

A new species of the genus *Vitessa* MOORE, [1860] from Northern Territory (Australia) (Lepidoptera, Pyralidae)

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Abstract: The new species *Vitessa magela* sp. n. is described from the Northern Territory (Australia). The new species is compared with the closest similar species *V. plumosa* HAMPSON, 1896 and *V. segereri* BUCHSBAUM, SPEIDEL & CHEN 2014. The new species is characterised by details of the wing pattern and by the genitalic structures. The DNA barcode shows a large distance to the other species from Australia. The new species is figured and a map indicating the position of the type locality is provided.

Key words: Lepidoptera, Pyralidae, *Vitessa magela* sp. n., Northern Territory, Australia, DNA, distribution.

Eine neue Art der Gattung *Vitessa* MOORE, [1860] aus dem Northern Territory (Australien) (Lepidoptera, Pyralidae)

Zusammenfassung: Die neue Art *Vitessa magela* sp. n. wird vom Northern Territory (Australien) beschrieben. Die neue Art wird mit den nächsten ähnlichen Arten *V. plumosa* HAMPSON, 1896 und *V. segereri* BUCHSBAUM, SPEIDEL & CHEN 2014 verglichen. Die neue Art unterscheidet sich deutlich in der Flügelzeichnung und in den Genitalstrukturen von den beiden anderen Arten. Der DNA-Barcode zeigt eine große Distanz zu den anderen Arten Australiens. Die neue Art wird abgebildet und eine Karte mit der Lage des Typenfundorts gezeigt.

Introduction

The genus *Vitessa* MOORE, [1860] is known with about 30 described species (MUNROE & SHAFFER 1980, BUCHSBAUM 2000, BUCHSBAUM & CHEN 2013, BUCHSBAUM et al. 2014) and some additional undescribed species. Two species are known from Australia so far, *V. zemire* (STOLL, 1781) and *V. glaucoptera* HAMPSON, 1906 (MUNROE & SHAFFER 1980, NIELSEN et al. 1996). Most of the *Vitessa* species are known from Moluccan Islands east of the Wallace line, New Guinea and the Solomon Islands (MUNROE & SHAFFER 1980, BUCHSBAUM 2000, BUCHSBAUM & CHEN 2013).

Material, methods and locality

Material of the new species was found in the Australian National Insect Collection (ANIC), Canberra, and in the Darwin Museum & Art Gallery, Darwin.

The specimens were collected at only one place in the Northern Territory.

Male genitalia were already dissected and available from ANIC. Dissection of the female genitalia was done with 10% KOH and the genitalia were mounted in Euparal.

Vitessa magela sp. n.

(Figs. 1–6.)

Holotype ♂: [Australia], N.T., Bowerbird; Magela Creek; 13°37' S, 132°8' E; 29. VIII.–1. IX. 1983; I. ARCHIBALD. ANIC.

Paratypes: in total 2 ♂♂, 2 ♀♀, same data: 1 ♀ ANIC and 2 ♂♂ and 1 ♀ Darwin Museum & Art Gallery.

Etymology: The new species is called *V. magela* sp. n. after the type locality Magela Creek where the new species was collected.

Description and differential diagnosis

Wingspan ♂ 43–45 mm, average 44 mm; length of forewing ♂ 20–21 mm, average 20,3 mm.

Wingspan ♀ 49–51 mm, average 50 mm, length of forewing ♀ 22–23 mm, average 22,5 mm.

Head yellow. Thorax yellow and black. Antenna black. Ground colour of abdomen black with white rings. Last segment yellow. Forewings black with white strips from outer margin to postdiscal region. In postdiscal region, a kidney-shaped mark and a long triangle mark below. Discal white band with two tips towards postdiscal region. Basal region black with an orange yellow band. Hindwing black with white basal region. — *V. plumosa* HAMPSON, 1896 has reduced white markings in the forewings. Hindwings of *V. magela* sp. n. with a larger black area. — *V. segereri* is darker. White markings of postdiscal region rounded. Orange yellow marking near base smaller and rounded.

