

**A Preliminary Annotated Checklist of the
Indonesian Wild Silkmoths – Part X.
The genus *Cricula* WALKER, 1855 –
Part 2A, the *trifenstrata*-group
(Lepidoptera: Saturniidae: Saturniinae)**

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Key words: Lepidoptera, Saturniidae, Saturniini, wild silkmoth, *Cricula*, annotated checklist, Indonesia, Oriental fauna.

A Preliminary Annotated Checklist of the Indonesian Wild Silkmoths – Part X. The genus *Cricula* WALKER, 1855 – Part 2A, the *trifenestrata*-group (Lepidoptera: Saturniidae: Saturniinae)

Eine vorläufige kommentierte Scheckliste der indonesischen
wilden Seidenspinner – Teil X. Die Gattung *Cricula* WALKER,
1855 – Teil 2A, die *trifenestrata*-Gruppe
(Lepidoptera: Saturniidae: Saturniinae)

Zusammenfassung: Die Saturniiden der Tribus Attacini BLANCHARD, 1840 und der Tribus Saturniini BOISDUVAL, [1837] 1834 der Unterfamilie Saturniinae BOISDUVAL, [1837] 1834 (Lepidoptera: Saturniidae) der indonesischen Fauna werden in diesen speziellen Beiträgen zur Kenntnis der wilden Seidenspinner des indonesischen Archipels in kommentierten Schecklisten dargestellt. Der hier vorliegende Beitrag beschäftigt sich mit der überwiegend orientalischen Gattung *Cricula* WALKER, 1855, die in Indonesien auf den Grossen Sundainseln (Borneo, Sumatra, Java und Sulawesi) sowie den angrenzenden kleineren Inseln), in den Molukken und auf den Kleinen Sundainseln (Bali, Lombok, Sumbawa, Flores, Sumba, Alor und Timor) mit mehreren überwiegend endemisch vorkommenden Taxa verbreitet ist. Das Verbreitungsgebiet der Gattung *Cricula* überlappt im östlichen Indonesien mit Gattungen der papuanisch-australischen Region. In diesem speziellen Beitrag werden Zitate aus der Literatur zu Taxa der Gattung *Cricula* aus dem Indonesischen Archipel einschliesslich Borneo (Kalimantan und East Malaysia) und Timor (der Westteil der Insel gehört zur indonesische Provinz Nusa Tenggara Timur / NTT und der Ostteil zu Timor Leste / East Timor) soweit möglich ausgewertet und kommentiert. Bei einigen älteren Zitaten war eine Auswertung schwierig oder gar unmöglich, weil diese keinem Taxon mit Sicherheit zugeordnet werden konnten. Wir setzen mit dieser Arbeit unsere Beitragsserie zur Kenntnis der indonesischen Saturniiden fort. Wie auch bereits bei den vorangegangenen Schecklisten geschehen, soll die hier jetzt vorliegende kommentierte Scheckliste über die Taxa der Gattung *Cricula* ebenfalls keine Gattungsrevision darstellen, sondern aufzeigen, was bisher bekannt ist, wo noch Forschungsbedarf besteht oder bestehen könnte und insbesondere den rezenten Status der vielen Namen in der Gattung *Cricula* WALKER, 1855 aufzeigen. Die Inhalte dieser Publikationsserie spiegeln den derzeitigen Kenntnisstand bestmöglichst wider. In Teil 2A dieses Beitrages wird die Unterart *javana* WATSON, 1913 der *trifenestrata*-Gruppe und die Arten *bornea* WATSON, 1913 sowie *kalimantanensis* BRECHLIN, 2010 bibliographisch bearbeitet. Wir sind dankbar für weitere Literaturhinweise und Diskussion zu den Taxa der Gattung *Cricula* WALKER, 1855.

Introduction

The wild silkmoths of the tribe Attacini BLANCHARD, 1840 and of the tribe Saturniini BOISDUVAL, [1837] 1834 of the subfamily Saturniinae BOISDUVAL, [1837] 1834 (Lepidoptera: Saturniidae) of the Indonesian fauna are discussed within annotated checklists in this special contributions to knowledge the wild silkmoths of the Indonesian Archipelago. The present paper deals with the mainly Oriental genus *Cricula* WALKER, 1855. Thus far 19 mostly endemic taxa plus 1 *species inquirenda* of this genus are known for the Indonesian Archipelago (Sumatra, Borneo including East Malaysia, Java, Sulawesi, Moluccas, and the Lesser Sunda Islands including Timor Leste). As the distribution pattern indicates the genus *Cricula* is widespread in the Papuan-Australian faunal region, too. Thus far reliable records are lacking from the Southeastern Moluccas, New Guinea and the Australian Continent. With this contribution we continue our series to knowledge the wild silkmoths of the Indonesian Archipelago. In this particular contribution literature on taxa of the genus *Cricula* from the Indonesian Archipelago including Borneo (Kalimantan and East Malaysia) and Timor (the western part of the island belongs to the Indonesian Province Nusa Tenggara Timur / NTT and the eastern part to Timor Leste / East Timor) is edited bibliographically. Though our studies on the Indonesian wild silkmoths are not yet completed we intend to publish our preliminary results to make these available for further studies by entomologists. The qualified reader will recognize that there is still plenty of room for discussions and improvements to knowledge the wild silkmoths of the genus *Cricula*. Due to the fact that some Indonesian wild silkmoths 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. Part 2A of this series is dealing with the subspecies *trifenestrata javana* WATSON, 1913, the species *bornea* WATSON, 1913 and *kalimantanensis* BRECHLIN, 2010 of the *trifenestrata*-group. This contribution is considered to be no generic revision. Feedbacks and hints on the systematic, on further publications, and discussions are highly welcome. Further studies on the relationships of the wild silkmoth (Saturniidae) of the Indonesian fauna and in particular studies on the early stages are considered necessary to solve remaining problems in the assignment of taxa and species-groups. Further studies on the taxa of genus *Cricula* of the Indonesian fauna are considered needed. During the past years the number of taxa in the genus *Cricula* increased rapidly mainly due to DNA-analysis, but contrary the knowledge on the biology and ecology unfortunately not improved considerably thus far.

**Annotated checklist and type localities of taxa of the *trifenestrata*-group
of the genus *Cricula* WALKER, 1855
which are distributed in the Indonesian Archipelago**
(including the non-Indonesian regions of the islands of Borneo and Timor)

Thus far three species with seven subspecies are recognized members of the *trifenestrata*-group in the Indonesian Archipelago. Those are (in chronological order):

***trifenestrata*-group**

bornea WATSON, 1913 (Borneo, Busan [most probably correct as Busang, Sarawak, East Malaysia])

trifenestrata javana WATSON, 1913 ([Indonesia, Java I.,] East Java [Province], Malang)

trifenestrata kransi JURRIAANSE & LINDEMANS, 1920 ([Indonesia, Sulawesi, Sulawesi Tenggara Province,] Galla I.)

trifenestrata serama NÄSSIG, 1989 (Indonesia, [Moluccas], (Central) Seram)

trifenestrata banggaiensis NAUMANN & PAUKSTADT, 1997 (Indonesia, Central Sulawesi Province, Peleng I., 1 km SW Luksagu, ca. 60 m)

trifenestrata tenggarensis PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 (Indonesia, Eastern Lesser Sunda Islands, Sumba I., Waimungura, 600-800 m)

trifenestrata halmaheraensis PAUKSTADT & PAUKSTADT, 2010 ([Indonesia, North Moluccas Province,] Halmahera [Island])

trifenestrata barisanensis PAUKSTADT & PAUKSTADT, 2010 (Indonesia, Sumatera Island, Nanggroe Aceh Darussalam Province, Kabupaten Aceh Tengah (=District Central Aceh), street Takengon – Isaq, 17.3 km off Takengon, GPS data, 1796 m)

kalimantanensis BRECHLIN, 2010 (Indonesia, Kalimantan Selatan, 30 km E Kandangan, 15 km NE of Loksado, 1100 m, GPS data)

Remarks: the assignment to the *trifenestrata*-group is provisionally and based on the BOLD TaxonID Tree and a few morphological characters.

The *trifenestrata*-group of the genus *Cricula* WALKER, 1855 Part A

bornea WATSON, 1913

Original citation and spelling: “*Cricula trifenestrata* (Helf.) *bornea*, nov. subsp.”

Original description: Watson, J. H. (1913): A new genus, a new species of *Antherea* [sic], and some geographical races of the genus *Cricula* (Saturnidae [sic]) from the Indo-Malay region. – Notes from the Leyden Museum (Leyden), XXXV: pp. 181-185; pl. 8 (5 figs. phot. h.-t.).

Type locality: Borneo, Busan

Remarks: Patria most probably correct as Busang, Sarawak, East Malaysia. Watson (1913: 182) remarked that he has received specimens in exchange from J. C. Moulton, Esq., Sarawak.

Geographical and altitudinal distribution: thus far *bornea* was recorded from the type locality on the island of Borneo. The geographical and altitudinal distribution remains obscure.

Etymology: the new taxon was named after its origin, the island of Borneo: *bornea*.

Type material: uncertain number of syntypes but at least each one ♂ and ♀. Mentioned in text the specimens were collected July 10th, 1895. Nässig (1989: 192) confirmed that he designated a ♂ lectotype of *bornea* WATSON, 1913 in BMNH, now The Natural History Museum (London, Great Britain). A further syntype in BMNH, a ♀, became a paralectotype.

Taxonomical notes: Watson (1913) described *bornea* originally as subspecies of the widespread *C. trifenestrata* (HELPER, 1837). Allen (1981) raised *bornea* WATSON, 1913 to species rank: “*C. bornea* WATSON, 1913”. He noted that this species was originally described as a subspecies of *C. trifenestrata* but following genitalia dissection by Holloway it merits specific status (see Appendix). Holloway in Allen (1981: 123) finally confirmed the new status: “*Cricula bornea* WATSON stat. n. (Plate 18)”. Nässig (1989: 182) placed *bornea* WATSON, 1913 as one of three species into the *trifenestrata*-group (sensu Nässig, 1989). Nässig (1995: 28) remarked that *bornea* WATSON, 1913 represents “a dubious form whose species status requires review”.

General notes: this taxon was not figured in the original description. Allen (1981: pl. 18) probably figured a ♂ of *C. bornea* WATSON, 1913. Holloway (1987: pl. 10, fig. 8) figured a ♂ adult in color dorsally. Nässig (1995: 73) figured the ♂ lectotype of *Cricula trifenestrata bornea*

WATSON, 1913 (fig. 22) and the ♀ paralectotype (fig. 23) in color dorsally. Nässig (1995: 97) figured the ♂ genitalia structures of *C. bornea* from Borneo (fig. 7). Specimens of this rare species are preserved in the Museum de Lyon / MHNH (Lyon, France).

Synonyms: For misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, and incorrect subsequent spellings for *bornea* WATSON, 1913 are as follows: So far nothing found in literature.

Hybridizations and sericulture: Inter-generic and inter-specific pairings with *bornea* WATSON, 1913 are unknown from literature. There is no information on sericulture available.

Further readings on *bornea* WATSON, 1913

Jordan (1909) recorded (: 303) *Cricula trifenestrata* HELFER (1837) [sic] from Ceylon [=Sri Lanka], South and North India, Burma [=Myanmar], the Malay Peninsula, the Andamans, Sumatra, Java, Lombok, Borneo, and Luzon but mentioned that *trifenestrata* may have a still wider range.

Remarks: The record of *C. trifenestrata* from Borneo may apply to *trifenestrata* ssp. or *bornea* WATSON, 1913, from Lombok to the subspecies *trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998, from Sumatra to the subspecies *trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010, and from Java to the subspecies *trifenestrata javana* WATSON, 1913.

Jordan (1909: 305-306) recorded *Cricula trifenestrata trifenestrata* HELFER, 1837 [sic] from the Nilgiris [=the Nilgiri Mountains form part of the Western Ghats in western Tamil Nadu of Southern India], Sikkim, Assam, Burma [=Myanmar], Malay Peninsula, Sumatra, Java, and Borneo. *C. trifenestrata burmana* was clearly cited in synonymy of *C. trifenestrata trifenestrata* [*burmana* is considered to be a good subspecies of *trifenestrata* today].

Remarks: The populations from the island of Borneo were described as *bornea* WATSON, 1913, those from Java were named *trifenestrata javana* WATSON, 1913, and those from Sumatra were described as *trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010. The Malay Peninsula is occupied by *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998.

Watson (1913: 182) described *C. trifenestrata bornea* from Busan [sic?, correct most probably as Busang], Borneo. He received ♂ and ♀ specimens in exchange from J. C. Moulton, Sarawak.

Remarks: The type locality “Busan” remains unidentified. The type locality might be correct as Busang, Sarawak, East Malaysia, Borneo.

