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A Preliminary Annotated Checklist of the Indonesian Wild Silkmoths – Part VI. The subgenus *Antheraeopsis* WOOD-MASON, 1886 of the genus *Antheraea* HÜBNER, 1819 ("1816") (Lepidoptera: Saturniidae: Saturniinae)

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Key Words: Lepidoptera, Saturniidae, Saturniinae, Saturniini, *Antheraea*, *Antheraeopsis*, silk moth, wild silkmoth, emperor moth, oak silk moth, muga silk moth, annotated checklist, Indonesia, Indonesian Archipelago.

Systematic (Lepidoptera: Saturniidae)

Systematic: Insecta-; Lepidoptera-; Glossata-; Heteroneura-; Bombycoidea-;
Saturniidae-; Saturniidae Boisduval, 1837 (“1834“)
Saturniidae-; Saturniinae Boisduval, 1837 (“1834“)
Saturniinae-; Attacini Blanchard, 1840
Attacini-; *Attacus atlas* (Linnaeus, 1758)
Saturniinae-; Saturniini Boisduval, 1837 (“1834”)
Saturniini-; *Antheraea* Hübner, 1819 (“1816”)
Saturniini-; *Phalaena mylitta* Drury, 1773; STATUS; type-species of *Antheraea* Hübner, 1819 (“1816”)
Saturniini-; *Antheraea* Hübner, 1819 (“1816”); STATUS; subgenus of *Antheraea* Hübner, 1819 (“1816”)
Saturniini-; *perrottetii* (Guérin-Méneville, 1843) [*species inquirenda*]
Saturniini-; *mylitta*/*frithi*-group (sensu Paukstadt, Brosch & Paukstadt 1999); STATUS; tentative collective group-name
Saturniini-; *mylitta*-subgroup (sensu Paukstadt, Brosch & Paukstadt 1999); STATUS; tentative collective group-name
Saturniini-; *mylitta* (Drury, 1773)
Saturniini-; *frithi*-subgroup (sensu Nässig 1991); STATUS; tentative collective group-name
Saturniini-; *cordifolia*-subgroup (sensu Holloway, Naumann & Nässig 1996); STATUS; tentative collective group-name
Saturniini-; *pernyi*-group (sensu Nässig 1991); STATUS; tentative collective group-name
Saturniini-; *pernyi* (Guérin-Méneville, 1855)
Saturniini-; *helferi*-group (sensu Nässig 1991); STATUS; tentative collective group-name
Saturniini-; *helferi* Moore, 1859
Saturniini-; *helferi* Moore *in* Horsfield & Moore, 1860; STATUS; primary junior homonym of *helferi* Moore, 1859
Saturniini-; *imperator* Watson, 1913
Saturniini-; *Antheraeopsis* Wood-Mason, 1886; STATUS; subgenus of *Antheraea* Hübner, 1819 (“1816”)
Saturniini-; *yunnanensis* Chu & Wang, 1993; STATUS; *species inquirenda*, most likely a taxon of the *frithi*-subgroup (sensu Nässig 1991) of the *mylitta*/*frithi*-group (sensu Paukstadt, Brosch & Paukstadt 1999) of the subgenus *Antheraea* Hübner, 1819 (“1816”) but the illustrated ♂ genitalia structures of *yunnanensis* fit to the taxa of the subgenus *Antheraeopsis* Wood-Mason, 1886
Saturniini-; *Saturnia assama* Westwood, 1848; STATUS; type-species by monotypy of *Antheraeopsis* Wood-Mason, 1886; junior subjective synonym of *Saturnia assamensis* Helfer, 1837
Saturniini-; *assamensis*-group (sensu Nässig 1991); STATUS; tentative collective group-name, which based on a taxon of unclear identity
Saturniini-; *youngi*-group (sensu Nässig 1991); STATUS; tentative collective group-name

Saturniini-; (*Antheraeopsis*) *assamensis* (Helfer, 1837); STATUS; unclear identity
Saturniini-; *Saturnia assama* Westwood, 1848; STATUS; junior subjective synonym of *Saturnia assamensis* Helfer, 1837
Saturniini-; (*Antheraeopsis*) *youngi* Watson, 1915
Saturniini-; *brunnea* Van Eecke, 1921; STATUS; junior subjective synonym of *youngi* Watson, 1915
Saturniini-; *rubiginea* Toxopeus, 1940; STATUS; presently considered being a junior subjective synonym of *youngi* Watson, 1915 but the status needs further investigation
Saturniini-; (*Antheraeopsis*) *chengtuana* Watson, 1923
Saturniini-; (*Antheraeopsis*) *formosana* Sonan, 1937; STATUS; needs further investigation, likely a junior subjective synonym of *chengtuana* Watson, 1923
Saturniini-; (*Antheraeopsis*) *paniki* Nässig & Treadaway, 1998
Saturniini-; (*Antheraeopsis*) *sahi* Nässig & Treadaway, 1998
Saturniini-; (*Antheraeopsis*) *rudloffi* Brechlin, 2002
Saturniini-; *mezankooria* Moore, 1862; STATUS; likely a junior subjective synonym of *assamensis* (Helfer, 1837)
Saturniini-; *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998); STATUS; tentative "replacement name" for *assamensis*-group (sensu Nässig 1991)
Saturniini-; (*Antheraeopsis*) *castanea* Jordan, 1910
Saturniini-; (*Antheraeopsis*) *mezops* Bryk, 1944
Saturniini-; *Telea* Hübner, 1819 ("1816"); STATUS; subgenus of the genus *Antheraea* Hübner, 1819 ("1816")
Saturniini-; *Phalaena polyphemus* Cramer, 1775; STATUS; type-species of *Telea* Hübner, 1819 ("1816")
Saturniini-; *Antheraea* (*T.*) *compta* Rothschild *in* Rothschild & Jordan, 1899; STATUS; the position within the subgenus *Telea* Hübner, 1819 ("1816") needs investigation and likely revision
Saturniini-; *Loepantheraea* Toxopeus, 1940; STATUS; subgenus of *Antheraea* Hübner, 1819 ("1816")
Saturniini-; *Actias* Hübner, 1819 ("1816")
Saturniini-; *angulocaudata* Naumann & Bouyer, 1998

A Preliminary Annotated Checklist of the Indonesian Wild Silkmoths – Part VI. The subgenus *Antheraeopsis* WOOD-MASON, 1886 of the genus *Antheraea* HÜBNER, 1819 ("1816") (Lepidoptera: Saturniidae: Saturniinae)

Zusammenfassung: Die bisher von uns veröffentlichten Teile I A und B, II, III, IV A und B und V von *A Preliminary Annotated Checklist of the Indonesian Wild Silkmoths* (vgl. U. & L. H. Paukstadt 2006 c, d, 2007 a, b, c, d, 2008) behandelten im Teil I das Tribus Attacini BLANCHARD, 1840 (Lepidoptera: Saturniidae: Saturniinae) und in den nachfolgenden Teilen das Tribus Saturniini BOISDUVAL, 1837 („1834"). Teil II befasste sich allgemein mit der Gattung *Antheraea* HÜBNER, 1819 („1816") und speziell mit der Untergattung *Loepantheraea* TOXOPEUS, 1940, Teil III mit der *cordifolia*-Untergruppe (sensu Holloway, Naumann & Nässig 1996) der *mylitta*/*frithi*-Gruppe (sensu Paukstadt, Brosch & Paukstadt 1999), Teil IV A mit der *helferi*-Untergruppe (sensu Paukstadt, Paukstadt & Brosch 1998) der *helferi*-Gruppe (sensu Nässig 1991), Teil IV B abschliessend mit den Taxa der *helferi*-Gruppe und speziell mit den Taxa der *yamamai*-Untergruppe (sensu Paukstadt, Paukstadt & Brosch 1998) der *helferi*-Gruppe (sensu Nässig 1991) und Teil V mit der *pernyi*-Gruppe (sensu Nässig 1991) der Untergattung *Antheraea* HÜBNER, 1819 („1816"). Im nun vorliegenden Teil VI wird die Untergattung *Antheraeopsis* WOOD-MASON, 1886 der Gattung *Antheraea* HÜBNER, 1819 („1816") behandelt. Die Untergattung *Antheraeopsis* wird aus zwei Artengruppen gebildet, der *castanea*-Gruppe (sensu Paukstadt, Paukstadt & Brosch 1998 [= *assamensis*-Gruppe (sensu Nässig 1991)]) und der *youngi*-Gruppe (sensu Nässig 1991). In dieser Publikationsserie werden schwerpunktmässig Beiträge der im indonesischen Archipel verbreiteten Gattungen und Taxa dokumentiert, bearbeitet und ausgewertet. Die bisher im indonesischen Archipel nicht nachgewiesenen Taxa und Gattungen der Familie Saturniidae BOISDUVAL, 1837 ("1834") werden weitgehend ausgeschlossen. Da die Untergattung *Antheraeopsis* hauptsächlich auf dem asiatischen Festland verbreitet ist, können die diesbezüglichen Namen und Taxa der Festlandpopulationen hier natürlich nicht gänzlich ignoriert werden. Sie werden deshalb zum allgemein besseren Verständnis der Gruppe zusammenfassend mit diskutiert.

Nässig (1991) Wild Silkmoths '89/'90 (eds. H. Akai & M. Kiuchi): pp. 1–8, veröffentlichte neue morphologische Aspekte zur Gattung *Antheraea* HÜBNER und Versuche einer Neueinteilung der Gattung. Die Taxa der Gattung *Antheraea* wurden durch Nässig (1991) auf drei Untergattungen und zahlreiche Arten-Gruppen verteilt. Ergänzungen und Korrekturen erfolgten durch Holloway, Naumann & Nässig (1996) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), N.F. 17 (3): pp. 225–258, Paukstadt, Paukstadt & Brosch (1998) – Entomol. Zeitschr. (Essen), 108 (8): pp. 317-324, Paukstadt, Brosch & Paukstadt (1999a) Entomol. Zeitschr. (Stuttgart), 109 (11): pp. 450-457, Paukstadt, Brosch & Paukstadt (1999b) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnbg.), Suppl. 6: pp. 23-32, Paukstadt, Brosch & Paukstadt (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnbg.), Suppl. 9: 59 pp. und

Paukstadt, L. H. & Paukstadt, U. (2003) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 1 (1): pp. 23–39. Die Taxa der fast weltweit verbreiteten Gattung *Antheraea* HÜBNER, 1819 („1816") (Lepidoptera: Saturniidae: Saturniinae: Saturniini), die Typusart der Gattung *Antheraea* ist *Phalaena mylitta* DRURY, 1773, werden derzeit auf vier Untergattungen verteilt. Dieses sind die Untergattungen *Antheraea* HÜBNER, 1819 („1816"), *Loepantheraea* TOXOPEUS, 1940, *Antheraeopsis* WOOD-MASON, 1886 und *Telea* HÜBNER, 1819 („1816"). Die Taxa der Untergattung *Antheraeopsis* WOOD-MASON, 1886 wurden durch Nässig (1991) auf die *assamensis*-Gruppe (sensu Nässig 1991) und die *youngi*-Gruppe (sensu Nässig 1991) verteilt. Paukstadt, Paukstadt & Brosch (1998) – Entomol. Zeitschr. (Essen), 108 (8): pp. 317‐324, korrigierten diese Namensgebung. Da sich der Name *assamensis*-Gruppe auf ein Taxon mit unbestimmter Identität bezog, wurde diese Gruppe in *castanea*-Gruppe umbenannt. Der nun vorliegende Teil VI zur Kenntnis der Saturniidenfauna des indonesischen Archipels beschäftigt sich speziell mit der orientalischen Untergattung *Antheraeopsis* WOOD-MASON, 1886 der Gattung *Antheraea* HÜBNER, 1819 („1816").

Die etwa 10 Taxa der orientalischen Untergattung *Antheraeopsis* WOOD-MASON, 1886 sind auf dem asiatischen Festland vom südlichen China über die Mekong Region bis nach Peninsular Malaysia und über Thailand und Myanmar bis auf den indischen Subkontinent verbreitet. Diese Untergattung ist auf den Kontinentalinseln Taiwan, Borneo, Sumatra und Java zu finden und kommt selbst auf den Andamanen und den Philippinen vor. Ein Einzelnachweis von Sulawesi durch Brechlin (2000) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), N.F. 20, (3/4): pp. 291–310, bestätigte nicht die Verbreitung auf dieser Insel. Auf dem asiatischen Festland ist die Untergattung meist durch jeweils zwei sympatrische Arten vertreten, die wegen ihrer unterschiedlichen und markanten Höhengliederung geographisch aber deutlich zu trennen sind. Von den Inseln ist bisher nur jeweils eine Art bekannt. Aus dem Verbreitungsmuster lässt sich schliessen, dass es sich bei den Taxa der Untergattung *Antheraeopsis* um historisch relativ alte Taxa handeln muss, die deshalb auch bis auf die Philippinen und auf die Andamanen vordringen konnten. Die Taxa der Untergattung *Antheraeopsis* WOOD-MASON, 1886 sind wegen ihrer Grösse, Grundfärbung, Habitus, Ozellen- und Genitalmorphologie leicht definierbar. Der nächste Verwandte könnte *Antheraea* (*Telea*) *compta* ROTHSCHILD *in* Rothschild & Jordan, 1899 vom indischen Subkontinent sein, die aber von Nässig (1991) Wild Silkmoths '89/'90 (eds. H. Akai & M. Kiuchi): pp. 1–8, in die amerikanische Untergattung *Telea* HÜBNER, 1819 („1816") gestellt wurde, was der Überprüfung bedarf. In der vorliegenden Arbeit beschränken sich taxonomische Diskussionen auf den Status einiger weniger Taxa. Für die Erstellung der vorliegenden kommentierten Scheckliste wurden die uns verfügbaren wichtigen Schriften zur Untergattung *Antheraeopsis* WOOD-MASON, 1886 zusammengetragen, deren Inhalte ausgewertet und zusammengestellt. Für jedes in Indonesien verbreitete Taxon werden umfangreiche Informationen zu seiner Originalbeschreibung, dem Originalzitat in der Originalbeschreibung, dem Typenfundort, der geographischen Verbreitung und der Höhengliederung, der Etymologie, der Typenserie, der Taxonomie und wenn vorhanden zu Synonymen gemacht. Wie wir bereits in vorherigen Arbeiten der gleichen Publikationsserie bemerkten, wurde auch der folgende Beitrag aus zwei

älteren, längeren Manuskripten zusammengestellt, ergänzt und inhaltlich dem derzeit neuesten Kenntnisstand angepasst. Bekanntlich sind die indonesischen Saturniiden grösstenteils noch sehr ungenügend erforscht. Die Inhalte dieser Publikationsserie spiegeln also lediglich den augenblicklichen Kenntnisstand wider. Die im Rahmen dieser kommentierten Schecklisten gemachten taxonomischen Ausführungen müssen deshalb auch als vorläufige Einschätzungen betrachtet werden. Vorhandene Kenntnislücken und Ansätze für weitere Forschungen und Diskussionen werden aufgezeigt. Weitere Studien zur Sytematik der indonesischen Saturniiden werden zweifellos zu weiteren Erkenntnissen, oder vielleicht auch zu neuen, abweichenden Ergebnissen führen, die schliesslich auch taxonomische Änderungen nach sich ziehen könnten. Wir werden deshalb weiterhin bemüht sein, den interessierten Lesern der *Beiträge zur Kenntnis der wilden Seidenspinner* neue Erkenntnisse über die wilden Seidenspinner des indonesischen Archipels schnellstmöglichst und umfassend mitzuteilen.

Gruppen-Namen: Die vorläufige Einteilung der Taxa in Gruppen, so wie sie in diesem Beitrag durchgeführt wird, geschieht zur besseren Übersicht. Deren Namensgebung stimmt in der Regel nicht mit den Regeln und/oder Empfehlungen des International Code of Zoological Nomenclature, 4th Edition (London) – ICZN (1999) zur gültigen Beschreibung von Gruppen-Namen überein. In der Anwendung der Gruppen-Namen und Einteilung in Untergattungen folgen wir Nässig (1989, 1991 und 1995), Holloway, Naumann & Nässig (1996), Paukstadt, Paukstadt & Brosch (1998), Paukstadt, Brosch & Paukstadt (1999a, 1999b und 2000) und Paukstadt, L. H. & Paukstadt, U. (2003).

Ringkasan: Bagian I A dan I B, II, III, IV A dan IV B dari *A Preliminary Annotated Checklist of the Indonesian Wild Silkmoths* yang sampai saat ini diterbitkan dalam bagian I membahas mengenai Tribus Attacini BLANCHARD, 1840 (Lepidoptera: Saturniidae: Saturniinae) dan bagian berikutnya Tribus Saturniini BOISDUVAL, 1837 („1834"). Bagian II membahas secara umum mengenai genus *Antheraea* HÜBNER, 1819 („1816") dan yang terutama mengenai anak genus *Loepantheraea* TOXOPEUS, 1940, bagian III mengenai anak kelompok *cordifolia* (sensu Holloway, Naumann & Nässig 1996) dari kelompok *mylitta*/*frithi* (sensu Paukstadt, Brosch & Paukstadt 1999), bagian IV A mengenai anak kelompok *helferi* (sensu Paukstadt, Paukstadt & Brosch 1998) dari kelompok *helferi* (sensu Nässig 1991), bagian IV B mengenai anak kelompok *yamamai* (sensu Paukstadt, Paukstadt & Brosch 1998) dari kelompok *helferi* (sensu Nässig 1991), dan bagian V mengenai anak kelompok *pernyi* (sensu Nässig 1991). Bagian VI ini membahas taxa anak genus *Antheraeopsis* WOOD-MASON, 1886 dengan anak kelompoknya *castanea* (sensu Paukstadt, Paukstadt & Brosch 1998) dan *youngi* (sensu Nässig 1991). Di dalam artikel berseri ini akan didokumentasikan penyebarluasan genus-genus di Kepulauan Indonesia dan referensi pustakanya akan dinilai kembali. Genus-genus dari keluarga Saturniidae BOISDUVAL, 1837 ("1834") yang penyebarluasannya tidak ada atau tidak pernah diketahui di Kepulauan Indonesia, dalam artikel ini tidak diikutsertakan.