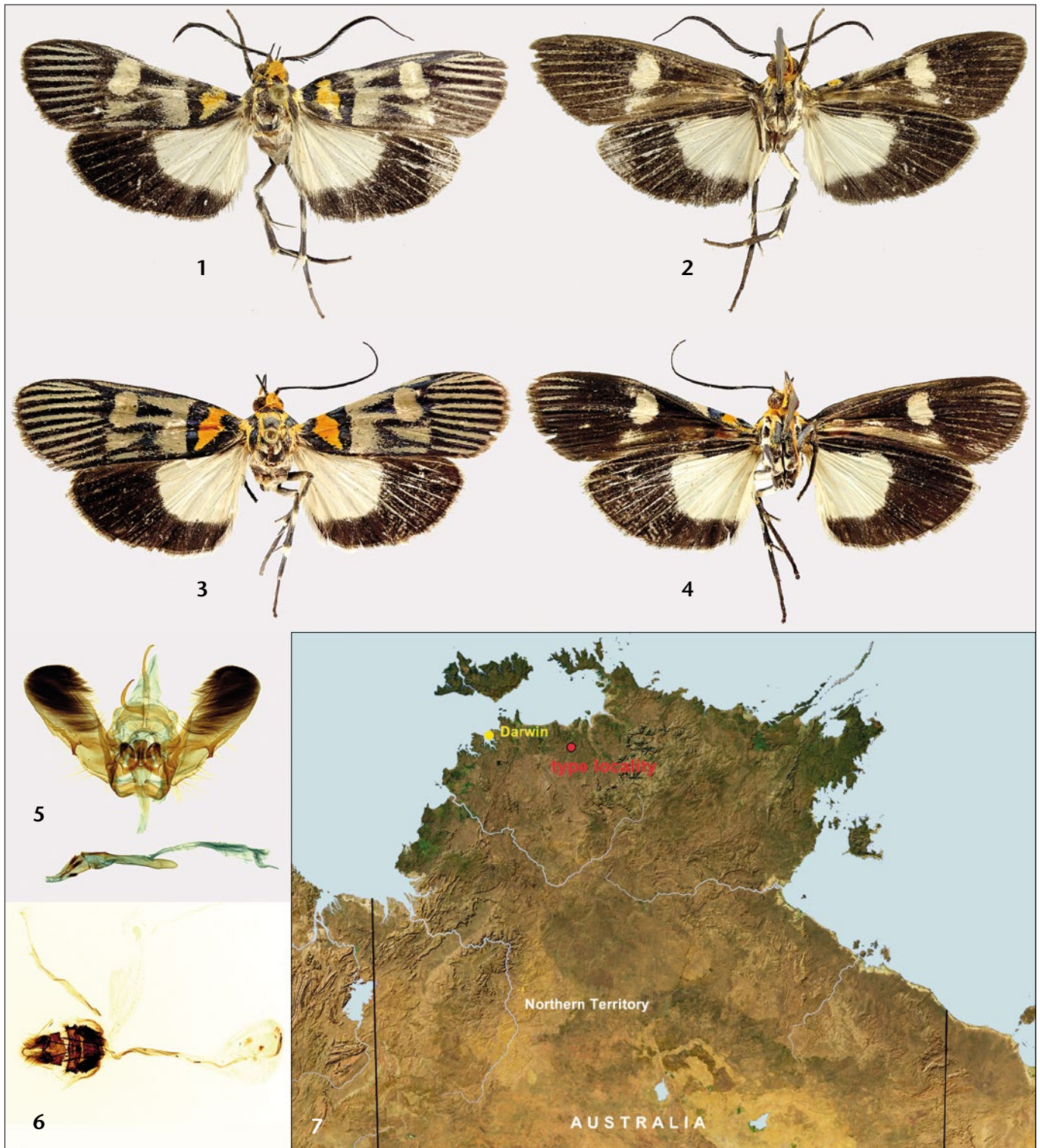
Male genitalia: Uncus at base wide and tapering, less sclerotized. In *V. plumosa*, much longer and narrower and in *V. segereri* wider and not tapering. Anal tube slim. Valvae rounded, hairy. Clasper dull. Juxta flat and sclerotized. Sacculus long. Phallus slim. Bulbus and ductus ejaculatorius very long, longer than phallus. Vesica with three clusters of cornuti. Two of the groups with long cornuti and one with shorter ones. In *V. segereri*, all cornuti longer and in *V. plumosa* phallus wider and only two cornuti cluster and shorter cornuti.

Female genitalia: Posterior apophyses shorter than anterior apophyses. They are stronger sclerotized. Ductus bursae long, slim. In *V. segereri*, shorter and wider, in *V. plumosa* also shorter. Corpus bursae rounded with two signa. *V. segereri* and *V. plumosa* without signum, with large and more weakly sclerotized bulla seminalis.

Distribution: So far only known from the type locality in Northern Territory (Fig. 7).

Biology: Host plants and biology unknown.

Molecular genetic results: In addition to the morphological differences, the DNA-cytochrome oxidase subunit I (COI barcode) shows a considerable difference to the known species of this region. However only a limited number of *Vitessa*-barcodes is known so far, which all,



Colour plate: *Vitessa magela* sp. n. Figs. 1–2: Holotype ♂; 1: upperside, 2: underside. Figs. 3–4: Paratype ♀; 3: upperside, 4: underside. Fig. 5: ♂ genitalia, holotype. Fig. 6: ♀ genitalia, paratype. Fig. 7: Type locality map (from www.primap.com, modified).

however, significantly differ from the present species (Fig. 8).

