

## A new species of the genus *Acropteris* Geyer, 1832 from the island Numfor (Indonesia, Papua) (Lepidoptera: Uraniidae, Microniinae)

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**Abstract:** A new species belonging to the genus *Acropteris* Geyer, 1832 is described from the island Numfor. This species, *A. numforensis* **spec. nov.**, is compared with *A. pieridaria* (Guenée, 1857). Adults and genitalia are figured.

**Rangkuman:** Spesies baru dari genus *Acropteris* Geyer, 1832, yang terdapat di pulau Numfor, dideskripsi di sini. Spesies ini, *A. numforensis* **spec. nov.**, dibandingkan dengan *A. pieridaria* (Guenée, 1857). Gambar bentuk dewasa dan genitalia disajikan.

**Keywords:** *numforensis*, *pieridaria*, New Guinea, taxonomy.

### Introduction

The genus *Acropteris* Geyer, 1832, with type species *A. grammearia* Geyer, 1862, comprises about 25 species of rather small uraniid moths, with a wide distribution in the Afrotropical region, Madagascar and the Indo-Australian tropics. They all have white or greyish white wings, with numerous fine striae or lines. In the collection of the NHMUK we found several specimens belonging to the genus *Acropteris* which drew our attention because of their very pale black and brown markings. They were all originating from the island Numfor (Indonesia, Papua) and resemble *A. pieridaria* (Guenée, 1857). In this paper we compare *A. pieridaria*, which is restricted to the mainland of New Guinea, to this new species of the genus *Acropteris* from Numfor.

Numfor is a small island of 311 km<sup>2</sup> located between the island Biak and the Birdshead Peninsula, at a distance of about 90 km east of the city of Manokwari.

The hostplants of *A. pieridaria* and the new species of Numfor are not known, but some other species of *Acropteris* are recorded from Asclepiadaceae. Holloway (1991) reports that *A. ciniferaria* Walker, 1866 has been reared on a member of Asclepiadaceae and *A. iphiata* (Guenée, 1857) is recorded from *Metaplexis* (Asclepiadaceae) (Lees & Smith, 1991).

At daytime *Acropteris* moths can be found resting at the underside of a leaf, with the wings flat against the leaf. We observed this behaviour with *A. inchoate* (Walker, 1862) and *A. basiguttaria* (Walker, 1866). We found that members of other genera of the Microniinae, such as *Micronia* Guenée, 1857 (*M. aculeata* Guenée, 1857 and *M. justaria* Walker, 1861) and *Stesichora* Meyrick, 1886 (*S. puellaria* (Walker, 1866) and *S. nigroapicata* Pagenstecher, 1886) have the same behaviour. When disturbed, they will, after a short flight, always disappear at the underside of a leaf.

### Abbreviations

BMNH(E) – former acronym of NHMUK with addition of (E) of department of Entomology

Fwl - Forewing length (measured from base to apex)

KSP - Koleksi Serangga Papua, Universitas Cenderawasih, Waena, Papua, Indonesia

MNHB - Museum für Naturkunde, Berlin

NHMUK - Natural History Museum, London, United Kingdom

RMNH - Naturalis Biodiversity Center, Leiden, The Netherlands

### Material and methods

For this study we examined four collections as mentioned above.

Specimens of *A. pieridaria* were only found in the collections of NHMUK, RMNH and MNHB. The labels of all *A. pieridaria* specimens in the collections have been examined. The data on these labels have been used to show the distribution of the species, in the text as well as in the distribution map (fig. 18), without citing all specimen data in detail.

Genitalia preparations were made according to the standards of the Natural History Museum in London (Robinson, 1976). When available, at least one male and one female specimen for each species was dissected. After dissection, the genitalia were macerated for 12 hours in cold KOH 10%, cleaned in ethanol 30% and stained with chlorazol black. The genitalia were temporarily stored in 70% ethanol to allow study of their three-dimensional structure. Finally the genitalia were mounted on glass slides in Euparal. Most of the adults were photographed with a Canon Powershot SX30 IS digital camera. Digital photographs of genitalia slides were made with a motorized Zeiss V20 binocular microscope and a digital Axio MRc5 camera controlled by Axiomanager M2 software. Wing length was measured from wing base to apex in males and females. Morphological terminology of the external structures (excluding the genitalia) mainly follows Scoble (1992) and Holloway et al. (2001). The terminology of the genitalia mainly follows Jordan (1939), Tuxen (1970) and Kôda (1987).