Seitz (1928: 507-508) [16.viii.1928] recognized only three species of the genus *Cricula* Walker, 1855. Those were *C. trifenestrata* HELFER [sic], *C. andrei*, and erroneously *C. drepanoides*. Concluded from text Seitz did not accept the generic name *Solus* WATSON for the taxon *drepanoides*. He listed several forms of *trifenestrata* in the sense of subspecies. Those were *burmana* SWINHOE [Myanmar], *luzonica* JORDAN (Philippines), *andamanica* JORDAN (Andamans), *bornea* WATSON (Sarawak), and *javana* WATSON (Java). Seitz listed *elaozia* JORDAN [incorrect subsequent spelling of *elaezia* JORDAN, 1909] (Java) as form of

andrei in the sense of subspecies. *C. andrei* ab. *afenestra* WATSON was mentioned for an aberration which is lacking the fenestrae in the forewings.

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Schüssler (1936: 152-158) assigned only two species to the genus *Cricula* WALKER, 1855. Those were *andrei* JORDAN and *trifenestrata* HELFER [sic]. He listed *andrei elaezia* JORDAN and *andrei* f. *afenestra* WATSON for Java. *C. trifenestrata* subspec. *bornea* WATSON was listed for Sarawak, Borneo and *C. trifenestrata* subspec. *javana* WATSON for Java.

Remarks: *andrei* f. *afenestra* WATSON was not clearly cited in infrasubspecific rank, because he also listed f. *agoia* JORDAN, 1909 from Travancore (Madras) [Chennai] in the same chapter.

Bouvier (1936: 235-240) accepted only three species of the genus *Cricula* WALKER, 1855. Those were *trifenestrata* HELFER [sic] distributed from Sikkim to Celebes [Sulawesi], *andrei* JORDAN distributed from Sikkim and Java, and *drepanoides* MOORE from Sikkim. *C. andrei elaezia* JORDAN, 1909 [incorrect subsequent spelling of *elaezia* JORDAN, 1909] was recorded for Java, the form *trifenestrata javana* WATSON, 1912-1913 was recorded for Sockaboemi [correct as Soekaboemi = now Sukabumi], Java, *trifenestrata bornea* WATSON was recorded for Busan, Borneo, and *trifenestrata kransi* JURRIAANSE & LINDEMANS, 1909 [error in publication date of *kransi* JURRIAANSE & LINDEMANS, 1920] was recorded for Galla [=Gala] and Boeton [=Buton] [Sulawesi, Province Sulawesi Tenggara].

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*). *C. elaezia* JORDAN, 1909 is considered to be no subspecies of *C. andrei* JORDAN, 1909, which is a Continental Asian species.

Allen (1981: 103, 120) recorded *Cricula trifenestrata* HELFER, 1837 [sic, not code-conform citation of (HELPER, 1837)], *C. elaezia* JORDAN, 1909, and *C. bornea* WATSON, 1913 for Brunei, Sabah and Sarawak, Borneo. The widespread *C. trifenestrata* was reported from India eastwards to Borneo, Indonesia and the Philippines. Specimens were reported taken in Brunei in montane forest (figured pl. 18). Allen noted that separate lowland and montane races may occur in Borneo. The author recorded *C. elaezia* JORDAN, 1909 for Brunei based on 2 ♂ taken in lowland primary forest and montane forest (both figured pl. 18) [see "Remarks" below]. The author mentioned that *C. bornea* WATSON, 1913 was actually described from Sarawak but was not taken in Brunei thus far. The illustrated specimen was taken in primary lowland forest in Sabah (figured pl. 18). Allen remarked that no records of the larvae and food plants of the Bornean populations of *Cricula* were recorded thus far.

Remarks: both specimens recorded as *C. elaezia* JORDAN, 1909 are true *C. magnifenestrata magnifenestrata* NAUMANN & LÖFFLER, 2010 due to the large ocelli in the forewings (pl. 18, top left the montane ♂ and bottom left the lowland ♂. The illustrated ♂ (pl. 18, top right) can be a true *C. trifenestrata* (HELPER, 1837). The ♂ *C. bornea* WATSON, 1913 (pl. 18, bottom right) does not fit very well to true *bornea* of the type series.

Holloway in Allen (1981: 123) finally noted the new status: “*Cricula bornea* WATSON stat. n. (Plate 18)“. He noted that this species is only known from the type locality Busan, Sarawak [patria most probably correct as Busang, Sarawak, East Malaysia], and the Tawau district of Sabah, both probably lowland localities.

Lampe (1984: [1]-[32]) [20.10.1984] recorded the Saturniidae of the Cameron- and Genting-Highlands in West-Malaysia. The author remarked that Allen recorded three species for Borneo which were discussed in detail by Holloway.

Remarks: Allen and Holloway recorded three species for Borneo. Those were *C. elaezia* JORDAN, 1909, the record refers to *C. magnifenestrata magnifenestrata* NAUMANN & LÖFFLER, 2010 today, *C. trifenestrata* (HELPER, 1837), and *C. bornea* WATSON, 1913 which is considered to be a somehow doubtful species. The illustrated specimens by Lampe (col.-pl. 8) are most likely ♂ *C. magnifenestrata elaeziopahangensis* BRECHLIN, 2010 (fig. 1), ♀ and ♂ *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998 (figs. 4 and 5).

Lampe (1985: [1]-[32]) [1985] noted that “recently Allen (1980) described [sic] three new species from Borneo and Holloway (in Allen 1980) fully confirmed these. Perhaps we are dealing here with more than one taxon. A knowledge of the pre-imaginal stages would provide more positive information.“

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Holloway (1987: 108-110) listed three species of the genus *Cricula* WALKER, 1855 for Borneo. Those were *Cricula trifenestrata* HELPER [sic] with a geographical range from the Indian Subregion to the Philippines, Sulawesi and Java, *Cricula bornea* WATSON with a geographical range Borneo (endemic), and *Cricula elaezia* JORDAN with a geographical range Sundaland and Buru (ssp. *buruensis* JORDAN). Holloway still assigned *drepanoides* MOORE erroneously to the genus *Cricula* but remarked that W. A. Nässig suggested that *drepanoides* is best separated in the genus *Solus*. The ♀ specimen illustrated in color dorsally (pl. 8, fig. 6) most probably belongs to *C. magnifenestrata* NAUMANN & LÖFFLER, 2010.

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*). At the time being the populations of the *elaezia*-group (sensu Naumann & Löffler 2010) from Sumatra are assigned to *C. separata* NAUMANN & LÖFFLER, 2010, from Java to *elaezia* JORDAN, 1909, from Bali to *pelengensis* PAUKSTADT & PAUKSTADT, 2009, from Borneo to *magnifenestrata magnifenestrata* NAUMANN & LÖFFLER, 2010, and from West Malaysia to *magnifenestrata elaeziopahangensis* BRECHLIN, 2010. At the time being the name *buruensis* JORDAN, 1939 is treated as *species inquirenda* rather than as synonym of *elaezia* JORDAN, 1909.

Nässig (1989: 182) [01./15.vii.1989] noted that a ♂ lectotype of *bornea* WATSON, 1913 was designated, in BMNH, now The Natural History Museum (London,

Great Britain). Nässig placed *bornea* WATSON, 1913 as one of three species into the *trifenestrata*-group (sensu Nässig, 1989).

Nässig (1995: 1-113; A revision of the genus *Cricula* WALKER, 1855 and an attempt of a phylogenetic analysis of the tribus Saturniini) remarked (: 28) that *bornea* WATSON, 1913 represents “a dubious form whose species status requires review”. Nässig (1995: 73) figured the ♂ lectotype of *Cricula trifenestrata bornea* WATSON, 1913 (fig. 22) and the ♀ paralectotype (fig. 23) in color dorsally. Nässig (1995: 97) figured the ♂ genitalia structures of *C. bornea* from Borneo (fig. 7) in phot.

Nässig, Lampe & Kager (1996a: 35) [30.vi.1996] recorded three species of the genus *Cricula* WALKER, 1855 from Borneo based on Holloway (1987). Those were the endemic *C. bornea* WATSON, 1913, the Sundanian *C. elaezia* JORDAN, 1939, and the widespread Oriental *C. trifenestrata* (HELPER, 1837).

Remarks: at the time present *C. elaezia* JORDAN, 1939 is considered to be endemic to the islands of Java and is replaced on Borneo by the endemic *C. magnifenestrata magnifenestrata* NAUMANN & LÖFFLER, 2010, on Bali (and eastern Java) by the endemic *C. pelengensis* PAUKSTADT & PAUKSTADT, 2009, in Peninsular Malaysia by the endemic *C. magnifenestrata elaeziopahangensis* BRECHLIN, 2010, and on Sumatra by the endemic *C. separata* NAUMANN & LÖFFLER, 2010. It is unlikely that true *trifenestrata* (HELPER, 1837) are present on Borneo. Investigation on the status of the Bornean *trifenestrata* populations from the lowlands and the highlands are lacking.

Paukstادت & Paukstادت (1998) recorded *C. trifenestrata javana* WATSON, 1913 from Thailand?, Peninsular Malaysia?, Borneo?, Sumatra, Java, Bali?, Nusa Tenggara? [=Smaller Sunda Islands] (: 20). *C. trifenestrata javana* and *C. trifenestrata javana?* were recorded for the Eastern Lesser Sunda Islands and mentioned that *C. trifenestrata javana* is only tentatively included into the list of species. Further species of the genus *Cricula* WALKER, 1855 recorded for the Eastern Lesser Sunda Islands were *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 from Flores and Timor and *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 from Sumba (and Flores?).

Remarks: at the time being the populations of *C. trifenestrata* from Thailand are assigned to the nominotypical subspecies *trifenestrata* (HELPER, 1837), those from Peninsular Malaysia to *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998, from Borneo to *C. trifenestrata javana* WATSON, 1913 and *C. bornea* WATSON, 1913, from Sumatra to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010, from Java *C. trifenestrata javana* Watson, 1913, from Bali and Nusa Tenggara [Lesser Sunda Islands = Bali, Lombok, Sumbawa, Sumba, and Flores] *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998.

Paukstادت, Paukstادت & Suhardjono (1998: 232-240) [15.vi.1998] remarked that a few taxa in the *trifenestrata*-group (sensu Nässig 1995) show a variable tendency to reduce the basal left cornutus in the vesica of the aedeagus. Those are *C. trifenestrata serama* NÄSSIG, 1989 (Seram), *C. bornea* WATSON, 1913 (Borneo), *C. trifenestrata banggaiensis* NAUMANN & PAUKSTADT, 1997 (Banggai Archipelago), and finally *C. trifenestrata tenggarensis* (Sumba) [only the Indonesian taxa and taxa from the island of Borneo are listed herein].

D’Abrera (1998: 52-55) [1998] reported the range of *C. trifenestrata* HELPER, 1837 [sic] from Java, Borneo, Sulawesi east to Irian Jaya. *C. banggaiensis* NAUMANN &

PAUKSTADT was recorded from Banggai Island [sic] and noted being distinct in the ♂ genitalia. *C. elaezia* JORDAN, 1939 was recorded from the Malay Peninsula, Java, Sumatra, Borneo, and ?western Moluccas. The ♂ holotype from western Java and a ♀ from eastern Java were figured in color. The author noted that the population from Buru [western Moluccas] has been described as *buruensis* JORDAN. *C. quinquefenestrata* ROEPKE, 1940 was recorded for Sulawesi. A ♂ adult and a ♀ paratype were figured in color. *C. bornea* WATSON, 1913 was recorded from Borneo. A ♂ adult from Sabah and a ♀ paralectotype from Busau were figured in color. The author noted that the specimens are smaller than *trifenestrata* and *elaezia* and might be identified by dissection only. *C. sumatrensis* JORDAN, 1939 was recorded for Sumatra and the ♂ holotype figured. The author noted that variable yellowish and reddish individuals are present. *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 was reported from Flores. ♂ and ♀ adults were illustrated in color.

Remarks: *C. trifenestrata* (HELPER, 1837) has been not cited code-conform. The report from Irian Jaya is considered doubtful and might be based on introduced specimens. The populations of the *trifenestrata*-group from Halmahera are assigned to *C. trifenestrata halmaheraensis* PAUKSTADT & PAUKSTADT, 2010. *C. elaezia* JORDAN, 1939 is replaced by *C. magnifenestrata elaeziopahangensis* BRECHLIN, 2010 on the Malay Peninsula, by *C. magnifenestrata* NAUMANN & LÖFFLER, 2010 on Borneo, and by *C. separata* NAUMANN & LÖFFLER, 2010 on Sumatra.

Beck & Nässig (2008: 160) reported *C. bornea* WATSON, 1913 from northern Borneo but did not record this species in their study. The authors remarked that the status requires further studies. The somewhat enigmatic species was confirmed being close to *trifenestrata* (HELPER, 1837) but might represent an endemic local species in northern Borneo. The authors noted that only very few reliable records were known since first description and that the taxon can be determined by genitalia dissection only, cf. Holloway (1987) and Nässig (1995).

