



Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

Band 34, Heft 24: 333-340

ISSN 0250-4413

Ansfelden, 2. Januar 2013

Vitessa ingae sp. n. (Lepidoptera, Pyralidae)
from Sulawesi (Indonesia)

Ulf BUCHSBAUM & Mei-Yu CHEN

Summary

A new species *Vitessa ingae* sp. n. from Sulawesi is described and compared with similar species. It is clearly different from all other *Vitessa*-species with its size and markings and shows clear differences to all the known species in this genus; also the DNA Barcode is distinctive.

Zusammenfassung

Die neue Art *Vitessa ingae* sp. n. aus Sulawesi wird beschrieben und mit ähnlichen Arten verglichen. Sie unterscheidet sich deutlich von allen anderen *Vitessa*-Arten durch ihre Größe und unterschiedliche Zeichnung. Ebenso zeigt der DNA Barcode deutliche Unterschiede zu den bisher bekannten Arten dieser Gattung.

Key words: Lepidoptera, Pyralidae, *Vitessa ingae* sp. n., Indonesia, Sulawesi, DNA Barcode, COI-5P

Introduction

Only three species and a few subspecies of the genus *Vitessa* MOORE, [1860] are recorded from Sulawesi (*Vitessa hollandi wallacealis* MUNROE & SHAFFER, 1980, *V. pyraliata latialbata* MUNROE & SHAFFER, 1980, *V. pyraliata pyraliata* Walker, 1864 and *V. kolakalis* MUNROE & SHAFFER, 1980). This genus only occurs in Southeast Asia from Southeast China, Indo-China region (Thailand, Burma, Laos, Vietnam & Cambodia) via Malaysia, Indonesian Islands, New Guinea to Australia with 29 species (MUNROE & SHAFFER 1980, BUCHSBAUM 2000, 2002). Most of the species are rare. The specimens fly in the night and come to the light.

Sulawesi is in the zoogeographic interregion of Wallacea (ILLIES 1971, REICHHOLF 2003, SEDLAG 1984, 1995, WALLACE 1869, WHITMORE 1987, WHITTEN et al. 2002). The region is known for a high biodiversity and is one of the biodiversity hotspots (MITTERMEIER et al. 1998, MYERS et al. 2000). Consequently many new species from this region could be found and described (e. g. BUCHSBAUM 2011, DUBATOLOV & HOLLOWAY 2006, FIBIGER 2007, 2010, HACKER et al. 2008, SPEIDEL et al. 2004).

Vitessa ingae sp. n. (Fig. 1)

Material: Holotype: ♂; S. Sulawesi (Celebes), Puncak, Palobo, 2.55' S 120.05' E. L., I 1997, leg. local collector, in Coll. Zoologische Staatssammlung Munich.

Description and differential diagnosis

Wingspan: 69 mm, Forewing length: 34 mm.

Body and wings black. Forewings with three white veins in the external third in dorsal part of the wings. A single middle spot more or less round. An elongate (yellowish?) white bar is situated in postbasal region at ventral margin and a small white dot at costa. Hindwings with a white dot in discal cell near costa. Wings with dark blue shining. Antenna black and long, reaching to the white middle reniform stigma.

Head yellow. Labial palpus yellow with black first segment. Thorax with bright yellow dot at caudal margin. Abdomen black with yellow hairs at the last segments. Legs black.

Female genitalia (fig. 2): Similar to *V. pyraliata*, but with a clear marked signum. Apophyses slim and long. Ductus bursae slim long, less sclerotized.

The next similar species is *V. pyraliata* which looks totally different. Forewings with two rounded dots in postbasal region at dorsum and costa. Hindwings large, white in the discal region. All the specimens of the latter species are about one third smaller than *V. ingae*.

Etymology: The species is named after the mother and mother in law of the authors dedicated to her 70th birthday in order to express our thank for her always great support of our entomological work.

Discussion

This *Vitessa* species is the largest species ever collected in the genus. Characterized by the size and the dark colouration it is a very conspicuous species of this genus.

The DNA also shows a larger distance to the similar species like *V. pyraliata pyraliata* and *V. pyraliata latipalpa* and to any further species inhabiting the adjacent islands, e. g. Sumatra and Borneo.

Cytochrome oxidase submit I (COI-5P).

Vitessa ingae sp. n.