### Systematic part

***Acropteris pieridaria*** (Guenée, 1857) Figs 1-3, 6-9, 12-14

*Micronia pieridaria* Guenée, 1857: 30.

*Stesichora quadristrigata*, Warren 1896: 274. **Lectotype** (designated here): ♀, Papua New Guinea, Fergusson Island, xii-1895, leg. A.S.Meek (NHMUK-014168935)

*Micronia notabilis* Pagenstecher, 1900: 127-128. **Lectotype** (designated here): ♂, Papua New Guinea, Nord Pommern, Kinigunang, leg. C.Ribbe (NHMUK-010483799)

### Additional material examined

1 ♂ BMNH(E)1325360, Papua New Guinea, New Britain, leg. Cotton & Webster; 1 ♀ BMNH(E)1325361, Papua New Guinea, Milne Bay, xi.1898, leg. A.S.Meek; 1 ♂ NHMUK-010483800, Indonesia, Papua, Kurudu Island, 4<sup>th</sup> trimester 1896, leg. W. Doherty; 1 ♂ NHMUK-010483801, Indonesia, Papua, coast between Geelvinck Bay and Humbolt Bay (northern coastal region), 4<sup>th</sup> trimester 1896, leg. W. Doherty; 1 ♀ NHMUK-014168936, Papua New Guinea, Fergusson Island, xi-1894, leg. A.S.Meek.

Note: it seems that the label of specimen NHMUK-014168936 of A.S Meek has been changed later: xi.xii.95 has been changed in xi.94.

**Description** (Figs 1-2): Fwl: ♂ 27.5 mm; ♀ 28 mm. Head with vertex brown, frons black with narrow white rectangular spot. Antennae pale brown, basal part white, filiform, length 11 mm. Labial palpus dorsally brown, ventrally white. Thorax (dorsally and ventrally), patagia and tegulae white. Forelegs with femur brown in front, tibiae brown in front, other parts and tarsi white. Other legs white, including tibiae and tarsi.

Forewing white, with four brown narrow transverse bands, all starting at the dorsum. The inner one starting basally from the dorsum at one fourth from wing base, the second one at the middle of the dorsum and the third one marginally at one fourth from the tornus, all three running to the costa but not reaching it and ending on the subcostal vein. The fourth transverse band runs parallel with the termen and is starting from the dorsum at one sixth from the tornus. It is variable in length, ending halfway or at nine-tenth from the costa, but there is always a trace of this fourth band near the dorsum. In some specimens this band is broken up at the costal end or it is a short line of brown striae between the outer transverse band and termen parallel to the margin. On the costa several small black triangular spots are present, more frequent towards wing base. Fringes white.

Hindwing white with three rather broad yellow-brown bands, starting at the anal angle in a yellow-brown field and diverging in the direction of the costa, but not reaching it. Between the outer transverse band and the termen, yellow-brown striae are present, forming short lines parallel to the termen. Above the tornus a small tail is present. A black round dot in the tail, two round black marginal dots between the tail and the anal angle. Just above the tail two elongated black marginal dots are present. Apical fringes white, near tornus and termen yellow-brown.

Underside of forewing white, the four transverse bands visible as grey lines. Underside of hindwing white.

Abdomen dorsally and ventrally white.

Variation: One male from the island Kurudu (east of Japen Island, Papua, Indonesia) in NHMUK has very pale brown transverse bands on the forewing (fig. 3). Examination of the genitalia proved it to belong to *A. pieridaria*. (figs. 8-9).