Introduction

The entomological publications *A Preliminary Annotated Checklist of the Indonesian Wild Silkmoths* by U. Paukstadt and L. H. Paukstadt based in some important sections actually on two lengthy so far unpublished manuscripts: *The Saturniidae of Indonesia* and *An Introduction to the Genus Antheraea HÜBNER, 1819 ("1816")*. Thus far issued were the Parts I A and I B of *A Preliminary Annotated Checklist of the Indonesian Wild Silkmoths*, which were dealing with the tribe Attacini BLANCHARD, 1840 (Lepidoptera: Saturniidae: Saturniinae), while the Parts II, III, IV A, IV B, and V were dealing with the tribe Saturniini BOISDUVAL, 1837 ("1834"). Part II was dealing in general with the genus *Antheraea* HÜBNER, 1819 ("1816") and in particular with the subgenus *Loepantheraea* TOXOPEUS, 1940, Part III was dealing with the *cordifolia*-subgroup (sensu Holloway, Naumann & Nässig 1996) of the *mylitta*/*frithi*-group (sensu Paukstadt, Brosch & Paukstadt 1999), Part IV A was dealing with the *helferi*-subgroup (sensu Paukstadt, Paukstadt & Brosch 1998) of the *helferi*-group (sensu Nässig 1991), Part IV B completed with the taxa of the *helferi*-group and in particular with the taxa of the *yamamai*-subgroup (sensu Paukstadt, Paukstadt & Brosch 1998) of the *helferi*-group (sensu Nässig 1991), and Part V was dealing with the *pernyi*-group (sensu Nässig 1991), cf. U. Paukstadt & L. H. Paukstadt (2006c, d, 2007a, b, c, d, and 2008). The herewith available Part VI of this contribution deals with the subgenus *Antheraeopsis* WOOD-MASON, 1886 of the genus *Antheraea* HÜBNER, 1819 ("1816"). Two species-groups of the subgenus *Antheraeopsis* (sensu Nässig 1991) are recognized. Those are the *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998 [= *assamensis*-group (sensu Nässig 1991)]) and the *youngi*-group (sensu Nässig 1991). The genera and taxa of the family Saturniidae BOISDUVAL, 1837 ("1834"), which were thus far not recorded from the Indonesian Archipelago (including East Malaysia, Brunei, and Timor Leste) are mostly excluded from this contributions.

Nässig (1991) Wild Silkmoths '89/'90 (eds. H. Akai & M. Kiuchi): pp. 1–8, published new morphological aspects of *Antheraea* HÜBNER and attempts towards a reclassification of the genus Saturniidae (Lepidoptera). Nässig (1991) arranged the taxa of the genus *Antheraea* mostly new in three subgenera and several collective-groups. Some amendments followed by Holloway, Naumann & Nässig (1996) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), N.F. 17 (3): pp. 225–258, Paukstadt, Paukstadt & Brosch (1998) Entomol. Zeitschr. (Essen), 108 (8): pp. 317‐324, Paukstadt, Brosch & Paukstadt (1999) Entomol. Zeitschr. (Stuttgart), 109 (11): pp. 450‐457, Paukstadt, Brosch & Paukstadt (1999) Galathea – Ber. Kr.

Nürnbg. Entomol. (Nürnbg.), Suppl. 6: pp. 23‑32, Paukstadt, Brosch & Paukstadt (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnbg.), Suppl. 9: 59 pp., and Paukstadt, L. H. & Paukstadt, U. (2003) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 1 (1): pp. 23–39. The taxa of the almost worldwide distributed genus *Antheraea* HÜBNER, 1819 ("1816") (Lepidoptera: Saturniidae: Saturniinae: Saturniini), the type species of the genus *Antheraea* is *Phalaena mylitta* DRURY, 1773, are presently subdivided into four subgenera. Those are *Antheraea* HÜBNER, 1819 ("1816"), *Loepantheraea* TOXOPEUS, 1940, *Antheraeopsis* WOOD-MASON, 1886, and *Telea* HÜBNER, 1819 ("1816"). Nässig & Treadaway (1998) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N. F., Suppl. 17, remarked (p. 287 footnote) that the subdivision of the genus *Antheraea* into three subgenera follows Nässig (1991) Wild Silkmoths '89-'90, and Nässig, Lampe & Kager (1996) Heteroc. Sumatr. (Göttingen), 10. It was never intended to propose these names as taxonomically valid taxa on the genus-group level; such acts would have to wait for a phylogenetic revision, including type studies. These group names were therefore always meant in the sense of Art. 1(b)(6) of ICZN (1985).

Part VI of *A Preliminary Annotated Checklist of the Indonesian Wild Silkmoths*, which is available now, deals in particular with the Oriental subgenus *Antheraeopsis* WOOD-MASON, 1886 of the genus *Antheraea* HÜBNER, 1819 ("1816"). About 10 taxa of the subgenus *Antheraeopsis* are presently known, which are ranging on the Asian Continent from China via the Mekong Region to Peninsular Malaysia in the southeast and via Thailand and Myanmar to the Indian Subcontinent in the southwest. Taxa of this subgenus are present on the continental islands Taiwan, Borneo, Sumatra, and Java. Scattered records from Sulawesi so far did not confirm the distribution on this island. Records from the Philippines and the Andaman Islands likely confirm that the subgenus *Antheraeopsis* represents a historical old subgenus, which was able to disperse into these regions prior they became isolated as islands. Each one taxon is known from the island of Taiwan, the Andamans and the Greater Sunda Islands (Borneo, Sumatra, and Java). Some regions of the Asian Continent are occupied by each two clearly definable taxa, of which one is distributed in the lowlands and middle montaineous regions and another sympatric taxon in the highlands only. The islands are occupied by each one taxon only. No records for the subgenus are present from the Lesser Sunda Islands and the Moluccas. Thus far two unproven records from Sulawesi not confirm the distribution on this island. This subgenus is absent in the Ryuku Archipelago.

Some important literature on the taxa of the subgenus *Antheraeopsis* WOOD-MASON, 1886 is compiled herein. Of course, it is not possible to provide information on the Indonesian taxa of *Antheraeopsis* without presenting a general overlook on further taxa of this subgenus from the Asian Continent, Taiwan, the Philippines, and the Andamans because this subgenus is widely distributed in Continental Asia. Our contribution on the non-Indonesian taxa and populations is limited herein due to the restricted available space. For each taxon of *Antheraeopsis* selected information on the original description are provided. Discussions on the taxonomy, geographical distribution, biology and ecology of the taxa are present. Though our studies on the Indonesian wild silkmoths are still not completed we intend to publish our preliminry results to make these available for further studies. Due to the fact that some Indonesian Saturniidae are still not fully understood because their early stages or even the appropriate other sex remain unknown the contents of this series solely reflects the present knowledge and our present taxonomic opinions have to be considered being tentative and preliminary.

The collective-group names in *Antheraea* HÜBNER, 1819 ("1816")

Collective-group names for taxa of the genus *Antheraea* HÜBNER, 1819 ("1816"), which were used in this and in previous contributions, were established tentative for certain assemblages of taxonomic convenience only. In the application of group-names we follow Nässig (1989, 1991, and 1995), Holloway, Naumann & Nässig (1996), Paukstadt, Brosch & Paukstadt (1999a, 1999b, and 2000), Paukstadt, Paukstadt & Brosch (1998), and L. H. Paukstadt & U. Paukstadt (2003). Although the collective-group names were repeatedly amended we believe that further new arrangements in the *mylitta*/*frithi*-group (sensu Paukstadt, Brosch & Paukstadt 1999), and in the *helferi*- and *pernyi*-groups (sensu Nässig 1991) are urgently necessary due to reasons, which were explained in detail by Paukstadt & Paukstadt (2008). At the time being we intend to use the names *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998) and *youngi*-group (sensu Nässig 1991) for the taxa of the subgenus *Antheraeopsis* WOOD-MASON, 1886 because these names are well established in literature. We must point out that we hereby neither confirm the correct use of the group-names nor the correct assignment of taxa within the subgenus *Antheraeopsis*.

Taxa / names in the subgenus *Antheraeopsis* WOOD-MASON, 1886

incorrect subsequent spellings of *Antheraeopsis* WOOD-MASON, 1886

Antheraeaopsis; Nässig, Lampe & Kager (1996a) Heteroc. Sumatr. (Göttingen), 10: p. 50.

Anthaeraeopsis; Lemaire *in* Heppner (ed.) (1996), p. 48.

species inquirenda

yunnanensis CHU & WANG, 1993 [presently treated as a *species inquirenda* within the subgenus *Antheraeopsis* WOOD-MASON, 1886 due to its uncertain identity as a taxon of the genus *Antheraea* HÜBNER, 1819 ("1816")].

***castanea*-group (sensu Paukstadt, Paukstadt & Brosch, 1998)**

assamensis-group (sensu Nässig 1991) [senior synonym of *castanea*-group, the name was replaced due to the uncertain identity of *assamensis*]

assamensis (HELFER, 1837) [unclear identity]

assama (WESTWOOD, 1848) [likely a junior subjective synonym]

mezankooria MOORE, 1862 [likely a junior subjective synonym]

biedermanni NIEPELT, 1932 [likely a junior subjective synonym]

castanea (JORDAN, 1910)

subvelata BOUVIER, 1930 [unclear status]

***youngi*-group (sensu Nässig 1991)**

youngi WATSON, 1915

brunnea VAN EECKE, 1921 [likely a junior subjective synonym]

dempoensis TOXOPEUS, [i.l.?] [*nomen nudum*]

rubiginea TOXOPEUS, 1940 [likely a junior subjective synonym]

chengtuana WATSON, 1923

formosana SONAN, 1937 [unclear status]

paniki NÄSSIG & TREADAWAY, 1998

sahi NÄSSIG & TREADAWAY, 1998

rudloffi BRECHLIN, 2002

incorrect subsequent spellings in the species-group names

assamentis; Guérin-Méneville (1855) Rev. Zool., 2 (7): p. 300.

assamentis [incorrect subsequent spelling]; Girard (1883) Traité d'Entom., 3 (1): p. 510.

assamensii; Helfer (1837) J. Asiat. Soc. Bengal, VI (I): pp. 38–47.

assamesis; Chu & Wang (1993) Sinozoologia, 10 (5): p. 263.

castenea; Nässig, Lampe & Kager (1996b) Heteroc. Sumatr. (Göttingen), 10, Appendix I: p. 124.

yongei; Seitz *in* Seitz (ed.) (1926) Gross-Schmett. Erde, 10: pp. 511, 520 [French edition]; p. 511 [German edition].

youngei; Seitz *in* Seitz (ed.) (1928) Gross-Schmett. Erde, 10: pp. 520.
youngei; Schüssler *in* Strand (ed.) (1933) Lep. Cat., 56: p. 174.
Youngei; Leefmans (1930) De Trop. Natuur, 5–6: p. 93.
yongei; Jolly, Sen, Sonwalkar & Prasad (1979) non-mulberry silks: pp. 6–7.
rubigenea; Allen (1981) Brunei Mus. J., 5 (1): pp. 117.
rubigenea; Holloway (1987) The moths of Borneo, part 3: p. 101.
mesankooria; Hampson *in* Blanford (1892) Fauna of British India. Moths, Vol. I: p. 20
mesankooria; Sonthonnax (1899) Lép. Soie, (2): p. 56

erroneous generic combinations
Attacus; Wardle (1881) Handbook Wild Silks of India: p. 5.
Attacus; Hutton *in* Wailly (1861) Bull. Soc. d'Acclim: p. 7.
Bombyx; Guérin-Méneville (1855) Rev. Zool., 2 (7): p. 300.
Caligula; Kirby (1892a) A synonymic catalogue of Lepidoptera Heterocera (Moths), Vol. 1. Sphinges and Bombyces: p. 760.
Saturnia; Helfer (1837) J. Asiat. Soc. Bengal (Calcutta), VI (I): pp. 38–47.
Saturmia [incorrect subsequent spelling]; Sonan (1937) Trans. nat. Hist. Soc. Formosa, 27 (160): p. 208.

The subgenus *Antheraeopsis* WOOD-MASON, 1886

Original citation and spelling: *Antheraeopsis*
Original description: Wood-Mason, J. (1886): Report of the Superintendent, Indian Museum. Appendix D. List of Entomological Specimens sent to the Silk Court of the Colonial and Indian Exhibition, London, 1886. – Annual Report and Lists of Accessions. April 1885 to March 1886 (Calcutta): pp. 19–22.
Type species: *Saturnia assama* WESTWOOD, 1848 by monotypy (see our remarks below), cf. Fletcher & Nye *in* Nye (ed.) (1995) The Generic Names of Moths of the World, Vol. 4, Bombycoidea, Mimallonoidea, Sphingoidea, Castnioidea, Cossoidea, Zygaenoidea and Sesioidea: p. 13. Presently *Saturnia assama* is treated as a junior subjective synonym of *Saturnia assamensis* HELFER, 1837.
Remarks: Wood-Mason (1886) Ann. Rep. Indian Mus.: p. 21, attributed the new genus *Antheraeopsis* not to *Saturnia assama* WESTWOOD, 1848 as repeatedly noted in secondary literature but actually to *assama* HELFER [either a misinterpretation or an error in authorship!]. In our opinion the type species of *Antheraeopsis* WOOD-MASON, 1886 therefore can be either *assamensis* HELFER, 1837 or *assama* WESTWOOD, 1848.

Furthermore it is uncertain whether or not the errection of the new genus name *Antheraeopsis* was based on a series of cocoons of a single species or even on two distinct species. Concluded from text Wood-Mason exhibited eleven specimens of which nine were cocoons and two were adults. The series of fife cocoons on which the name *Antheraeopsis* directly based were from Sibsagar and Kamrup, Assam. Wood-Mason remarked that "3 pale ones = Mezankoori Muga".

Etymology: Not explicitly mentioned by Wood-Mason (1886).

Synonyms: *Attacus* [part.]; Wardle (1881) Handbook Wild Silks of India: p. 5.

Bombyx [part.]; Guérin-Méneville (1855) Rev. Zool., 2 (7): p. 300.

Caligula; Kirby (1892a) A synonymic catalogue of Lepidoptera Heterocera (Moths), Vol. 1. Sphinges and Bombyces,: p. 760.

Saturnia [part.]; Helfer (1837) J. Asiat. Soc. Bengal (Calcutta), VI (I): pp. 38–47.

Saturmia [incorrect subsequent spelling] [part.]; Sonan (1937) Trans. nat. Hist. Soc. Formosa, 27 (160): p. 208.

Geographical distribution: On the Asian mainland the taxa of the subgenus *Antheraeopsis* range from southern China via the Mekong Region to the Malay Peninsula and via Thailand and Myanmar to the Himalaya and the northern Indian Subcontinent. Various taxa of the subgenus *Antheraeopsis* occupy the Andaman Islands, the Philippines, and the continental islands Taiwan and the Greater Sunda Islands Borneo, Sumatra, and Java. This subgenus is not present in the Indonesian Archipelago on the islands off the Sunda Shelf. A single record from the island of Sulawesi, cf. Brechlin (2000a) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), N.F. 20 (3/4): pp. 291–310, did not confirm the geographical distribution of *Antheraeopsis* for Sulawesi. The distribution pattern of the subgenus *Antheraeopsis* most likely confirms that this subgenus is historical old, because it or it ancestors could reach the Andamans and the Philippines most likely via land-bridges already long time before the glacial epoches. The altitudinal distribution of the *castanea*-group is from 1,600 to 2,500 m (Myanmar and Vietnam) and from 3,000 and 3,800 m (Yunnan Plateau, P. R. China), cf. Paukstadt, Brosch & Paukstadt (1999a) Entomol. Zeitschr. (Stuttgart), 109 (11): pp. 450‑457. The taxa of the *castanea*-group obviously prefer much higher elevations than the taxa of the *youngi*-group do. The *youngi*-group was recorded from the lowland rainforests of East Malaysia, cf. Holloway (1987) The moths of Borneo, part 3, 199 pp., and in Indonesia from 50–1,600 m (mostly 900–1,600 m), cf. Paukstadt, Suhardjono & Paukstadt (2003) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 14: pp.

25–64. During three expeditions, which were carried out by the authors to the Province Nanggroe Aceh Darussalam, northern Sumatra the *youngi*-group was reported being common in elevations from 109 to 1,798 m. No preference for any particular altitudinal distribution was observed existing in the populations of Aceh, cf. Paukstadt & Paukstadt (2007f) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 5 (6): pp. 289 (table 1) and 291 (table 2). Paukstadt, Brosch & Paukstadt (1999a) Entomol. Zeitschr. (Stuttgart), 109 (11): pp. 450–457, remarked that final conclusions on group-names in *Antheraeopsis*, if any needed, have to be done in a subgeneric revision of *Antheraeopsis* WOOD-MASON, 1886.

Taxonomic notes: Type-species of *Antheraeopsis* WOOD-MASON, 1886 is *Saturnia assama* WESTWOOD, 1848 by monotypy (see our remarks under "Type species"), cf. Fletcher & Nye *in* Nye (ed.) (1995) The Generic Names of Moths of the World, Vol. 4, Bombycoidea, Mimallonoidea, Sphingoidea, Castnioidea, Cossoidea, Zygaenoidea and Sesioidea: p. 13. *Saturnia assama* presently is treated as a junior subjective synonym of *Saturnia assamensis* HELFER, 1837. Presently about 10 taxa of partly unclear taxonomic status are recognized in the subgenus *Antheraeopsis*. The description of a further taxon from China unfortunately fits to *Antheraeopsis* in the illustrated ♂ genitalia structures only and therefore is treated as a *species inquirenda* at the time being. This taxon most likely represents a member of the *platessa*-complex of the *frithi*-subgroup (sensu Nässig 1991) of the *mylitta*/*frithi*-group (sensu Paukstadt, Brosch & Paukstadt 1999) of the subgenus *Antheraea* HÜBNER, 1819 ("1816"). The taxa of the subgenus *Antheraeopsis* were tentatively arranged into two species-groups. Those are the *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998) [= *assamensis*-group (sensu Nässig 1991)] and the *youngi*-group (sensu Nässig 1991). The name *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998) replaced the former name *assamensis*-group (sensu Nässig 1991) due to the unclear identity of *Antheraea* (*Antheraeopsis*) *assamensis* (HELFER, 1837). Collective-group names which were used in this and in previous contributions were established tentative for certain assemblages of taxonomic convenience, and they do not comply with the requirements for a valid description according to the provisions of the International Code of Zoological Nomenclature, 4th Edition (London) – ICZN (1999). For further taxonomic remarks on the collective-groups please confirm the chapter "The collective-group names in *Antheraea* HÜBNER, 1819 ("1816")" in this issue. We intend to use the name *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998) instead of its older synonym

assamensis-group (sensu Nässig 1991) because the name *assamensis*-group based on a taxon of unclear identity. Presently six taxa partly with unclear status (likely junior subjective synonyms) are preliminary placed in the *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998). The taxon *castanea* JORDAN, 1910 is unmistakable due to its falcate forewings and much pointed forewing apices. Presently we do not believe that the selection of the taxon *castanea* to name this species-group around *assamensis* has been a proper choice. Further studies might reveal that the taxa *assamensis* and *castanea* belong to distinct species-groups and than *assamensis* is needed to be excluded from the *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998). Paukstadt, U. & Paukstadt, L. H. (2007c) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 5 (4): p. 161, remarked that the assignment of the Indian *compta* ROTHSCHILD *in* Rothschild & Jordan, 1899 needs further investigation because indications are available that the Oriental taxon *compta* might be closer related to the Oriental subgenus *Antheraeopsis* WOOD-MASON, 1886 than to the Nearctic subgenus *Telea* HÜBNER, 1819 ("1816").

Remarks: All remarks, which were done in this contribution on the taxonomic status of the taxa of the subgenus *Antheraeopsis* WOOD-MASON, 1886 have to be considered being preliminary and tentative and based on present treatments by us and/or other authors. A subgeneric revision of *Antheraeopsis* is considered by us to be urgently needed to solve basic taxonomic problems in *Antheraeopsis*.

