



Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

Band 31, Heft 7: 57-68

ISSN 0250-4413

Ansfelden, 4. Januar 2010

***Nordstromia guenterriedeli* sp. n. from Sumatra (Indonesia)**
(Lepidoptera, Drepanidae)

Ulf BUCHSBAUM

Abstract

The species *Nordstromia guenterriedeli* **sp. n.** is described from Sumatra (Indonesia) and compared with similar species. *N. guenterriedeli* is only known from North Sumatra from two localities until now. An overview of the distribution of the species of the genus *Nordstromia* is given.

Zusammenfassung

Die Art *Nordstromia guenterriedeli* **sp. n.** wird aus Sumatra (Indonesien) beschrieben und mit den ähnlichen Arten verglichen. *N. guenterriedeli* ist bisher nur von Nord-Sumatra von zwei Stellen bekannt. Eine Übersicht über die Verbreitung der Arten der Gattung *Nordstromia* wird in einer Checkliste gegeben.

Key words: Lepidoptera, Drepanidae, *Nordstromia guenterriedeli* sp. n. Sumatra, Indo-nesia, Southeast Asia, distribution, checklist, foodplants.

Introduction

Drepanidae are a well known lepidopterous family with the highest species numbers in different Oriental regions. About 108 species are recorded from Borneo (HOLLOWAY 1998, BUCHSBAUM 2002, 2003), and 125 species are known from China (CHU & WANG 1991). The estimation for Sumatra is about 100 species (BUCHSBAUM in prep.).

In the last decades, many activities and investigations for the Heterocera fauna of Sumatra were started (see: e. g. Heterocera Sumatrana volumes 1-12). BUCHSBAUM (2000) described the drepanid *Agnidra alectoba*. Some additional new Drepanidae (Hook tip moths) were described also from other countries and places (e. g. BUCHSBAUM 2002, 2003, INOUE 1991, YAZAKI 2003).

Rich material from Sumatra collected by Dr. DIEHL is stored in the collection of the Zoologische Staatssammlung München (ZSM), from the Heterocera Sumatrana Society (HSS). In the frame of the activities of the HSS, many entomologists came to Sumatra for collecting and research trips. The results of these trips and researches are given in many publications, especially in the book series "Heterocera Sumatrana". Sumatra is a large Island south of Malaysia and Singapore and west of Java. The so-called Greater Sunda Islands include Borneo, Java, Sumatra and Sulawesi. This region is also named Malay Archipelago and is totally different from the other Indonesian Islands situated more eastwards. The fauna is separated by the Wallace line into the Indo-Malayan Fauna west of this line and the Indo-Australian Fauna east of it (WALLACE 1869, 1876; DE LATTIN 1967; SEDLAG 1995; HALL & HOLLOWAY 1998; REICHHOLF 2003).

The genus *Nordstromia* BRYK, 1943

The last revision of the genus was published by WATSON (1968). INOUE (1992) and CHU & WANG (1988) described further species from Taiwan, the Philippines and from the PR of China. All together 25 species are included in this genus until now. Further undescribed species are in the collection of the ZSM.