Remarks: the habitus (wing shapes) of *bornea* WATSON, 1913 is unmistakable and therefore dissection considered being not mandatory for a safe determination.

Paukstadt & Paukstadt (2010e: 159-174) [13.v.2010] provided a preliminary checklist of the Saturniidae of Indonesia (New Guinea excluded). *C. bornea* WATSON, 1913 from Borneo was listed (: 166). The authors remarked that the taxonomic status needs investigation.

Paukstadt & Paukstadt (2010f: 203-228) [14.v.2010] listed the following subspecies of *C. trifenestrata*: *barisanensis* PAUKSTADT & PAUKSTADT, 2010, *javana* WATSON, 1913, *kransi* JURRIANSE & LINDEMANS, 1920, *serama* NÄSSIG, 1989, *banggaiensis* NAUMANN & PAUKSTADT, 1997, *tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998, *halmaheraensis* PAUKSTADT & PAUKSTADT, 2010, and the species *bornea* WATSON, 1913, *hayatae* PAUKSTADT & SUHARDJONO, 1992, *cameronensis* PAUKSTADT & PAUKSTADT, 1998, and *maxalorensis* NAUMANN & LÖFFLER, 2010 as members of the *trifenestrata*-group (sensu Nässig, 1995). *C. kalimantanensis* BRECHLIN, 2010 was included into this species-group but remarked that the placement within this group is uncertain.

Remarks: at the time being *C. kalimantanensis* BRECHLIN, 2010 is preliminary and tentative included by us in the *agria*-subgroup of the *trifenestrata*-group based on the BOLD TaxonID Tree. The species *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 from Flores and the

closely relative *C. maxalorensis* NAUMANN & LÖFFLER, 2010 from the nearby island of Alor were included into the *hayatiae*-subgroup of the *luzonica*-group.

Furry (2012: 1-51) [2012 Sep] provided a study [thesis] on the production and possible economy of *Cricula trifenestrata* from Mete Desa Imogiri Yogyakarta [Central Java, Indonesia]. Several errors and misspellings are in this paper. *C. trifenestrata javana* was reported from Nusa Tenggara Timur (e.g. Flores) based on Watson (1913), *C. trifenestrata tenggarensis* was recorded from Sumba, *trifenestrata* from Sumatra, *trifenestrata kransi* from Sulawesi, *trifenestrata banggaiensis* from the Banggai Archipelago, and *trifenestrata bornea* from Kalimantan (: 5). The life history of *C. trifenestrata javana* from Yogyakarta (Central Java) was described and figured in color.

Remarks: Bali and Nusa Tenggara are occupied by *Cricula trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998, which ranges in Nusa Tenggara Barat and Nusa Tenggara Timur from Bali to Flores and on Sumba. Sumatra is occupied by the subspecies *trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010. The taxon *bornea* has been unintentionally lowered to subspecific rank following the original description. There are actually no reliable records of *bornea* from Kalimantan (the Indonesian provinces) but from East Malaysia instead.

***kalimantanensis* BRECHLIN, 2010**

Original citation and spelling: “*Cricula kalimantanensis* n. sp.”

Original description: Brechlin, R. (2010a): Neue Taxa der Gattung *Cricula* WALKER, 1855 (Lepidoptera: Saturniidae). – Entomo-Satsphingia, 3 (1): pp. 34-41, 2 col.-pls. (with 20 figs.).

Remarks: above paper is considered being unpublished for the purposes of zoological nomenclature, cf. Nässig, Kitching, Peigler & Treadaway (2010: 145-165).

Brechlin, R. (2010b): Neue Taxa der Gattung *Cricula* WALKER, 1855 (Lepidoptera: Saturniidae). – Entomo-Satsphingia, 3 (1): pp. 36-44, 2 col.-pls. (with 20 figs.).

Type locality: Indonesia, Kalimantan Selatan [Kalimantan Selatan Province; Selatan = South], 30 km E Kandangan, 15 km NE of Loksado, 1100 m, GPS 02.52°S 115.35°E

Etymology: the name *kalimantanensis* refers to the type locality Kalimantan, Indonesia.

Type material: the description based on a ♀ holotype by original designation ex coll. Brechlin / CRBP (Pasewalk, Germany) in coll. Museum Witt (Munich, Germany) and is finally preserved in the collection Zoologische Staatssammlung München (Munich, Germany). There are no paratypes available.

Taxonomical notes: the description of the taxon *kalimantanensis* BRECHLIN, 2010 was published twice. The first description was

considered being unpublished for the purposes of zoological nomenclature due to a publishing problem, cf. Nässig, Kitching, Peigler & Treadaway (2010: 145-165)]. The second description was considered valid by above authors. The taxon was described without group status.

Geographical and altitudinal range: thus far the species *C. kalimantanensis* BRECHLIN, 2010 is only known from the type locality near Loksado, South Kalimantan Province, Indonesia. The only altitudinal record is from 1100 m (holotype). The appropriate ♂ specimens and the preimaginal instars remain unknown.

General notes: the ♀ holotype of *C. kalimantanensis* BRECHLIN, 2010 was figured in color dorsally (: 43, fig. 6). The appropriate ♂ adult and the early stages remain unknown. Nothing is known on the biology and ecology thus far.

Synonyms: For misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, and incorrect subsequent spellings for *kalimantanensis* BRECHLIN, 2010 are as follows:

C. ‡kalimantanensis BRECHLIN, 2010 in Brechlin, R. (2010a): Neue Taxa der Gattung *Cricula* WALKER, 1855 (Lepidoptera: Saturniidae). – Entomo-Satsphingia, 3 (1): pp. 34-41, 2 col.-pls.

Remarks: the paper is considered to be unpublished for the purposes of zoological nomenclature, cf. Nässig, Kitching, Peigler & Treadaway (2010: 145-165).

Hybridizations and sericulture: Inter-generic and inter-specific pairings with *kalimantanensis* BRECHLIN, 2010 are unknown from literature. There is no information on sericulture available.

Further readings on *kalimantanensis* (in chronological order):

Brechlin (2010a: 34-41) [09.i.2010 / considered unpublished for the purposes of zoological nomenclature] described and illustrated new taxa of the genus *Cricula* WALKER, 1855. Those were *C. ‡elaeziosumatrana* (Sumatra), *C. ‡elaeziopahangensis* (West Malaysia), and *C. ‡elaezioborneensis* (Borneo) of the *elaezia*-group and *C. ‡kalimantanensis* (Kalimantan) with uncertain group status. The taxa were figured in color (: 40) as well as the ♂ genitalia structures (: 41).

Remarks: the paper by Brechlin (2010a) was considered being unpublished for the purposes of zoological nomenclature and the names therefore being invalid, cf. Nässig, Kitching, Peigler & Treadaway, 2010.

Brechlin (2010b: 36-44) [09.i.2010, **recte** 26.i.2010 / considered being published for purposes of zoological nomenclature, cf. Nässig, Kitching, Peigler & Treadaway (2010)] described and illustrated new taxa of the genus *Cricula* WALKER, 1855. Those were from Sundaland *C. elaeziosumatrana* (Sumatra), *C. elaeziopahangensis* (West Malaysia), and *C. elaezioborneensis* (Borneo) of the *elaezia*-group and *C. kalimantanensis* (Kalimantan) with uncertain group status. The ♀ holotype of *C. kalimantanensis* BRECHLIN, 2010 (Kalimantan) was figured in color dorsally (: 43, fig. 6).

Remarks: in the meantime *C. elaeziosumatrana* was considered to be a junior subjective synonym of *C. separata* NAUMANN & LÖFFLER, 2010 [see further “Remarks” below], *C. elaeziopahangensis* was downgraded as subspecies of *C. magnifenestrata* NAUMANN & LÖFFLER, 2010, and *C. elaezioborneensis* was considered to be a junior subjective synonym of *C. magnifenestrata* NAUMANN & LÖFFLER, 2010, cf. Nässig, Kitching, Peigler & Treadaway (2010). At the time present the populations of the *elaezia*-group from Bali are assigned to *C. pelengensis* PAUKSTADT & PAUKSTADT, 2009.

The status of *C. elaeziosumatrana* BRECHLIN, 2010 needs further investigation. At the time present *C. elaeziosumatrana* is treated as junior subjective synonym of *C. separata* NAUMANN & LÖFFLER, 2010. The BOLD TaxonID Tree on which this paper based taxonomically clearly shows a grouping of the *elaezia*-group populations from North Sumatra and Aceh (= *elaeziosumatrana*) and those from West Sumatra (= *separata*). The description of *C. separata* based unfortunately on specimens from West Sumatra only.

Paukstadt & Paukstadt (2010e: 159-174) [13.v.2010] provided a preliminary checklist of the Saturniidae of Indonesia (New Guinea excluded). *C. kalimantanensis* BRECHLIN, 2010 from Borneo was listed (: 167). The authors noted that Naumann (2010) assumed that *kalimantanensis* represents the appropriate still unknown ♀ of *bornea* WATSON, 1913. Therefore the placement within the *trifenestrata*-group was considered by Paukstadt & Paukstadt (2010e) to be tentative because the appropriate ♂ adult of *kalimantanensis* was remaining unknown.

Paukstadt & Paukstadt (2010f: 203-228) [14.v.2010] listed the following subspecies of *C. trifenestrata*: *barisanensis* PAUKSTADT & PAUKSTADT, 2010, *javana* WATSON, 1913, *kransi* JURRIAANSE & LINDEMANS, 1920, *serama* NÄSSIG, 1989, *banggaiensis* NAUMANN & PAUKSTADT, 1997, *tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998, *halmaheraensis* PAUKSTADT & PAUKSTADT, 2010, and the species *bornea* WATSON, 1913, *hayatiae* PAUKSTADT & SUHARDJONO, 1992, *cameronensis* PAUKSTADT & PAUKSTADT, 1998, and *maxalorensis* NAUMANN & LÖFFLER, 2010 as members of the *trifenestrata*-group (sensu Nässig, 1995). *C. kalimantanensis* BRECHLIN, 2010 was included into this species-group but remarked that the placement within this group is uncertain.

Remarks: at the time being *C. kalimantanensis* BRECHLIN, 2010 is preliminary and tentative included by us in the *agria*-subgroup of the *trifenestrata*-group based on the BOLD TaxonID Tree. The species *C. hayatiae* PAUKSTADT & SUHARDJONO, 1992 from Flores and the closely relative *C. maxalorensis* NAUMANN & LÖFFLER, 2010 from the nearby island of Alor are included in the *hayatiae*-subgroup of the *luzonica*-group.

***trifenestrata javana* WATSON, 1913**

Original citation and spelling: “*C. trifenestrata javana*, nov. subsp.”

Original description: Watson, J. H. (1913): A new genus, a new species of *Antherea* [sic], and some geographical races of the genus *Cricula* (Saturnidae [sic]) from the Indo-Malay region. – Notes from the Leyden Museum (Leyden), XXXV: pp. 181-185; pl. 8 (5 figs. phot. h.-t.).

Type locality: [Indonesia, Java I.,] Eastern Java [East Java Province, Propinsi Jawa Timur], Malang.

Etymology: the name *javana* is pointing out the distribution of this taxon, the island of Java.

Type material: the description was based unmistakably on an unknown number of ♂ and ♀ syntypes, which were mentioned being preserved in coll. Watson. Nässig (1989) designated a ♂ lectotype of *C. trifenestrata javana* WATSON 1913 and a further specimen became a ♀ paralectotype. Both type specimens were confirmed by Nässig (1989: 187) being preserved in BMNH [now The Natural History Museum (London, Great Britain)].

Taxonomical notes: thus far there were no taxonomical changes regarding the populations of *C. trifenestrata javana* WATSON, 1913 from Java and adjacent smaller islands (e.g., Bawean Islands). In older literature the name *javana* was erroneously applied to the populations of the *trifenestrata*-group (sensu Nässig 1995) from Bali, Sumatra, Malaysia, and Borneo. These populations, except (partly?) for Borneo, belong to distinct mostly endemic subspecies or species of the *trifenestrata*-group as presently defined. This idea was recently confirmed by DNA analysis (by BOLD).

Geographical and altitudinal range: *C. trifenestrata javana* WATSON, 1913 is an endemic taxon of the island of Java and most probably adjacent smaller islands except Bali, Indonesia.