General notes: One for the sericulture most important wild silkmoth belongs to the oriental subgenus *Antheraeopsis*. This is the muga silkmoth *Antheraea* (*Antheraeopsis*) *assamensis* (HELFER, 1837) of Assam. Peigler (1993) Am. Entomol., 39 (3): pp. 152–153, remarked that the word muga is derived from an ancient Sanscrit word meaning amber, and that the production of muga silk may date back to 1662 B.C. or earlier. The taxa of the subgenus *Antheraeopsis* WOOD-MASON, 1886 are quite distinct from most of the remaining taxa in the genus *Antheraea* HÜBNER, 1819 ("1816"). They are well distinguishable from taxa of the other subgenera in the habitus, in the color and pattern morphology of the wings, in the antennal morphology, and mainly in the morphology of the ♂ genitalia structures. The adults are highly variable moths and demonstrate a clear sexual dimorphism. The adults of the subgenus *Antheraeopsis* WOOD-MASON, 1886 are comparatively large moths. The wings of the ♀ adult exhibit a larger circular cross-section than those of the ♂ adult, of which the forewings are clear falcate and the apices more pointed. Ground coloration in both sexes mostly chestnut, the median

area in the ♂ darker than in the ♀ but the outer margin in the ♂ brighter than in the ♀. Postmedianline doubly whitish, in the ♀ more conspicuous than in the ♂ and particular in the ♀ the postmedianline of the forewing run to a conspicuous whitish triangular patch near the costa. Ocelli in both sexes orange, hindwing ocelli larger than forewing ocelli and distally more conspicuous crescent black filled than in forewings. Hindwing ocelli with a hyaline center. Thorax and abdomen colored as wings. About 15 taxa are placed in the subgenus *Antheraeopsis*. Several names of unclear status, invalid or unavailable names, names in the synonymy, and one *species inquirenda* are present. This contribution mainly deals with the names, which were proposed and taxa, which were recorded from the Indonesian Archipelago.

Antheraea (*Antheraeopsis*) *yunnanensis* CHU & WANG, 1993

[*species inquirenda*]

Original citation and spelling: "*Antheraea pernyi yunnanensis* Chu et Wang ssp. nov."

Original description: Zhu Hongfu (Chu H. F.) and Wang Linyao (1993) The Saturniidae of China (Lepidoptera) I. Subfamily Attacinae. – Sinozoologia, 10: pp. 260 [in Chinese], fig. 11 (♀ genitalia structures, aedoagus separate and incomplete), p. 264 [in English]

Type locality: Yunnan [P. R. China].

Geographical distribution: Yunnan, P. R. China.

Etymology: The taxon *yunnanensis* was given a toponimic name referred to the collecting place of the ♂ singleton.

Type material: The description based on a single ♂ specimen. The holotype by original designation is most likely preserved in the Institute of Zoology, Beijing, not examined by us. A color foto of a similar specimen was received but the illustrated ♂ adult fits to a taxon of the *platessa*-complex instead of the subgenus *Antheraeopsis* WOOD-MASON, 1886 as the illustrated genitalia apparatus does.

Taxonomic notes: The situation on the status and even the identity of *yunnanensis* is confuse due to some considerable errors in the original description by Chu & Wang (1993), as well as in a subsequent publication by the same authors (1996). Chu & Wang (1993 and 1996) erroneously placed the genus *Antheraea* HÜBNER, 1819 ("1816") into the subfamily Attacinae [SMITH, 1886] [**recte** Attacinae BLANCHARD, 1840; **recte** Saturniinae BOISDUVAL, 1837 ("1834")] of the family Saturniidae BOISDUVAL, 1837 ("1834"). The name *yunnanensis* was originally

described as a subspecies of the Chinese oak silkmoth *pernyi* (GUÉRIN-MÉNEVILLE, 1855), which is a taxon of the *pernyi*-group (sensu Nässig 1991) of the subgenus *Antheraea* HÜBNER, 1819 ("1816"). The description of *yunnanensis* clearly based on a single ♂ specimen only. Chu & Wang (1993) remarked that *yunnanensis* is a local subspecies of *pernyi* and only known from Yunnan. The ♂ holotype was sorry not figured in the original description but line-drawings of the ♂ genitalia structures (of *yunnanensis*?) were present. Unfortunately the ♂ genitalia structures of *pernyi yunnanensis*, which were illustrated in the original description definitively neither belongs to a taxon of the *pernyi*-group (sensu Nässig 1991) nor to any taxon of the *frithi*-subgroup (sensu Nässig 1991) of the *mylitta*/*frithi*-group (sensu Paukstadt, Brosch & Paukstadt 1999), but clearly to a taxon of the subgenus *Antheraeopsis* WOOD-MASON, 1886. It is unknown to us whether the genitalia apparatus of *yunnanensis* was accidentally mixed up during dissections, or the figures of the genitalia structures were accidentally replaced by the author, the publisher, or the printer with figures of another taxon, which was discussed in the same work. Chu & Wang (1996) subsequently figured the holotype of *pernyi yunnanensis* in color (pl. XII fig. 4), but the illustrated specimen clearly neither belongs to a taxon of the *pernyi*-group (sensu Nässig 1991) nor to a taxon of the subgenus *Antheraeopsis* as the illustrated ♂ genitalia structures in the same publication do. The illustrations of the genitalia structures in Chu & Wang (1996) were copied from Chu & Wang (1993). The specimen figured in Chu & Wang (1996) definitively represents a taxon of the *platessa*-complex of the *frithi*-group (sensu Nässig 1991) of the *mylitta*/*frithi*-group (sensu Paukstadt, Brosch & Paukstadt 1999). Paukstadt, Paukstadt & Naumann (2000) therefore combined the name *yunnanensis* in subspecific rank with *platessa* ROTHSCHILD, 1903. In the same contribution the authors lowered *yunnanensis* into synonymy to *platessa ornata* BOUVIER, 1928, which was originally described from Tonkin (northern Vietnam). This taxonomic act was mainly based on the condition that the color illustration of *yunnanensis* by Chu & Wang (1996) factually represents the ♂ holotype of *yunnanensis*. Paukstadt, U. & Paukstadt, L. H. (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 8: pp. 22–25, were in doubt on the identity of *yunnanensis* and particulary on the accuracy of the illustration of the ♂ holotype by Chu & Wang (1996). Due to the taxonomic confusion, which was mainly based on the still uncertain identity of *yunnanensis* CHU & WANG, 1993 further studies were considered required. The authors remarked that *yunnanensis* might either represents a taxon of the *pernyi*-group (sensu Nässig 1991) of the

subgenus *Antheraea*, or a taxon of the subgenus *Antheraeopsis*, or a taxon of the *frithi*-subgroup (sensu Nässig 1991) of the *mylitta*/*frithi*-group (sensu Paukstadt, Brosch & Paukstadt 1999) of the subgenus *Antheraea*. A final conclusion on the status of *yunnanensis* should be proposed not earlier than the real identity is known. The taxon *yunnanensis* is considered to be a species of doubtful identity, which needs further investigation (*species inquirenda*) and was placed tentatively to the subgenus *Antheraeopsis* WOOD-MASON, 1886. A color picture of the holotype of *yunnanensis* was not available on our request but we had received a color picture of a specimen "very similar to the holotype" for comparisons instead. The ♂ adult, which was figured represents a taxon of the *platessa*-complex. We preliminary include *yunnanensis* as a *species inquirenda* of the subgenus *Antheraeopsis* WOOD-MASON, 1886 following Paukstadt, U. & Paukstadt, L. H. (2000) Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 8: pp. 22–25, and Paukstadt, Brosch & Paukstadt (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 9: 59 pp., because the illustrated ♂ genitalia structures are so far the only clear diagnostic marks from the original description of *yunnanesis* CHU & WANG, 1993. Brechlin (2002) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (4): p. 223, listed *yunnanensis* CHU & WANG, 1993 as a member of the *youngi*-group (sensu Paukstadt et al. 2000) from China, no remarks on the status of *yunnanensis* were made.

The *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998) of the subgenus *Antheraeopsis* WOOD-MASON, 1886

Original citation: "*castanea*-group".

First citation: Paukstadt, U., Paukstadt, L. H. & Brosch, U. (1998): Taxonomische Änderungen und Anmerkungen zu den Taxa der Gattung *Antheraea* HÜBNER [1819] von Sumatera, Indonesien (Lepidoptera: Saturniidae). – Entomologische Zeitschrift (Essen), 108 (8): pp. 317–324.

Synonyms: *assamensis*-group; Nässig (1991) Wild Silkmoths '89/'90 (eds. H. Akai & M. Kiuchi): pp. 1–8.

pernyi-subgroup; Naumann (1995) Die Saturniiden-Fauna von Sulawesi, Indonesien (thesis): p. 45 [**error** in group status].

Geographical distribution: The geographical distribution of the taxa in the *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998) was recorded from the Himalayan belt to the Yunnan Plateau in southeastern China, northern Myanmar, and northern Vietnam. Taxa of this group occupy mostly higher elevations from 1,600 up to 3,800 m. The only taxon from lower mountain regions, which is presently placed within the *castanea*-group is *assamensis* (HELFER, 1837) and its supposed synonyms. The *castanea*-group is replaced by the *youngi*-group (sensu Nässig 1991) with taxa in lower elevations of Myanmar, Thailand, Peninsular Malaysia, Taiwan, the Philippines, Andamans, and the Greater Sunda Islands (except Sulawesi).

Taxonomic notes: Collective-group names, which were used in this and in previous contributions were established tentative for certain assemblages of taxonomic convenience, and they do not comply with the requirements for a valid description according to the provisions of the International Code of Zoological Nomenclature, 4th Edition (London) – ICZN (1999). For further taxonomic remarks on the collective-groups please confirm the chapter "The collective-group names in *Antheraea* HÜBNER, 1819 ("1816")" in this issue. We intend to use the name *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998) instead of its older synonym *assamensis*-group (sensu Nässig 1991) because the name *assamensis*-group based on a taxon of unclear identity. Presently six taxa partly with unclear status (likely junior synonyms) are placed in the *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998). The taxon *castanea* JORDAN, 1910 is unmistakable due to its falcate forewings and much pointed forewing apices. The assignments of the taxa of the subgenus *Antheraeopsis* WOOD-MASON, 1886 to either the *youngi*-group or to the *castanea*-group require further studies and likely corrections. Presently we do not believe that the selection of the taxon *castanea* to name this species-group around *assamensis* has been a proper choice. Further studies might reveal that the taxa *assamensis* and *castanea* belong to distinct species-groups and subsequently *assamensis* is needed excluded from the *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998).

The *youngi*-group (sensu Nässig 1991) of the subgenus *Antheraeopsis* WOOD-MASON, 1886

Original citation: "*youngi*-group".

First citation: Nässig, W. A. (1991): New morphological aspects of *Antheraea* HÜBNER and attempts towards a reclassification of the genus (Lepidoptera, Saturniidae). – Wild Silkmoths '89/'90 (eds. H. Akai & M. Kiuchi): pp. 1–8, 4 figs.

Synonyms: *pernyi*-subgroup; Naumann (1995) Die Saturniiden-Fauna von Sulawesi, Indonesien (thesis): p. 45 [**error** in group status].

Geographical distribution: the geographical distribution of the taxa in the *youngi*-group (sensu Nässig 1991) was recorded from the Himalayan belt to southern China and Taiwan in the north. In the south the *youngi*-group (sensu Nässig 1991) is distributed in the Mekong Region, Myanmar, Thailand, Peninsular Malaysia, the Greater Sunda Islands (Borneo, Sumatra, and Java), and Palawan. The populations of the subgenus *Antheraeopsis* of the Philippines (excluding Palawan), and the Andamans were placed tentatively into the *youngi*-group, further studies on the group-status are needed. A single record from the island of Sulawesi, cf. Brechlin (2000a) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), N.F. 20 (3/4): pp. 291–310, did not confirm the geographical distribution of *Antheraeopsis* for the island of Sulawesi. In the Indonesian Archipelago records of the altitudinal distribution of the *youngi*-group are from 50–1,600 m (mostly 900–1,600 m), cf. Paukstadt, Suhardjono & Paukstadt (2003) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 14: pp. 25–64. More precise observations were done in various altitudes in Nanggroe Aceh Darussalam, northern Sumatra by U. & L. H. Paukstadt in 2006 and 2007. The altitudinal distribution of *youngi* was confirmed for the province of Aceh from 109 to 1,798 m without any observed preferrence to a particular elevation, cf. Paukstadt & Paukstadt (2007f) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 5 (6): pp. 289 (table 1) and 291 (table 2).

Taxonomic notes: collective-group names, which were used in this and in previous contributions were established tentative for certain assemblages of taxonomic convenience, and they do not comply with the requirements for a valid description according to the provisions of the International Code of Zoological Nomenclature, 4th Edition (London) – ICZN (1999). For further taxonomic remarks on the collective-groups please confirm the chapter "The collective-group names in *Antheraea* HÜBNER, 1819 ("1816")" in this issue. We intend to use the name *youngi*-group (sensu Nässig 1991) because this name is well established

in literature. The taxa of the *youngi*-group (sensu Nässig 1991) are unmistakable. Presently eight taxa of partly unclear status and one *nomen nudum* are recognized in the *youngi*-group (sensu Nässig 1991). The assignments of the taxa of the subgenus *Antheraeopsis* WOOD-MASON, 1886 to either the *youngi*-group or to the *castanea*-group requires further studies and likely small corrections.

Antheraea (*Antheraeopsis*) *assamensis* (HELFER, 1837)

Original citation and spelling: "*Saturnia Assamensis*, (mihi.)"
Multiple original spelling: "*Saturnia Assamensii*": List of plates.

Original description: Helfer, T. W. (1837) On the indigenous Silkworms of India. – The Journal of the Asiatic Society of Bengal (Calcutta), VI (I): pp. 38–47; pl. VI figs. (♀ adult, eggs, cocoon, pupa, 1st, 3rd, and 5th instar larva). [pl. VI was included in the paper of Hugon, but must be considered as part of the publication of Helfer, where they were cited. There are no remarks on this plate in Hugon's paper, cf. "List of plates".]

Type locality: India, Assam, neighborhood of Comercolly.

Geographical distribution: Arora & Gupta (1979) Mem. Zool. Survey of India, Vol. 16 (1): p. 24 recorded *assamensis* from Himachal Pradesh, Uttar Pradesh, Sikkim, Assam, Meghalaya, Gujarat, Pondicherry (India), Sylhet (Bangladesh), Sri Lanka, and Indonesia. The records for Pondicherry and Indonesia most probably based on distinct taxa and not based on true *assamensis*. Records for Pondicherry most likely based on records of *Antheraea* (*Antheraea*) *perrottetii* (GUÉRIN-MÉNEVILLE, 1843) [*species inquirenda*], which is considered to be no taxon of the subgenus *Antheraeopsis* WOOD-MASON, 1886. Thus far no true member of the *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998) [= *assamensis*-group sensu Nässig (1991)] is known from the Indonesian Archipelago. Peigler & Wang (1996) Saturniid Moths of Southeastern Asia: p. 238, recorded *assamensis* from Lakhimpore, Darrong, Dhurumpore, Dehra-Doon, and Kangra (India), Myanmar, Thailand, and Vietnam mostly following the records by Bryk (1944) Ark. Zool. 35A (2): p. 7. The records for Myanmar, Thailand, and Vietnam likely partly based on distinct taxa and need confirmation because the populations of *Antheraeopsis* of lower altitudes most probably not belong to *assamensis* but to one or two other taxa of the *youngi*-group (sensu Nässig 1991). A member of the *castanea*-group occupies northern Vietnam in high elevations only. Bryk (1944) recorded *assamensis* additionally from Assam, Silhet, Sumatra, and Borneo. The latter two locations are

occupied by a distinct taxon of the *youngi*-group (sensu Nässig 1991) and not by *assamensis* sensu lato. Records of *assamensis* by Jolly, Sen, Sonwalkar & Prasad (1979) non-mulberry silks: pp. 6–7, and Holloway (1987) The moths of Borneo, part 3: p. 101, from Borneo, and by Joannis (1929) Ann. Soc. Ent. Fr., XCVIII: p. [291] 523, from Tonkin (northern Vietnam) likely based on misinterpretations. Due to zoogeographic reasons we place the name *assamensis* tentative and temporary to the populations of the subgenus *Antheraeopsis* from the lowlands and lower mountain regions of Assam of the Indian Subcontinent only. The name *assamensis* is needed to be fixed to a lowland taxon of the subgenus *Antheraeopsis* from Assam by neotype designation. Only after the neotype designation conclusions on the identity and status of further populations within the *youngi*-group from the Asian Mainland can be drawn (paper in preparation by Paukstadt et al.).

Etymology: *assamensis* was given a toponimic name referred to the collecting place in Assam, India.

Type material: Concluded from text the description based on each two ♂ and ♀ adults. Helfer noted that the particulars of *assamensis* are extensively described in Hugon's memorandum. The location of the type material was not determined by us, but we assume that the type material got lost.

Taxonomic notes: The taxon *assamensis* sensu lato is unmistakable but a neotype for *Saturnia assamensis* HELFER, 1837 is considered to be selected to fix the name *assamensis* for maintaining stability in taxonomy. Cotes (1891) Indian Mus. Notes, II (2): pp. 69–89, pl. II–XV, referred to Walker (1855) Cat. Lep. Het. B. M., VI: p. 1379, and to Guérin-Méneville (1844 [**recte** 1843]) Mag. de Zool., (2) V (9), pl. 123, when he assumed that *perrottetii* may be a variety of *assama*. *Antheraea* (*Antheraea*) *perrottetii* (GUÉRIN-MÉNEVILLE, 1843) [*species inquirenda*], presently is considered to be no taxon of the subgenus *Antheraeopsis* WOOD-MASON, 1886. Jolly, Sen, Sonwalkar & Prasad (1979) non-mulberry silks, suggested, there is reason to believe that *assamensis* is the ancestral stock and that other species of *Antheraea* have evolved through chromosomal fission. The auhors assumed (p. 82, fig. 80 (hypothetical evolutionary trend in *Antheraea*)) that *Antheraea pernyi* (GUÉRIN-MÉNEVILLE, 1855) is the closest relative of *assamensis*. According to the authors it is suspected that *Antheraea* species with the lowest number of chromosomes were endemic in northeastern India and spread from this primary epicenter over other parts of the world.