**Male genitalia** (Figs 6-7): Valvae rounded, rather broad, with a sclerotized costal lobe, tapering to the apex, blunt at the apex. Cucullus with a long finger-shaped distal process with a sharp apex. Sacculus broad, rounded, at apex truncated and with a small process. Uncus bifid in its distal half, each part finger-shaped and with a short sharp apex. Tegumen triangular, partly sclerotized. Vinculum hardly sclerotized with a small rounded saccus. Many long setae near the apex of the sacculus and at the costal part of the cucullus.

Aedeagus tubular, slender and slightly curved, vesica with large scobinated fields.

**Female genitalia** (Figs 12-14): Corpus bursae globular, slightly oblong. Length corpus bursae is about 80% of length ductus bursae. Two signa on corpus bursae, close to each other but well separated near the connection of the corpus bursae and ductus bursae. Both signa consisting of short, laterally directed spines. Antrum short, small sclerotized papillae anales with some setae.

**Distribution:** Aru Islands, Misool, Kurudu, mainland of New Guinea, Bismarck Archipelago, D'Entrecasteaux Islands.

***Acropteris numforensis* spec. nov.** Figs 4-5, 10-11, 15-17

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**Holotype:** ♂ BMNH(E)1325362, [Indonesia, Papua], Numfor Island, Suer, vi.1897, leg. W.Doherty.

**Paratypes:** 1 ♂ NHMUK014168940, 1 ♀ BMNH(E)1325363, same as holotype.

**Diagnosis:** *Acropteris pieridaria* has four distinct brown transverse bands on the forewing, in *A. numforensis* **spec. nov.** the transverse bands are pale brown and only three are partly visible. The transverse bands on the forewing underside are visible as grey lines in *pieridaria*, in *numforensis* the underside of the forewing is white without markings.

In the male genitalia the most distinct difference between the two species is in the shape of the uncus. In both species the uncus is bifid in the distal half, each part finger-shaped. This finger-shaped part is longer and the apex of it is sharper in *pieridaria* than in *numforensis*. Near the apex of the sacculus and at the costal part of the cucullus there are more and longer setae in *numforensis* than in *pieridaria*.

In the female genitalia the two signa are well separated in *pieridaria*, while in *numforensis* the two signa are touching each other in the middle.

**Description** (Figs 4, 5): Fwl: ♂ 28.5 mm, ♀ 31.5 mm. Head with vertex brown, frons black with narrow white rectangular spot. Antennae pale brown, basal part white, filiform, length 10 mm. Labial palpus dorsally brown, ventrally white. Thorax (dorsally and ventrally), patagia and tegulae white. Forelegs with femur and tibiae brown in front, other parts and tarsi white. Mid and hind legs white, including tibiae and tarsi.

Forewing white, with three pale brown narrow transverse lines, all starting at the dorsum. The inner one starting in the middle of the dorsum, the middle one at one-fourth from the tornus and the outer one starting at one sixth from the tornus, all three running towards the costa but not reaching it. The middle transverse line is always visible and the longest, the inner transverse line is oblique and hardly visible, the outer one is visible near the dorsum and is variable in length and diminishing halfway to costa. Only a few small black triangular spots on the costa near the base. Fringes white.

Hindwing white with two rather broad pale brown bands, starting at the anal angle and diverging in the direction of the costa but not reaching it. Between the outer transverse band and the termen are yellow-brown striae present, forming short lines parallel to the margin. A thin pale brown marginal line runs from the anal angle to the apex. Apical fringes white, near tornus and termen pale brown.

Underside of forewing white, the middle transverse band visible as a diffuse grey line. Underside of hindwing white.

Abdomen dorsally and ventrally white.

**Male genitalia** (Figs 10-11): Valvae rounded, rather broad, with a sclerotized costal lobe, tapering to the apex, blunt at the apex. Cucullus with a long finger-shaped distal process with a sharp apex. Sacculus broad, rounded, at apex bending sharply inwards. Uncus bifid in its distal half, each part shortly finger-shaped and rounded at the apex. Tegumen triangular, partly sclerotized. Vinculum hardly sclerotized with a small rounded saccus. Many long setae near the apex of the sacculus and very long setae at the costal part of the cucullus.