General notes: Horsfield & Moore [1860: pl. xvii] illustrated the mature larva (fig. 7), pupa (fig. 7a) and cocoon (fig. 7b) of *C. trifenestrata* (HELPER, 1837) from Java. Jordan (1939: 435) figured and compared the ♂ antennae of *C. elaezia* (Java) (line drawing, text-fig. 319) and *C. trifenestrata [javana]* (Java) (line drawing, text-fig. 318). Kalshoven (1981: 319, 320) figured a ♀ adult (: 320, b&w drawing) and a cluster of cocoons (: 319, phot. h.-t.) of uncertain origin. Paukstadt & Paukstadt (1990a: 271-272) illustrated in phot. h.-t. a gynandromorphic *C. trifenestrata javana* WATSON, 1913 from West Java (: 271, fig. 1). Paukstadt & Paukstadt (1990b) figured the preimaginal instars and parasites of *C. trifenestrata javana* WATSON, 1913 from West Java. The

authors recorded the following hosts for the larvae: *Persea americana* (Lauraceae), Rambutan [*Nephelium lappaceum* L. (Sapindaceae)], Sirsak [*Annona muricata* L. (Magnoliales: Annonaceae)] and Jambu Air (*Psidium* sp., Myrtaceae). The following parasites were listed: Diptera: Tachinidae [unidentified], *Xanthopimpla brullei* (KRIEGER, 1899) (Hymenoptera, Ichneumonidae), *Theronia zebra zebra* (VOLLENHOVEN, 1879) based on Dammermann (1929). The following illustrations were provided in color (photo): 1st instar larva (fig. 1, 2), 2nd instar larva (fig. 3, 4), 3rd instar larva (fig. 5), 4th instar larva (fig. 6, 7), 5th instar larva (figs. 8, 9), *Xanthopimpla brullei* KRIEGER, 1899 and an undetermined Diptera of the family Tachinidae (fig. 10), a ♀ adult (fig. 11), a ♂ adult (fig. 12), the pupa (figs. 13, 14, 17, and 21), the cocoon (figs. 18, 19, 20), eggs (fig. 15), and the ♂ genitalia structures (fig. 16). Nässig (1995: 77) figured ♂ adults from Java Island in color dorsally (figs. 7, 8, 9, 10), a ♂ from Bawean Island (fig. 11), and a ♀ from West Java (fig. 14). Nässig (1995: 95) figured the ♂ genitalia structures (fig. 6) in phot. Nässig (1995: 103) figured the ♀ genitalia structures of *C. trifenestrata javana* in phot. (fig. 3). Nässig, Lampe & Kager (1996a: [87]) illustrated the adults of *C. trifenestrata barisanensis* under the name of *C. trifenestrata javana* in color dorsally. The ♂ specimen (fig. 30) needs to be assigned to *C. trifenestrata javana* WATSON, 1913 from Java and the ♀ specimen (fig. 34) needs to be assigned to *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998. Nässig (1995: 95) figured the ♂ genitalia structures (fig. 6) in phot. Whitten, Soeriaatmadja & Afiff (1996, 2000) reported *Cricula trifenestrata [javana]* to be a key pest on avocado, cocoa, rose apple, mango, and kenari trees. Paukstadt & Paukstadt (1998a) figured the mature larva in color (: 137, fig.11) and a wild collected cocoon in phot. h.-t. (: 138, fig.13). Paukstadt, Paukstadt & Suhardjono (1998: 237, fig. 8) figured the ♂ genitalia structures in phot. h.-t. Lampe (2010) illustrated the preimaginal instars of *C. trifenestrata javana* WATSON, 1913 from West Java (: 303, pl. 298, 10 col.-figs. and : 304, pl. 299, 10 col.-figs.) in color. Meister (2011: 153) recorded *Malus »hillieri*, *Acrocarpus*, and *Salix pentandra* as [substitute and natural, not specified] foodplants [without reference]. Paukstadt & Paukstadt (2010: 224) illustrated in phot. h.-t. the ♀ genitalia structures of *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 (paratype) (: 224, fig. 12) and compared to those of *C. trifenestrata javana* WATSON, 1913 (: 224, fig. 13). Furry (2012: 1-51) figured the life history of *C. trifenestrata javana* from Yogyakarta (Central Java) in color: fig. 8 (: 26), fig. 9 (: 27), fig. 10 (: 28), figs. 11 and 12 (: 29), fig. 13 (: 30), and fig. 14 (: 31), the ♂ and ♀ adults were figured in color: fig. 2 (: 5) and fig. 15 (: 32). Paukstadt, L. H. & Paukstadt, U. (2013b:

145] illustrated the spinning mature larva in color (figs. 1-2). Paukstadt & Paukstadt (2013i: cover illustration) illustrated in color two ♂ adults of *C. trifenestrata javana* WATSON, 1913 showing an intraspecific variation of the forewing fenestrae and the “standard” ocelli morphology. Paukstadt & Paukstadt (2019a: Cover Illustration) figured a gynandromorph of *javana* WATSON, 1913 in color.

Synonyms: For misinterpretations see the Introduction with Systematics and the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *trifenestrata* (HELPER, 1837) and *trifenestrata javana* WATSON, 1913 are as follows:

trifenestrata HERR SCHÄFF. [sic]; Cotes (1891: 80)
‡*Trifenestrata* [sic] HELFER [sic]; Snellen in Veth (1892: 40, 92)
trifenestrata HELFER [sic]; Kheil (1911: 129)
trifenestrata (HELPER, 1847) [sic]; Watson (1913: 182)
trifenestrata WALK[sic]; Bouvier (1928: 122, 123)
trifenestrata trifenestrata HELFER 1837 [sic]; Lampe (1984: 3)
trifenestrata trifenestrata HELFER 1837 [sic]; Lampe (1985: 5)
trifenestrata HELFER [sic]; Alam & Ahmed (1992: 69)
trifenestrata HELFER 1837 [sic]; Allen (1993: 52, 62)
trifenestrata HELFER 1837 [sic]; Chu & Wang (1993: 287)
trifenestrata HELFER 1837 [sic]; d’Abrera (1998: 52)]
trifenestrata trifenestrata HELFER 1837 [sic]; Pinratana & Lampe (1990: iv, 29)
trifenestrata trifenestrata HELFER, 1837 [sic]; Nässig, Lampe & Kager (1996b: 120)
trifenestrata HELFER [sic]; Kakati & Chutia (2009: 141)
trifenestrata HELFER [sic]; Prasetyawati (2012: i-viii and 1-59)
trifenestrata HELFER [sic]; Tikader, Vijayan & Saratchandra (2014: 24)
‡*trifenestrata* [sic] HELFER, 1837 [sic]; Pinratana & Lampe (1990: 27)
‡*trifinestrata* [sic]; PAUKSTADT & PAUKSTADT (1993: 20)
‡*trifenestrata* [sic]; Naumann (1995: 76, 78, 81)
‡*trifene* ‡*strata* [sic] HELFER [sic]; Chu & Wang (1996: 77)
‡*trifenestrata* [sic]; Naumann & Paukstadt (1997: 196)
‡*trifenestrata* [sic]; Kato (2000: [11], 12)
‡*tnfenestrata* [sic]; Kato (2000: [11])
‡*Triphenestrata* [sic]; Kuroda (2000: [85])
‡*trifenetrata* [sic]; Brechlin (2001: 43)
‡*trifenestara* [sic]; Wikardi, Djuwarso, Tyasning & Risanti (2001: 18)
‡*Cricullatriphenestrata* [sic]; Lenan (2008)
‡*Trifenesfrata* [sic] HELF [sic]; Supandi, Wiana, Tresna & Karmila (2009)
‡*trifenstera* [sic]; Kavane & Sathe (2011: 60)

‡*triphenestrata* [sic]; Sunarintyas, Siswomihardjo & Tontowi (2012: unnumbered, 7 pp.)
‡*Triphenestrata* [sic]; Hardoyo (2012)
‡*triphenestrata* [sic]; anonymous in Acton (edit.) (2012: 465) [2013]
‡*trienestrata* [sic]; Furry (2012: iii)
‡*trifenestrata* [sic]; Furry (2012: xi, 32)
Trifenestrata [sic] HELFER [sic]; Furry (2012: 18)
‡*trifenestra* [sic] HELFER [sic]; Prasetyawati (2012: xi)
‡*Criculatrifenestrata* [sic] HELFER [sic]; Prasetyawati (2012: 43, 46)
‡*trifenestrata* [sic]; Naumann & Löffler (2013: 183)
‡*tritenastrata* [sic]; Gundlach (2013)
‡*tritenestrata* [sic]; Gundlach (2013)
‡*trinesentrata* [sic]; Nindhia, Knejzlik, Ruml & Nindhia (2014: 142)
Trifenestrata [sic] HELF [sic]; Putro (2014: xv, xvi)
Trifenestrata [sic] HELFER [sic]; Putro, Prihatin & Suratno (2015: 100)
trifenestrata HELF [sic]; Putro, Prihatin & Suratno (2015: 100)
Saturnia ‡*trimaculata* DE HAAN; i.l., Snellen van Vollenhoven (1862: 13) [correct as *Saturnia* ‡*trimaculatus*] [nomen nudum]
Saturnia trimaculata DE HAAN; i.l., Snellen van Vollenhoven (1862: 13) noted that *Saturnia trifenestrata* Herr. Sch. [sic] from Java and other Indonesian islands has been preserved in the Leiden Museum under the name above
Saturnia trifenestrata Herr. Sch. [sic]; Snellen van Vollenhoven (1862: 13)
trifenestrata HERR SCHÄFF. [sic]; Cotes (1891: 80)
‡*haumpottonee*; HUGON (1837: 33); STATUS-; vernacular name
‡*haumpottonee* HUGCN [sic] 1837; Chu & Wang (1993: 287)
‡*haumpottonee* HUGEN [sic], 1837; Chu & Wang (1996: 147)
‡*ampotoni*; Rondot (1887: 199); STATUS-; vernacular name
‡*ampotoni* RANDOT [sic], 1887; Chu & Wang (1993: 287)
‡*ampotoni* RANDOT [sic], 1837; Chu & Wang (1996: 147)
‡*amlouri*; RONDOT (1887: 199); STATUS-; vernacular name
zuleika (WESTWOOD, 1848) (*Saturnia*); primary homonym
trifenestrata ab. ‡*zuleica* [sic] WESTWOOD; Levrat (1901: 141)
‡*zuleica* [sic] WESTWOOD, 1848; Sonthonnax (1901-1902)
‡*zuleica* [sic] WESTWOOD, 1848; Sonthonnax (1904)
‡*zuleica* [sic] WESTWOOD, 1848; Conte (1919)
zuleika WESTWOOD, [1847] [sic]; Nässig (1989: 181)
zuleika WASTWOOD [sic], 1848; Chu & Wang (1996: 147)

Hybridizations and sericulture: Inter-generic and inter-specific pairings with *Cricula trifenestrata javana* WATSON, 1913 are unknown from literature. There is no information on sericulture available.

Further readings on *trifenestrata javana* (in chronological order):

(this chapter contains citations of *C. trifenestrata* (HELPER, 1837) (*Saturnia*) from Continental Asia if considered being important)

Clerck (1759-1764 [1764] illustrated and mentioned *Ph. [Phalaena]* Bombyx *Fenestra* (pl. 55 [fig.] 41) and mentioned in the Register “*Fenestra*....55.1”.

Remarks: the illustrated specimen is not identical with *Cricula trifenestrata* (HELPER, 1837) as supposed by Horsfield & Moore, even not belongs to the family Saturniidae [cf. Horsfield & Moore (1860)]. The specimen figured and listed supposedly is *Hyalurga fenestra* (LINNAEUS, 1758) (Lepidoptera: Erebidae).

Helper (1837: 45-46) described *Saturnia* (?) *trifenestrata* from Assam.

Remarks: the genus *Cricula* was first established in the family Drepanulidae BOISDUVAL (now Drepanidae MEYRICK, 1895) and was placed in the Saturniidae by Herrich-Schäffer ([1858] 1850-1858: 61).

Westwood (1848) described *S. zuleika* (Westwood) in the genus *Saturnia*.

Remarks: the name *S. zuleika* WESTWOOD, 1848 was preoccupied by *Saturnia zuleika* HOPE, 1843 and was based on ♂ *andrei* and ♂ *trifenestrata*, the latter being regarded as the ♀, cf. Cockerell in Packard (1914).

Herrich-Schäffer (1850-1858) recorded *Euphranor trifenestrata* HELPER from India or. [orientalis] and Java (: 61). The generic name *Cricula* WALKER was placed in synonymy to *Euphranor* H-S. [HERRICH-SCHÄFFER] (: 61). He noted (: 78) *Saturnia trifenestrata* HELPER *foem.* – *Euphranor* H-S. [HERRICH-SCHÄFFER]. The name *multifenestrata* H-S. [HERRICH-SCHÄFFER] was assigned to the genus *Euphranor* (: 84) and *Euphranor dione* WESTWOOD was cited in synonymy of *Saturnia wahlbergii* WESTWOOD (: 78). The author assigned *Euphranor* HERRICH-SCHÄFFER to Saturniina HERRICH-SCHÄFFER.

Remarks: the record for Java refers to the subspecies *javana* WATSON, 1913. *Euphranor* HERRICH-SCHÄFFER, 1855 [December]; STATUS-; junior objective synonym of *Cricula* WALKER, 1855 [November] (cf. Fletcher & Nye 1982).