General notes: Early descriptions of the life-history and figures of the eggs, larvae, pupa, and cocoon were by Hugon (1837) [with a contribution by

F. Jenkins (p. 37)] Journ. Asiat. Soc. Bengal, 6: pp. 21–37, pl. VI. The cocoon was described being of a yellowish brown color. We had received wild collected cocoons of *Attacus atlas* (LINNAEUS, 1758) (Lepidoptera: Saturniidae: Saturniinae: Attacini) from Assam some years ago, which were mixed up with cocoons of *assamensis*. Cocoons of both species were hardly distinguishable. Some particulars on *assamensis* were described in detail in Hugon's memorandum. Hugon's figures were copied by Moore *in* Horsfield & Moore (1858-59 [1860]) A Catalogue of the Lepidopterous Insects in the Museum of Natural History at The East-India House, Vol. II (London): 1858-9 [published 1860]: 186 pp., pls. VIIA–XXIII [24 pls.]. Further descriptions and figures of the early stages of most likely *assamensis* were by Rondot (1887) l'Art de la Soie: pp. 161–172 (text-figs. of larva, cocoon, silk, ♂ and ♀ adults), pp. 188, 190, 194, 232–235, 243, 255, 378–379, 393, 397, 402–404, 407–409, and 427. Hampson *in* Blanford (1892) Fauna of British India, Moths Vol. 1: p. 20, described the larvae and the cocoon. The cocoon and the silk structures were illustrated by Silbermann (1897) Die Seide. Ihre Geschichte, Gewinnung und Verarbeitung. Vol. 1: Die Geschichte der Seidenkultur, des Seidenhandels und der Seidenwebekunst von ihren Anfängen bis auf die Gegenwart. Naturgeschichte der Seide. Die wilden Seiden. Die Gewinnung der Rohseide. Und Zubereitung der Gespinnste: text.-figs. 165 and 166. Jolly, Sen, Sonwalkar & Prasad (1979) non-mulberry silks: pp. 6–7, 30, 77–83, 101, and 122–137, figs., discussed on general aspects of the non-mulberry silk industry, part of the manual was dealing with the economically important muga (*assamensis*). Haploid chromosome numbers were reported for eight species of the genus *Antheraea* HÜBNER, 1819 ("1816") (p. 81), including *assamensis* with the lowest chromosome number of only 5 [**recte** 15]. Food plants were listed, rearing instructions were provided (pp. 127–132), and it was discussed on diseases and pests (p. 133). Valuable information was provided on breeding and genetics (pp. 134–135). Unfortunately the information on *assamensis* are confused, because Jolly, Sen, Sonwalkar & Prasad distinguished three muga varieties: green, wild hibernating and yellow mutants, also called diapausing and non-diapausing ecotypes or strains. The populations of green larvae, which were originally collected in the wild at Halflong, were reported being multivoltine (5–6 generations per year), same as the yellow mutant, which had been separated from the natural population. Hibernating pupae were found among the seed cocoons collected at the Assamese foothills. The trivoltine strain undergoes pupal diapause for 5–6 months (September to March). The authors noted that some of the morphological characters

were quite distinct from those found in the multivoltine populations. Above remarks by Jolly, Sen, Sonwalkar & Prasad (1979) cannot exclude the possibility that eventually more than one species was involved in this contribution. Some notes on the biology of the Indian member of the subgenus *Antheraeopsis* (most likely *assamensis*) were provided by Arora & Gupta (1979) Mem. Zool. Survey India, 16 (1): pp. 22–24, the forewing and hindwing venations and the ♂ genitalia structures were illustrated in text-figs. 7A–E, by Jolly (1980) Paper presented on the XVI. International Congress of Entomology, Kyoto, Japan, 3-9 Aug. 1980: pp. 1-13, 6 tables & 5 figs., and by Ramos & Peigler (1999) Int. J. Wild Silkmoths & Silk, 4: pp. 17-29, 1 table, 28 figs. on 5 pls., who provided a valuable contribution on comparative ultrastructure of silk fibers for identifying silk textiles. A compilation on the so far known preimaginal instars of the taxa in the genus *Antheraea* HÜBNER, 1819 ("1816") and citations of available literature was published by Paukstadt, U. & Paukstadt, L. H. (2001a) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 34-46. Thangavelu, Bhagowati & Chakraborty (1987) reported on color polymorphism in *Antheraea assama* WESTWOOD [misinterpretation, **recte** *assamensis* (HELFER, 1837)] for the first time. Black, intermediate and normal brown colored ♂ and ♀ adults emerged from cocoons collected in the wild of the Jorhat District of Assam bordering the foot hills of Naga Hills. The authors reported that the black color of the adults appears to be a recessive character against brown (normal) color. Data recorded and compared on morphological characters of the adults indicate some differences to variing degree among the black and brown colored adults and its preimaginal stages including cocoons. The occurrence of color polymorphism confirms the existence of natural variants in *assamensis*. Thangavelu, Bhagowati & Chakraborty (1987) recorded *Machilus bombycina* KING as the principal food plant of the muga silkworm in the Jorhat District of Assam. This food plant was probably never mentioned in literature before.

Vernacular names: Vernacular names by the Assamese are Moonga or Mooga, cf. Wardle (1879) J. of the Soc. of Arts: p. 501. Further names used for the moths, larvae or the products of the larvae of *assamensis* sensu lato were Ban Munga, Mooga, "*Antheraea Mooga*", Moogah, Moogha, Moonga, Moongah, Mouga, Mounga, Muga, Indian muga silk, Muza, Munga. Above listed names might include misspellings. Further vernacular names are known for *Antheraea* (*Antheraeopsis*) *mezankooria* MOORE, 1862 [*incertae sedis*], which might be either related to *assamensis*, or a junior subjective synonym of *assamensis* (HELFER,

1837). For further details on vernacular names in the genus *Antheraea* HÜBNER, 1819 ("1816") please cf. Paukstadt, U. & Paukstadt, L. H. (2006b) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 4 (3): pp. 99–132.

Synonyms: There are several incorrect subsequent spellings, errors in authorship and publication year, and misinterpretations on *assamensis* present in literature, which are not listed herein. The most important synonyms recognized for *assamensis* as presently defined are:

Saturnia assama WESTWOOD, 1848. This taxon was described in The Cabinet of Oriental Entomology: pp. 41–42, col.-pl. XX (20), fig. 2 (♂ adult). The type locality of *assama* is Assam (communicated by Lieutnant Robinson). The color figure in Westwood (1848) shows a light reddish brown ♂ specimen with rounded forewing apices, which is obviously similar to the typical *assamensis* sensu lato instead to *castanea*. Swinhoe (1892) Cat. Lep. Het. Oxford Mus., part 1, Sphinges and Bombyces: p. 246, was likely the first who placed *assama* as a junior subjective synonym to *assamensis*, which was followed by Seitz *in* Seitz (ed.) (1928) Gross-Schmett. Erde, 10: p. 511, although Seitz *in* Seitz (ed.) (1928) Gross-Schmett. Erde, 10: p. 499, recorded *assama* as a taxon of *Antheraea* distributed in Assam. Some authors erroneously noted that Helfer being the author of *assama*, which likely based on an error by Wood-Mason (1886) Ann. Rep. Indian Mus.: p. 21.

Antheraea mezankooria MOORE, 1862 [*incertae sedis*]. This taxon was described in the Trans. Ent. Soc. London, (3) 1 (4): p. 318. The silkworm is called mezankorie by the Assamese. The taxon was given a name referred either to the vernacular name or to the name of the food plant of the silkworm, which is called maizankurry or addakurry (*Tetranthera polyantha* WALL.). The description based on the silk of an unknown taxon. The adults and the preimaginal instars were unknown to Moore. We consider *mezankooria* MOORE, 1862 being a valid name, although the name based on a description of the silk of a taxon only, cf. ICZN (1999) Art. 23.3.2.1. We are interpreting the silk of this taxon as "part of an animal". Though we are presently unable to place the silk and the name to any of the already described taxa, we treat the name as a junior subjective synonym of *assamensis* following Holloway (1987) The moths of Borneo, part 3: p. 101. Wood-Mason (1886) Ann. Rep. Indian Mus., 1885–1886: p. 21, placed Mezankoori Muga, the name based on pale cocoons of *assama*, into synonymy to *Antheraeaopsis assama* HELFER [**recte** *assama* WESTWOOD, 1848]. Seitz *in* Seitz (ed.) (1928) Gross-Schmett. Erde, 10: p. 511, was the first who treated *mezankooria* as a junior subjective synonym of *assamensis* WESTWOOD [**recte**

assamensis (HELFER, 1837)]. Hutton (1869) J. agric. hort. Soc. India, (N.S.) I (4), 1867–69: p. 349, remarked that the word "mezankooree" (= *mezankooria* MOORE) being applied by the Assamese not to a worm distinct from *A. Assama* [sic] (WESTWOOD, 1847) but to a particular quality of silk of the latter. Paukstadt, Brosch & Paukstadt (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 9: 59 pp., treated in A Preliminary Checklist of the Names of the Worldwide Genus *Antheraea* HÜBNER, 1819 ("1816") (Lepidoptera: Saturniidae) *mezankooria* MOORE, 1862 as an *incertae sedis* name, which description based on the silk only and likely to be a junior synonym of *assamensis* (HELFER, 1837).

mooga; Chu & Wang (1993) The Saturniidae of China (Lepidoptera). Sinozoologia (Beijing), 10 (5), erroneously used the vernacular name mooga as a species-group name in the genus *Antheraea* HÜBNER, 1819 ("1816").

Hybridizations and sericulture: inter-specific pairings with a taxon of the *mylitta*/*frithi*-group (sensu Paukstadt, Brosch & Paukstadt 1999) of the subgenus *Antheraea* HÜBNER, 1819 ("1816") are known from literature. Jolly, Sen, Sonwalkar & Prasad (1979) non-mulberry silks: pp. 83 and 135, and Jolly (1980) Distribution and Differentiation in *Antheraea* species: p. 11, reported on inter-specific pairings of *Antheraea mylitta* (DRURY, 1773) x *Antheraea assamensis* (HELFER, 1837) and reciprocals. Jolly, Sen, Sonwalkar & Prasad (1979) noted that the cross combination *mylitta* x *assamensis* and reciprocals was found steril. In *assamensis* (HELFER, 1837) x *mylitta* (DRURY, 1773) the oviposition was observed to be quite normal, but the eggs failed to hatch. The reciprocal cross resulted in extremely poor hatching, but the larvae could not survive. For details on hybridizations in the genus *Antheraea* HÜBNER, 1819 („1816") please cf. Paukstadt, Brosch & Paukstadt (2000) – Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 9: 59 pp., in a "Preliminary Checklist of the Names of the Worldwide Genus *Antheraea* HÜBNER, 1819 ("1816") (Lepidoptera: Saturniidae)".

In Assam the moth produce silk called "muga silk", cf. Peigler & Wang (1996) Saturniid Moths of Southeastern Asia: p. 238. This is the "Muga Moth" of the silk-industry. Jolly, Sen, Sonwalkar & Prasad (1979) non-mulberry silks: pp. 1–138, text-fig. 2 [territorial spread of non-mulberry sericulture in India], discussed on general aspects of the non-mulberry silk industry. Part of the manual deals with the economically important tropical muga (= *assamensis* (HELFER, 1837). Jolly, Sen, Sonwalkar & Prasad (1979) noted that the muga silkworm is cultivated only in Assam, possibly because its characteristic ecological requirements are found

only in its natural abode. Eastern Goalpara and the southwestern part of the Kamrup districts in lower Assam are the major seed cocoon areas. Commercial rearing is practised mainly in Sibsagar and Lakhimpur, to lesser extent in Nowgong, Darrang and other districts. Geoghegan (1880) Some Accounts of Silk in India especially of the various Attempts to Encourage and Extend Sericulture in that Country: 177 pp., is the author of a valuable report on the silk industry to the Government of India. His contribution in particular stated that different vernacular names were used for the same species for seed from particular areas, origin or the number of brood. Geoghegan remarked in a footnote that Colonel Rowlatt, Deputy Commissioner of Maunbhoom speaks of three varieties of cocoons, one raised in Asarh called mooga, the second in Bhadro and Assin called daba, and the third in Cheit called ampatee. Besides these a considerable quantity of cocoons is gathered in the jungles; this last being evidently the Board's bonbunda. The contribution by Hugon (1837) in the Asiatic Society's Journal was cited by Geoghegan and details on the rearing of the silk worms were extracted. Stack (1885) The Entomologist, 18: pp. 213–217, reported on three domesticated silkworms of Assam. Those are the pát or mulberry worm (*Bombyx textor*), the muga or sum-feeding worm (*Antheraea assama*) [misinterpretation, = *Antheraea* (*Antheraeopsis*) *assamensis* (HELFER, 1837)], whose cocoons can be reeled, and the castor-oil worm (*Attacus ricini*) [misinterpretation, = *Samia ricini* (Anonymous)], yielding a silk which is never reeled, but spun by hand. Silbermann (1897) Die Seide, Vol. 1: pp. Ix, 285, 294, 309–311, and 332, provided some valuable information on the silk and food plants of *Antheraeopsis* in India. He distinguished two "species", those are *assama* and *mezankooria*.

Antheraea (*Antheraeopsis*) *subvelata* BOUVIER, 1930

[presently treated as junior subjective synonym of *assamensis* (HELFER, 1837)]

Original citation and spelling: "*Antheraea brunnea* **subvelata** subsp. nov."

Original description: Bouvier, E.-L. (1930): Seconde Contribution à la Connaissance des Saturnioïdes du Hill Museum. – Bulletin of the Hill Museum (Wormley, Witley), 4 (1): p. 92, no. 166; plates 4 (2): pl. IX fig. 2 (♂ holotype).

Type locality: [India], Assam, Shillong.

Geographical distribution: This taxon was described from Assam and therefore the name *subvelata* should be applied to the Assamese

populations of the subgenus *Antheraeopsis* only. The name *subvelata* is presently treated as a junior subjective synonym of *assamensis* (HELFER, 1837). A ♂ adult, which is preserved in the Museum national d'Histoire naturelle / MNHN (Paris) from Chapa, Tonkin (northern Vietnam) bearing a pin-label by Bouvier: "*brunnea subvelata*". This specimen is most probably not conspecific with any taxon from Assam but is similar to the populations of the subgenus *Antheraeopsis*, which are common in the lowlands of the Mekong region (Vietnam and Laos).

Etymology: Not explicitly given by Bouvier (1930).

Type material: The description based on a single ♂ adult only. The ♂ holotype by original designation is preserved in The Natural History Museum / BMNH (London), not examined by us.

Taxonomic notes: The ♂ specimen illustrated by Bouvier (1930) might be conspecific with *assamensis* (HELFER, 1837) from Assam. It is necessary to examine the type specimen of *subvelata* and to designate a neotype for *Saturnia assamensis* HELFER, 1837 prior drawing new taxonomic conclusions. Regarding the status of *subvelata* we follow Toxopeus (1940) Ent. Med. Ned.-Indie, 6 (1): p. 15, who proposed that *subvelata* should be treated as a junior subjective synonym of *assamensis* (HELFER, 1837). However, the name *subvelata* was applied in subspecific rank to the wrong species *brunnea* VAN EECKE, 1921, which was described from the island of Sumatra. The taxon *brunnea* is considered to be not conspecific with any taxon of the Indian Subcontinent. Paukstadt, Brosch & Paukstadt (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 9: 59 pp., remarked in "A Preliminary Checklist of the Names of the Worldwide Genus *Antheraea* HÜBNER, 1819 ("1816") (Lepidoptera: Saturniidae)" that the name *subvelata* BOUVIER, 1930 being of unclear status.

General notes: With exception of the original description by Bouvier (1930) Bull. Hill. Mus. (Witley), and short notes by Bouvier (1936) Mém. Mus. Nat. d'Hist. Nat. (Paris): p. 161, by Toxopeus (1940) Ent. Med. Ned.-Indie, 6 (1): p. 15, and by Holloway (1987) The moths of Borneo, part 3: p. 101, the name *subvelata* is absent in important standard literature.

Synonyms: Incorrect subsequent spellings and misinterpretations might be occasionally present in literature, which are not listed herein. The names *biedermanni* NIEPELT, 1932 and *subvelata* BOUVIER, 1930 might be synonyms.

Hybridizations and sericulture: No records in literature found thus far, which could be attributed to the taxon *subvelata* BOUVIER, 1930 with certainty.

Antheraea (*Antheraeopsis*) *biedermanni* NIEPELT, 1932

[presently treated as junior subjective synonym of *assamensis* (HELFER, 1837)]

Original citation and spelling: "*Antheraea biedermanni* Niep. sp. n."

Original description: Niepelt, W (1932): Neue orientalische Saturniiden. Int. Ent. Zeitschr., 26 (8): pp. 90–91, the ♀ adult was illustrated on pl. II fig. 3.

Type locality: [India], Assam, Naga Hills, 1,500 m.

Geographical distribution: This taxon was described from the Naga Hills of Assam.

Etymology: The taxon was named in honour of Mr. R. Biedermann (Winterthur) who compared the ♀ of *biedermanni* with ♀ adults of *compta* and *helferi*.

Type material: The description based on a single ♀ specimen only. The present location of the ♀ holotype by monotypy was not determined by us.

Taxonomic notes: The illustration of *biedermanni* is unmistakable and therefore *biedermanni* is considered to be a junior subjective synonym of *assamensis*. Paukstadt, Brosch & Paukstadt (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 9: 59 pp., remarked in "A Preliminary Checklist of the Names of the Worldwide Genus *Antheraea* HÜBNER, 1819 ("1816") (Lepidoptera: Saturniidae)" that the name *biedermanni* NIEPELT, 1932 most likely represents a junior synonym of *assamensis* (HELFER, 1837).

General notes: When Niepelt (1932) remarked (p. 90) that *biedermanni* is close to *helferi* MOORE, 1859, he unfortunately has had no ♀ adult of *helferi* before him. Therefore he asked Mr. Biedermann (Winterthur) to compare a colored illustration of *biedermanni* with a ♀ of *helferi* and a ♀ of *compta* ROTHSCHILD *in* Rothschild & Jordan, 1899.

Synonyms: The names *biedermanni* NIEPELT, 1932 and *subvelata* BOUVIER, 1930 might be synonyms. Incorrect subsequent spellings and misinterpretations might be occasionally present in literature, which are not listed herein.

Hybridizations and sericulture: No records in literature found thus far, which could be attributed to the name *biedermanni* NIEPELT, 1932 with certainty.

Antheraea (*Antheraeopsis*) *castanea* JORDAN, 1910

Original citation and spelling: "**Antheraea castanea** sp. nov."

Original description: Jordan, K. (1910): New Saturniidae. – Novitates Zoologicae (Tring), XVII (3): pp. 470–476.

Type locality: [India], Assam, Khasia [Khasi] Hills.

Geographical distribution: The geographical distribution of *castanea* might be restricted to the higher elevations of Assam and likely to further higher mountain regions of the Himalaya. The limits of the geographical distribution of *castanea* are still poorly known. A similar taxon is known from the higher mountain regions of Myanmar, the Yunnan Plateau, and the Mt. Fansipan in northern Vietnam. This is the closely related species *Antheraea* (*Antheraeopsis*) *mezops* BRYK, 1944. The taxa *castanea* and *mezops* are clearly distinct in the ♂ genitalia structures and therefore considered by us to be not conspecific. Records of *castanea* in literature from further regions based on misinterpretations of taxa of the *youngi*-group (sensu Nässig 1991). Nässig, Lampe & Kager (1996a) Heteroc. Sumatr. (Göttingen), 10 : p. 48, and Nässig, Lampe & Kager (1996b) Heteroc. Sumatr. (Göttingen), 10, Appendix I: p. 124 placed the populations from northern Thailand to *castanea youngi* WATSON, 1915 [**error** in combination]. Brosch, Naumann, Paukstadt, L. H., Paukstadt, U., Tcherniak & Beeke (1999) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 6: p. 44, recorded *castanea* JORDAN, 1910 [?] for the fauna of Laos from altitudes from 850 m and 1400–1600 m. The assignment to *castanea* was explicitly tentative. Presently we do not believe that the specimens in question belong to *castanea* but to another taxon closely related to *youngi* or *youngi* sensu lato itself. Thus far we have not seen any taxon of the *castanea*-group or true *castanea* from Thailand, Peninsular Malaysia, the Philippines, and the Indonesian Archipelago.