Species	Distribution	Remarks / Citation
<i>Nordstromia vira</i> (MOORE, 1866)	India (Darjeeling, Assam, Sikkim), China (Fujian, Sichuan, Xizang (Tibet), Nepal, North Burma	Coll. ZSM / WATSON (1968), Yazaki (1992), BUCHSBAUM (2002), WILKINSON (1972), CHU & WANG (1991)
<i>N. heba</i> CHU & WANG, 1988	China (Shanxi)	CHU & WANG (1991)
<i>N. fusca</i> CHU & WANG, 1988	China (Hubei, Fujian)	CHU & WANG (1991)
<i>N. fuscula</i> CHU & WANG, 1988	China (Sichuan, Fujian)	CHU & WANG (1991)
<i>N. nigra</i> CHU & WANG, 1988	China (Sichuan, Yunnan)	CHU & WANG (1991)
<i>N. niva</i> CHU & WANG, 1988	China (Hubei)	CHU & WANG (1991)
<i>N. angula</i> CHU & WANG, 1988	China (Fujian)	CHU & WANG (1991)
<i>N. unilinea</i> CHU & WANG, 1988	China (Fujian)	CHU & WANG (1991)
<i>N. bicostata bicostata</i> (HAMPSON, 1912) and <i>N. bicostata opalescens</i> (OBERTHÜR, 1916)	India (Sikkim), China (Sichuan), Nepal, North Burma	WATSON (1968), BUCHSBAUM (2002), YAZAKI (1992), WILKINSON (1972), CHU & WANG (1991)
<i>N. agna</i> (OBERTHÜR, 1916)	China (Sichuan)	WATSON (1969), CHU & WANG (1991)
<i>N. problematica</i> (BRYK, 1943)	Northern Burma	WATSON (1969)
<i>N. argenticeps</i> (WARREN, 1922)	Northeast India (Khasis Hills), Nepal	Larva feeds on: <i>Rubus</i> spec. in India / Coll. ZSM / WATSON (1969), BUCHSBAUM (2002), YAZAKI (1992), WILKINSON (1972), SEVASTOPULO (1947)
<i>N. coffeata</i> INOUE, 1992	Philippines (Luzon, Mindanao), Borneo, Peninsula Malaysia	HOLLOWAY (1998), INOUE (1992)
<i>N. sumatrana</i> (ROEPKE, 1948)	Sumatra	Coll. ZSM / WATSON (1969)
<i>N. japonica</i> (MOORE, 1877)	Japan, China (Hunan, Sichuan)	Coll. ZSM / Larva feeds on <i>Quercus</i> and <i>Castanea</i> spec. / WATSON (1969), CHU & WANG (1991), INOUE (1970), NAKAJIMA (1970)
<i>N. grisearia</i> (STAUDINGER, 1892)	Far East Russia (Amur region), Japan, China (Sichuan, Fujian)	Larva feeds on: <i>Fagus</i> and <i>Quercus</i> spec. WATSON (1969), CHU & WANG (1991), INOUE (1970)
<i>N. recava</i> WATSON, 1968	China (Zhejiang, Jiangsu),	WATSON (1969), CHU & WANG (1991)
<i>N. lilacina</i> (MOORE, 1888)	North India (Sikkim), Nepal, Thailand	Coll. ZSM, Coll Pinratana (Bangkok) / Larva feeds on <i>Quercus</i> spec. / WATSON (1969), BUCHSBAUM (2002), YAZAKI (1992), WILKINSON (1972), SEN & LIN (2002)
<i>N. semililacina</i> INOUE, 1992	Taiwan	Larva feeds on Fagaceae / INOUE (1992), FU & TZUOO (2004), CHANG (1989)
<i>N. paralilacina</i> WANG & YAZAKI, 2004	China (Guangdong)	WANG & YAZAKI (2004)
<i>N. simillima</i> (MOORE, 1888)	Northwest India (Kashmir)	WATSON (1969), BUCHSBAUM (2002)
<i>N. siccifolia</i> (ROEPKE, 1948)	Sumatra	Coll. ZSM / WATSON (1969)
<i>N. ochrozona</i> (BRYK, 1943)	Burma	WATSON (1969)
<i>N. duplicata</i> (Warren, 1922)	Northeast India, China (Chekiang), Borneo, Sumatra	Coll. ZSM / WATSON (1969), CHU & WANG (1991), HOLLOWAY (1998), INOUE (1970)
<i>N. humerata</i> (WARREN, 1896)	Northeast India	WATSON (1969)
<i>N. undata</i> WATSON, 1968	China (Yunnan)	WATSON (1969), CHU & WANG (1991)

Table 1: Overview of the known species and their distribution

The general distribution of this genus is from North India, Sikkim, Nepal, Burma, Thailand (probably 3 species), Vietnam and China to Taiwan (1 species) and Japan (5 species), south to the Philippines (1 species), Malaysia, Borneo (2 species) to Sumatra (3 species).

The genus has homogeneous body and wing morphology, but the genitalia structures, especially the male genitalia, are very heterogenous.

Caterpillars of *Nordstromia* species feed on *Quercus*, *Fagus*, *Betula*, *Castanea*, *Corylus* and *Rubus* spec. (CHU & WANG 1991, INOUE 1970, NAKAJIMA 1970, SEN & LI 2002, SEVASTOPOLO 1947).