Barcode ID: GWOSM372-11, Sample ID: BC ZSM Lep 43458, GenBank Accession:

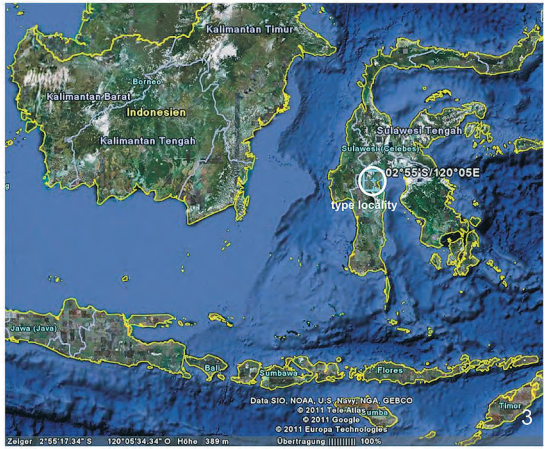
-; Nucleotide Sequence: Residues: 658; Comp. A: 183; Comp. G: 107; Comp. C: 109; Comp. T: 259; Ambiguous: 0:

```
CACATTATATTTTATTTTTGGTATTTGATCTGGTATAGTGGAACCTCTTTAAG
ATTAATAATTCGAGCAGAATTGGGAACCCCTGAATCTTTAATTGGAGATGAT
CAAATTTATAATACTATCGTTACTGGTCACGCTTTTATTATAATTTTTTTTATA
GTTATACCTATTATAAATGGGGGGTTTGGAAATTGGTTAGTACCTTTAATATT
AGGGGCCCTGATATAGCTTTCCCCGAATAAATAATATAAGATTTTGATTAT
TACCCCATCTATTACCTTTTAATTTCAAGAAGAATTGTTGAAAATGGTGCC
GGGACAGGTTGAACAGTTTATCCCCCCTATCTTCTAATATTGCCATAGAGG
AAGATCTGTAGACTTAGCAATTTTTTCTTACACTTAGCGGGTATTTTCATCTA
TTTTAGGAGCAATTAATTTTATTACCACTATTATTAATATAAAATTAATGGG
TTACATTTTGATCAAAACCTTTATTTGTTTGAGCTGTGGGTATTACAGCCCTT
TTATTACTTTTATCCTTACCGGTTTTAGCTGGGGCTATTACAATACTTCTAACA
GATCGAAATTTAAATACTTCTTTTTTGACCCTGCTGGAGGGGGGATCCTAT
TCTTTACCAACATTTATTC
```

Vitessa pyraliata pyraliata WALKER, 1864

Barcode ID: GWORM540-09, Sample ID: BC ZSM Lep 20790, GenBank Accession: GU687340; Residues: 658; Comp. A: 188; Comp. G: 105; Comp. C: 108, Com. T: 257; Ambiguous: 0:

```
CACATTATATTTTATCTTTGGGATTTGATCAGGAATAGTAGGAACCTCTTTAA
GATTGCTAATTCGAGCAGAATTGGGAACCCCTGAATCTTTAATTGGAGATGA
TCAAATTTATAATACTATTGTTACAGGTCACGCCTTTATTATAATTTTTTTTAT
AGTTATACCAATTATAAATGGAGGGTTTGGAAATTGATTAGTTCCTTTAATAC
TAGGAGCCCTGATATGGCATTCCCTCGAATAAATAATATAAGATTTTGATT
ATTACCCCATCTATTACTCTTTTAATTTCAAGAAGAATTGTTGAAAATGGTG
CTGGAACAGGGTGGACAGTTTACCCTCCACTATCTTCTAATATTGCCATAGA
GGTAGATCTGTAGATTTAGCAATTTTTTCTTACATTTAGCTGGTATTTTCATCT
ATTTTAGGTGCAATTAATTTTATTACCACTATTATTAATATAAAATTAATGG
ATTACATTTTGACCAAATACCTTTATTTGTTTGAGCTGTGGGTATCACAGCTC
TCTTATTACTTTTATCCTTACCGGTTTTAGCCGGAGCTATTACTATGCTCCTAA
CAGATCGAAATTTAAATACGCTTTTTTTTGACCCTGCTGGGGGTGGAGACCT
ATTCTTTATCAACATTTATTT
```



Vitessa ingae sp. n. Fig. 1. Holotype. Fig. 2. Female genitalia. Fig. 3.: map showing type locality. of *V. ingae* sp. n..