Etymology: Not explicitly given by Jordan (1910) but the name *castanea* might reflects the coloration of the species, which is chestnut colored according to the original description. More unlikely the name referred to the Chestnut-tree, family Fagaceae DUM., subfamily Castaneoideae, genus *Castanea* MILL.

Type material: The description based on four ♂ and three ♀ syntype specimens. No holotype was designated by Jordan (1910). Thus far no valid lectotype designation is known to us. The type material is preserved in The Natural History Museum / BMNH (London), not examined by us.

Taxonomic notes: The name *castanea* JORDAN, 1910 was erroneously applied to several taxa of the subgenus *Antheraeopsis*. The contributions

by Nässig, Lampe & Kager (1996a) Heteroc. Sumatr. (Göttingen), 10, and Nässig, Lampe & Kager (1996b) Heteroc. Sumatr. (Göttingen), 10, Appendix I, caused some confusion because the name *castanea* was applied to a lowland taxon of the *youngi*-group (sensu Nässig 1991). The taxon, which was described by Jordan (1910) shows more pointed forewing apices and a more conspicuous white scaling ventrally and is most likely not closely related with the taxa of the *youngi*-group (sensu Nässig 1991). *A. castanea* is treated herein as a distinct species and well distinguishable in the habitus, the external morphology and in the ♂ genitalia structures from *assamensis* from Assamese populations.

General notes: The preimaginal instars of *castanea* probably remains unknown thus far. A few notes in literature on the life-history of populations of the subgenus *Antheraeopsis* cannot assigned to any particular taxon of this subgenus with certainty and therefore the true identity remains unknown. The early stages of *castanea youngi* [**error** in combination] from northern Thailand, which were described by Nässig, Lampe & Kager (1996b) Heteroc. Sumatr. (Göttingen), 10, Appendix I, belong not to *castanea* as reported, but to a member of the *youngi*-group (sensu Nässig 1991), either *assamensis* sensu lato or more likely *youngi* sensu lato.

Synonyms: There are some incorrect subsequent spellings and misinterpretations present in literature, which are not listed herein.

Hybridizations and sericulture: Some records in literature on hybridizations and sericulture cannot be assigned to the taxon *castanea* JORDAN, 1910 or to any other taxon of the subgenus *Antheraeopsis* WOOD-MASON, 1886 with certainty.

Antheraea (*Antheraeopsis*) *mezops* BRYK, 1944

Original citation and spelling: "A. assamensis (HELFER) ssp. mezops m. (subsp. nova)"

Original description: Bryk, F. (1944): Entomological Results from the Swedish Expedition 1934 to Burma and British India. Lepidoptera: Saturniidae, Bombycidae, Eupterotidae, Uraniidae, Epiplemidae and Sphingidae. Gesammelt von René Malaise. – Arkiv för Zoologi utgivet av K. Svenska Vetenskapsakademien (Kopenhagen), Band 35 A (2): pp. 1–56, 1 map, 6 pls., pl. I fig. 1 (♂ holotype).

Type locality: Birma [Myanmar], Kambaiti, 2,000 m.

Geographical distribution: The name *mezops* is considered to be the correct name for the populations of the subgenus *Antheraeopsis* WOOD-

MASON, 1886, which geographical distribution was recorded from the mountain regions of northern Myanmar via the Chinese Yunnan Plateau to northern Vietnam. Besides the type locality, *mezops* was recorded from the highest mountain in northern Vietnam close to the Chinese border, the Mt. Fan-si-pan (3,143 m / 10,312 ft), from the P. R. China, southwest Yunnan, Mt. Daxue, and from central Yunnan, Mt. Wuliang. The Mt. Fan-si-pan is part of the mountainous southern foothills of the Chinese Yunnan Plateau. The taxon *mezops* obviously prefers high elevations. The altitudinal distribution was recorded from 1,600 up to 2,500 m (Myanmar and Vietnam), mostly above 2,000 m in the Mt. Fan-si-pan environment, and singletons are even from 3,000 and 3,800 m (P. R. China). In lower elevations of the same localities distinct populations of the subgenus *Antheraeopsis* are present. There are obviously two sympatric species present in the range of *mezops*, of which *mezops* obviously prefers high elevations much above 1,600 m and a further taxon or further taxa occupy the lowlands and the lower mountain regions. Due to the distinct altitudinal distribution both species remain isolated from each other. For further details cf. Paukstadt, Brosch & Paukstadt (1999a) Entomol. Zeitschr. (Stuttgart), 109 (11): pp. 450–457.

Etymology: Not explicitly given by Bryk (1944).

Type material: The taxon *mezops* was described by Bryk (1944) as subspecies of *assamensis* (HELFER 1837) after ten ♂ adults from northern Myanmar, Kambaiti, 2,000 m. The type series consists of the ♂ holotype by original designation and nine ♂ paratypes. The type material is preserved in the Naturhistoriska Riksmuseet Stockholm (Sweden). Color pictures of the type material and of the ♂ genitalia structures were received for comparisons.

Taxonomic notes: Despite missing illustrations of the described specimens the description of *mezops* is unmistakable. The taxon *mezops* is presently treated as a member of the *castanea*-group (= *assamensis*-group, sensu Nässig, 1991). Holloway (1987) The moths of Borneo, part 3: p. 101, listed *assamensis mezops* BRYK, 1944 in subordination of *assamensis* HELFER [not code-conform citation of (Helfer)]. Holloway (1987) referred to the populations of *Antheraeopsis* from Borneo, which are not conspecific with *assamensis*. Due to significant differences in the morphology of the ♂ genitalia, we believe that *mezops* being neither a subspecies of *assamensis* nor of any other taxon of the *castanea*-group. Bristle-tufts were found being present inside the saccus of the ♂ genitalia apparatus, which were so far reported in the Chinese *Actias angulocaudata* NAUMANN & BOUYER, 1998 only, cf. Naumann & Bouyer (1998) Entomol. Zeitschr., 108 (6): pp. 224–231. Therefore the

name *mezops* was re-instated and the rank was elevated to species level by Paukstadt, Brosch & Paukstadt (1999a) Entomol. Zeitschr. (Stuttgart), 109 (11): pp. 450-457. Watson (1923) The Entomologist, LVI [no. 723]: pp. 171–173, described a new species of *Antheraeopsis* from Chengtu, Sichuan, Westchina: *chengtuana* WATSON, 1923. We had not examined the ♀ holotype by monotypy but some ♂ adults from the type locality of *chengtuana*, which are clearly not conspecific with *mezops*.

General notes: The ♂ holotype was figured by Bryk (1944) Arkiv. Zool., 35A (2): pl. 1 fig. 1. The preimaginal instars of *mezops* remain unknown and nothing is known on its biology and ecology thus far. The ♀ adult of *mezops* was described and figured dorsally and ventrally for the first time by Paukstadt, Brosch & Paukstadt (1999a) Entomol. Zeitschr. (Stuttgart), 109 (11): pp. 450-457, fig. 2, based on a ♀ specimen from the Mt. Fan-si-pan, Vietnam in Coll. Dr. R. Brechlin (Pasewalk). The ♂ genitalia structures of *mezops* from northern Vietnam were illustrated by Paukstadt, Brosch & Paukstadt (1999a) Entomol. Zeitschr. (Stuttgart), 109 (11): fig. 3 (dissection U. Paukstadt No. 0631) and compared to other taxa of the subgenus *Antheraeopsis*.

Synonyms: "undescribed taxon from Mt. Fan-si-pan, Vietnam"; Paukstadt, U. & Paukstadt, L. H. (1998) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 4: 34 pp., 2 col.-pls. (21 figs.). No further synonyms, incorrect subsequent spellings or further misinterpretations were found being recorded in literature.

Hybridizations and sericulture: No records were found in literature thus far, which could be assigned to the name *mezops* with certainty.

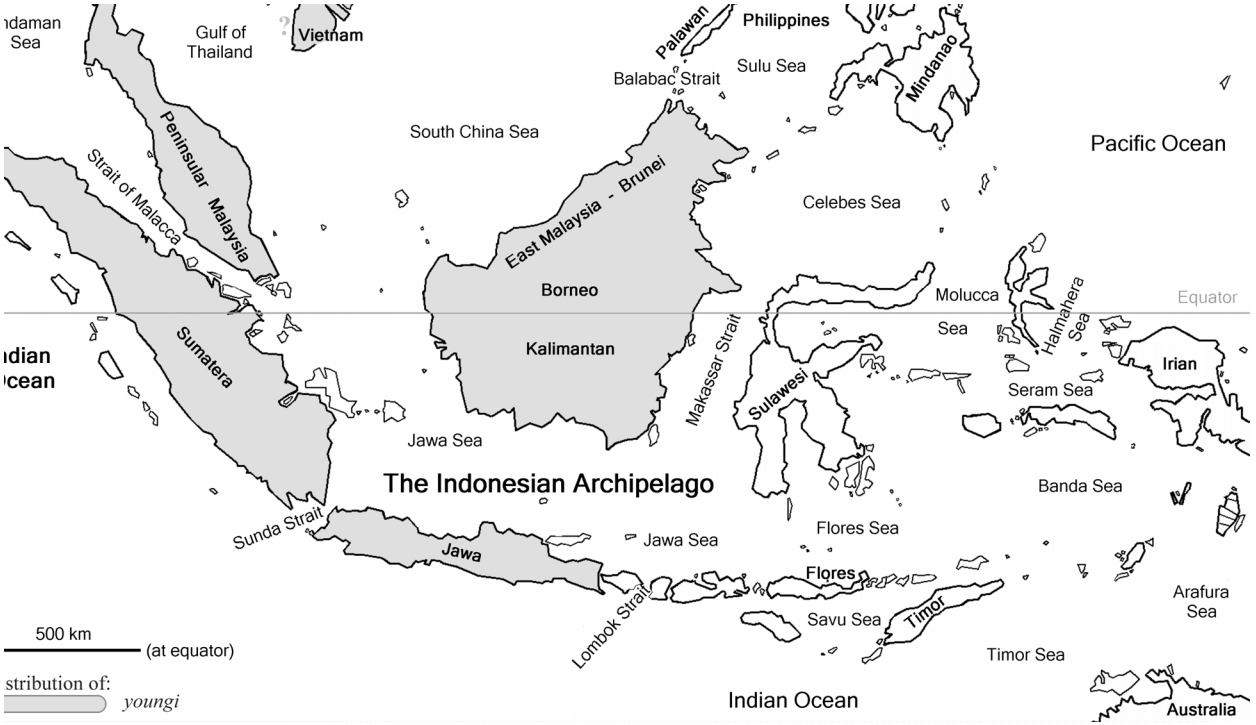
Antheraea (*Antheraeopsis*) *youngi* WATSON, 1915

Original citation and spelling: "**Antherea youngi** (Nov. sp.)"

Original description: Watson, J. H. (1915): Some new forms of Malayan Saturnidae [sic!]. – Tijdschrift voor Entomologie, LVIII: pp. 279–280.
Remarks: Schüssler *in* Strand (edit.) (1933) Lepidopterorum Catalogus Pars 56: p. 174, listed this taxon under the name of *Youngei* WATSON, Ann. Rept. Manch. Ent. Soc. p. [?] (1914). This publication might be older than the presently recognized original description by Watson (1915) but was not located in any library us far.

Type locality: [eastern Malaysia], Borneo, Sarawak, Bau.

Geographical distribution: *Antheraea* (*Ao.*) *youngi* WATSON, 1915 as presently defined is a widespread taxon of the *youngi*-group (sensu



Map 1. The Indonesian Archipelago. Geographical distribution of *Antheraea* (*Antheraeopsis*) *youngi* WATSON, 1915 in the Indonesian Archipelago and adjacent regions.

Nässig 1991) and distributed in southern Thailand, southern Myanmar, Peninsular Malaysia, Borneo, Sumatra, and Java. The lowland populations of the Mekong region (Cambodia, Laos, and Vietnam) are tentative placed to the name *youngi*. The status of the lowland populations of the *youngi*-group (sensu Nässig 1991) from northern Thailand and Myanmar, that means from all locations north of the Isthmus of Kra, needs determination. The taxon *youngi* ranges in lowlands and lower montane regions with moderate climates. Altitudinal records are from Borneo from the lowland rainforests, cf. Holloway (1987) The moths of Borneo, part 3: pp. 101, 194. In the Indonesian Archipelago records of the altitudinal distribution of *youngi* sensu lato are from 50–1,600 m (mostly 900–1,600 m), cf. Paukstadt, Suhardjono & Paukstadt (2003) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 14: pp. 25–64. More precise observations on the altitudinal distributions of the taxa of the family Saturniidae BOISDUVAL, 1837 ("1834") in general were done by U. & L. H. Paukstadt in various altitudes in the province of Nanggroe Aceh Darussalam, northern Sumatra. The altitudinal distribution of *youngi* (Aceh) was observed from 109 to 1,798 m without any observed preferrence to a particular altitude, cf. Paukstadt & Paukstadt (2007f) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 5 (6): pp. 289 (table 1) and 291 (table 2). For Peninsular Malaysia and Thailand altitudinal records are either lacking or are considered to be unreliable. A single record from the island of Sulawesi, cf. Brechlin (2000a) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), N.F. 20 (3/4): pp. 291–310, so far did not confirms the geographical distribution of the subgenus *Antheraeopsis* for the island of Sulawesi.

Etymology: The taxon *youngi* was named in honour of Mr. H. S. Young, who has collected the first specimen.

Type material: The description of *youngi* based on three ♂ adults. The ♂ holotype by original designation (called "type" in the original description) was reported by Watson to be preserved in his collection, while the ♂ paratypes (called "cotypes" in the original description) were reported to be preserved in Museum Sarawak and in Museum Tring. The present location of the type material was not determined by us but most likely one or two ♂ types are preserved in The Natural History Museum / BMNH (London).

Taxonomic notes: There is some confusion in Nässig, Lampe & Kager (1996a) Heteroc. Sumatr. (Göttingen), 10: p. 49, and Nässig, Lampe & Kager (1996b) Heteroc. Sumatr. (Göttingen), 10, Appendix I: p. 126, on the identity of the northern Thai populations of *Antheraeopsis*. The

authors assumed (p. 49) that the Thai populations, which were placed to *assamensis* by Pinratana & Lampe (1990) Moths of Thailand, vol. I, belong to typical *castanea*, while the same authors (p. 126) placed the northern Thai populations of *Antheraeopsis* to *castanea youngi*. In Coll. L. H. Paukstadt (Wilhelmshaven) large series of populations of the subgenus *Antheraeopsis* from northern and southern (Peninsular) Myanmar and from northern and southern (Peninsular) Thailand are preserved. Specimens from Myanmar and Thailand were observed to be highly variable moths. Most of the specimens show the "typical" dark reddish brown ground coloration known for *castanea* and *youngi* and only a few specimens show the pale brown ground coloration, which is known for *assamensis* sensu lato from Assam. Specimens from Myanmar and Thailand showing the extremes in color morphology were dissected by us but no obvious differences in the ♂ genitalia structures were found. Both color morphs belong obviously to the same taxon. Thangavelu, Bhagowati & Chakraborty (1987) reported on color polymorphism in *Antheraea assama* WESTWOOD [misinterpretation, **recte** *assamensis* (HELFER, 1837)] for the first time. Black, intermediate and normal brown colored ♂ and ♀ adults emerged from cocoons collected in the wild of the Jorhat District of Assam bordering the foot hills of Naga Hills. The authors reported that the black color of the adults appears to be a recessive character against brown (normal) color. Data recorded and compared on morphological characters of the adults indicate some differences to variing degree among the black and brown colored adults and its preimaginal stages including cocoons. The occurrence of color polymorphism confirms the existence of natural variants in *assamensis*. The question remains, what is the correct name or what are the correct names for the populations of the subgenus *Antheraeopsis* of Assam. In case that the name *assamensis* would be applied to the lowland populations of the subgenus *Antheraeopsis* of Assam, the taxon *youngi* might be the closest relative of *assamensis* and finally *assamensis* has not to be placed in the *castanea*-group (sensu Paukstadt, Paukstadt & Brosch 1998) but in the *youngi*-group (sensu Nässig 1991) instead. Final conclusions on the relationships of *assamensis*, *castanea*, and *youngi* need to be drawn after a neotype designation of *assamensis*. As long as the name *assamensis* is not fixed to a particular specimen / population all taxonomic proposals have to be considered to be tentative and preliminary. The lowland populations of the subgenus *Antheraeopsis* of the Southeast Asian Mainland and the Greater Sunda Islands of the Indonesian Archipelago are presently assigned to the name *youngi*, although *youngi* was originally described

from the island of Borneo. With certainty the populations of the subgenus *Antheraeopsis* of the Malay Peninsula (including Peninsular Thailand and Peninsular Myanmar) and the Greater Sunda Islands of the Indonesian Archipelago are very close related. The distribution pattern of the taxa of the subgenus *Antheraeopsis* might confirm that *Antheraeopsis* represents a historical old group and therefore genflow between the populations of the subgenus *Antheraeopsis* of a region, which is terminated as Greater Sunda Islands, the Malay Peninsula, and the Mekong region today, was possible during the glacial or post glacial epoches. Due to the fact that the island of Java was repeatedly first separated from the Asian Mainland prior Sumatra and finally Borneo, the populations of the subgenus *Antheraeopsis* of Java are most probably closer related to those of Sumatra than to those of Borneo, and the populations of Borneo are closer related to those of the Malay Peninsula than the populations of Sumatra to those of the Malay Peninsula.

General notes: Color illustrations of the adults of *youngi* (Peninsular Malaysia) were presented by Lampe (1984) Neue Ent. Nachr. (Keltern), 11: col.-pl. 5 fig. 4 (♂ adult) and Lampe (1985) Malayan Saturniidae from the Cameron & Genting Highlands: col.-pl. 5 fig. 4 (♂ adult). Holloway (1987) The Moths of Borneo, part 3: col.-pl. 7 fig. 11 (♂ adult) and 12 (♀ adult) illustrated specimens from Borneo. Pinratana & Lampe (1990) Moths of Thailand, Vol. One: iv, col.-pls. 19 (♂ adult) and 20 (♀ adult) illustrated specimens from Thailand under the name of *assamensis*. Nässig, Lampe & Kager (1996a) Heteroc. Sumatr. (Göttingen), 10: col.-pl. 10 fig. 52 (♂ adult) and col.-pl. 12 fig. 61 (♀ adult) illustrated specimens from Sumatra. Some of the earliest notes on the biology and a figure of a mature larva of *youngi* from Sumatra were given by Van Eecke (1930) De Heterocera van Sumatra, eerste deel: pp. 410–411, fig. 40. Incomplete descriptions of the life-history of *youngi* from northern Thailand were presented by Nässig, Lampe & Kager (1996b) Heteroc. Sumatr. (Göttingen), 10, Appendix I: p. 127, col.-pls. 1–2, and 6–7, figs. 11–15, 60–62, 74, 76, and 85–86. Populations of *youngi* from Borneo and Java were repeatedly reared by L. H. Paukstadt (Wilhelmshaven). No obvious differences were observed to be present in the larval morphology between the populations of Borneo, Sumatra and Java. Paukstadt, L. H. & Paukstadt, U. (2001) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 17‑33, 8 b/w figs, col.-pl. (11 figs), described and illustrated the early stages of *youngi* WATSON, 1915 of the island of Java. Nässig, Lampe & Kager (1996b) Heteroc. Sumatr. (Göttingen), 10, Appendix I: pp. 126–127, col.-pl. 1 figs. 11–13, col.-pl. 2 figs. 14–15, col.-pl. 6 figs., 60–62, 74, and col.-pl. 7 figs. 76,

and 85–86 described and figured the early stages of *youngi* from Thailand.