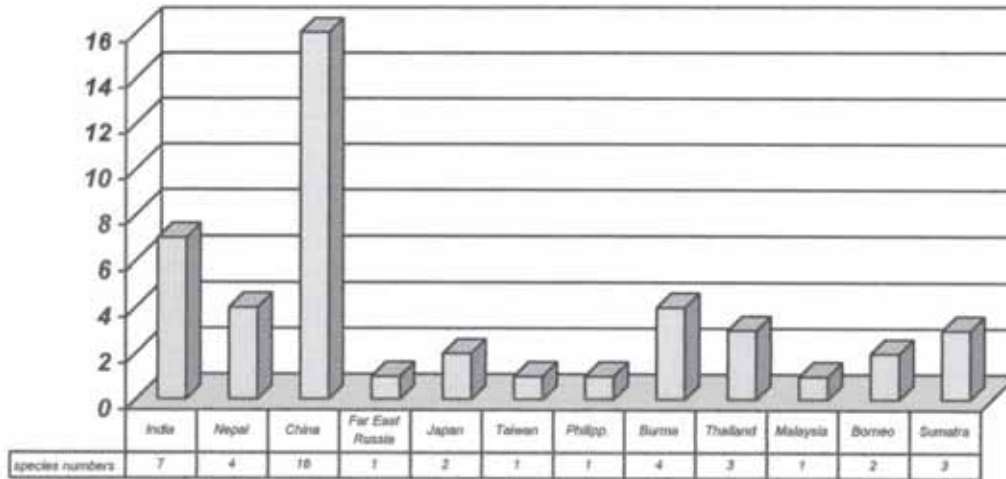


Diagram: Species numbers of the genus *Nordstromia* in different countries and regions

Material and localities

The specimens of the new species were all collected by Dr. E. W. ("Edi") DIEHL in North Sumatra, almost all in the area of Prapat and Pematang Siantar (pl. 1, fig 3 & 4; pl. 2, fig. 2). The collecting sites are all in primary tropical rainforest (pl. 1, fig. 5 & 6). The localities are situated in elevations between 250 - 1200 m. Some collecting sites are no more existing, because of the destruction of the rainforest in wide areas all over Sumatra. Only small parts in few places still exist and also these places are almost unprotected and endangered by deforestation by native people or very often by foreign companies using illegal methods, mostly for paper production (pl. 1, fig. 6).

Nordstromia guenterriedeli sp. n.

(Plate 1, figs 1 & 2; plate 2, fig. 1)

Material. Holotype ♂: Indonesia, Sumatra sept. (Simalungun), Holzweg 3, 1150 m, 15 km NO Prapat, 98°58E / 02°46N, 06. X. 83, leg. E. W. DIEHL. Paratypes: Indonesia, Sumatra north: 1 ♂, 2 ♀♀, Prapat, Holzweg 2, 1050 m, 20. 3. 06, X. 1970; 1 ♂, Prapat, 1000 - 1200 m, 26. 7. 1976; 1 ♂, Nagarad ja, 250 m, 6. XII. 1975; 4 ♂♂, 1 ♀, Dolok Merangir, 250 m, 1. X. 1970, 04. 3. 1976, 30. 03. 1976, 20. V. 1976.

The holotype and the paratypes are deposited in the collection of the Zoologische Staatssammlung München (ZSM). One PT is stored in the Museum Witt, Munich.

Description and differential diagnosis

Wingspan: 23 - 27 mm, ø 25,2 mm, Forewing length: 12 - 14 mm, ø 12,5 mm.

The new species *N. guenterriedeli* is similar to *N. duplicata*, *N. lilacina*, *N. semililacina*, *N. paralilacina* and *N. coffeata*, but smaller.

Ground colour of wings and body milk cafe brown. *N. lilacina* is brighter and *N. duplicata* is darker. Black dots at the inner angle. Transverse lines dark brown and clear. Three transverse lines from abdominalmargin to the middle of the hindwing.

♂ genitalia (plate 1, fig. 2) is totally different from other similar species. Uncus not deeply bifurcate and much wider and shorter than in other species. Corona with long hair. Valva much longer than in these other similar species. Vinuculum much wider.

N. guenterriedeli is only known from North Sumatra (Indonesia) until now. The other similar species are recorded from the Philippines (*N. coffeata* INOUE, 1992), Taiwan (*N. semililacina* INOUE, 1992), India (*N. lilacina* MOORE, 1888), Japan, China and North India (*N. duplicata* WARREN, 1922) and South China (*N. paralilacina* WANG & YAZAKI, 2004).