Vitessa pyraliata latialbata MUNROE & SHAFFER, 1980

Barcode ID: GWORM534-09, Sample ID: BC ZSM Lep 20784, GenBank Accession: HM393698; Residues: 627; Comp. A: 179; Comp. G: 101; Comp. C: 105, Com. T: 242; Ambiguous: 0:

CACATTATATTTTATCTTTGGGATTTGATCAGGAATAGTAGGAACCTCTTTAA
GATTGCTAATTCGAGCAGAGTTGGGAACCCCTGAATCTTTAATTGGAGATGA
TCAAATTTATAACTATTGTTACAGGTCACGCCTTTATTATAATTTTTTTTAT
AGTTATACCAATTATAATTGGAGGTTTTGGAAATTGATTAGTTCCCTTTAATAC
TAGGGGCCCCCTGATATAGCATTCCCCGAATAAATAATATAAGATTTTGATT
ATTGCCCCCATCTATTACTCTTTTAATTTCAAGAAGAATTGTTGAAAATGGTG
CTGGGACAGGGTGGACAGTTTACCCTCCCCTATCTTCTAATATTGCCCATAGA
GGTAGATCTGTAGATTTAGCAATTTTTTCTTACATTTAGCTGGTATTTTCATCT
ATTTTAGGCGCAATTAATTTTATTACCACTATTATTAATATAAAAATTTAAATGG
ATTACATTTTGACCAAATACCTTTATTTGTTTGAGCTGTGGGTATCACAGCTC
TCTTATTACTTTTATCCTTACCGGTTTTAGCCGGAGCTATTACCATACTCCTAA
CAGATCGAAATTTAAATATATCTTTTTTTGACCCTGCTGGAGG

Vitessa gritschroerae BUCHSBAUM, 2000

Barcode ID: GWORM545-09, Sample ID: BC ZSM Lep 20795, GenBank Accession: HM393702; Residues: 658; Comp. A: 183; Comp. G: 104; Comp. C: 106, Com. T: 265; Ambiguous: 0:

TACATTATATTTTATTTTTGGAATTTGGTCAGGAATAGTAGGAACCTCTTTAA
GATTATTAATTCGAGCAGAATTAGGAACCTCCCGAATCTTTAATTGGAGATGA
TCAAATTTATAACACTATTGTTACCGGTCATGCTTTCATTATAATTTTTTTTAT
AGTTATACCAATTATAATTGGGGGATTTGGAAATTGATTAGTACCTCTTATAT
TAGGGGCTCCTGATATAGCTTTCCCTCGAATAAATAATATAAGATTTTGTTA
CTCCCCCATCTATTACTCTTTTAATTTCAAGAAGAATTGTTGAAAATGGTGC
CGGAACCTGGGTGAACAGTTTACCCCTCTATCTTCCAATATTGCTCATAGTG
GTAGATCTGTAGATCTAGCAATTTTTCTTTACATTTAGCTGGTATCTCCTCTA
TTTTAGGGGCAATTAATTTTCATTACCACTATTATTAATATAAAAATTTAAATGGG
TTACATTTTGATCAAAATACCTTTATTTGTTTGAGCTGTGGGTATTACAGCCCT
CTTATTACTTTTATCTTTACCGGTTTTAGCTGGGGCTATTACTATACTTTTAAAC
AGACCGAAATTTAAATACTTCTTTTTTTGACCCTGCTGGAGGGGGAGATCCTA
TTCTTTATCAACATTTATTT

Acknowledgements

Heartful thanks for the discussion about the manuscript to Wolfgang SPEIDEL. Thanks to Prof. Paul Hebert and his team analyse our material at CCDB, University of Guelph.