Synonyms: There are no synonyms as such but incorrect subsequent spellings, erroneous combinations, and misinterpretations known from literature.

youngei; Seitz *in* Seitz (ed.) (1928) Gross-Schmett. Erde, 10: pp. 511, 520.

Youngei; Schüssler *in* Strand (ed.) (1933) Lep. Cat., 56: p. 174.

Youngei; Schüssler *in* Strand (ed.) (1934) Lep. Cat., 65: pp. 639, 767.

Youngei; Leefmans (1930) De Trop. Natuur, 5–6: p. 93.

yongei; Jolly, Sen, Sonwalkar & Prasad (1979) non-mulberry silks: pp. 6–7.

castanea youngi; Nässig, Lampe & Kager (1996b) Heteroc. Sumatr. (Göttingen), 10, Appendix I: p. 126.

A.ntheraea (*Antheraeopsis*) *youngi* WATSON [lapsus calami], 1915; Brechlin (2001) Nachr. Entomol. Ver. Apollo, N.F. 22 (1): p. 37.

Hybridizations and sericulture: No records in literature were found thus far, which could be assigned to Southeast Asian *youngi* with certainty.

Further readings on *Antheraea* (*Ao.*) *youngi* WATSON, 1915 including its presently recognized junior subjective synonyms *brunnea* VAN EECKE, 1921 and *rubiginea* TOXOPEUS, 1940.

Paukstadt, Paukstadt, & Brosch (1998) Entomol. Zeitschr. (Essen), 108 (8): pp. 317–324, revised the status of *youngi* WATSON, 1915 in a contribution on the taxa of the genus *Antheraea* HÜBNER, [1819] from Sumatra. The authors remarked that *youngi* is considered being a distinct species and no subspecies of *castanea* JORDAN, 1910. The taxa *youngi* and *castanea* were considered being members of different species-groups of the subgenus *Antheraeopsis* WOOD-MASON, 1886. The authors remarked that no sufficient material was present in their collections to investigate the status of the populations of *youngi* from Sumatra and Peninsular Malaysia finally but *youngi* was considered with certainty to be no subspecies of *castanea*. The authors further noted that *brunnea* VAN EECKE, 1922 [**recte** 1921] might be a junior synonym of *youngi*, and *rubiginea* TOXOPEUS, 1940 either a junior synonym of *youngi* or *brunnea*. It has to be investigated whether the populations of *youngi* from Borneo, West Malaysia, and Sumatra are conspecific. If not, the name *brunnea* might be applied to the populations of Sumatra and eventually West Malaysia and/or Java.

Paukstadt, Brosch & Paukstadt (1999a) Entomol. Zeitschr. (Stuttgart), 109 (11): pp. 450–457, remarked in a contribution on *A.* (*Antheraeopsis*) *mezops* BRYK 1944 (rev. stat.), from Myanmar and Vietnam that *youngi* WATSON, 1915 was described as a distinct species, but placed as a subspecies to *assamensis* by Seitz (1928), which was followed by almost all authors till 1991. Nässig, Lampe & Kager (1996) placed *youngi* as a subspecies to *castanea* (JORDAN, 1910), though the true identity of *castanea* was obviously not clear to the authors. Nässig & Treadaway (1998) re-instated *youngi* in species rank following a hint by Paukstadt, Brosch & Paukstadt.

Brosch, Naumann, Paukstadt, L. H., Paukstadt, U., Tcherniak & Beeke (1999) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 6: pp. 33–58, 2 col.-pls. (8 figs.), recorded *castanea* JORDAN, 1910 [?] in a contribution on „Anmerkungen zur Brahmaeiden- und Saturniidenfauna von Laos und Kambodscha (Lepidoptera: Bombycoidea) ("Remarks on the Brahmaeidae and Saturniidae of Laos and Cambodia")" for the fauna of Laos from altitudes from 850 m and 1400–1600 m. The assignment to *castanea* was tentative and the authors remared that the determination to be confirmed within a subgeneric revision of *Antheraeopsis* WOOD-MASON, 1886.

Remarks: Due to the low elevations of the collecting sites we presently do not believe that the populations belong to *castanea* but to *youngi* sensu lato, or another closely related taxon from the Mekong Region.

Paukstadt, Brosch & Paukstadt (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 9: 59 pp., placed in a "Preliminary Checklist of the Names of the Worldwide Genus *Antheraea* HÜBNER, 1819 ("1816")" the taxa of the subgenus *Antheraeopsis* WOOD-MASON, 1886 into the *castanea*-group and into the *youngi*-group. All taxa of *Antheraeopsis* were listed including its junior synonyms, incorrect subsequent spellings, errors in authorship, errors in publication date, vernacular names erroneously treated as species names, taxa of uncertain identity (*assamensis*), *incertae sedis* (*mezankooria*), unclear status (*subvelata*, *rubiginea*, *formosana*), *species inquirenda* (*yunnanensis*), and taxa of doubtfull combination (*paniki sahi*).

Paukstadt, L. H. & Paukstadt, U. (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), 16 (3): pp. 109–124, noted that the doubtful record of a taxon of the subgenus *Antheraeopsis* WOOD-MASON, 1886 from Sulawesi by Brechlin (2000), was not included into the number of recognized species of *Antheraea* for Sulawesi by them.

Brechlin (2001) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (1): pp. 37–40, removed *brunnea* VAN EECKE, 1921 from synonymy to *youngi* WATSON, 1915 and gave some valuable comments on the publication year of the original description, which was confirmed to be the year 1921 instead of 1922 as erroneously mentioned by some authors. Unfortunately *brunnea* was removed from synonymy after comparisons of specimens from Borneo and Sumatra only. There was no material before Brechlin from Java and the Malay Peninsula. Brechlin (2001) remarked that the status of *rubiginea* TOXOPEUS, 1940 remains unclear and further studies are required.

Paukstadt, U. & Paukstadt, L. H. (2001a) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 3–16, 45 figs., presented the circadian flight times of ♂ and ♀ *youngi* WATSON, 1915 from the Halimun env., West Java (1,270 m) (fig. 27, 28).

Paukstadt, L. H. & Paukstadt, U. (2001) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 17–33, 8 b/w figs, col.-pl. (11 figs.) described and figured the early stages of *Antheraea* (*Antheraeopsis) youngi* WATSON, 1915 (Java) for the first time. The authors remarked that *A. assamensis rubiginea* was

described by Toxopeus (1940) from Java. The name *rubiginea* was treated as a junior synonym of *youngi*, but the status of *rubiginea* was considered needed determined with more material. The populations from Java were observed being much variable and clearly not belong to *assamensis* (HELFER, 1837). Van Eecke (1922) [**recte** 1921] described *brunnea* from Sumatra, which recently was re-established in species rank for the populations from Sumatra, cf. BRECHLIN (2001). After examination of some material from Sumatra and Borneo, Paukstadt & Paukstadt (2001) considered *brunnea* to be a junior synonym of *youngi* (type locality: Borneo). The morphology as well as the genitalia morphology of the populations from Java, Sumatra, and Peninsular Malaysia were found being not clearly distinct. The populations of the subgenus *Antheraeopsis* from Java were preliminary applied to the name *youngi* WATSON, 1915, but further studies with more material were noted to be needed prior drawing a final conclusion on the status of the Javanese populations. SEM-figs. of the chorion surface structures of *youngi* (Java) were presented (figs. 1–8). The preimaginal instars of *youngi* (West Java) were illustrated in color (col.-pl. 1, figs. 9–18: 1st, 2nd, 3rd, 4th, and 5th (last) larval instar), as well as the ♀ adult (fig. 19). The authors remarked that the reared specimens were found in both sexes being much distinct from specimens, which were collected in the wild (West Java) in their seize, ground coloration, and coloration of the wing ocelli.

Paukstadt, U. & Paukstadt, L. H. (2001b) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 34-46, listed the taxa of the genus *Antheraea* HÜBNER, 1819 („1816“) of which details of the early stages were known. For *Antheraea (Antheraeopsis) youngi* WATSON, 1915 the following authors with descriptions of the early stages were cited: Van Eecke (1930) De Heterocera van Sumatra, eerste deel. - Leiden (E. J. Brill). [Reprinted from a series of publications in Zool. Meded., Leiden, 8 (3/4), 1925, to 12 (3/4), 1929. The Saturniidae pages were first published in 1929.], and Nässig, Lampe & Kager (1996b) Heteroc. Sumatr. (Göttingen), 10, Appendix I: pp. 111-170 (population of North Thailand).

Paukstadt, U. & Paukstadt, L. H. (2001c) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 50-52, recorded *Antheraea* (*Antheraeopsis*) *youngi* WATSON, 1915 for the Mt. Halimun National Park, West Java, Indonesien.

Paukstadt, U. & Paukstadt, L. H. (2001d) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 69-71, col.-pl. (2 figs.), described and illustrated in color the hithero unknown ♀ adult of *A*. (*Antheraeopsis*) *youngi* WATSON, 1915 (West Java). The only known ♀ adult, which was collected in the wild in western Java was found being not distinct from those from the islands of Sumatra and Borneo (only scattered records present) and not distinct from those from West Malaysia, but the ♀ (Java), which were reared under laboratory conditions are considerably distinct. A reared ♀ adult (West Java) was illustrated in color dorsally and ventrally (p. 70).

Paukstadt, U., & Paukstadt, L. H. (2002) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 12: pp. 65–69, remarked that *yunnanensis* CHU & WANG, 1993 (Yunnan, China), which presently is considered being a *species inquirenda*

within the oriental subgenus *Antheraeopsis* WOOD-MASON, 1886 most likely represents a junior synonym of *platessa ornata* BOUVIER, 1929 (southern China and Vietnam), a taxon of the *platessa*-complex, which status remains unclear (pp. 65–67).

Brechlin (2002) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (4): p. 223, treated *brunnea* VAN EECKE, 1921 as a species of the *youngi*-group (sensu Paukstadt et al. 2000) of the subgenus *Antheraeopsis* WOOD-MASON, 1886 and therefore removed *brunnea* from synonymy to *youngi*: *A. (Ao.) brunnea* VAN EECKE, 1921. Eight members of the *youngi*-group (sensu Paukstadt at al. 2000) were listed. Brechlin (2002) noted (p. 223) that the status of the Javanese taxon *A*. (*Ao*.) *rubiginea* TOXOPEUS, 1940 remains unclear.

Paukstadt, Suhardjono & Paukstadt (2003) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 14: pp. 25–64, 4 tables, 11 maps, reported in a contribution on "Notes on the distribution of the genus *Antheraea* HÜBNER, 1819 ("1816") and of some selected hosts of the larvae of this genus in Indonesia (Lepidoptera: Saturniidae)" that the subgenus *Antheraeopsis* WOOD-MASON, 1886 likely is associated with species of the plant families Lauraceae and Magnoliaceae (pp. 28 and 55). The geographical distribution of the subgenus *Antheraeopsis* in the Indonesian Archipelago was recorded (p. 32 and map 2) and the number of taxa for each region in Indonesia and the Philippines presented (p. 36, table 2). The geographical and altitudinal distribution of *youngi* WATSON, 1915 in the Indonesian Archipelago was presented for Borneo (p. 42), Sumatra (p. 43), and Java (p. 44). Hosts of the larvae from Indonesian populations were not recorded. The following hosts for non-Indonesian population were recorded for *assamensis* (HELFER, 1837) or related taxa from Assam and Sikkim (p. 49): *Tetranthera polyantha* WALL. [= *Litsea citrata* BLUME] (Lauraceae), cf. Wardle (1880); *Michelia champaca* L. (Magnoliaceae), *Sarcostemma brachystigma* HOOK. [= *Sarcostemma brevistemma* WIGHT & ARN.] (Asclepiadaceae), *Tetranthera macrophylla* WALL. [= *Litsea polyantha* JUSS.], *Tetranthera diglottica* [sic] [*Tetranthera diglatia* BUCH-HAM ex NEES = *Tetranthera salicifolia* ZOLL. ex MEISSN. = *Litsea sebifera* PERS.] (Lauraceae), *Laurus obtusifolia* ROXB. [= *Cinnamomum obtusifolium* NEES] (Lauraceae), cf. Silbermann (1897). Altitudinal records of *Antheraeopsis* were from 50 to 1,600 m (mostly 900 to 1,600 m) (p. 55, table 3). The subgenus *Antheraeopsis* WOOD-MASON, 1886 was compiled with its hosts, which were recorded for the Asian fauna, with special reference to the altitudinal distribution of the hosts in the Indonesian Archipelago (p. 56, table 4). *Litsea* ssp. and *Cinnamomum* ssp. (Lauraceae) were reported from >900 m, *Michelia* spp. (Magnoliaceae) from 1,000 to 1,200 m, and *Sarcostemma* spp. (Asclepiadaceae) from 300 to 1,200 m (p. 56). The authors remarked that *youngi* preferably came to light in mountainous regions.

Paukstadt, L. H. & Paukstadt, U. (2003) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 1 (1): pp. 23–39, 16 b/w-figs., remarked in a contribution on *Antheraea* (*Loepantheraea*) *rosieri* (TOXOPEUS, 1940), that the morphology of the labides of the ♂ genitalia of *rosieri* is similar to those of taxa of the subgenus *Antheraeopsis* and the *pernyi*-group (sensu Nässig 1991) of the

subgenus *Antheraea* HÜBNER, 1819 (“1816”) but in *rosieri* the top of the labides probably cannot be folded in medioventrally as in taxa of the subgenus *Antheraeopsis*.

Paukstadt, U. & Paukstadt, L. H. (2004a) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 2 (1): pp. 3–55; 4 tables, 36 maps, presented in a ”Contribution on the geographical distribution of the Southeast Asian Saturniidae and discussion on the zoogeographic zones in the Indonesian Archipelago”, the distribution pattern of the genera and subgenera of the family Saturniidae BOISDUVAL, 1837 (“1834“) in selected areas of Asia and Australia. The distribution pattern of the subgenus *Antheraeopsis* was presented (table 4). The number of species and percentage of combined totals of species of the subgenus *Antheraeopsis* WOOD-MASON, 1886 shared between the major parts (mostly islands) of Southeast Asia was presented in map 14.

Paukstadt, U. & Paukstadt, L. H. (2004b) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 2 (3): pp. 111–188, listed *A.* (*Ao.*) *youngi* WATSON, 1915 in the Systematic of a contribution on “An introduction to the wild silkmoths of the Oriental Region, with special reference to Peninsular Malaysia – Part 1 (Lepidoptera: Saturniidae)”. The taxon *brunnea* VAN EECKE, 1922 [**recte** 1921] was listed and placed as junior synonym to *youngi* WATSON, 1915. Regarding the taxon *rubiginea* TOXOPEUS, 1940 was remarked, that *rubiginea* is presently considered being a junior synonym of *youngi* WATSON, 1915 but the status needs investigation. The geographical distribution of *youngi* was recorded and remarked that the status of the lowland populations from Thailand, Laos, and Vietnam needs to be determined (p. 174). Altitudinal records of *youngi* from Borneo and Indonesia were presented (p. 174). The preimaginal instars and the adults were described in detail (p. 174–175). The authors reported that populations of *youngi* from Borneo and Jawa were repeatedly reared by L. H. Paukstadt (Wilhelmshaven). No obvious differences were observed in the larval morphology between the populations from Borneo, Sumatra and Jawa.

Paukstadt, U. & Paukstadt, L. H. (2005) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 3 (2): pp. 51–124; 15 col.-pls. (105 figs.), 6 monochrome-pls. (31 figs.), 5 b/w-pls. (21 figs.), and 4 maps, listed *A.* (*Antheraeopsis*) *youngi* WATSON, 1915 in a “Checklist of the Saturniidae of Peninsular Malaysia” (p. 57). ♂ and ♀ adults from the Cameron Highlands were illustrated in color dorsally and ventrally (p. 83, figs. 1–4). The wing venations of the ♂ and ♀ adults were figured (p. 94, line drawings, figs. 30 and 31). The ♂ genitalia structures of *youngi* (West Malaysia) were illustrated (p. 99, b/w-digital directscan, fig. 21, micro slide U. Paukstadt no. 0651)

Regier, Paukstadt, Paukstadt, Mitter & Peigler (2005): Phylogenetics of Eggshell Morphogenesis in *Antheraea* (Lepidoptera: Saturniidae): Unique Origin and Repeated Reduction of the Aeropyle Crown. – Systematic Biology: pp. 254–267; 10 figs., 2 tables. The chorion surface structures of some species in the genus *Antheraea* HÜBNER, 1819 (“1816”) were compared. The chorion of *youngi* from Java shows aeropyle crowns everywhere except at the micropyle region.

Paukstadt, U. & Paukstadt, L. H. (2006a) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 4 (1): pp. 28–48, 4 col.-pls. (155 figs.), reported in a contribution on the intraspecific variability of *A.* (*A.*) *imperator* WATSON, 1913 from Java, that Jolly (1980) erroneously noted *imperator* being almost identical with *Antheraea compta* ROTHSCHILD, 1899 [ROTHSCHILD *in* Rothschild & Jordan, 1899] and *Antheraea assamensis* (HELFER, 1837) (pp. 31 and 39). Paukstadt & Paukstadt remarked that the subgenus *Antheraeopsis* is present in the Indonesian Archipelago with one or two taxa (pp. 30 and 33).

Paukstadt, U. & Paukstadt, L. H. (2006d) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 4 (5): pp. 207–256, recorded *Antheraea* (*Antheraeopsis*) *youngi* WATSON, 1915 in the Sytematics to "A Preliminary Annotated Checklist of the Indonesian Wild Silkmoths – Part I B (Lepidoptera: Saturniidae: Attacini)" (p. 211). The taxon *youngi* was listed in a "List of known preimaginal instars of Saturniidae distributed in the Indonesian Archipelago (including East Malaysia, Brunei, and Timor-Leste)" (p. 221), and the authors referred to Nässig, Lampe & Kager (1996b) (N-Thailand, incomplete) and Paukstadt, L. H. & Paukstadt, U. (2001) (Java).

Paukstadt, U. & Paukstadt, L. H. (2006e) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 4 (6): pp. 259–295, 2 maps, 7 col.-pls (30 figs.), 1 col. text-fig., reported on an entomological expedition to Nanggroe Aceh Darussalam, Sumatra. The taxon *youngi* WATSON, 1915 was recorded from the street Bireuen – Blang Keujeren (1,553 m) (p. 286) and in 1,028 m elevation the so far only ♀ of *youngi* came to light (p. 291). Further records of *youngi* were from 1,798 m (p. 288).