The region “India orientalis” extends from India to the coasts of Southern China with the Pearl River Estuary, Canton and Formosa [Taiwan], it also includes all of the Malay peninsula and Indochina, northern Borneo, and the Philippines.

Publication dates of single issues (parts) of this work were not checked by us but citations were found different in various literature and the WorldWideWeb.

Moore (1859: 245-246) recorded *C. trifenestrata* (HELPER, 1837) from NE and S India, Silhet, Assam, Murmah [Myanmar], and Java. The following food plants were recorded for the Javanese populations of *trifenestrata*: Teng-gulung (*Protium javanum*), Kettos (*Canarium commune*), and Ingas (*Mangifera ingas*?) based on observations by Dr. Horsfield. The author noted that the larva, pupa, and cocoon of *C. trifenestrata* are figured in the Cat. of Lepidoptera in the Museum, India House, vol. ii, pl. 27, figs. 7, 7a, and 7b.

Remarks: the populations from Java belong to the subspecific name *javana* WATSON, 1913.

Horsfield & Moore ([1860]) illustrated the larva of *Cricula* [see “Remarks” below] from Java for the first time being [see “Remarks”¹ below]. The authors listed *Protium javanum* [Burseraceae], *Canarium commune* [Burseraceae] and Ingas (*Mangifera ingas*?) [Anacardiaceae?] for the Javanese populations. Horsfield & Moore listed in the synonymy of *Cricula trifenestrata* HELPER two taxa which not belong to the family Saturniidae. Those were “? *Phalaena-Attacus fenestrata*,

Linnaeus, Syst. Nat. I. II. P. 811; Mus. Lud. Ulr. P. 372. Clerck, Icon. Pl. 55, f. 1” and ?*Phalaena-Attaca perspicua*, Linnaeus, S. N. I. II. P. 811; Mus. Lud. Ulr. P. 373” [see “Remarks”² below].

Remarks:

¹ despite the poor quality of the drawing we believe that the illustration may assigned to the common *C. trifenestrata javana* WATSON, 1913 rather than to *C. elaezia* JORDAN, 1909. Thus far we were not able to assign the record of *Mangifera ingas* to a particular plant with certainty.

² The specimens figured and mentioned by Clerck and Horsfield & Moore are *Hyalurga fenestra* (LINNAEUS, 1758) (Lepidoptera: Erebidae) and *Pitthea perspicua* (LINNAEUS, 1758) (Lepidoptera: Geometridae).

Moore (1862: 416-417) recorded *Cricula trifenestrata* (Helfer) from Java. He reported that the larvae feed on the Cashew-nut tree (*Anacardium orientale*) at Moulmein [= Mawlamyaing, also Mawlamyine, a city about 300 km SE off Rangoon] and on *Protium javanum*, *Canarium commune*, and *Mangifera ingas* in Java. *Saturnia Zuleika* [sic] (WESTWOOD) was cited as synonym of *C. trifenestrata* (HELPER).

Remarks: the populations from Java belong to the subspecific name *javana* WATSON, 1913.

Snellen van Vollenhoven (1862: 13-15) recorded *Saturnia trifenestrata* HERR. SCH. [sic] from Java and further islands of the Indonesian Archipelago. He noticed that specimens in the Leiden Museum were labeled *Saturnia trimaculata* DE HAAN.

Remarks: thus far no further appropriate publication on *Saturnia trimaculata* DE HAAN, in *Litteris*, was found; *Ovalipes trimaculatus* (DE HAAN, 1833) (originally described as *Corystes (Anisopus) trimaculata* DE HAAN, 1833: 13) based on a crab (Crustacea: Decapoda: Portunidae)]. The name *Saturnia* ‡*trimaculata* DE HAAN is considered to be a manuscript name (*nomen nudum*).

Walker (1865: 530) placed *Euphranor* H.-SCH. [HERRICH-SCHÄFFER] in synonymy to *Cricula* [WALKER, 1855]. Only a single species was listed: *Cricula trifenestrata* [(HELPER, 1837)]. *Antheraea zuleika* and *Euphranor multifenestrata* HERRICH-SCHÄFFER, [1858] (1850-1855) were cited in synonymy of *C. trifenestrata*. No further notes on the Oriental distribution of the genus *Cricula* WALKER, 1855 were provided.

Remarks: the citation of *Antheraea zuleika* based on *Saturnia zuleika* WESTWOOD in Cab. Orient. Ent. 25, pl. 12, fig. 1. *Saturnia zuleika* (WESTWOOD, 1848) (*Saturnia*) is considered to be a primary homonym of *Saturnia zuleika* HOPE, 1843 [= *Saturnia (Rinaca) zuleika* HOPE, 1843]]. *Euphranor* HERRICH-SCHÄFFER, 1855 [December]; STATUS-; junior objective synonym of *Cricula* WALKER, 1855 [November] (cf. Fletcher & Nye 1982).

Hutton (1872: 133) recorded in “Notes on the Indian Bombycidae” *Cricula trifenestrata* for various parts of India. No further notes on the Oriental distribution of the genus *Cricula* WALKER, 1855 were provided.

Wardle (1879: 499) shows the “position of the families Bombycidae and Saturniidae in the great system of classification of the animal kingdom” [systematics]. *Cricula* has been one of eleven genera in the family Saturniidae. He recorded *Cricula trifenestrata* (HELPER) for Assam (: 501). The taxon *drepanoides* (MOORE) was assigned to the genus *Cricula*. The author noted (: 502-503) that cocoons of *Cricula trifenestrata* were utilized in India. No information on *Cricula* from the Indonesian Archipelago was provided in this work.

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*).

Geoghegan (1880: 159) in Section XI (Wild Silk-Producers) described the larva (“haumpottonee”) and cocoon of *Cricula trifenestrata* from India and mentioned that larvae exites severe itching and cocoons therefore were not used. No information on *Cricula* from the Indonesian Archipelago was provided in this work. Indigenous tea and wild mango were recorded as hosts for *Cucula* [sic] *trifenestrata* (: Appendix B, 178).

Hutton in Geoghegan (1880: 161) noted in “Appendix A” that the cocoons of *Cricula trifenestrata* [from India] are very irritating from a number of minute bristly hairs from the larvae. Based on the distinct morphology of the cocoons he assumed that there are two species standing under the name of *C. trifenestrata*. This species was recorded for Burma [Myanmar], Assam, and Central India. No information on *Cricula* from the Indonesian Archipelago was provided in this work.

Remarks: the author already recognized two distinct species each one of the *trifenestrata*-group and the *andrei*-group.

Wardle (1881: [vi], 13) noted (: 13) that cocoons of *Cricula trifenestrata* were utilized in India. Particular information was provided on the quality of the silk (: 67, 68). The illustrations (h.-t.) of *Cricula trifenestrata* (: 109, pl. XII) ♂ (fig. 2), ♀ (fig. 3), larva (fig. 4), and cocoon (fig. 4) not really fit to *C. trifenestrata* s. str. No information on *Cricula* from the Indonesian Archipelago was provided in this work.

Moore in Wardle (1881: 7) recorded *Cricula trifenestrata* (HELPER) as a silk-producing insect. The silk was described briefly. The taxon *drepanoides* (MOORE) was assigned to the genus *Cricula*. No information on *Cricula* from the Indonesian Archipelago was provided in this work.

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*).

Atkinson (1884: 193) recorded only two taxa of the genus *Cricula*. Those were *C. trifenestrata* HELPER [sic] from Burma [Myanmar], Assam, Maulmain, and Chota Nagpur in Central India, and *C. drepanoides* MOORE from Sikkim. Southeast Asian taxa of the genus *Cricula* were not mentioned.

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*).

Rondot (1887: 199-202, 493-404) recorded the two vernacular names ‡*amlouri* and ‡*ampotoni* for *Cricula trifenestrata* [HELPER] from Assam. Some notes on sericulture were provided, the ♂ (: 200) and ♀ (: 201) adults, the larva (: 199) and the cocoon (: 200) were figured in b&w. Local foodplants were listed (: 200). Records were from W India, Assam, Silhet, Burma [Myanmar], and Java (: 200). The following hosts were recorded for Java: *Protium javanum*, *Canarium commune*, and *Mangifera ingas*. The author noted that a further undescribed (undetermined) species of *Cricula* is present (: 202) which is distinct in the morphology of the cocoons.

Remarks: the record of *C. trifenestrata* (HELPER, 1837) from Java might be assigned to the subspecies *trifenestrata javana* WATSON, 1913. The second species of *Cricula* WALKER, 1855 which was mentioned can be *C. andrei* JORDAN, 1909.

Cotes & Swinhoe (1887: 199) listed only two species of the genus *Cricula*. Those were *Cricula drepanoides* MOORE, 1865 and *Cricula trifenestrata* (HELPER, 1837). Several taxa were listed in synonymy of *C. trifenestrata* which not belong to this genus at all. *C. trifenestrata* was recorded for Java.

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*). The Javanese populations of the *trifenestrata*-group are assigned to the subspecific name *javana* WATSON, 1913.

Wardle, T. (1891): noted that the larvae of *Cricula trifenestrata* excited much attention at its first introduction into England in the Silk Culture Court of the Colonial and Indian Exhibition in 1886 (: 628). In the “List of the illustrations and utilizations of Tusser Silk” bottles containing larva of *Cricula trifenestrata* in spirit were listed (: 642). *Cricula trifenestrata* (India) was erroneously assigned to the family Drepanulidae [see “Remarks” below] (: 647). No information on *Cricula* from the Indonesian Archipelago was provided in this work.

Remarks: Drepanulidae [Drepanidae MEYRICK, 1895] (Lepidoptera).

Cotes (1891: 80-81) reported that the Indian Museum possess specimen(s) of *Cricula trifenestrata* HERR SCHÄFF. [error in authorship of *Cricula trifenestrata* (HELPER, 1837)] from Java. Cotes assigned *drepanoides* MOORE to the genus *Cricula*. *C. trifenestrata* was figured: ♂ (fig. 1a), ♀ (fig. 1b), cocoon (fig. 1c, and larva (fig. 1d). The figures are not relevant for the Javanese populations of *C. trifenestrata*.

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*). The Javanese populations of the *trifenestrata*-group are assigned to the subspecific name *javana* WATSON, 1913.

Kirby (1892: 754, 934) listed only three species of the genus *Cricula* WALKER, 1855. Those were *C. drepanoides* MOORE, 1865 from Darjiling, *Cricula zuleika* WESTWOOD, 1848 (*Saturnia zuleika*) from N India, and *Cricula trifenestrata* HELPER, 1837 [sic] (*Saturnia trifenestrata*) from N India and Java. Var. a. *C. burmana* SWINHOE, 1890 from Burma [Myanmar and N India] was cited in synonymy of *C. trifenestrata*. In the Appendix (: 934) was listed “*C. trifenestrata* HERR-SCH'FF. [sic!]; Cotes, l. c. p. 80, t. 10. F. 1. (1891).” but no remark was added on the wrong authorship of *C. trifenestrata* (HELPER, 1837).

Remarks: the record of *C. trifenestrata* (HELPER, 1837) from Java is assigned to the subspecies *trifenestrata javana* WATSON, 1913. The taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*). *Cricula zuleika* (WESTWOOD, 1848) (*Saturnia*) is considered to be a primary homonym of *Saturnia zuleika* HOPE, 1843 [= *Saturnia* (*Rinaca*) *zuleika* HOPE, 1843]]. The correct name for this moth is *Cricula trifenestrata* (HELPER, 1837) (*Saturnia*).

Swinhoe (1892: 253) listed *Cricula trifenestrata* (HELPER, 1837) in his “Catalogue of Eastern and Australian Lepidoptera Heterocera in the collections of The Oxford University Museum, Part 1. He cited specimens from Java based on Horsfield.

Remarks: the record from Java needs to be assigned to the subspecies *Cricula trifenestrata javana* WATSON, 1913.

Hampson (1892: 28) recorded *C. trifenestrata* HELFER [sic] for India, Ceylon [Sri Lanka], Burma [Myanmar], Andamans, Java. The author assigned *drepanoides* MOORE, 1865 to *Cricula* WALKER, 1855: *Cricula drepanoides* MOORE, 1865.

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*).

Grote (1896: 1-30) [vi.1896] placed the genus *Cricula* into the subfamily Saturniinae of the family Saturniidae due to the morphology of the discoidal cell (: 2-3). *C. trifenestrata* was cited to be the type species of *Cricula*. The author noticed that there was a certain similarity between the morphology of the larvae of *Graellsia* and *Cricula* and between the ♀ antennae of *Perisomena* and *Cricula* (: 17). No information on the Southeast Asian taxa was provided.

Silbermann (1897: 324-325) recorded *Cricula trifenestrata* (HELPER) for various areas in India, British Birma [Myanmar], and Java. The author noted that the cocoons were reared and that single trees can carry about 35 kg of cocoons of which many cannot be collected due to rot. The cocoon and the silk (enlarged) are illustrated in drawings. Other vernacular names for *C. trifenestrata* in India were listed as “amluri”, “tayet-po”, and “haumpottonee”. The name *drepanoides* MOORE was assigned to the genus *Cricula*.