References

- BUCHSBAUM, U. (2000): Eine neue Pyralide der Gattung *Vitessa* MOORE, [1860], aus Sabah, Nord-Borneo, Malaysia (Lepidoptera: Pyralidae). — *Entomologische Zeitschrift, Stuttgart* **110** (11): 337 – 339.
- BUCHSBAUM, U. (2002): Unusual mass occurrences at lights of species in the genus *Vitessa* Moore, [1860] in Sumatra, Indonesia (Lepidoptera, Pyralidae). — *Heterocera Sumatrana* **12** (3): 171 – 175.
- BUCHSBAUM, U. (2010): *Mimeusemia morinakai* KISHIDA, 1995 (Lepidoptera: Noctuidae, Agaristinae) on Lombok Island (Indonesia) with a checklist of the Agaristinae of Sumatra, Java, Bali and Lombok. — *Esperiana* **15**: 387 – 392.
- DUBATOLOV, V. V. & J. D. HOLLOWAY (2006): A new species of the *Cretonotes transiens*-group (Lepidoptera: Arctiidae) from Sulawesi, Indonesia. — *Bonner zoologische Beiträge* **55** (2): 113 – 121.
- FIBIGER, M. (2007): Revision of the Micronoctuidae (Lepidoptera: Noctuoidea). Part 1, Taxonomy of the Pollexinae. — *Zootaxa* **1567**: 116 pp
- FIBIGER, M. (2010): Revision of the Micronoctuidae (Lepidoptera: Noctuoidea) Part 3, Taxonomy of the Tactusinae. — *Zootaxa* **2583**: 119 pp.
- HACKER, H. H., A. LEGRAIN & M. FIBIGER (2008): Revision of the genus *Acontia* Ochsenheimer, 1816 and the tribus Acontiini Guenee, 1841 (Old World) (Lepidoptera: Noctuidae: Acontiinae). — *Esperiana* **14**: 7 – 533.
- ILLIES, J. (1971): Einführung in die Tiergeographie. — Gustav Fischer Verlag Stuttgart, 91 pp.
- KALTENBACH, T. & R. U. ROESLER (1989): Die Arten der Pyraliden-Gattungen *Vitessa* MOORE, 1869 (Pyralinae) und *Heortia* LEDERER, 1863 (Odontiinae) von Sumatra (Lepidoptera, Pyraloidea). — *Atalanta* **19** (1/4): 219 – 233.
- MITTERMEIER, R. A., MYERS, N., THOMSEN, J. B., DA FONSECA, G. A. B. & S. OLIVIERI (1998): Biodiversity hotspots and major tropical wilderness areas: Approaches to setting conservation priorities. — *Conservation Biology* **12** (3): 516–520.
- MYERS, N., MITTERMEIER, R. A., MITTERMEIER, C. G., DA FONSECA, G. A. B. & J. KENT (2000): Biodiversity hotspots for conservation priorities. — *Nature* **403**: 853–858.
- MUNROE, E. G. & M. SHAFFER (1980): A revision of *Vitessidia* ROTHSCILD & JORDAN und *Vitessa* MOORE (Lepidoptera: Pyralidae). — *Bulletin British Museum Nat. Hist. (Ent.)* **39**: 241 – 360, 318 figs.
- REICHHOLF, J. H. (2003): Malesian Island Biogeography. From Alfred R. Wallace to Robert H. MacArthur and beyond: What makes “Wallacea” so unique?. — *Journal of the Zoological Society Wallacea* **1**: 4 - 11
- SEDLAG, U. (1984): Wörterbücher der Biologie. Biogeographie, Artbildung, Evolution. — Gustav Fischer Verlag, Jena, 333 pp.
- SEDLAG, U. (1995): Tiergeographie. Urania Tierreich. — Urania Verlag Leipzig, Jena, Berlin: 447 pp.
- SPEIDEL, W., U. BUCHSBAUM & M. A. MILLER (2004): A new *Paracymoryca* Species from Lombok (Indonesia) (Lepidoptera, Crambidae). — *Bonner zoologische Beiträge* **53** (1/2): 227 – 234.
- WALLACE, A. R. (1869): *The Malayan Archipelago*. — MacMillan, London: 515 pp.

