

**Short scientific note**

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**A new species of *Reticulana* from the Bismarck Archipelago (Lepidoptera: Erebidae)**

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ORCID: <https://orcid.org/0000-0002-3416-8069>**Abstract**

*Reticulana sculpta* sp. n., a second species of the hitherto monobasic genus *Reticulana*, is described from New Ireland (Bismarck Archipelago). The new species is similar to the congener *R. costilinea* from New Guinea, from which it can easily be distinguished by features of the wing pattern and the genitalia.

**Key words:** moths, taxonomy, Papuan Region.

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The genus *Reticulana* was erected by Bethune-Baker (1906) and has so far remained monobasic, being restricted to its type species only, *R. costilinea* Bethune-Baker, 1906, a little-known New Guinean erebid moth that is illustrated here for the first time (Figs 1-4). Reorganisation of the massive collection by Lionel Walter Rothschild, since 1939 preserved at the Natural History Museum (London) (NHMUK), formerly known as British Museum (Natural History), allowed to trace two specimens of an unknown species of the same genus collected by Alfred Frederic Eichhorn in New Ireland, which is described in this note.

**Description*****Reticulana sculpta* sp. nov.**

Male (Figs 5-6)

*Size.* Length of forewing 16 mm (N = 2).

*Head.* Large, eye very large, globular, frons narrow, feebly bulged at middle, vertex with rough vestiture of erect flat scales and predominantly dark brown at middle, white along edges, the white edges combining with voluminous white tufts surrounding the antennal scapes, antenna long, filiform, fasciculate, with cilia as long as width of antennomeres, haustellum flimsy, labial palpus obliquely oriented, the joints mostly white internally and at tips, second joint long, compactly scaled laterally and dorsally, roughly ventrally, third joint long rod-like, with slightly clubbed apex.