Aedeagus tubular, slender and slightly curved, vesica with large scobinated fields.

**Female genitalia** (Fig. 15-17): Corpus bursae globular, slightly oblong. Length corpus bursae is about 80% of length ductus bursae. Two signa on corpus bursae near the connection of corpus bursae with ductus bursae, oblong, consisting of short, laterally directed spines, in the middle the two signa are touching each other. Antrum short, small sclerotized papillae anales with some setae.

**Distribution:** Numfor island (Papua, Indonesia).

**Etymology:** The name refers to the island Numfor, the type locality of the species.

### Discussion

It is remarkable that on the small island of Numfor a number of endemic species of uraniid moth are found, resembling species from other parts of New Guinea, but with very pale black and brown markings. In the genus *Cyphura* this is the case for two species; *Cyphura numforensis* Sinnema & Sinnema-Bloemen, 2020 and *C. mastrigti* Sinnema & Sinnema-Bloemen, 2018. The black markings on the wings of these species are very pale compared with resembling species from other parts of New Guinea.

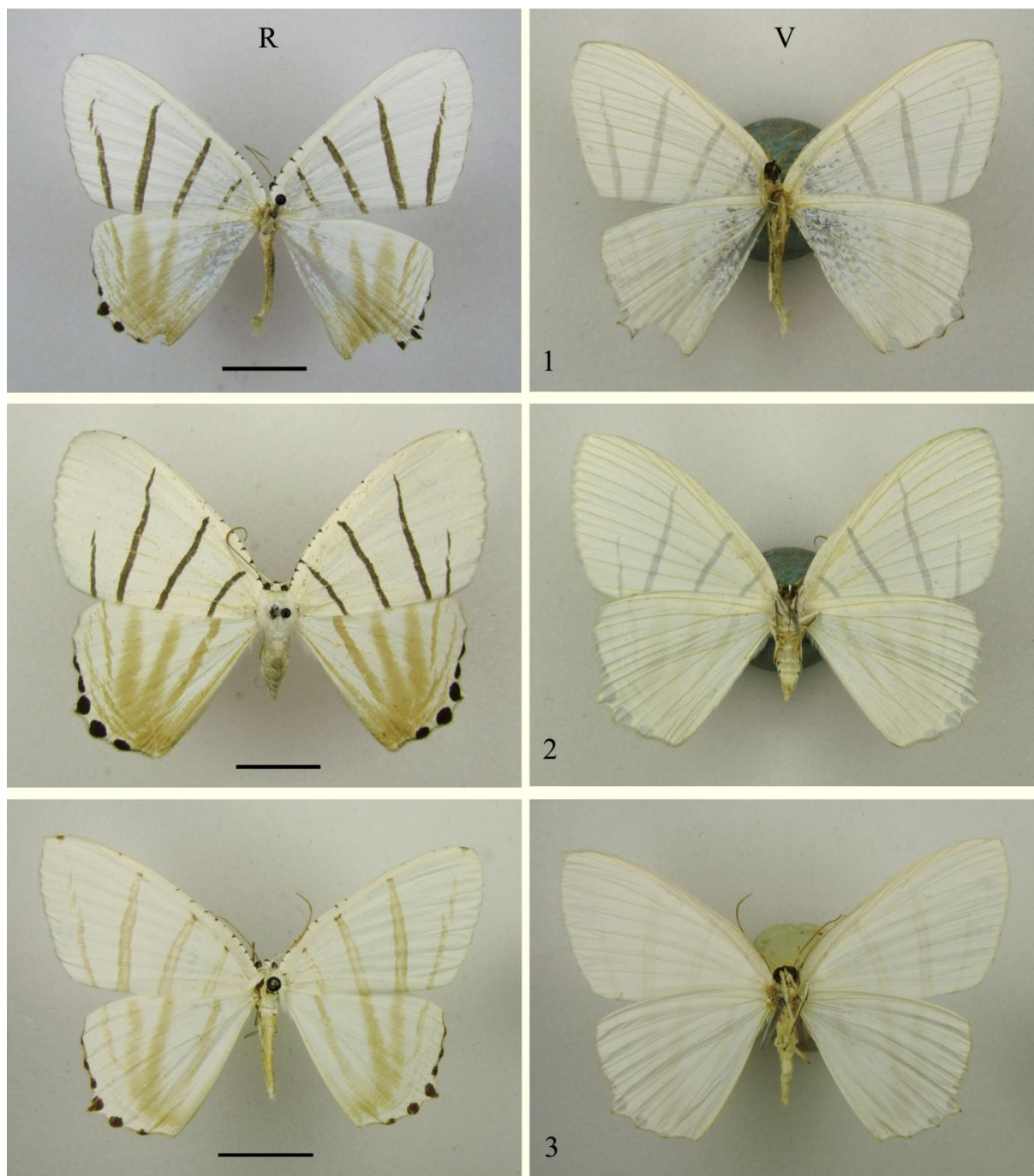
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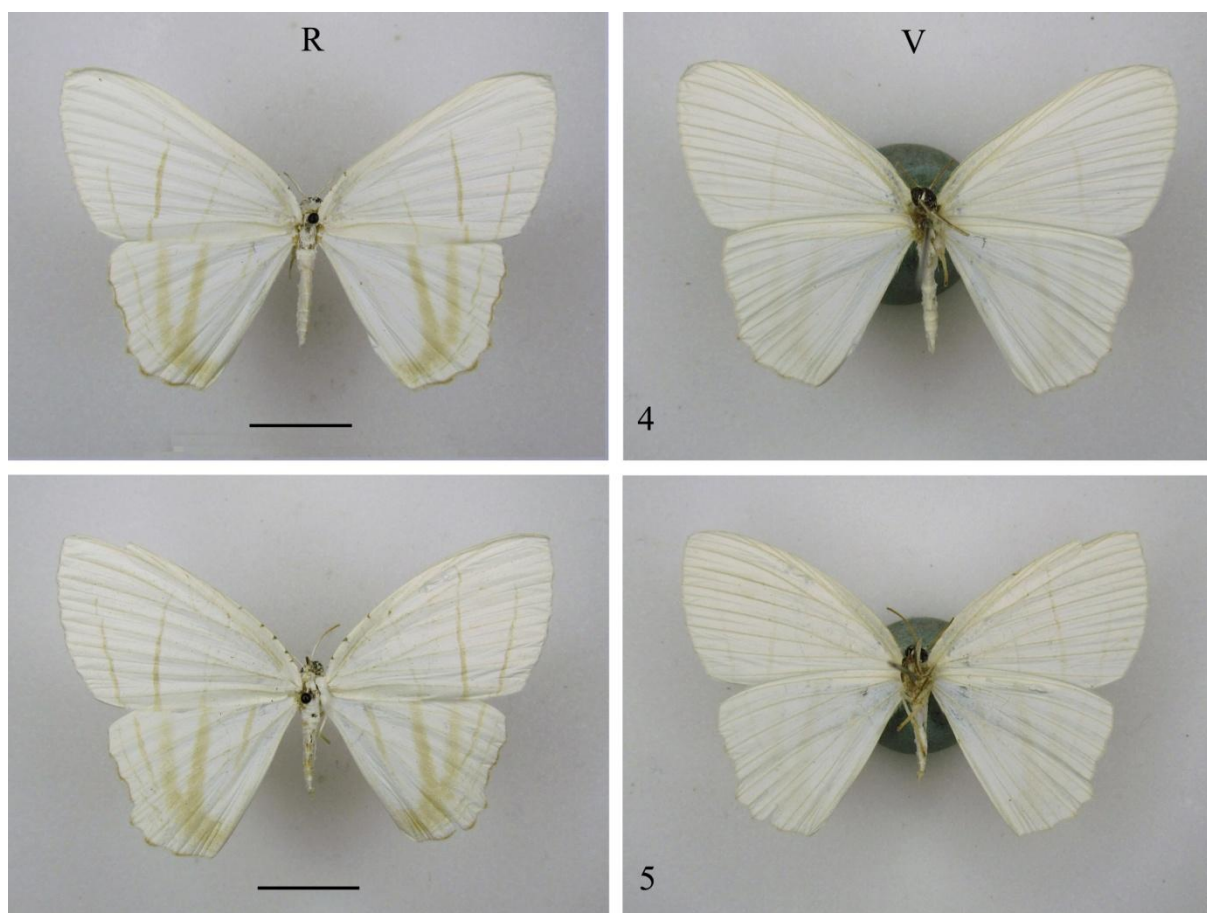
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**Figs 1–3.** Adults of *Acropteris pieridaria*: **1.** ♂ (BMNH(E)1325360); **2.** ♀ (BMNH(E)1325361); **3.** ♂ (NHMUK010483800). Scale bars: 1 cm.