Discussion

The new species is known only from the type locality in Northern Territory. Other *Vitessa* species in Australia are recorded from the tropical part of northern Queensland. The closely similar species *V. plumosa* is only known from the Indonesian Lesser Sunda Islands from Bali to Damar

(MUNROE & SHAFFER 1980) and with the subspecies *V. plumosa salayerensis* from Salajar. With the discovery of *Vitessa magela* sp. n., the distribution of the genus *Vitessa* can be widened to the Northern Territory of Australia. The other closely similar species *V. segereri* is only known from the Moluccan Island Tanimbar (BUCHSBAUM et al. 2014).

The collection site Magela Creek is a small creek surrounded by open eucalypt forest and eucalypt woodlands (DEPARTMENT OF ENVIRONMENT AND WATER RESSOURCE

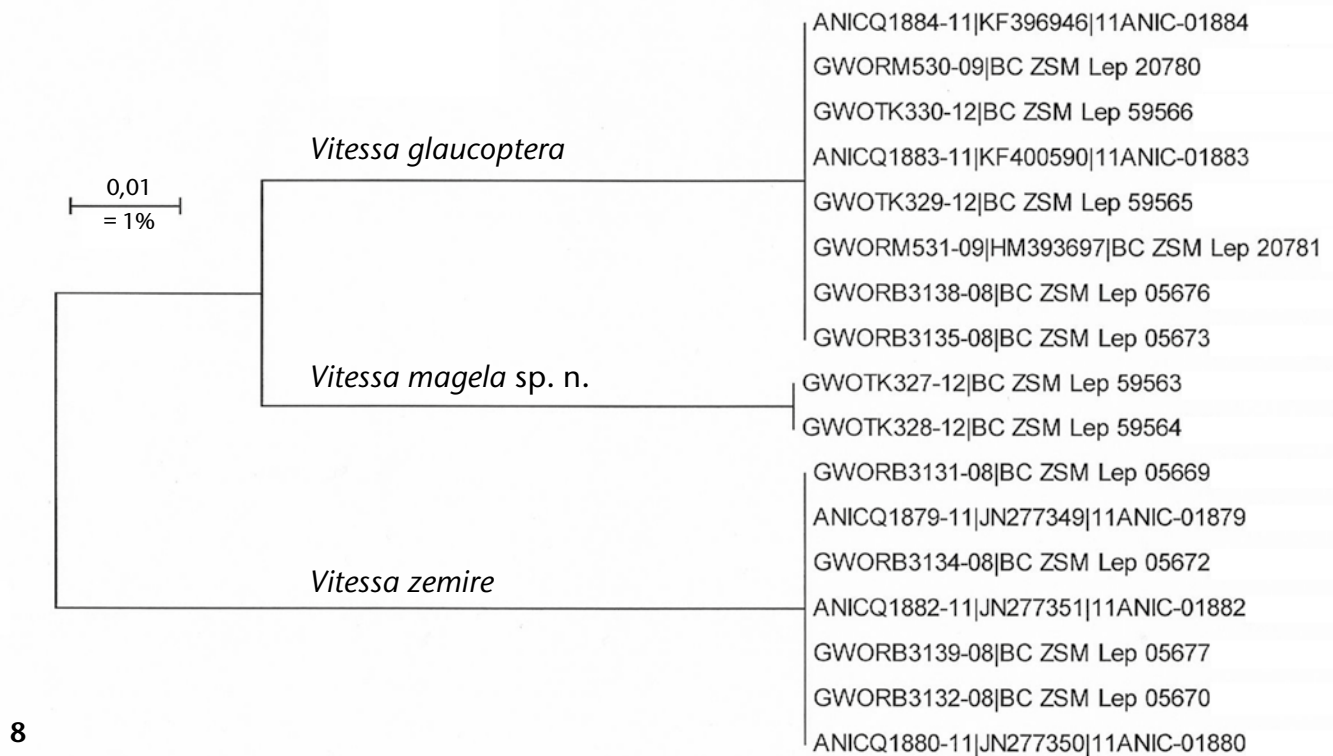


Fig. 8: Unrooted maximum likelihood tree (MEGA 6.06, see TAMURA et al. 2013).

2007). This place is situated about 190 km southeast of Darwin in the southern part of Kakadu National Park.

The species *V. magela* sp. n. should be included in the species-group of *V. plumosa* (MUNROE & SHAFFER 1980) because of the similarity of the genitalia structures.

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