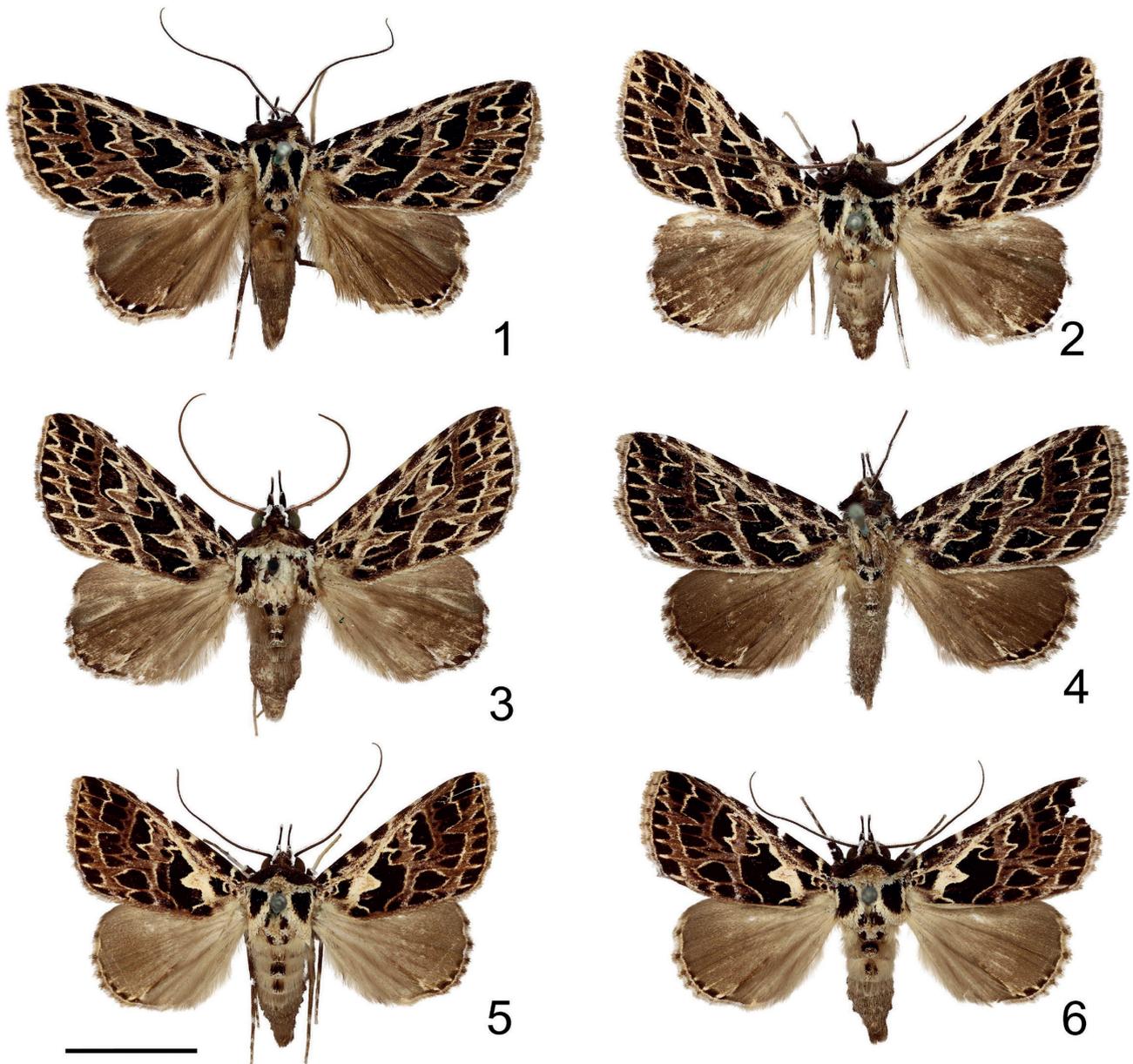
*Thorax.* Notum extensively covered with long rough suberect scales, patagium thick, much wider than high, dark brown, overlapping thick vestiture of creamy white scales that protrude beyond its distal margin and split mesially its halves with a voluminous anterior meso-scutal tuft, tegula broad, dark brown, broadly lined creamy white along edges and at tip, vestiture of mesoscutellum creamy white with two pairs of dark brown blotches, metascutum with creamy white hair-like scales. Forewing with reticulate pattern of dark brown blotches lined with creamy white that alternate with paler bands essentially as in *Reticulana costilinea* (Figs 1-4), but such bands medium brown and blotches more compact, especially largest one, less deeply indented; oblique stripe running from nearly base of anal margin to costa before apex extensively filled with creamy white tinge that wholly invades the jag along inner margin of large blotch; fringe with alternating waves of beige and brown tinges, darker brown in correspondence of veins; underside extensively fuscous brown, with pale beige diffuse discal area and lining of veins, terminal line dull yellow, fringe chequered. Hindwing slightly oblong, with termen quite blunt in correspondence of vannal section, ground colour greyish brown, palest at base, with veins feebly lined darker brown on disc, adterminal area with 3-4 small dark brown blotches separated by pale dots on veins; fringe beige with brown midline, much darker brown than in forewing in correspondence of veins, thus appearing chequered; underside fuscous brown irrorated with beige, with darker brown discal spot and postmedial line, terminal line dull yellow, fringe chequered. Pectus hairy, medium brown. Legs slender, with dark brown and

creamy white areas, or a variable admixture of the two colours, albeit prevailing dark brown on outer side of joints except at their tips, creamy white, tarsomeres dark brown tinged creamy white at apex, foretibia looking flat because of outer fringe of short, creamy white hair-like scales.