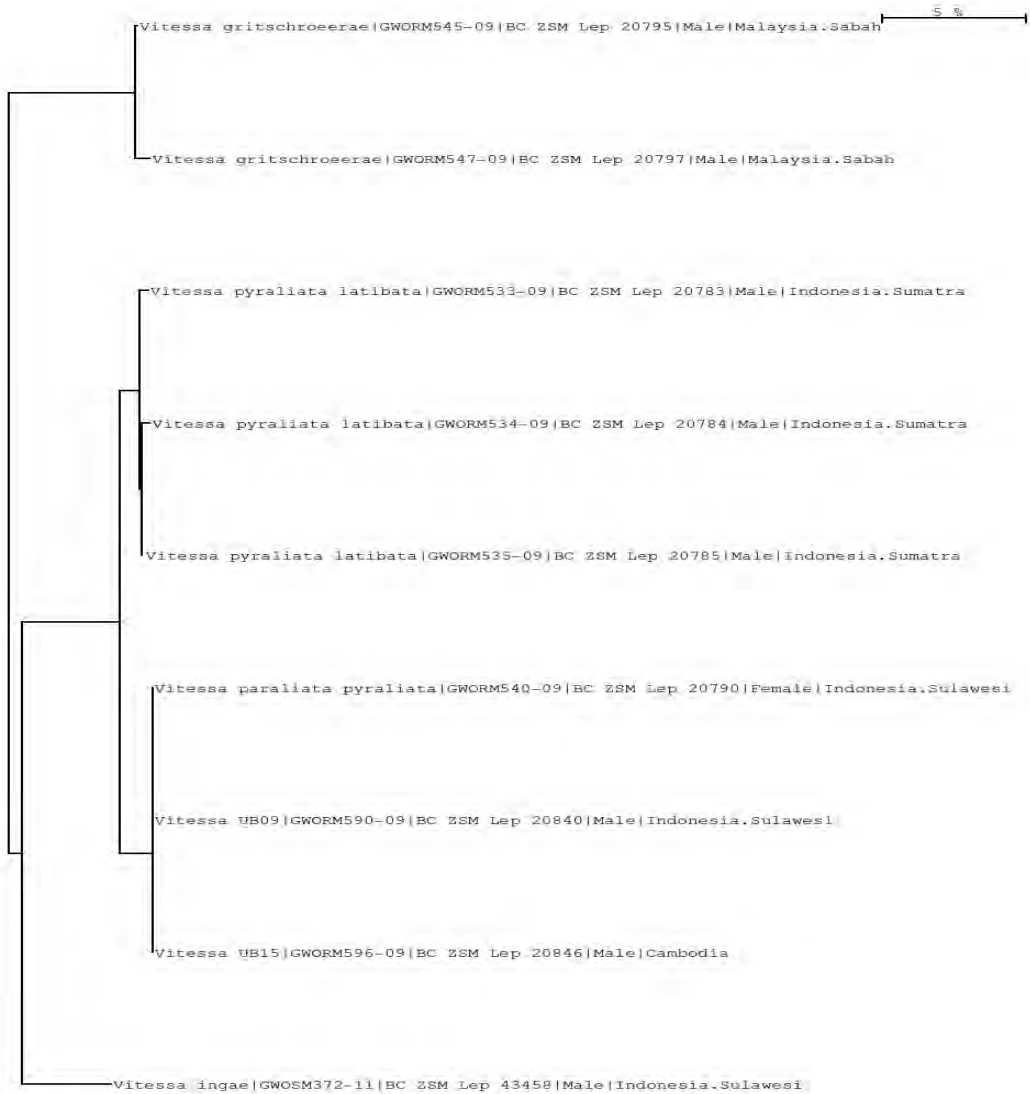


Abb. 4.: DNA-Barcode tree from any next similar species from theses region

WHITEMORE, T. C (Ed.) (1987): Biogeographical Evolution of the Malay Archipelago. — Clarendon Press, Oxford: 147 pp.

WHITTEN, T, G. S. HENDERSON & M. MUSTAFA (2002): The Ecology of Sulawesi. The Ecology on Indonesia Series, Volume: IV. – Periplus Editions: 754 pp.

Addresses of the authors:

Ulf BUCHSBAUM

Zoologische Staatssammlung München

Münchhausenstraße 21

D – 81247 München

Germany

E-mail: UlfBuchsbaum.Lepidoptera@zsm.mwn.de

Mei-Yu CHEN

Lustheimstraße 5

D – 81247 München

Germany

E-mail: MY.Chen@web.de

Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich:

Maximilian SCHWARZ, Konsulent f. Wissenschaft der Oberösterreichischen Landesregierung, Eibenweg 6, A-4052 Ansfelden, E-Mail: maximilian.schwarz@liwest.at.

Redaktion: Erich DILLER, ZSM, Münchhausenstraße 21, D-81247 München;
Roland GERSTMEIER, Lehrstuhl f. Tierökologie, H.-C.-v.-Carlowitz-Pl. 2, D-85350 Freising;
Fritz GUSENLEITNER, Lungitzerstr. 51, A-4222 St. Georgen/Gusen;
Wolfgang SPEIDEL, MWM, Tengstraße 33, D-80796 München;
Thomas WITT, Tengstraße 33, D-80796 München.

Adresse: Entomofauna, Redaktion und Schriftentausch c/o Museum Witt, Tengstr. 33, 80796 München, Deutschland, E-Mail: thomas@witt-thomas.com; Entomofauna, Redaktion c/o Fritz Gusenleitner, Lungitzerstr. 51, 4222 St. Georgen/Gusen, Austria, E-Mail: f.gusenleitner@landesmuseum.at