *S. sinnemorum* spec. nov., appear to be closely allied. At first glance the genitalia structure of both species look very different (figs 7-12). However, a more detailed research reveals more similar characters, i.e. in the uncus and arched apex of the tegumen which is in fact characteristic for *Spilosoma*, also the presence and structure of the sclerotized anal tergite plate (fig. 5 and 6) and coremata bristles. More conspicuous are the colour and pattern of the metallic blue abdomen, the yellow anal tuft and the metallic blue shimmer on the wings. The small and short labial palpa distinguish the species immediately from *Immetalia* and other genera of Agaristinae and are

in fact characteristic for Arctiinae. This and other distinguishing characters have unfortunately been overlooked by De Vos (2013) which in this publication is amended.

## Acknowledgement

We are grateful to Kees van den Berg (RMNH) for giving us the opportunity to make digital images of the genitalia with a motorized Zeiss V20 binocular microscope and a digital Axio MRc5 camera controlled by Axio manager M2 software. Mr and Mrs Sinnema we thank for their kindness to donate the unique specimen of *Spilosoma sinnemorum* spec. nov. to the RMNH. The Uyttenboogaart-Eliassen Stichting (The Netherlands) we are grateful for financing the survey to Papua in 2011 which made collection of last mentioned species possible.

## Literature

- Vos, R. de, 2013. Three new Agaristinae species and the first record of *Argyrolepidia palaea* from Papua, Indonesia (Lepidoptera: Noctuidae, Agaristinae). (SUGAPA) 7(4): 114-123.
- Vos, R. de & D. Suhartawan, 2011. The *Spilosoma* group of species from New Guinea and adjacent islands (Lepidoptera: Erebidae, Arctiinae, Arctiini). In: Telnov, D., 2011. Biodiversity, *Biogeography and Nature Conservation in Wallacea and New Guinea*, Vol. I: 299-333.



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Figs 1-2. *Spilosoma mokndoma* (De Vos, 2013) holotype ♂, Mokndoma, Snow Mountains (KSP): 1. upperside; 2. underside.  
Figs 3-4. *Spilosoma sinnemorum* spec.nov. holotype ♂, Demaisi, Arfak Mountains (RMNH): 3. upperside; 4. underside.



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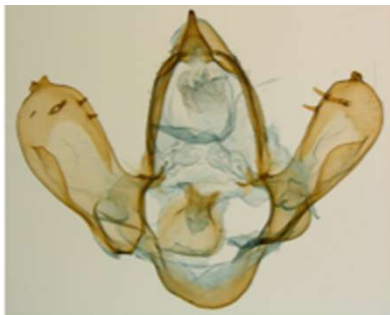
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Figs 5-6. Posterior part of abdomen with sclerotized tergite and coremata bristles.

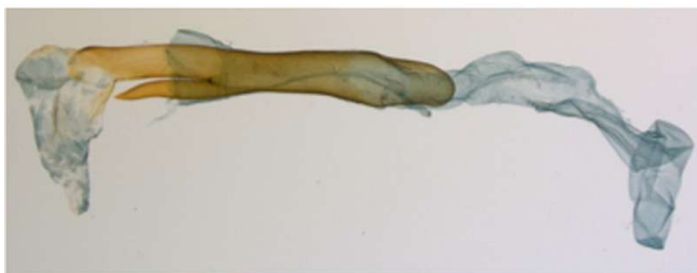
5. *Spilosoma mokndoma*; 6. *Spilosoma sinnemorum*.

Figs 7-9. ♂ genitalia *Spilosoma mokndoma* (De Vos, 2013) (prep. KSP65892):

7. habitus; 8. aedeagus; 9. vesica.



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Figs 10-12. ♂ genitalia *Spilosoma sinnemorum* spec. nov. (prep. RMNH558005): 10. habitus; 11. aedeagus; 12. vesica.