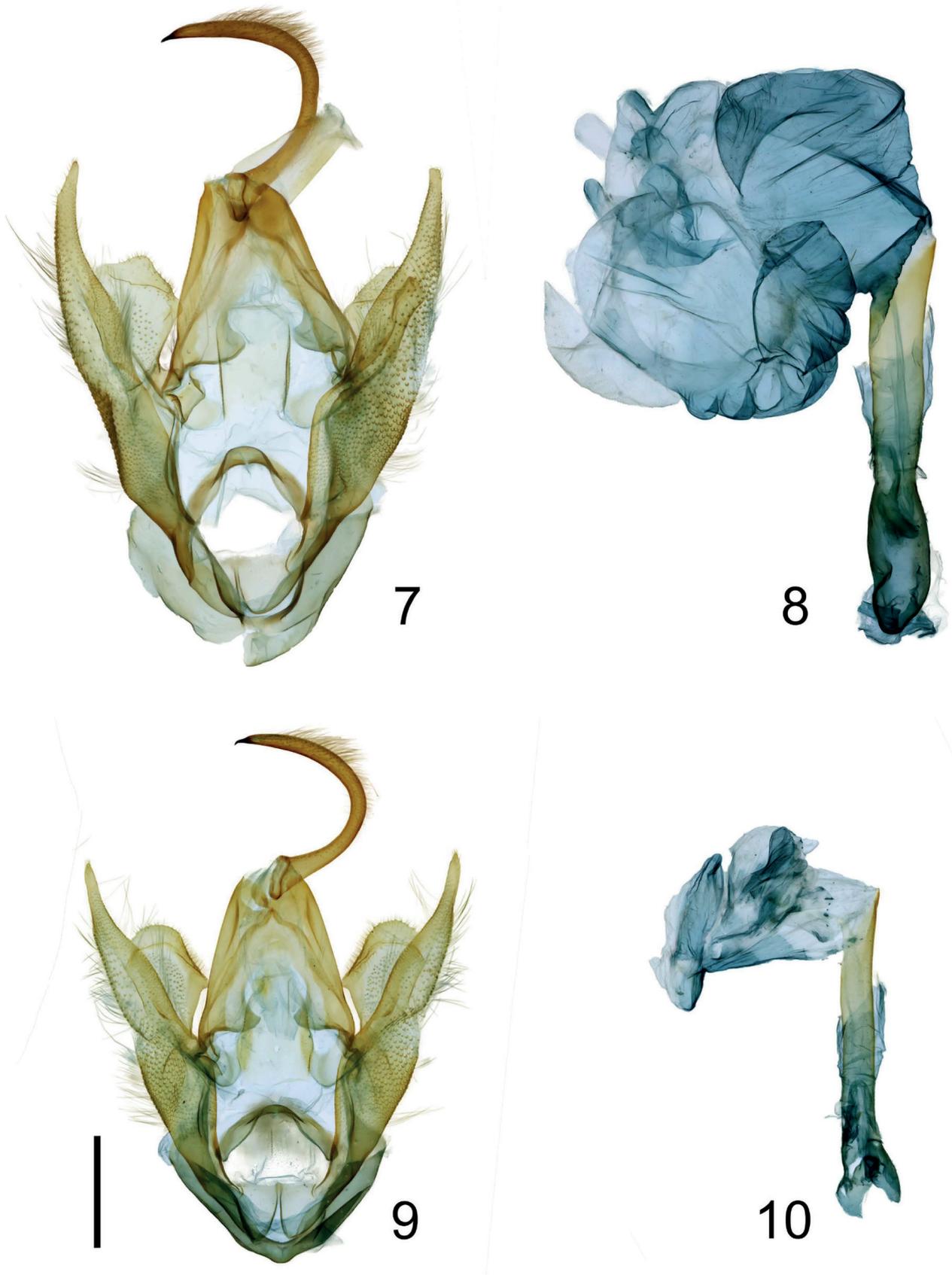
*Abdomen.* Vestiture made of hair-like scales, basal segments creamy white with middorsal dark brown tufts, distal ones duskier, underside more uniformly fuscous.

*Male genitalia* (Figs 9-10). Tegumen dome-shaped, with large anterior cordiform notch leaving paired antero-lateral sub-triangular lobes with slightly recurved tip; vinculum broad and flimsy, tightly adpressed and wrapping base of valvae; valva consisting of elongated saccular

part following up in line, after membranous shallow constriction, with long acuminate apex, and of broad, distally convex costal plate, the ventral part of valva folding over the latter, transtilla short and high, weakly sclerotised, not merging with contralateral one; juxta a narrow belt configured in shape of broadly opened ‘reverse saddle’; manica penis sclerotised at sides; uncus a long slender hook of nearly uniform thickness all through except at very base and pointed tip; tuba analis entirely membranous (Fig. 9). Phallus long and slender, shaft straight, vesica small, unarmed, opening perpendicularly, with central corpus and three main (distal, posterior and lateral) multilobular diverticula (Fig. 10).