Etymology

The species is named after Günter RIEDEL, Zoologische Staatssammlung München (ZSM). With his participation on numerous expeditions to many countries all over the world, Günter RIEDEL contributed a strong increment of many specimens and species to the collection of the ZSM.

Concluding remarks

Many new species to the lepidopterous fauna of Sumatra could be found in the last years, even though the fauna seemed to be more or less well known. This is urgent, because more and more primary rainforest is lost and with it species which nobody has ever seen.

Literature

- BUCHSBAUM, U. (2000): *Agnidra alextoba* sp. n. aus Sumatra (Lepidoptera, Drepanidae). — Mitteilungen der Münchner Entomologischen Gesellschaft **90**: 85-89.
- BUCHSBAUM, U. (2003): *Phalacra meiyuae* sp. n., a new Drepanidae species (Lepidoptera) from Sabah (North Borneo, Malaysia). — Journal of the Zoological Society Wallacea **1**: 53-56.
- BUCHSBAUM, U. (2002): Zur Erforschung der Drepanidae (Insecta: Lepidoptera) des Himalayas. In: Hartmann, M. & H. BAUMBACH: Biodiversität & Naturlausstattung im Himalaya. — Verein der Freunde und Förderer des Naturkundemuseums Erfurt e. V., Erfurt, 337-342, pl. VIII.

- BUCHSBAUM, U. & M.A. MILLER (2002): *Leucoblepsis taiwanensis* sp. nov., a new Drepanidae from Taiwan (Insecta: Lepidoptera). — *Formosan Entomologist* **22** (2): 101-114.
- CHANG, B.S. (1989): *Illustrated moths of Taiwan*. **1**. — National Taiwan Museum, Taipei, 242 pp. [in Chinese with English summary]
- CHU (ZHU), H.-F. & WANG, L.-Y. (1991): *Fauna Sinica Insecta*. **3**. Lepidoptera; Cyclidiidae, Drepanidae. — Science Press, Beijing, 269 pp., 204 figs, 10 plates. [in Chinese with English summary]
- DE LATTIN, G. (1967): *Grundriß der Zoogeographie*. — Verlag G. Fischer, Jena, 602 pp.
- FU, C.M. & H.R. TZUOO (2004): *Moths of Anmashan*. **2**. — Taichung Nature Research Soc., Taichung, 263 pp, 60 pls.
- HALL R. & J.D. HOLLOWAY (eds) (1998): *Biogeography and Geological Evolution of SE Asia*. — Backhuys Publishers, 420 pp.
- HEPPNER, J.B. (1991): *Faunal Regions and the Diversity of Lepidoptera*. — *Tropical Lepidoptera* **2** (Suppl. 1): 1-85.
- HEPPNER, J.B. & H. INOUE (1992): *Lepidoptera of Taiwan*. Vol. 1, Part 2: Checklist. — Association for Tropical Lepidoptera, Gainesville.
- HOLLOWAY, J.D. (1998): *The moths of Borneo: Families Castanidae, Callidulidae, Drepanidae, Uraniidae*. — *Malayan Nature Journal* **52**: 1-155.
- HOLLOWAY, J.D., G. KIBBY & D. PEGGIE (2001): *The families of Malesian moths and butterflies*. — *Fauna Malesiana Handbook 3*. Brill, Leiden, Boston, Köln, 455 pp.
- INOUE, H. (1970): *Supplementary notes on the Japanese Drepanidae (I)*. — *Tinea*, Tokyo **8** (1): 185-189.
- INOUE, H. (1992): *Two new Nordstromia from the Philippines and Taiwan*. — *Tyo to Ga* **43** (3): 182-186.
- NAKAJIMA, H. (1970): *A contribution to the knowledge of the immature stages of the Drepanidae occurring in Japan*. — *Tinea*, Tokyo **8** (1): 167-184, 19 pls.
- REICHHOLF, J.H. (2003): *Malesian Island Biogeography. From Alfred R. Wallace to Robert H. MacArther and beyond: What makes "Wallacea" so unique?* — *Journal of the Zoological Society Wallacea* **1**: 4-11.
- SAVELA, M. (2007): <http://www.funet.fi/pub/sci/bio/life/insecta/lepidoptera/ditrysia/drepanoidea/drepanidae/drepaninae/nordstromia/index.html> (Downloaded at: 08. February 2007).
- SEDLAG, U. (1995): *Urania Tierreich: Tiergeographie*. — Urania Verlag Leipzig, Jena, Berlin. 447 pp.
- SEN, Y.C. & C.S. LIN (2002): *Larval Morphology and Host plants of Drepanidae (Lepidoptera: Drepanidae) in Southern Taiwan*. — *Formosan Entomologist* **22** (1): 27-42.
- WALLACE, A.R. (1869): *The Malay Archipelago: The Land of the Orang-Utan, and the Bird of Paradise*. — MacMillan and Co., London. Two Volumes, 524 pp.
- WALLACE, A.R. (1876): *Die geographische Verbreitung der Thiere*. — Verlag von Zahn, Dresden, Two volumes, 658 pp.
- WANG, H.-Y. (1995): *Guide book to the Insects in Taiwan*, 10 Brahmaeidae, Eupterotidae, Cyclidiidae, Drepanidae, Notodontidae. — Taipei, 237 pp.