Paukstadt, U. & Paukstadt, L. H. (2006f) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 4 (6): pp. 296–316, 3 col.-pls. (16 figs.), 3 table, 13 diagrams, recorded (p. 297) *Antheraea* (*Antheraeopsis*) *youngi* WATSON, 1915 in the "Sytematics" on a contribution on preliminary results of their studies on the Saturniidae of Nanggroe Aceh Darussalam, Sumatra, Indonesia. The taxon *youngi* was listed in a "Checklist of the Saturniidae (Lepidoptera) of Sumatra" (p. 301) and a ♂ adult from Aceh was illustrated in color (p. 303, col.-pl. 1 fig. 6). Records of *youngi* were for the Kabupaten Aceh Tengah, Takengon env., 1,553 m and the street Kute Lintang–Isaq, 1,798 m (p. 306). The altitudinal distribution of *youngi* was recorded to be between 80 and 1,798 m based on observations by Diehl and Paukstadt & Paukstadt (p. 309, table 1 and 2). The circadian flight times of *youngi* were reported for Aceh from 02:10 till 04:41 hrs. local time (p. 311, table 3) and (p. 313, diagram 8). The taxon *youngi* was listed in the "Preliminary checklist of the Saturniidae (Lepidoptera) of Nanggroe Aceh Darussalam, Sumatera, Indonesia" (p. 315).

Paukstadt, U. & Paukstadt, L. H. (2007a) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 5 (1): pp. 3–40, 1 map, listed in the "Systematic" of "A Preliminary Annotated Checklist of the Indonesian Wild Silkmoths on the subgenus *Loepantheraea* TOXOPEUS, 1940" (p. 5) the *youngi*-group (sensu Nässig 1991) and noted that the name being an invalid collective group-name. The taxon *youngi* WATSON, 1915 was listed with its junior

subjective synonym *brunnea* VAN EECKE, 1921. On *rubiginea* TOXOPEUS, 1940 was remarked that the present treatment as junior subjective synonym of *youngi* needs further investigation. The authors noted (p. 16) that only one species is recognized for the Indonesian Archipelago thus far: *youngi* WATSON, 1915 of the *youngi*-group (sensu Nässig 1991) with its synonyms *brunnea* VAN EECKE, 1921 (Sumatra) and *rubiginea* TOXOPEUS, 1940 (Java). The authors remarked that the status of *rubiginea* needs further investigation due to some zoogeographic reasons, cf. Paukstadt, Brosch & Paukstadt (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 9: 59 pp., Brechlin (2001) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (1): pp. 37-40, and Paukstadt, L. H. & Paukstadt, U. (2001) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 17-33.

Paukstadt, Paukstadt, Suhardjono & Aswari (2007) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 5 (3): pp. 89–150; 1 table, 19 diagrams, 10 col.-pls., compiled in an "Annotated Catalogue of the Saturniidae in Coll. Museum Zoologicum Bogoriense / MZB (Cibinong)" all available information from pin-labels of *A.* (*Antheraeopsis*) *youngi* WATSON, 1915 from Indonesia. In the "Systematic" of the contribution (p. 91) the name *youngi*-group was noted to be an invalid collective group-name, *youngi* WATSON, 1915 was listed with its junior subjective synonym *brunnea* VAN EECKE, 1921, and on *rubiginea* TOXOPEUS, 1940 was remarked that the present status as a junior subjective synonym of *youngi* WATSON, 1915 needs further investigation. Altitudinal records of *youngi* in Coll. MZB (Cibinong) were from 1,200 m (Java), 900 to 1,200 m (Sumatra), and 50 m (Borneo) (p. 102, table 1). Collecting years of *youngi* in Coll. MZB (Cibinong) were recorded to be from 1940 (Java), 1950 (Borneo), 1983 and 1986 (Sumatra) (p. 103). Collecting months of *youngi* in Coll. MZB (Cibinong) were recorded to be from VI (Java), I, III, and XI (Sumatra), and X (Borneo) (p. 104). The monthly frequency of *youngi* for Sumatra, Borneo, and Java was demonstrated (p. 108, diagrams 17, 18, and 19). The geographical distribution of *youngi* based on data of pin-labels of specimens in Coll. MZB (Cibinong) was recorded for West Java (Mt. Malabar), West Sumatra (Sikaladi and Mt. Subang), and East Kalimantan (Balikpapan) (p. 110). Pin-labels of *youngi* in Coll. MZB (Cibinong) were illustrated in color and natural sizes (p. 131, col.-pl. 7). The data of all pin-labels of *youngi* in Coll. MZB (Cibinong) were cited and compiled (pp. 145–146).

Paukstadt, U. & Paukstadt, L. H. (2007e) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 5 (6): pp. 260–277, recorded ♂ adults of *A.* (*Antheraeopsis*) *youngi* WATSON, 1915 from an altitudinal distribution of 109 m at Lokop (04°34'08.0"N 097°36'52.9"E) in an entomological travel report on their 2nd expedition to Aceh (p. 276).

Paukstadt, U. & Paukstadt, L. H. (2007f) Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 5 (6): pp. 278–300; 2 col.-pls. (11 figs.), 3 tables, 20 diagrams, 1 map, provided some detailed information on *A.* (*Antheraeopsis*) *youngi* WATSON, 1915 in a contribution on the Saturniidae of Nanggroe Aceh Darussalam. The altitudinal distribution of *youngi* in Aceh was

recorded to be between 80 and 1,798 m based on observations by Diehl and Paukstadt & Paukstadt (p. 289, table 1). A ♀ adult of *Antheraea* (*Antheraeopsis*) *youngi* of Aceh was illustrated in color (p. 290, col.-pl. 2 fig. 7). The altitudinal distribution of *youngi* was demonstrated for different elevations. It was observed that *youngi* most likely not prefer any particular geographical altitude because the taxon was observed to be common in all geographical altitudes between 100 m and 1,900 m (p. 291, table 2). Information on the circadian flight times of *youngi* for Aceh were provided (p. 293, table 3). The authors recorded approaching times at light for the ♂ adults from 02:48 till 04:41 hrs lt. The approaching times at light of 11 ♂ adults of *youngi* were recorded (p. 297, diagram 13).

Antheraea (*Antheraeopsis*) *brunnea* VAN EECKE, 1921

[presently treated as junior subjective synonym of *youngi* WATSON, 1915]

Original citation and spelling: "**ANTHERAEA BRUNNEA, NOV. SPEC.**"

Original description: Van Eecke, R. (1921): *Antheraea brunnea*, nov. spec. – Zoologische Mededeelingen uitgegeven vanwege 's Rijks Museum van Natuurlijke Historie te Leiden (Leiden) (1921–1922), VI (2/3): pp. 99–100, pl. II fig. 3 (♀ adult, dorsally and ventrally).

Type locality: [Indonesia], Sumatra, [West Sumatra] Padangsche Bovenlanden [Padang Highlands], Buo.

Geographical distribution: If further studies might reveal *brunnea* VAN EECKE, 1921 to be a distinct taxon and not conspecific with *youngi* WATSON, 1915 (Borneo), the name *brunnea* needs to be applied to all populations of the subgenus *Antheraeopsis* of the island of Sumatra with certainty. Bouvier (1930) Bull. Hill. Mus., 4: p. 92, recorded *brunnea* from Sumatra and Java. Presenly we do not place the populations of the subgenus *Antheraeopsis* from Java to the name *brunnea* due to zoogeographic reasons.

Etymology: Not explicitly given by van Eecke (1921). Most likely the name *brunnea* reflects the brownish coloration of the ♀ type specimen.

Type material: The description clearly based on a single ♀ adult only, which was collected by Edw. Jacobsen. The ♀ holotype by monotypy was confirmed being preserved in Coll. Museum Leiden (Leiden), not examined by us.

Taxonomic notes: Van Eecke (1921) Zool. Meded. (Leiden), VI (2/3): pp. 99–100, described *brunnea* as a new species from Sumatra and erroneously noted that *brunnea* is close to *Antheraea imperator* WATSON. The taxon *imperator* is close to *helferi* MOORE, 1859 and a member of the *helferi*-group (sensu Nässig (1991) of the subgenus

Antheraea HÜBNER, 1819 ("1816") and not of the subgenus *Antheraeopsis*. Van Eecke's error was copied by Seitz *in* Seitz (ed.) (1928) Gross-Schmett. Erde, 10: p. 512. At a later date Van Eecke (1929) De Heterocera van Sumatra: p. 409, combined *brunnea* new with *assamensis* and utters his astointment about the remark made by Seitz (1928). Unfortunately Van Eecke has forgotten that Seitz (1928) actually copied Van Eecke's own erroneous taxonomic note, cf. Toxopeus (1940) Ent. Med. Ned.-Indie, 6 (1): p. 15. The name *brunnea* was treated as a junior subjective synonym of *castanea youngi* [**error** in combination] by Nässig, Lampe & Kager (1996a) Heteroc. Sumatr. (Göttingen), 10: p. 49, following Holloway (1987) The moths of Borneo, part 3: p. 101, who listed *brunnea* VAN EECKE, 1922 [**recte** VAN EECKE, 1921] in the synonymy of *assamensis* HELFER, 1837 [not code-conform citation of (HELFER, 1837)]. Unfortunately Holloway (1987) referred to the populations of Borneo, which are presently considered to be not conspecific with *assamensis* or any other taxon from the Indian Subcontinent. Allen (1981) Brunei Mus. J., 5 (1): pp. 117, placed the populations of *Antheraeopsis* from Sumatra erroneously to *assamensis gschwandneri* NIESPELT [lapsus, **recte** NIEPELT] but *gschwandneri* is a species of the *frithi*-subgroup (sensu Nässig 1991) of the *mylitta*/*frithi*-group. Paukstadt, Paukstadt & Brosch (1998) Entomol. Zeitschr. (Essen), 108 (8): pp. 318–319, remarked that *youngi* was combined erroneously with *castanea* JORDAN, 1910. The authors remarked that the taxa *youngi* WATSON, 1915, *formosana* SONAN, 1937, *brunnea* VAN EECKE, 1922 [**recte** VAN EECKE, 1921] (junior synonym of *youngi*?), *rubiginea* TOXOPEUS, 1940 (junior synonym of *youngi* and/or *brunnea*), and two new species of the Philippinies, which were reported to be in description by Nässig & Treadaway are presently placed in the *youngi*-group (sensu Nässig 1991). The authors remarked that further studies are needed to confirm whether the populations of the subgenus *Antheraeopsis* of Borneo, West Malaysia, and Sumatra are conspecific. If not, the name *brunnea* would becomes available for the populations of Sumatra and eventually also for the populations of Peninsular Malaysia and/or Java. Brechlin (2001) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (1): pp. 37–40, re-instated *brunnea* in species rank but concluded from text only a singleton from Borneo and no specimens from Peninsular Malaysia and Java were before him for comparisons. Paukstadt, L. H. & Paukstadt, U. (2001) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 17–33, again lowered the name *brunnea* into synonymy to *youngi* after comparisons of the early stages including comparisons of the chorion surface structures of *youngi* from

different islands and the Malay Peninsula. With certainty the populations of the subgenus *Antheraeopsis* of Java are closer related to those of Sumatra than to those of Borneo due to zoogeographic reasons. Brechlin (2002) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (4): p. 223, treated *brunnea* VAN EECKE, 1921 as a species of the *youngi*-group (sensu Paukstadt et al. 2000) of the subgenus *Antheraeopsis* WOOD-MASON, 1886 and therefore removed *brunnea* from synonymy to *youngi.*

General notes: Populations of *youngi* from Sumatra were repeatedly reared. No obvious differences were observed in the larval morphology between the populations from Borneo, Sumatra and Jawa, cf. Paukstadt, L. H. & Paukstadt, U. (2001) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 17–33; 8 b/w figs, col.-pl. (11 figs.). Further details on the populations of the subgenus *Antheraeopsis* of Sumatra are provided in the appropriate chapter on the taxon *youngi* WATSON, 1915. Brechlin (2001) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (1): pp. 37–40, pointed out that the publication year of the original description of *brunnea* should be the year 1921, which was recorded in the contents of Zoologische Mededeelingen (1921–1922) of the Rijks Museum van Natuurlijke Historie at Leiden (delivery 3 December 1921).

Synonyms: There are some incorrect subsequent spellings of the author's name, errors in publication date, and misinterpretations present in literature, which are not explicitly listed herein.

Antheraea dempoensis TOXOPEUS, (i.l.?) [*nomen nudum*]. No valid original description was found in literature thus far. The name remains as a *nomen nudum*. The taxon was given a toponimic name referred to the collecting place, the Mt. Dempo, Sumatra, Indonesia. It is highly unlikely that two species of the subgenus *Antheraeopsis* inhabit the island of Sumatra.

Hybridizations and sericulture: No records in literature, which might be based on the populations of the subgenus *Antheraeopsis* WOOD-MASON, 1886 from Sumatra were found thus far.

Further readings on the name *brunnea* VAN EECKE, 1921.

Further readings on the populations of the subgenus *Antheraeopsis* WOOD-MASON, 1886 from the island of Sumatra, which were placed by several authors to the name *brunnea* VAN EECKE, 1921 are listed in this contribution in the chapter under the taxon *youngi* WATSON, 1915.

Antheraea (*Antheraeopsis*) *rubiginea* TOXOPEUS, 1940

[presently treated as junior subjective synonym of *youngi* WATSON, 1915]

Original citation and spelling: "**Antheraea assamensis rubiginea** n. subsp."

Original description: Toxopeus, L. J. (1940): The Muga Silk Moth in Java (Lep., Saturniidae). – Ent. Med. Ned.-Indië, 6 (1): pp. 14–15, pl. 2 fig. 2a (♂ holotype ventrally) 2b (♂ holotype dorsally).

Type locality: [Indonesia, West Java], near Bandoeng [Bandung], Malabar Radio Station, ca. 1,400 m.

Geographical distribution: If further studies might reveal that *rubiginea* TOXOPEUS, 1940 represents a distinct taxon and is not conspecific with the Bornean *youngi* WATSON, 1915, the name *rubiginea* needs to be applied to the populations of *Antheraeopsis* of the island of Java only. Due to zoogeographic reasons *rubiginea* might be endemic on the island of Java. No specimens of the subgenus *Antheraeopsis* were reported from the Lesser Sunda Islands east of Java thus far. A single record from the island of Sulawesi by Brechlin (2000) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), N.F. 20 (3/4): pp. 291–310, did not confirm the geographical distribution of *Antheraeopsis* for the island of Sulawesi.

Etymology: Not explicitly given by Toxopeus (1940). Most likely the name *rubiginea* reflects the sordid brown coloration of the ♂ specimens.

Type material: The description based on two ♂ specimens. The present location of the ♂ holotype (called "type" in the original description) and of the ♂ paratype (called "paratype" in the original description) by original designation are unknown to us. The specimens were not found being preserved in the Museum Zoologicum Bogoriense / MZB (Cibinong).

Taxonomic notes: The name *rubiginea* is treated herein tentative and preliminary as a junior subjective synonym of *youngi* WATSON, 1915, following Nässig, Lampe & Kager (1996a) Heteroc. Sumatr. (Göttingen), 10: p. 49. Although Toxopeus (1940a, b) Ent. Med. Ned.-Indie, 6 (1): p. 13 and p. 14–15, and Holloway (1987) The moths of Borneo, part 3: p. 101, placed *rubiginea* as a subspecies to *assamensis* (HELFER, 1837) we presently do not recognize any close relationship between the taxa of the Indonesian Archipelago and the Indian Subcontinent. Further studies on the morphology and biology of the populations from Myanmar, Thailand, the Mekong region, Peninsular Malaysia, and the Indonesian Archipelgo are considered to be necessary prior to be able to draw taxonomic conclusions on the status of the names, which were proposed for the insular populations of the Indonesian Archipelago thus far. Paukstadt, Paukstadt & Brosch (1998)

Entomol. Zeitschr. (Essen), 108 (8): pp. 317–324, remarked that the taxa *youngi* WATSON, 1915, *formosana* SONAN, 1937, *brunnea* VAN EECKE, 1922 [**recte** VAN EECKE, 1921] (junior synonym of *youngi*?), *rubiginea* TOXOPEUS, 1940 (junior synonym of *youngi* and/or *brunnea*), and two new species of the Philippinies, which were reported to be in description by Nässig & Treadaway were presently placed in the *youngi*-group (sensu Nässig 1991). The authors remarked that further studies are considered needed to confirm whether the populations of *Antheraeopsis* of Borneo, West Malaysia, and Sumatra are conspecific. If not, the name *brunnea* would becomes available for the populations of Sumatra and eventually Peninsular Malaysia and/or Java. With certainty the populations of the subgenus *Antheraeopsis* of Java are closer related to those of Sumatra than to those of Borneo due to zoogeographic reasons. Brechlin (2001)) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (1): p. 40, remarked that the status of *rubiginea* TOXOPEUS, 1940 remains unclear and further studies are required. Brechlin (2002) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (4): p. 223, remarked that the status of the Javanese taxon *A*. (*Ao*.) *rubiginea* TOXOPEUS, 1940 remains unclear.

General notes: Populations of *youngi* from Borneo and Jawa were repeatedly reared by L. H. Paukstadt (Wilhelmshaven) under laboratory conditions and the life-histories were photographed. No obvious differences were observed in the larval morphology between the populations from the islands of Borneo, Sumatra, and Java, cf. Paukstadt, L. H. & Paukstadt, U. (2001) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 10: pp. 17–33; 8 b/w figs, col.-pl. (11 figs.). Further details on the populations of the subgenus *Antheraeopsis* of Java are provided in the appropriate chapter on *youngi* WATSON, 1915.

Synonyms: Misinterpretations and incorrect subsequent spellings of *rubiginea* are present in literature.

Bouvier (1930) Bull. Hill. Mus., 4: p. 92, placed the populations of the subgenus *Antheraeopsis* WOOD-MASON, 1886 from Java to *brunnea*.

Toxopeus (1940) Ent. Med. Ned.-Indie, 6 (1): p. 13, placed the populations of the subgenus *Antheraeopsis* WOOD-MASON, 1886 from Java to an unnamed new subspecies of *assamensis* HELFER (*rubiginea* TOX. in the illustration of the venations in fore wings of *Antheraea*-species) prior the description in a further contribution on *Antheraea* in the same issue of Ent. Med. Ned.-Indie. The name *rubiginea* TOXOPEUS, 1940 in Toxopeus (1940) Ent. Med. Ned.-Indie, 6 (1): p. 13, therefore is considered to be no *nomen nudum* as such.

rubigenea; Allen (1981) Brunei Mus. J., 5 (1): pp. 117.

rubigenea; Holloway (1987) The moths of Borneo, part 3: p. 101.

Hybridizations and sericulture: No records in literature, which might be based on the populations of the subgenus *Antheraeopsis* WOOD-MASON, 1886 from Java were found thus far.

Further readings on the name *rubiginea* TOXOPEUS, 1940.

Further readings on the populations of the subgenus *Antheraeopsis* WOOD-MASON, 1886 from the island of Java, which were placed by several authors to the name *rubiginea* TOXOPEUS, 1940 are listed in this contribution in the chapter under the taxon *youngi* WATSON, 1915.

Antheraea (*Antheraeopsis*) *chengtuana* WATSON, 1923

Original citation and spelling: "**A. chengtuana** sp. nov."

Original description: Watson, J. H. (1923): On some Palearctic Saturnids (Lep., Het.) from Szechuen, Western China. – The Entomologist, LVI [no. 723]: pp. 171–173.

Type locality: Western China, Szechuen, Chengtu.