**Figs 4–5.** Adults of *Acropteris numforensis* **spec. nov.**: **4.** ♂ holotype (BMNH(E)1325362); **5.** ♀ paratype (BMNH(E)1325363). Scale bars: 1 cm.

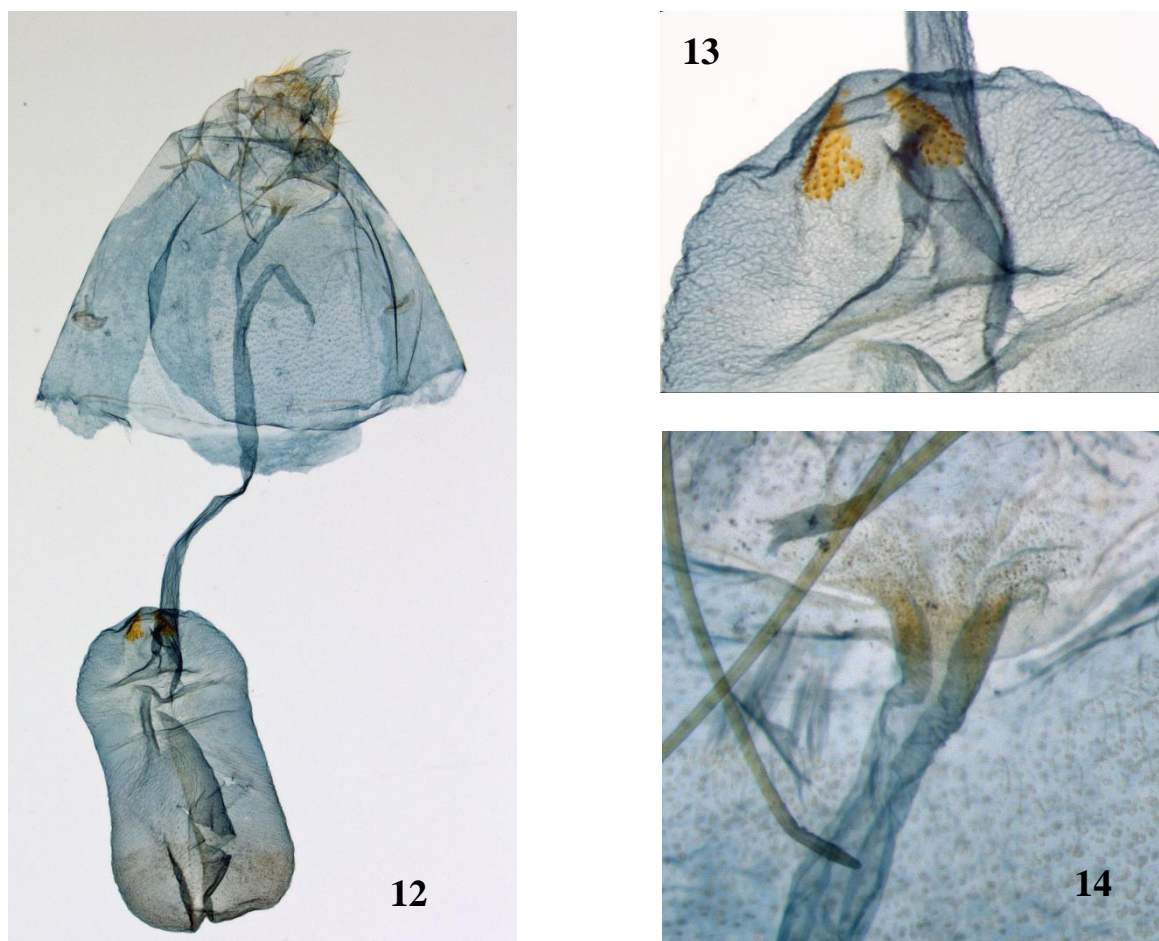




**Figs 6-9.** Male genitalia of *Acropteris* species: **6.** *A. pieridaria* (BMNH(E)1325360), genital armature; **7.** *A. pieridaria* (BM1325360), aedeagus; **8.** *A. pieridaria* (NHMUK010483800), genital armature; **9.** *a. pieridaria*, (NHMUK010483800), aedeagus.