- WANG, M. & K. YAZAKI (2004): A new species of *Nordstromia* BRYK (Drepanidae, Drepaninae) from S. China. — *Tinea*, Tokyo **18** (2): 140-142.
- WATSON, A. (1968): The taxonomy of the Drepanidae represented in China, with an account of their world distribution (Lepidoptera: Drepanidae). — *Bulletin of the British Museum (Natural History) Entomology*, London: Suppl. **12**: 1-151, 15 pls.
- WILKINSON, C. (1972): The Drepanidae of Nepal (Lepidoptera). — *Khumbu Himal, Ergebnisse des Forschungsunternehmens Nepal Himalaya, München*. **4** (2): 157-228.
- YAZAKI, K. (2003): Records of the genus *Strepsigonia* (Lepidoptera, Drepanidae) from Wallacea. — *Tinea*, Tokyo **17** (3): 116-120.

Acknowledgments

Many thanks to Dr. Edi DIEHL (†) who always organized our collecting trips in Sumatra very well and invested much time for the collection of so much important and interesting material from many places in Sumatra. Also many thanks to Prof. Dr. Lutz KOBES for his strong engagement in the organization of the "Heterocera Sumatrana" and for transferring all the Sumatran material now in good condition to the ZSM. Thanks also to Wolfgang SCHACHT for his kind help with the manuscript. And finally thanks to Dr. Wolfgang SPEIDEL for his introduction in the creation of plates with Photoshop.

Plate 1

Fig 1: Holotype of *Nordstromia guenterriedeli* sp. n. ♂

Fig. 2: Genitalia of the Holotype of *N. guenterriedeli* sp. n.

Figs 3-4: Map with the type localities in Northern Sumatra (Indonesia) (google earth maps)

Figs 5-6: Pictures of the collecting sites of the new species, fig. 5: Holzweg 2, between Pematang Siantar and Prapat (Lake Toba); fig 6: Now destroyed former primary rainforest near Dolok Merangir.

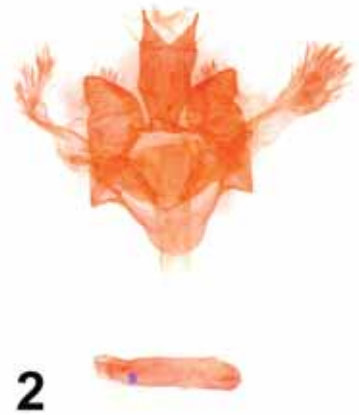
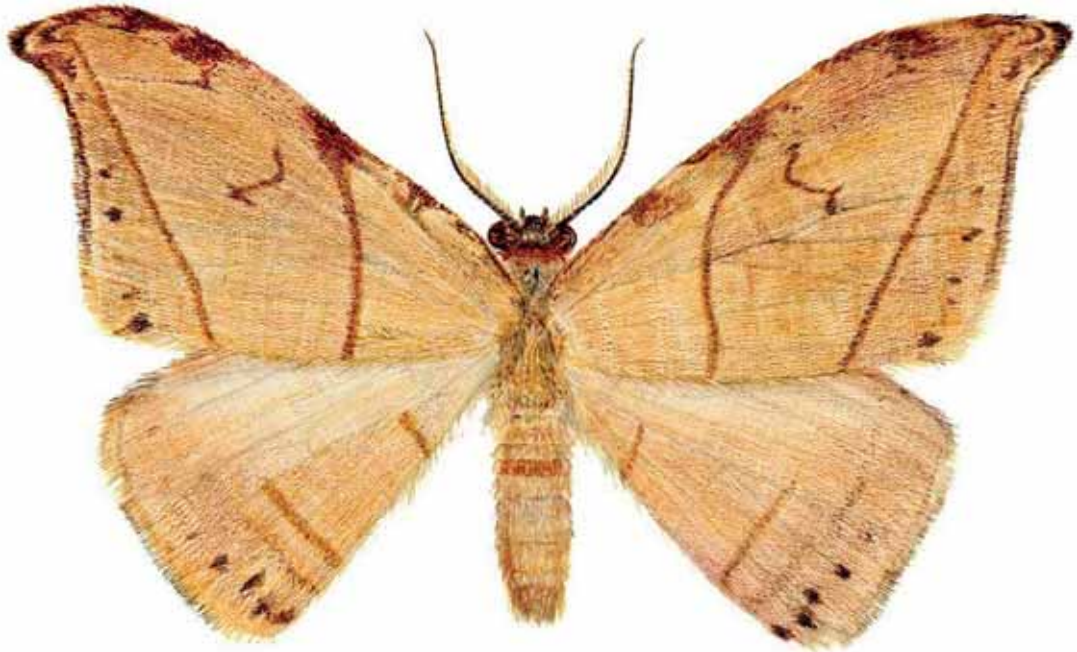