**Figs 1-6** – Habitus of *Reticulana* spp.: 1, *R. costilinea*, ♂, New Guinea, Arfak Mts, Ninay Valley; 2, idem, ♂, New Guinea, Hydrographer Mts; 3, idem, ♂, New Guinea, Upper Aroa River; 4, idem, ♀, New Guinea, Arfak Mts, Ninay Valley; 5, *R. sculpta* sp. n., ♂, holotypus, New Ireland; 6, idem, ♂, paratypus, New Ireland. Scale bar = 1 cm.



**Figs 7-10** – Male genitalia of *Reticulana* spp.: **7**, *R. costilinea*, New Guinea, Hydrographer Mts, apparatus; **8**, same as 7, phallus; **9**, *R. sculpta* sp. n., paratypus, New Ireland, apparatus; **10**, same as 9, phallus. Scale bar = 1 mm.

Female. Unknown.

**Type material.** Holotypus: ♂, [Papua New Guinea] [New Ireland Province] “New Ireland, November, 1923. (A. F. Eichhorn).” / Rothschild Bequest 1939-1 / NHMUK010918672, in Natural History Museum (London). Paratypus: ♂, same data and repository as the holotypus, NHMUK010918673.

**Distribution.** The species is so far known only from the island of New Ireland in the Bismarck Archipelago.

**Etymology.** The species’ name is based on the feminine adjective “*sculpta*”, meaning sculpted, carved, in reference to the forewing pattern of the moth.

**Diagnostic remarks.** The new species can easily be distinguished from its congener, *Reticulana costilinea*, by the smaller size (length of forewing in male *costilinea* 18-19 mm, N = 10), the more compact wings dominated by warmer brown colour and the less tabby aspect of forewing in consequence of its more compact dark brown blotches; in particular, the largest blotch is less deeply incised, with shallower jag along its inner edge that is completely filled with creamy white proceeding from the concolorous oblique stripe crossing the wing from nearly the base of anal margin to costa before the apex (Figs 5-6). This stripe is much less conspicuous and as greyish brown as the other bands that alternate with dark blotches in the New Guinean taxon (Figs 1-4). The hindwing of male is less quadrangular and lacks the shallow terminal notch above  $M_1$  that occurs in *costilinea*; further to this, there is no wedge of velvety grey modified scales — evidently androconial in that absent in the female (Fig. 4) — that in such species radiates on the two sides of  $M_1$  from middle of disc to termen (Figs 1-3). In the male genitalia, the configuration of the apparatus is very similar and the more fragile structure of the new species might simply be ascribable to an isometric factor, this species being smaller sized than its congener, but the shape of the costal plates is diagnostic, being narrower and distally rounded in the new species (Fig. 9), wide and subpentagonal in the New Guinean taxon (Fig. 7). Paramount differences occur instead in the width of the phallus shaft, much smaller in *sculpta*, and especially in the size and configuration of the fully everted vesicae, that of *costilinea* being massive, with numerous diverticula and lobes all around, and not comparable at all with the tiny one of the new species (cf. Figs 8, 10).

**Discussion.** The new species appears to be a vicariant, at least in part of the Bismarck Archipelago, of *Reticulana costilinea*, that is widespread over most of New Guinea from the Doberai Peninsula to the Southeastern Peninsula. Localities for the latter so far known after either published or unpublished records are as follows: Ninay Valley (Central Arfak Mts), near Oetakwa River (Maoke

Mts), Nomnagihé, Dinawa, Ekeikei, Babooni, Hydrographer Mts, Upper Aroa River, and Uskwar (Bethune-Baker, 1906; NHMUK). The unusual albeit increasingly recorded circumstance of Erebininae showing dorsally membranous tuba analis, i.e. without a sclerotised scaphium (cf. Zilli, 2021), must also be noted in both species of *Reticulana*.

#### References

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- Zilli A. 2021. *Tabwecala robinsoni* gen. nov., sp. nov., from Vanuatu and its systematic position in the ‘Ophiusini-Poaphilini’ clade (Lepidoptera, Erebidae). *Nota lepidopterologica*, 45: 193–211.