Remarks: *Solus drepanoides* (MOORE, 1865) (*Cricula*) is a species of the genus *Solus* WATSON, 1913.

Pagenstecher (1898: 184) recorded *Cricula trifenestrata* HELPER [sic] from the island of Bawean [Java Sea, off the northern coast of Java]. He reported that he received many much variable specimens colored from bright to dark.

Remarks: the record of *C. trifenestrata* from Bawean needs to be assigned to *C. trifenestrata javana* WATSON, 1913.

Sonthonnax (1901-1902) recorded *Cricula trifenestrata* HELPER, 1837 [sic] (*Saturnia*) from NE and S India, Burma [Myanmar], Java, and the Andaman Islands. The author assigned *multifenestrata* HERR SHÄFF, 1858 [incorrect spelling of Herrich-Schäffer] (*Euphranor*), *drepanoides* MOORE, 1865, and *expandens* WALKER, 1855 (*Copaxa*) to the genus *Cricula* WALKER, 1855.

Remarks: the populations of *C. trifenestrata* (HELPER, 1837) from Java are presently assigned to the subspecies *javana* WATSON, 1913. The taxa *multifenestrata* (HERRICH-SCHÄFFER, 1858) and *expandens* WALKER, 1855 are assigned to the genus *Copaxa* WALKER, 1855.

Sonthonnax (1904 / reprint 1977) recorded *Cricula trifenestrata* HELPER, 1837 [sic] (*Saturnia*) from NE and S India, Burma [Myanmar], Java, and the Andaman Islands. The author assigned *multifenestrata* HERR SHÄFF, 1858 [incorrect spelling of Herrich-Schäffer] (*Euphranor*), *drepanoides* MOORE, 1865, and *expandens* WALKER, 1855 (*Copaxa*) to the genus *Cricula* WALKER, 1855.

Remarks: the populations of *C. trifenestrata* (HELPER, 1837) from Java are presently assigned to the subspecies *javana* WATSON, 1913. The taxa *multifenestrata* (HERRICH-SCHÄFFER, 1858) and *expandens* WALKER, 1855 are assigned to the genus *Copaxa* WALKER, 1855.

André (1907: 186-190) described the adults and preimaginals of *Cricula trifenestrata* HELPER [sic]. A ♂ adult is figured [uncertain identity] and the cocoon. The species is recorded for NE and S India, Andaman Islands, and Java,

etc. Further three species listed under the generic name of *Cricula*. Those where *Cricula drepanoides* MOORE from Sikkim, *Cricula multifenestrata* HERR. SCHÄFF. from Mexico and Colombia, and *Cricula expandens* WALKER from Mexico.

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*). The taxa *multifenestrata* HERRICH-SCHÄFFER, 1858 and *expandens* WALKER, 1855 are members of the genus *Copaxa* WALKER, 1855. The populations of *C. trifenestrata* (HELPER, 1837) from Java are presently assigned to the subspecies *javana* WATSON, 1913.

Jordan (1909) recorded (: 303) *Cricula trifenestrata* HELPER, 1837 [sic] from Ceylon [=Sri Lanka], South and North India, Burma [=Myanmar], the Malay Peninsula, the Andamans, Sumatra, Java, Lombok, Borneo, and Luzon. Jordan (1909: 304) noted that the early stages of *C. trifenestrata* from North India and Java are much different from those of *C. andrei andrei* JORDAN, 1909 and that all races of *C. trifenestrata* were reported being sharply separated from *C. andrei* in the genitalia of both sexes. Jordan (1909: 304) noted that it appears doubtful if the still unknown larvae of *C. trifenestrata* from the Andamans, Ceylon, Nilgiris, and Philippines will turn out to be identical with Javan and Indian populations because the adults are readily distinguished by some slight differences.

Remarks: The distribution of *C. trifenestrata* recorded by Jordan (1909: 304) actually based on the distribution of several mostly endemic subspecies of *C. trifenestrata* or species of *Cricula* WALKER, 1855. The record for the island of Java applies to the distinct subspecies *C. trifenestrata javana* WATSON, 1913. The populations from the island of Sumatra belong to the distinct subspecies *barisanensis* PAUKSTADT & PAUKSTADT, 2010, from Lombok to the subspecies *trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998, and from Borneo to *bornea* WATSON, 1913.

Jordan (1909: 305-306) recorded *Cricula trifenestrata trifenestrata* HELPER, 1837 [sic] from the Nilgiris [=the Nilgiri Mountains form part of the Western Ghats in western Tamil Nadu of Southern India], Sikkim, Assam, Burma [=Myanmar], Malay Peninsula, Sumatra, Java, and Borneo. *C. trifenestrata burmana* was clearly cited in synonymy of *C. trifenestrata trifenestrata* [*burmana* is considered to be a good subspecies of *trifenestrata* today].

Remarks: The populations from the island of Borneo were described as *bornea* WATSON, 1913, those from Java were named *trifenestrata javana* WATSON, 1913, and those from Sumatra were described as *trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010. The Malay Peninsula is occupied by *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998.

Watson (1910) recorded (: 255) *C. trifenestrata* HELPER [sic] from India, Ceylon [=Sri Lanka], Java and as far East as the Philippines. Watson noted that in Java the larva feeds on *Protium javanum* [unidentified, unresolved status] [*Protium javanicum* BURM.f. (Burseraceae) or *Lophopetalum javanum* (ZOLL.) TURCZ, 1863, cf. "Remarks" below], *Canarium commune* [*Canarium* L. (Burseraceae); = synonym of *Canarium indicum* L.] and *Mangifera ingas* [unidentified species, probably *indica* L.] [*Mangifera* L., (Anacardiaceae)].

Remarks: The record might be based on different subspecies of *C. trifenestrata* at least, probably even on different species of the genus *Cricula* WALKER, 1855. The island of Java is occupied by the endemic subspecies *C. trifenestrata javana* WATSON, 1913.

"The Plant List" includes 186 scientific species names for the genus *Protium* of which are only 73 accepted species names. Further 34 scientific names for this genus are of infraspecific rank. "The Plant List" recorded for *Protium javanicum* BURM.f. an

unresolved status, cf. <http://www.theplantlist.org/tpl1.1/search?q=Protium+javanum> (last time accessed 2018-08-12).

Closs (1913) [18.x.1913] placed *Cricula trifenestrata* HELFER [sic] [not further specified] into the Saturniidae of the subfamily Attacinae of the family Attacidae. The Attacinae were further divided into Attacidae (with open discoidal cell) and Saturniidae (with closed discoidal cell).

Watson (1913: 182) compared the new taxon *C. trifenestrata javana* WATSON, 1913 with *andamana* JORDAN, which, of course, has been an incorrect subsequent spelling of *Cricula trifenestrata andamanica* JORDAN, 1909. Watson recorded the species *trifenestrata* (HELPER, 1847) [error in publication date of *trifenestrata* (HELPER, 1837)] from Burmah [Myanmar], India, Ceylon [Sri Lanka], Andamans, Java, and Sumatra.

Remarks: the populations of the species *trifenestrata* from Java belong to the subspecies *javana* WATSON, 1913 which has been described in the same paper by Watson (1913) and those from Sumatra belong to the subspecies *barisanensis* PAUKSTADT & PAUKSTADT, 2010.

Packard (1914) recorded the genus *Cricula* WALKER, 1855 from NE India, Java, and Burmah [Myanmar] based on Swinhoe [unspecified]. Packard (: 154) recorded *C. trifenestrata* (HELPER, 1837) (*Saturnia*) for NE India (Khasia Hills), Kawie, and Java. There were no other species and subspecies of *Cricula* mentioned by Packard. The adults and preimaginals were described in detail (: 154-155).

Remarks: the populations of *trifenestrata* from Java belong to the subspecies *javana* WATSON, 1913.

Cockerell in Packard (1914) noted *Euphranor multifenestrata* is designated as the type of *Euphranor*, which thus becomes a synonym of *Copaxa*. Cockerell further noted (: 154) that Jordan (1909) recognized three species, including the subspecies *C. andrei elaezia* JORDAN (Java), *C. trifenestrata* (HELPER) (Assam to Java, Borneo, etc.), and *C. drepanoides* MOORE (Sikkim and Bhutan). Cockerell remarked that *C. zuleika* (WESTWOOD) was described in the genus *Saturnia*, and the name is preoccupied. The name was based on ♂ *andrei* and ♂ *trifenestrata*, the latter being regarded as the ♀.

Remarks: the populations of the species *trifenestrata* from Java belong to the subspecies *javana* WATSON, 1913. *C. drepanoides* MOORE, 1865 actually is a species of the genus *Solus* WATSON, 1913.

Koningsberger (1915: 141) reported *C. trifenestrata* being a pest on *Canarium commune* [Burseraceae] and *Persea gratissima* [*Persea gratissima* C. F. GAERTN. is considered to be a synonym of *Persea americana* MILL., (Lauraceae)] on Java.

Seitz (1928: 507-508) [16.viii.1928] recognized only three species of the genus *Cricula* Walker, 1855. Those were *C. trifenestrata* HELPER [sic], *C. andrei*, and erroneously *C. drepanoides*. Concluded from text Seitz did not accept the generic name *Solus* WATSON for the taxon *drepanoides*. He listed several forms of *trifenestrata* in the sense of subspecies. Those were *burmana* SWINHOE [Myanmar], *luzonica* JORDAN (Philippines), *andamanica* JORDAN (Andamans), *bornea* WATSON (Sarawak), and *javana* WATSON (Java). Seitz listed *elaozia* JORDAN [incorrect subsequent spelling of *elaezia* JORDAN, 1909] (Java) as form of *andrei* in the sense of subspecies. *C. andrei* ab. *afenestra* WATSON is mentioned for an aberration lacking the fenestrae in the forewings.

Seitz (1928: 507-508) [French edition 16.viii.1928] recognized only three species of the genus *Cricula* WALKER, 1855. Those were *C. trifenestrata* HELFER [sic], *C. andrei*, and *C. drepanoides*. Concluded from text Seitz did not accept the generic name *Solus* WATSON for the taxon *drepanoides*. He listed several forms of *trifenestrata* in the sense of subspecies. Those were *burmana* SWINHOE [Myanmar], *luzonica* JORDAN (Philippines), *andamanica* JORDAN (Andamans), *bornea* WATSON (Sarawak), and *javana* WATSON (Java). Seitz listed *elaozia* JORDAN [incorrect subsequent spelling of *elaezia* JORDAN, 1909] (Java) as form of *andrei* in the sense of subspecies. *C. andrei* ab. *afenestra* WATSON is mentioned for an aberration without fenestrae in the forewings.

Bouvier (1929: 339-341) described *Copaxa nadari* as a new taxon and announced the illustration Plate III, fig. 2. Unfortunately the “Explanation of the Plates” not fits with the illustration. The only specimen figured Plate III without a legend (fig. 12) is unmistakably a ♂ specimen of the Oriental genus *Cricula* WALKER, 1855 but not of the genus *Copaxa*. *Cricula nadari* BOUVIER, 1929 (*Copaxa*) has been described within the genus *Copaxa* WALKER, 1855 and compared with taxa of this genus.

Eecke van, R. (1929a: 134- 1929b [137]) recorded *Cricula trifenestrata* HELFER [sic] for British India, Ceylon [Sri Lanka], Andaman, Sumatra, Java, Borneo, Celebes [Sulawesi], and the Philippines. Van Eecke [: 137] described the larva of *Cricula andrei*, but this taxon has been explicitly not recorded from Sumatra.

Remarks: the range of *C. trifenestrata* (HELPER) provided by van Eecke based on the distribution of several species and subspecies of the *trifenestrata*-group of the genus *Cricula* WALKER, 1855. *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 was described from Sumatra, *C. trifenestrata javana* WATSON, 1913 from Java, and *C. trifenestrata kransi* JURRIANSE & LINDEMANS, 1920 from Sulawesi.

Joannis de (1928-1931) [Saturniidae: 1929: 293-294] recorded *C. trifenestrata* (HELPER, 1837) for Tonkin [northern Vietnam]. No information on taxa of this genus from the Indonesian Archipelago was provided.

Eecke van, R. (1930: 402-[405]) [book edition of “De Heterocera van Sumatra” first published in Zoologische Mededeelingen] recorded *Cricula trifenestrata* HELFER [sic] for British India, Ceylon [Sri Lanka], Andaman, Sumatra, Java, Borneo, Celebes [Sulawesi], and the Philippines. Van Eecke [: 405] described the larva of *Cricula andrei* but this taxon has been explicitly not recorded from Sumatra.