Geographical distribution: Due to the uncertain identity and lack of specimens in our collection for comparisons we assign the name *chengtuana* tentative and preliminary to the lowland populations of the subgenus *Antheraeopsis* from Continental China.

Etymology: The taxon *chengtuana* was given a toponimic name referred to the collecting place Chengtu in western China.

Type material: The description clearly based on a single ♀ specimen only, which was collected by Rev. G. M. Franck. Watson noted that this "rather poor specimen" is preserved in Coll. J. Henry Watson. The present location of the ♀ holotype by monotypy was not determined by us. Most likely the type specimen is preserved in The Natural History Museum / BMNH (London), not examined by us.

Taxonomic notes: Concluded from the text in the original description *chengtuana* might be related to *mezops* BRYK, 1944 but the latter taxon is only known from the higher mountain regions of Myanmar, the Yunnan Plateau (southern China), and the Mt. Fansipan (northern Vietnam) thus far. Therefore we believe that *chengtuana* represents a taxon of the *youngi*-group (sensu Nässig 1991) and is related more likely to *formosana* SONAN, 1937 from the continental island Taiwan. We were able to examine some ♂ adults from the type locality of *chengtuana*, which we had received from Stefan Naumann (Berlin). The examined specimens were found being not conspecific with *mezops* BRYK, 1944.

General notes: There is not much known on the taxon *chengtuana* from literature. With exception of single records by Seitz *in* Seitz (ed.) Gross-Schmett. Erde, 10: p. 509 (foodnote), Bollow *in* Seitz (ed.) (1932) Gross-Schmett. Erde, Suppl. 2: p. 130, and Chu & Wang (1996) Fauna Sinica, Insecta 5: p. 174 [Chinese] the name *chengtuana* obviously not appeared in any important literature.

Synonyms: There is one taxon known from literature, which might be placed in synonymy either to *chengtuana* or to any other taxon of the subgenus *Antheraeopsis* of the P. R. China. This is *yunnanensis* CHU & WANG, 1993 [*species inquirenda*]. The taxon *yunnanensis* was described as a subspecies of *Antheraea* (*Antheraea*) *pernyi* (GUÉRIN-MÉNEVILLE, 1855) but the ♂ genitalia, which was figured in the original description belongs definitively not to a taxon of the *pernyi*-group (sensu Nässig 1991) but to a taxon of the subgenus *Antheraeopsis* WOOD-MASON, 1886. Chu & Wang (1996) subsequently figured the ♂ adult of *yunnanensis* (holotype by monotypy) which clearly belongs to the *platessa*-complex of the *frithi*-subgroup (sensu Nässig 1991) of the *mylitta*/*frithi*-group (sensu Paukstadt, Brosch & Paukstadt 1999). Because the holotype of *yunnanensis* was not available for comparisons we had received a picture of a specimen "very similar to the holotype". The ♂ adult shown on a color picture represents a taxon of the *platessa*-complex. Presently we include *yunnanensis* as *species inquirenda* of the subgenus *Antheraeopsis* WOOD-MASON, 1886 following Paukstadt, U. & Paukstadt, L. H. (2000) Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 8: pp. 22–25, and Paukstadt, Brosch & Paukstadt (2000) Galathea – Ber. Kr. Nürnbg. Entomol. (Nürnberg), Suppl. 9: 59 pp., because the illustrated ♂ genitalia structures are the only clear diagnostic marks in the original description.

Hybridizations and sericulture: No records in literature found thus far, which might be assigned to the name *chengtuana* with certainty.

Antheraea (*Antheraeopsis*) *formosana* SONAN, 1937

Original citation and spelling: "**Antheraea formosana** n. sp. [plus Chinese figures]"

Original description: Sonan, J. (1937): Saturnidae [sic] and Bombycidae of Formosa. – Transactions of the natural History Society of Formosa, 27 (160): pp. 202–215 [Japanese], 4 text-figs. (text-fig. 2 ♂ adult). [Text mostly in Chinese.]

Type locality: Formosa (Taiwan).

Geographical distribution: The taxon might be endemic to the island of Taiwan.

Etymology: The taxon *formosana* was given a toponimic name, which referred to the collecting place, the island of Formosa (Taiwan).

Type material: The description clearly based on a single ♂ adult only. The present location of the ♂ [holotype by monotypy?] was not determined by us.

Taxonomic notes: The taxon *formosana* is most likely a distinct species not closely related to *assamensis* or *castanea* as assumed by some authors. The closest relative of *formosana* might be the continental Asian *chengtuana* WATSON, 1923, which was described from Chengtu, Szechuen, West China. The name *chengtuana* would have priority if further studies might reveal that *chengtuana* and *formosana* are conspecific. Due to zoogeographic reasons, the island of Taiwan was isolated from the Asian mainland after the last glacial epoch some 8,000 years ago, we believe that the populations of Taiwan represent a taxon distinct from any taxon of Continental Asia. Nässig, Lampe & Kager (1996a) Heteroc. Sumatr. (Göttingen), 10: p. 49, remarked that the Taiwanese *formosana* appears to be a distinct species and that the larva of *formosana* is very similar to, but not identical with that of *castanea* [**recte** *youngi* sensu lato or *assamensis* from northern Thailand] figured in Nässig, Lampe & Kager (1996b) Heteroc. Sumatr. (Göttingen), 10, Appendix I, col.-pls. 1, 2, 6, and 7.

General notes: The adults of *formosana* were illustrated in color by Peigler & Wang (1996) Saturniid Moths of Southeastern Asia: 3 col.-figs. (♂ and ♀ adults). The same authors illustrated the eggs and the larval instars in color: 8 col.-figs (eggs, 1st till 5th (last) larval instar). Further color figures of the preimaginal instars and b/w-drawings of details of the larva were presented by Wang & Heppner (1994) J. Taiwan Mus., 47 (1): pp. 111–117, col.-figs. 1 (eggs), 2–6 (1st till 6th [last] larval instars), and 7–21 (line drawings of some details of the larva).

Synonyms: There are no synonyms as such but misinterpretations present in literature, which are not listed herein. Sonan (1937) Trans. nat. Hist. Soc. Formosa, 27 (160): pp. 208–209, recorded *formosana* and *assamensis* HELFER[, 1837] for Formosa (Taiwan).

Hybridizations and sericulture: No records in literature, which might be applied to the Taiwanese populations of the subgenus *Antheraeopsis* WOOD-MASON, 1886 were found thus far.

Antheraea (*Antheraeopsis*) *paniki* NÄSSIG & TREADAWAY, 1998

Original citation and spelling: "*Antheraea* (*Antheraeopsis*) ***paniki*** NÄSSIG & TREADAWAY, **n. sp.**"

Original description: Nässig & Treadaway (1998): The Saturniidae (Lepidoptera) of the Philippines. – Nachrichten des Entomologischen Vereins Apollo (Frankfurt am Main), Supplement 17: pp. 223–424, col.-pl. 7, figs. 44 (♀ paratype), 45 (♂ holotype), b/w-pl. [8] figs. 29 and 30 (♂ genitalia structures), b/w-pl. [9] figs. 37 and 38 (♂ genitalia structures, aedeagi only), 40 ("hood" of 8th abdominal tergite), and 43–49 (transtilla protuberances, the labides).

Type locality: Philippines, N-Luzon, Ifuago, Mt. Pulis, 16 km SSE Bontoc, 17°02'N.L. [= nördliche Länge, = northern longitude, **recte** northern latitude / = Breite] 121°01'E.Br. [= östliche Breite, = eastern latitude, **recte** eastern longitude / = Länge]

Geographical distribution: The taxon *paniki* is endemic to the islands of the Philippines (excluding Palawan) and is replaced on the island of Palawan by *sahi* NÄSSIG & TREADAWAY, 1998 and on the island of Borneo by *youngi* WATSON, 1915.

Etymology: The name comes from the Tagalog word for bat: "paniki". The large dark taxon has some resemblance to a bat when comes to light.

Type material: ♂ holotype by original designation in coll. W. A. Nässig (Mühlheim / Main), via CWAN in SMFL, Senckenberg Museum Frankfurt Lepidoptera / SMFL-no. 4164. 178 ♂ and 16 ♀ paratypes in different collections, cf. Nässig & Treadaway (1998) Nachr. entomol. Ver. Apollo (Frankfurt am Main), Suppl. 17: pp. 288–289.

Taxonomic notes: This distinctive species cannot be confused with any other taxon of the subgenus *Antheraeopsis*. The taxon *paniki* is an endemic species of the Philippines except Palawan. The island of Palawan is occupied by a distinct taxon of the subgenus *Antheraeopsis*. Both taxa from the Philippines were described by Nässig & Treadaway (1998) as subspecies of *paniki*. The populations of Palawan were elevated to species rank at a later date.

General notes: Nässig & Treadaway (1998) Nachr. entomol. Ver. Apollo (Frankfurt am Main), Suppl. 17, figured the adults of *paniki paniki* in color (col.-pl. 7, fig. 45 (♂ holotype) and fig. 44 (♀ paratype)). The ♂ genitalia staructures were figured (p. 344 top, line drawings) on b/w-pl. [8] fig. 29 (♂ paratype, Mindanao) and fig. 30 (♂ paratype, Luzon), and the aedeagi separate (p. 344 bottom, line drawings) on b/w-pl. [9] fig. 37 (♂ paratype, Mindanao) and fig. 38 (♂ paratype, Luzon).

Synonyms: There are no synonyms as such or incorrect subsequent spellings known from literature thus far. Misinterpretations of the

populations of the subgenus *Antheraeopsis* of the Philippines (excluding Palawan) were as follows. *Antheraea assamensis* HELFER, 1837 [not code-conform citation of (HELFER, 1837)] by Pinratana & Lampe (1990) Moths of Thailand, Vol. I: p. 13 [part.]. Nässig, Lampe & Kager (1996a) Heteroc. Sumatr. (Göttingen), 10: p. 48, remarked that the populations of the subgenus *Antheraeopsis* of the Philippines perhaps might be united under the name *Antheraea* (*Antheraeopsis*) *castanea youngi* WATSON, 1915 [**error** in combination]. A taxon "unnamed no. 1" of the subgenus *Antheraeopsis* was reported by Paukstadt, Paukstadt & Brosch (1998) Entomol. Zeitschr. (Essen), 108 (8): pp. 317–324.

Hybridizations and sericulture: No records in literature, which might be applied to the populations of the subgenus *Antheraeopsis* WOOD-MASON, 1886 of the Philippines were found thus far.

Antheraea (*Antheraeopsis*) *sahi* NÄSSIG & TREADAWAY, 1998

Original citation and spelling: "*Antheraea* (*Antheraeopsis*) *paniki* ***sahi*** NÄSSIG & TREADAWAY, **n. ssp.**"

Original description: Nässig & Treadaway (1998): The Saturniidae (Lepidoptera) of the Philippines. – Nachrichten des Entomologischen Vereins Apollo (Frankfurt am Main), Supplement 17: pp. 223–424, col.-pl. 7, fig. 47 (♂ holotype), b/w-pl. [8] fig. 31 (♂ genitalia structures), b/w-pl. [9] figs. 39 (♂ genitalia structures, aedeagi only), fig. 50 (transtilla protuberances, the labides).

Type locality: [Philippines,] Palawan S. [?South], nr. [?near] Brooke's Point.

Geographical distribution: The taxon *sahi* is endemic to the island of Palawan and is replaced in the remaining Philippines by *paniki* NÄSSIG & TREADAWAY, 1998 and on the island of Borneo by *youngi* WATSON, 1915.

Etymology: *sahi* means in the local language of the island of Cebu "distinct from the others".

Type material: The description of *paniki sahi* actually based on only two ♂ adults in the collection of the authors but further two ♂ adults were reported by Brechlin (Pasewalk) and included into the type series shortly before publication. The type series therefore consists of the ♂ holotype by original designation and three ♂ paratypes. The holotype was recorded being preserved in Coll. C. G. Treadaway / CCGT assigned to Senckenberg Museum Frankfurt/Main Lepidoptera (Frankfurt am Main)

(SMFL-no. 4163), one ♂ paratype is in Coll. Senckenberg Museum Frankfurt/Main Lepidoptera / SMFL (Frankfurt am Main), and two ♂ paratypes are preserved in Coll. Dr. R. Brechlin / CRBP (Pasewalk).

Taxonomic notes: The taxon *sahi* was described originally as a subspecies of *paniki* by Nässig & Treadaway (1998) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), Suppl. 17: pp. 223–424. Paukstadt, Brosch & Paukstadt (1999) Entomol. Zeitschr. (Essen), 109: p. 456, remarked that the populations of *Antheraeopsis* from Palawan are clearly distinct from those of the remaining Philippines and that the populations of Palawan appear closer to *youngi* WATSON, 1915 than to *paniki*. The authors noted that concluded from text the new taxon *sahi* was compared with *youngi* WATSON, 1915 of Sumatra and the Malay Peninsula only, but not with *youngi* of Borneo, although *youngi* was described after material from Borneo. Paukstadt, Brosch & Paukstadt (2000): p. 23, reported the combination of *sahi* as subspecies of *paniki* to be doubtful, more likely *sahi* is a taxon close to *youngi* WATSON, 1915, no taxonomic changes were proposed. Finally *sahi* was elevated to species rank by Brechlin (2001) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (1): pp. 37–40, because his studies revealed that *sahi* is clearly distinct from *paniki* NÄSSIG & TREADAWAY, 1998 and from the Bornean *youngi* WATSON, 1915. We propose further studies with more material and the rearing of the populations from the Philippines (excluding Palawan), Palawan, and Borneo prior drawing final conclusions on the relationships of *paniki*, *sahi*, and *youngi* (Borneo). Due to zoogeographical reasons, a few taxa in the genus Saturniidae from Palawan and Borneo are presently considered to be not distinct on species or subspecies level, the geographical ranges of *youngi* and *sahi* and the status of *sahi* are needed to be confirmed.

General notes: Brechlin (2001) Nachr. Entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (1): pp. 37–40; col.-pl. (6 figs.), b/w-pl. (fig.-nos. 1–4) [**recte** fig.-nos. 7–10 concluded from text], described and illustrated the ♀ adult of *sahi* from Palawan for the first time (p. 38, col.-pl. fig. 1). The ♀ adult of *sahi* from Palawan was illustrated in color dorsally and compared with a ♀ adult of *paniki* from Negros. The ♂ genitalia structures of *sahi* from Palawan were illustrated (genitalia-pl. direct scan b/w-fig. 1 [**recte** 7 concluded from text]).

Synonyms: There are no synonyms as such or incorrect subsequent spellings known from literature thus far. Misinterpretations of the populations of the subgenus *Antheraeopsis* of Palawan (excluding the remaining Philippines) were as follows. *Antheraea assamensis* HELFER, 1837 [not code-conform citation of (HELFER, 1837)] by Pinratana &

Lampe (1990) Moths of Thailand, Vol. I: p. 13 [part.]. Nässig, Lampe & Kager (1996a) Heteroc. Sumatr. (Göttingen), 10: p. 48, remarked that the populations of the subgenus *Antheraeopsis* of the Philippines perhaps might be united under the name *Antheraea* (*Antheraeopsis*) *castanea youngi* WATSON, 1915 [**error** in combination]. A taxon "unnamed no. 2" of the subgenus *Antheraeopsis* was reported from Palawan by Paukstadt, Paukstadt & Brosch (1998) Entomol. Zeitschr. (Essen), 108 (8): pp. 317-324.

Hybridizations and sericulture: No records in literature, which might be applied to the populations of the subgenus *Antheraeopsis* WOOD-MASON, 1886 of Palawan were found thus far.

Antheraea (*Antheraeopsis*) *rudloffi* BRECHLIN, 2002

Original citation and spelling: "*Antheraea* (*Antheraeopsis*) ***rudloffi* n. sp.**"

Original description: Brechlin, R. (2002): Neue Arten der Gattung *Antheraea* HÜBNER 1819 [„1816"] von den Andamanen (Lepidoptera: Saturniidae). – Nachrichten des Entomologischen Vereins Apollo (Frankfurt am Main), N.F. 22 (4): pp. 219–224, col.-pl. (6 figs.).

Type locality: Andaman Islands (N), 6 km S of Mayabunder, Karmatany (sic, recte Karmatang), 12,51°N 92,56°E (sic, richtig [= recte]) 12°51'N, 92°56'E], 20–100 m.

Geographical distribution: The first record of a taxon of the subgenus *Antheraeopsis* WOOD-MASON, 1886 from the Andaman Islands was by Brechlin & Kitching (2001) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (2): p. 123. Due to zoogeographic reasons the taxon *rudloffi* most likely represents an endemic species of the Andaman Islands. Thus far records were from the type locality and the Mt.-Harriet-National-Park, near Port Blair, 200 m.

Etymology: The taxon *rudloffi* was named in honour of Mr. Jan-Peter Rudloff (Roßlau, Germany), who collected the first specimens during two expeditions to the Andaman Islands.

Type material: The description based on the ♂ holotype by original designation and 3 ♂ paratypes. The holotype is preserved in Museum Witt / CMWM (Munich) and the paratypes are preserved in Coll. Brechlin / CRBP (Pasewalk) as per statements in the original description.

Taxonomic notes: This insular populations of *Antheraeopsis* are clearly distinct on species level from the Continental Asian taxa. Though the

populations of the subgenus *Antheraeopsis* of the Andaman Islands are presently placed to the lowland fauna due to lack of mountains the closest relatives of *rudloffi* can be distributed on the Asian Mainland in higher elevations of the Himalaya and its foothills. The forewing apices of ♂ *rudloffi* are more similar to those of *castanea* and *mezops*, than to any taxon of the *youngi*-group (sensu Nässig 1991). Most probably the Andaman Islands were fused and connected to the Himalaya via a landbridge, and the mountains of the Andamans were much higher in early geological era. Due to lowering the landbridge was reduced to some islands, which are actually the tips of the mountain chain of this former landbridge. Presently ten endemic taxa (including *rudloffi*) all in species rank of the family Saturniidae BOISDUVAL, 1837 ("1834") are recognized for the Andaman Islands, cf. Brechlin (2002) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (4): pp. 219–224.

General notes: Brechlin (2002) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (4): pp. 219–224, col.-pl. (6 figs.), illustrated the ♂ holotype in color dorsally and ventrally (col.-pl. figs. 1 and 2). The ♂ genitalia structures were illustrated (genitalia plate, b/w-directscan 7). The preimaginal instars and the ♀ of *rudloffi* remain unknown.

Synonyms: There are neither synonyms as such nor incorrect subsequent spellings or misinterpretations known from literature. Brechlin & Kitching (2001) Nachr. entomol. Ver. Apollo (Frankfurt am Main), N.F. 22 (2): p. 123, recorded a ♂ adult of the subgenus *Antheraeopsis* WOOD-MASON, 1886 (Brechlin in preparation) from the Andamans.

Hybridizations and sericulture: No records in literature, which might be applied to the populations of the subgenus *Antheraeopsis* WOOD-MASON, 1886 of the Andaman Islands were found thus far.

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Brechlin, R. (2002): Neue Arten der Gattung *Antheraea* HÜBNER, 1819 ["1816"] von den Andamanen (Lepidoptera: Saturniidae). – Nachrichten des Entomologischen Vereins Apollo (Frankfurt am Main), N.F. 22 (4): 219–224; col.-pl. (6 figs.), b/w-pl. (10 figs.).

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