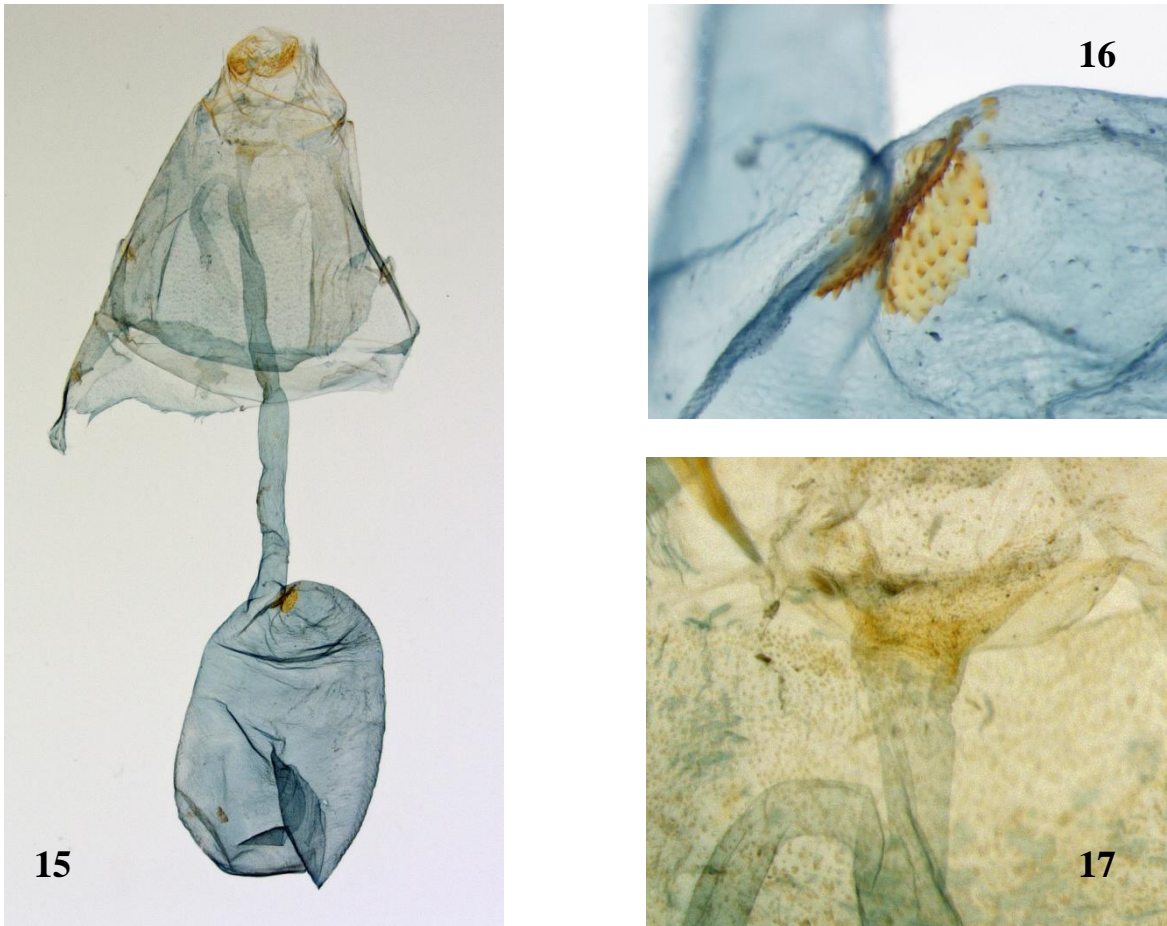


**Figs 10-11.** Male genitalia of *Acropteris numforensis* **spec. nov.**, holotype: **10.** genital armature; **11.** aedeagus.

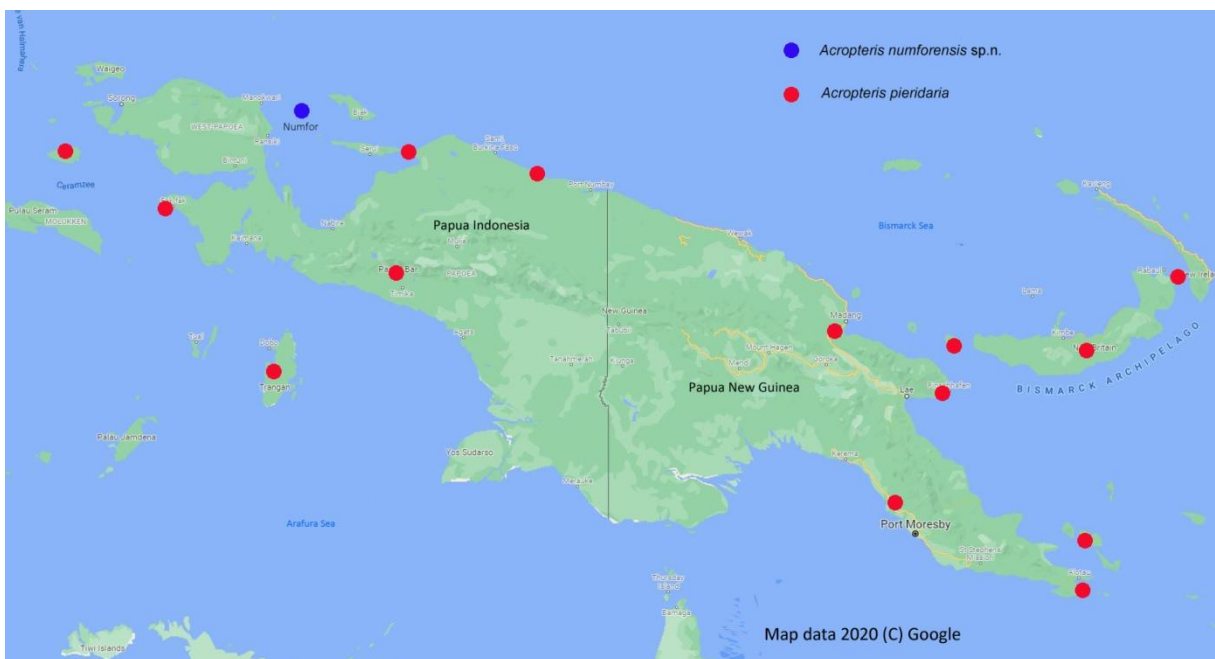


**Figs 12-14.** Female genitalia of *Acropteris pieridaria* (BMNH(E)1325361): **12.** habitus genital; **13.** signa; **14.** antrum.





**Figs 15-17.** Female genitalia of *Acropterus numforensis* spec. nov. (BMNH(E)1325363): **15.** habitus genital; **16.** signa; **17.** antrum.



**Fig. 18.** Distribution of *Acropterus pieridaria* and *A. numforensis* spec. nov.