Remarks: the range of *C. trifenestrata* HELFER provided by van Eecke based on the distribution of several species and subspecies of the *trifenestrata*-group of the genus *Cricula* WALKER, 1855. *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 was described from Sumatra, *C. trifenestrata javana* WATSON, 1913 from Java, and *C. trifenestrata kransi* JURRIANSE & LINDEMANS, 1920 from Sulawesi.

Bouvier & Riel (1931) reported *Cricula trifenestrata* HELFER [sic] from Rés. Soebaboemi [correct as Soekaboemi = Sukabumi], [West] Java and Mont [Mt.] Gede, [West] Java.

Remarks: the records from West Java refer to the subspecies *trifenestrata javana* WATSON, 1913.

Aue (1933: 165) recorded *Cricula trifenestrata* HELFER [sic] from India and Ceylon [Sri Lanka] through Southasia [?correct as Southeast Asia] to the Philippines. Aue

remarked that the larvae resemble those of *Lasiocampa quercus* L. [(Lasiocampidae)].

Schüssler (1936: 152-158) assigned only two species to the genus *Cricula* WALKER, 1855. Those were *andrei* JORDAN and *trifenestrata* HELFER [sic]. He listed *andrei elaezia* JORDAN and *andrei* f. *afenestra* WATSON for Java. *C. trifenestrata* subspec. *bornea* WATSON was listed for Sarawak, Borneo and *C. trifenestrata* subspec. *javana* WATSON for Java.

Remarks: *andrei* f. *afenestra* WATSON was not clearly cited in infrasubspecific rank, because he also listed f. *agoia* JORDAN, 1909 from Travancore (Madras) [Chennai] in the same chapter.

Bouvier (1936: 235-240) accepted only three species of the genus *Cricula* WALKER, 1855. Those were *trifenestrata* HELFER [sic] distributed from Sikkim to Celebes [Sulawesi], *andrei* JORDAN distributed from Sikkim and Java, and *drepanoides* MOORE from Sikkim. *C. andrei elaezia* JORDAN, 1909 [incorrect subsequent spelling of *elaesia* JORDAN, 1909] was recorded for Java, the form *trifenestrata javana* WATSON, 1912-1913 was recorded for Sockeboemi [correct as Soekaboemi = now Sukabumi], Java, *trifenestrata bornea* WATSON was recorded for Busan, Borneo, and *trifenestrata kransi* JURRIAANSE & LINDEMANS, 1909 [error in publication date of *kransi* JURRIAANSE & LINDEMANS, 1920] was recorded for Galla [=Gala] and Boeton [=Buton] [Sulawesi, Province Sulawesi Tenggara].

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*). *C. elaezia* JORDAN, 1909 is considered to be no subspecies of *C. andrei* JORDAN, 1909, which is a Continental Asian species.

Overbeck (1938: 93) reported that *Cricula trifenestrata*, the kenari-moth, had defoliated two kedondong trees [most probably *Spondias dulcis* PARKINSON (Anacardiaceae)] in his garden in Djogjakarta [=Yogyakarta] completely. Three pictures were attached, also a picture of the ♀ moth.

Remarks: there is no doubt at all that the report by Overbeck not based on the common *Cricula trifenestrata javana* WATSON, 1913.

Jordan (1939: 435) figured and compared the ♂ antennae of *C. elaezia* (Java) (line drawing, text-fig. 319) and *C. trifenestrata [javana]* (Java) (line drawing, text-fig. 318). Jordan (: 433) recorded *Cricula trifenestrata* in a number of subspecies [unspecified] from Ceylon [=Sri Lanka], North India, Lombok, Ceram [=Seram], and Halmahaira [=Halmahera].

Remarks: *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 is known from Lombok, *C. trifenestrata serama* NÄSSIG, 1989 is known from Seram, and *C. trifenestrata halmaheraensis* PAUKSTADT & PAUKSTADT, 2010 is known for Halmahera.

Roepke (1940: 24) remarked that Watson (1913) described from Java a subspecies of *C. trifenestrata: javana* and that he described an aberration of *C. andrei elaezia* as ab. *afenestra*. Roepke (1940: 23) listed *Canarium* [*Canarium* L. (Burseraceae)], *Chinchona* [*Chinchona* L. (Rubiaceae)], *Theobroma* [*Theobroma* L. (Malvaceae)], *Mangifera* [*Mangifera* L. (Anacardiaceae)], *Altingia* [*Altingia* NORONHA (Altingiaceaea)], and *Cinnamomum* [*Cinnamomum* SCHAEFF. (Lauraceae)] as foodplants for the larvae of *Cricula* (undefined) from the island of Java. Roepke noted that the ♂ genitalia organs of the species and subspecies of *Cricula* WALKER vary to a considerable extent. The aedeagus of *C. trifenestrata javana* from West

Java and from Dolok Ilir (Sumatra, North Sumatra Province) was figured (: 25, figs. 2a and b, line drawings) and details of the genitalia (: 26, figs. 3C-3F) and compared. In local populations of the Javanese *Cricula* species these organs may be fairly constant, but different populations show distinct differences mainly in the so-called sella. He further noted that the Javanese *elaezia* JORDAN must be considered as a distinct species due to genitalia morphology. The aedeagus of *elaezia* from West Java was figured (: 25, fig. 2c) and compared to those of *C. trifenestrata* from Java and Sumatra. He reported *C. elaezia* being a mountainous taxon and that the green larvae are injurious to Chinchona plantations. Roepke remarked that reports of *elaezia* in literature were always confounded with *C. trifenestrata javana* WATSON.

Remarks: the illustration of the aedeagus of *C. trifenestrata javana* WATSON from Sumatra needs to be assigned to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010. The statement on the variability of the ♂ genitalia structures most likely was based on the fact that distinct species or subspecies were before Roepke.

Kalshoven, Sody & Bemmél van (1951: 558-560) reported that the adults of *Cricula trifenestrata* HELFER [sic] of Celebes [Sulawesi] are 1½ times bigger than those of Java (: 559). Larvae were reported being pests on kanari trees [*Canarium indicum* L. (Burseraceae); cf. The Plant List <http://www.theplantlist.org/tpl1.1/record/kew-2695836>] and also feeding on avocado [*Persea* L. sp. (Lauraceae)] and kedondong [*Spondias dulcis* PARKINSON (Anacardiaceae)] trees. Cacao [*Theobroma cacao* L. (Malvaceae)], djamboe species [*Psidium* L. (Myrtaceae)], mangga [*Mangifera* sp. (Anacardiaceae)], and kaneel [*Cinnamomum* sp. (Lauraceae)] were also reported as hosts for the larvae. The authors noted that parasites were only occasionally examined and recorded from Java. A parasite of the eggs was recorded: *Pterosemella viridis* [*Agiommatus viridis* (GIRAULT, 1913) (*Pterosemella*) (Chalcididae)], and a tachnid *Tricholyga sorbillans* [*Exorista sorbillans* (WIEDEMANN, 1830) (*Tricholyga*) (Tachinidae)] and *Xanthopimpla* sp. [Ichneumonidae]. The ♀ adult was illustrated (line drawing fig. 331) and a cluster of cocoons (phot. h.-t. fig. 330).

Crotch (1956: 84-85) recorded the genus *Cricula* from India and Ceylon [Sri Lanka] to the East Indian islands [Malay Archipelago]. The author recognized only three species. Those were *C. andrei* JORDAN, *C. trifenestrata* HELFER [sic] (India), and *C. drepanoides* MOORE (Sikkim). The larvae of *C. trifenestrata* were noted being similar those of *Lasiocampa quercus* (Lasiocampidae).

Remarks: taxa of the continental Asian *andrei*-group are replaced by taxa of the *elaezia*-group and the *hayatae*-subgroup in the Indonesian Archipelago. Several subspecies of *C. trifenestrata* have been described from the Indonesian Archipelago.

Holloway (1976: 85) recorded *Cricula trifenestrata* (HELPER, 1837) from India and Sri Lanka to the Philippines and Java and for the Mt. Kinabalu, Borneo.

Remarks: the record for the Mt. Kinabalu, Borneo needs to be assigned to *C. magnifenestrata magnifenestrata* NAUMANN & LÖFFLER, 2010, cf. also Holloway (1987: 110).

Arora & Gupta (1979) reported *C. andrei* JORDAN for India Bhutan and Java (: 40) and *C. trifenestrata* (Helper) was reported from Bangladesh, Burma, Sri Lanka, and Indonesia. The above listed two species were only accepted for India.

Remarks: *C. andrei* JORDAN, 1909 is a Continental Asian species and replaced by taxa of the *elaezia*-group (sensu Naumann & Löffler 2010) in the Indonesian Archipelago. The island of Java is occupied by *C. elaezia elaezia* JORDAN, 1909.

Kalshoven (1981) reported *Cricula trifenestrata* HELFER [sic] [undefined origin] being occasionally a pest of *Canarium commune* (kenari) [*Canarium commune* L. is considered to be a junior synonym of *Canarium indicum* L. (Burseraceae); cf. The Plant List <http://www.theplantlist.org/tpl1.1/record/kew-2695836>] (: 319). In addition to kenari this species can develop on avocado [*Persea* L. sp. (Lauraceae)] and kedondong [*Spondias dulcis* PARKINSON (Anacardiaceae)]. The insects have been reported on cacao [*Theobroma cacao* L. (Malvaceae)], jambu [*Psidium guajava* L. (Myrtaceae)], mangga [*Mangifera* sp. (Anacardiaceae)], and cinnamomum [*Cinnamomum* sp. (Lauraceae)]. The adults from Sulawesi were reported being 1.5x bigger than those of Java. *C. elaezia* JORDAN [undefined origin] was reported to occurs in cinchona plantations [*Cinchona* L. (Rubiaceae)] (: 320). The tachnid *Carcelia irridipennis* (vdW.) [correct as *Carcelia iridipennis* (VAN DER WULP, 1893) (*Parexorida*) of the genus *Carcelia* ROBINEAU-DESVOIDY, 1830] was reported being reared from the larvae. A ♀ adult (: 320, b&w drawing) and a cluster of cocoons (: 319, phot. h.-t.) were figured.

Remarks: Kalshoven (1981) is not a 1:1 translation of Kalshoven, Sody & Bemmelen van (1951).

Allen (1981: 103, 120) recorded *Cricula trifenestrata* HELFER, 1837 [sic], *C. elaezia* JORDAN, 1909, and *C. bornea* WATSON, 1913 for Brunei, Sabah and Sarawak, Borneo. The widespread *C. trifenestrata* was reported from India eastwards to Borneo, Indonesia and the Philippines. Specimens were reported taken in Brunei in montane forest (figured pl. 18). Allen noted that separate lowland and montane races may occur in Borneo. The author mentioned that *C. bornea* WATSON, 1913 was actually described from Sarawak but was not taken in Brunei thus far. The illustrated specimen was taken in primary lowland forest in Sabah (figured pl. 18). Allen remarked that no records of the larvae and food plants of the Bornean populations of *Cricula* were recorded thus far.

Remarks: the illustrated ♂ (pl. 18, top right) can be a true *C. trifenestrata* (HELPER, 1837). The ♂ *C. bornea* WATSON, 1913 (pl. 18, bottom right) does not fit very well to true *bornea* of the type series. *C. trifenestrata* (HELPER, 1837) is widespread in Indonesia and represented on the islands of the Indonesian Archipelago in several endemic subspecies. Those are *javana* WATSON, 1913 (Java, ?Borneo), *kransi* JURRIANSE & LINDEMANS, 1920 (Sulawesi), *serama* NÄSSIG, 1989 (central Moluccas), *banggaiensis* NAUMANN & PAUKSTADT, 1997 (Banggai Archipelago), *tenggaraensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 (Lesser Sunda Bali to Flores), *halmaheraensis* PAUKSTADT & PAUKSTADT, 2010 (Halmahera), and *barisanensis* PAUKSTADT & PAUKSTADT, 2010 (Sumatra).

Holloway in Allen (1981: 122-123) reviewed *Cricula* WALKER, 1855 of Borneo. *Cricula trifenestrata* HELFER [sic] was recorded from the Indian subcontinent to as far east as Sulawesi and Ceram [=Seram]. He noted that there may be two biological races in Borneo, one from the lowlands and foothills and one from higher altitudes.

Remarks: at the time being the populations from Sulawesi are assigned to the subspecies *kransi* JURRIANSE & LINDEMANS, 1920 and those from Ceram to the subspecies *serama*

NÄSSIG, 1989. Further endemic subspecies occupy Sumatra, Java, Bali to Flores, Halmahera, and the Banggai Archipelago.

Gardiner (1982: 126-128) recorded the genus *Cricula* from India and Ceylon [Sri Lanka] to the East Indian islands [Malay Archipelago]. The author recognized only three species. Those were *C. andrei* JORDAN, *C. trifenestrata* HELFER [sic] (India), and *C. drepanoides* MOORE (Sikkim). The larvae of *C. trifenestrata* were noted being similar those of *Lasiocampa quercus* (Lasiocampidae).