Plate 2

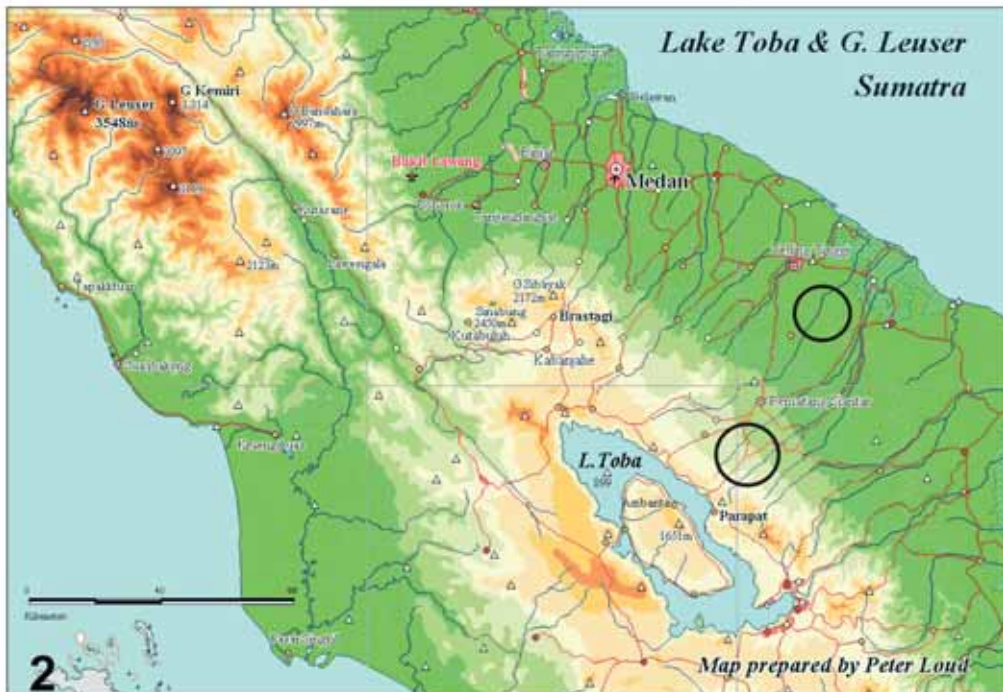
Fig. 1: Paratype of *Nordstromia guenterriedeli*, painting Ruth KÜHBANDNER

Map: type localities again in Northern Sumatra (modified Peter Loud maps from Internet)



1

Paul Villanov...
1897



Authors address:

Ulf BUCHSBAUM
Zoologische Staatssammlung München
Münchhausenstraße 21
D-81247 München
Germany
E-mail: UlfBuchsbaum.Lepidoptera@zsm.mwn.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;
Fritz GUSENLEITNER, Lungitzerstr. 51, A-4222 St. Georgen/Gusen;
Wolfgang SCHACHT, Scherrerstraße 8, D-82296 Schöngeising;
Johannes SCHUBERTH, Mannertstraße 15, D-80997 München;
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