Remarks: taxa of the continental Asian *andrei*-group are replaced by taxa of the *elaezia*-group and *hayatae*-subgroup in the Indonesian Archipelago. Several subspecies of *C. trifenestrata* have been described from the Indonesian Archipelago.

Barlow (1982 [1983]: 47-50) in “An introduction to the Moths of South East Asia” unfortunately omitted the important genus *Cricula* WALKER, 1855.

Holloway in Barlow (1982 [1983]: 192-194) in the “Taxonomic Appendix” of “An introduction to the Moths of South East Asia” unfortunately omitted the important genus *Cricula* WALKER, 1855.

Lampe (1984: [1]-[32]) [20.10.1984] recorded the Saturniidae of the Cameron- and Genting-Highlands in West-Malaysia. The author remarked that Allen recorded three species for Borneo which were discussed in detail by Holloway.

Remarks: Allen and Holloway recorded three species for Borneo. Those were *C. elaezia* JORDAN, 1909, the record refers to *C. magnifenestrata magnifenestrata* NAUMANN & LÖFFLER, 2010 today, *C. trifenestrata* (HELPER, 1837), and *C. bornea* WATSON, 1913 which is considered to be a somehow doubtful species. The illustrated specimens by Lampe (col.-pl. 8) are most likely ♂ *C. magnifenestrata elaeziopahangensis* BRECHLIN, 2010 (fig. 1), ♀ and ♂ *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998 (figs. 4 and 5).

Lampe (1985: [1]-[32]) [1985] noted that “recently Allen (1980) described [sic] three new species from Borneo and Holloway (in Allen 1980) fully confirmed these. Perhaps we are dealing here with more than one taxon. A knowledge of the pre-imaginal stages would provide more positive information.”

Remarks: Allen and Holloway recorded three species for Borneo. Those were *C. elaezia* JORDAN, 1909, the record refers to *C. magnifenestrata magnifenestrata* NAUMANN & LÖFFLER, 2010 today, *C. trifenestrata* (HELPER, 1837), and *C. bornea* WATSON, 1913 which is considered to be a somehow doubtful species. The illustrated specimens by Lampe (col.-pl. 8) are most likely ♂ *C. magnifenestrata elaeziopahangensis* BRECHLIN, 2010 (fig. 1), ♀ and ♂ *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998 (figs. 4 and 5).

Becking (1987: 182) reported on diets of Javanese birds based on unpublished manuscripts by H. J. V. Sody (1892-1959), an expert for Indonesian Wildlife. He reported that birds of the family Cuculidae, *Cuculus saturatus lepidus* M. MÜLLER, 1845 and *Cacomantis merulinus* (SCOPOLI, 1786) eat *Cricula trifenestrata* and *Cacomantis variolosus* VIGORS & HORSFIELD, 1826 eats *Cricula elaezia* adults and/or larvae.

Remarks: the report on *C. trifenestrata* for Java needs to be assigned to the subspecies *C. trifenestrata javana* WATSON, 1913.

Holloway (1987: 108-110) listed three species of the genus *Cricula* WALKER, 1855 for Borneo. Those were *Cricula trifenestrata* HELFER [sic] with a geographical range from the Indian Subregion to the Philippines, Sulawesi and Java, *Cricula bornea* WATSON with a geographical range Borneo (endemic), and *Cricula elaezia* JORDAN with a geographical range Sundaland and Buru (ssp. *buruensis* JORDAN).

Holloway assigned *drepanoides* MOORE to the genus *Cricula* but remarked that W. A. Nässig suggested that *drepanoides* is best separated in the genus *Solus*. The ♂ adult figured in color by Holloway (1987: pl. 10, fig. 1) under the name *C. trifenestrata* can be a true *trifenestrata* because the specimen appears different from *C. elaezia*, *C. bornea*, and *C. magnifenestrata* NAUMANN & LÖFFLER, 2010. Unfortunately no collecting site was cited.

Remarks: the taxon *drepanoides* was later transferred to the genus *Solus* WATSON, 1913: *Solus drepanoides* (MOORE, 1865) (*Cricula*). At the time being the populations of the *elaezia*-group (sensu Naumann & Löffler 2010) from Sumatra are assigned to *C. separata* NAUMANN & LÖFFLER, 2010, from Java to *elaezia* JORDAN, 1909, from Bali to *pelengensis* PAUKSTADT & PAUKSTADT, 2009, from Borneo to *magnifenestrata magnifenestrata* NAUMANN & LÖFFLER, 2010, and from West Malaysia to *magnifenestrata elaeziopahangensis* BRECHLIN, 2010.

Gupta (1987: 189) listed *Cricula* sp. based on Dammerman (1929) and *C. trifenestrata* based on Rohwer (1918), Menzel (1925), Townes, Townes & Gupta (1961), and Gupta (1962) as hosts for *Theronia zebra zebra* (VOLLENHOVEN) on Java.

Remarks: all records might be assigned to *Cricula trifenestrata javana* WATSON, 1913 rather.

Nässig (1989: 187) [01./15.vii.1989] recorded *C. trifenestrata javana* WATSON, 1913 from Sundaland (Sumatra, West-Malaysia, Borneo, Java, and Bali).

Remarks: the name *javana* was applied by Nässig in subspecific rank to some populations of *trifenestrata* which are considered today to be distinct on subspecific level. Sumatra Island is occupied by the endemic *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010, West-Malaysia is occupied by *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998 which might replace *trifenestrata* in Peninsular Malaysia, Borneo Island is occupied by *C. bornea* WATSON, 1913 and *C. kalimantanensis* BRECHLIN, 2010 with uncertain membership to any species-group, *C. trifenestrata javana* WATSON, 1913 is endemic to Java, and *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 is endemic to the island of Bali and some islands east off Bali in the Lesser Sunda Islands. Older records of *C. trifenestrata* for Borneo need to be handled with caution. The status of the Bornean populations of *trifenestrata* needs further research.

Nässig (1989: 253-264) tentatively recognized seven types of scoli in caterpillars of the Saturniidae. Sternwarzen, “horns“ (“star warts“) type 1 with poison have been recognized for *Cricula* [unspecified origin, unspecified taxon] (: 260).

Nässig (1989: 337-345) [01.xii.1989] published a synopsis of the genus *Solus* WATSON, 1913 and confirmed that there is no closer relationships between the genera *Solus* and *Cricula* WALKER, 1855. He confirmed that the genera *Solus* and *Cricula* WALKER, 1855 being distinct because both genera share no synapomorphies. Nässig noted that, in contrast, the ♂ genitalia structures of *Solus* share some characters with *Antheraea* HÜBNER.

Paukstadt & Paukstadt (1990a: 271-272) [16.vii.1990] described and illustrated in phot. h.-t. a gynandromorphic *C. trifenestrata javana* WATSON, 1913 from Sukabumi, West Java (fig. 1).

Nässig & Oberprieler (1990: 655) reported on mimetic or aposematic patterns – a comparison of larval and imaginal strategies of Saturniinae (Lepidoptera, Saturniidae). The early stages, in particular the (poisonous) spines of the larvae of

Cricula andrei JORDAN, 1909 and *C. trifenestrata* (HELPER, 1837) [unspecified origin / subspecies] were discussed.

Paukstadt & Paukstadt (1990b: 90-100) [1990] described and figured the preimaginal instars, cocoon, parasites, and adults of *C. trifenestrata javana* WATSON, 1913 from West Java. The authors recorded the following hosts for the larvae: *Persea americana* (Lauraceae), Rambutan [*Nephelium lappaceum* L. (Sapindaceae)], Sirsak [ANNONA MURICATA L. (Annonaceae)] and Jambu Air (*Psidium* sp., Myrtaceae). The following parasites were listed: Diptera: Tachinidae [unidentified], *Xanthopimpla brullei* (KRIEGER, 1899) (Hymenoptera, Ichneumonidae), *Theronia zebra zebra* (VOLLENHOVEN, 1879) based on Dammermann (1929). The authors remarked that the preimaginals of *C. trifenestrata javana* were never used economically by local people on Sumatra, Java, and Bali, but from Balinese people was learned that pupae of *C. trifenestrata javana* or a related species were used as fishing lures. The following illustrations were provided in color (photo): 1st instar larva (fig. 1, 2), 2nd instar larva (fig. 3, 4), 3rd instar larva (fig. 5), 4th instar larva (fig. 6, 7), 5th instar larva (figs. 8, 9), *Xanthopimpla brullei* KRIEGER, 1899 and an undetermined Diptera of the family Tachinidae (fig. 10), a ♀ adult (fig. 11), a ♂ adult (fig. 12), the pupa (figs. 13, 14, 17, and 21), the cocoon (figs. 18, 19, 20), eggs (fig. 15), and the ♂ genitalia structures (fig. 16).

Nässig (1991: 504) reported on the phylogeny and zoogeography of the tropical Asiatic genus *Cricula* WALKER, 1855. He separated the taxa into two groups. Those were the *trifenestrata*-group with 3 species and the *andrei*-group with 9 species. He reported the *trifenestrata*-group being distributed from South India to West New Guinea with two separate species on Borneo and the Andamans. The *andrei*-group was divided into further 3 subgroups. Those were the *andrei*-subgroup of the *andrei*-group, the *elaezia*-subgroup of the *andrei*-group and the [third subgroup unnamed, probably *luzonica*-subgroup]. A member of the *trifenestrata*-group [undefined taxon] was recorded for the Moluccas. Three sympatric species of *Cricula* were recorded for Sumatra, two of the *andrei*-group and one of the *trifenestrata*-group, and for Borneo, one of the *andrei*-group and two of the *trifenestrata*-group. *C. trifenestrata javana* WATSON, 1913 and *C. elaezia* JORDAN, 1939 were recorded for West Malaysia and Sundaland. *C. trifenestrata kransi* JURRIANSE & LINDEMANS, 1920 and *C. quinquefenestrata* ROEPKE, 1940 were recorded for Sulawesi. *C. sumatrensis* JORDAN, 1939 was recorded for Sumatra and suggested that the nearest relatives are in Thailand or Yunnan.

Remarks: the Moluccas are actually occupied by three taxa of the *trifenestrata*-group. Those are *C. trifenestrata banggaiensis* NAUMANN & PAUKSTADT, 1997 (Sanana), *C. trifenestrata halmaheraensis* PAUKSTADT & PAUKSTADT, 2010 (Halmahera), and *C. trifenestrata serama* NÄSSIG, 1989 (Seram, Buru and Ambon). The *andrei*-group (Continental Asian group) is replaced by the *elaezia*-group (Archipelago Asian group) on Sumatra and Borneo. *C. trifenestrata javana* WATSON, 1913 is considered to be endemic to Java and probably Borneo. This species is replaced in Sundaland by *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998 (Malay Peninsular), *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 (Sumatra), and *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 (Bali). Recent studies carried out on *C. elaezia* JORDAN, 1909 revealed

this species being more allied to taxa of the *elaezia*-group and not to the Continental Asian *andrei*-group. *C. elaezia* is considered to be endemic to Java and southeastern Borneo (Kalimantan). This species is replaced in Sundaland by *C. magnifenestrata elaeziopahangensis* BRECHLIN, 2010 (Malay Peninsula), *C. magnifenestrata* NAUMANN & LÖFFLER, 2010 (Borneo), *C. separata* NAUMANN & LÖFFLER, 2010 (Sumatra), and *C. pelengensis* PAUKSTADT & PAUKSTADT, 2009 (Bali). Taxa of the *andrei*-group are not present in the Indonesian Archipelago and the Philippines.

Stone (1991: 16-17) listed the following foodplants for *Cricula trifenestrata* (HELPER) [subspecies not specified]: *Canarium commune*, *C. album*, *Mangifera indica*, *Persea americana*, *Chinchona succirubra*, *Eugenia aquea*, *E. malaccense*, *Psidium guajava*, *Anacardium occidentale*, *Careya arborea*, *Pyrus communis*, *P. malus*, *Machilus odoratissima*, *Salix babylonica*, *Schleichera oleosa*, *Rhododendron*, *Eucalyptus gunni*, *Quercus*, *Canarium album*, *Spondias*, *Bischofia*, *Cinnamomum*, *Artocarpus*, *Ziziphus*, and *Prunus*. The author not separated primary and substitute foodplants but provided the source occasionally.

Paukstadt & Suhardjono (1992: 253-258) [15.vii.1992] recorded *C. trifenestrata javana* WATSON, 1913 from Kalimantan, Sumatra, Java, Bali, Lombok?, and Flores (first record for Flores). *C. trifenestrata kransi* JURRIAANSE & LINDEMANS, 1920 was recorded from Sulawesi, *C. trifenestrata serama* NÄSSIG, 1989 was recorded from Seram and Buru, *C. sumatrensis* JORDAN, 1939 was recorded from Sumatra, and *C. elaezia* JORDAN, 1909 was recorded from Kalimantan, Sumatra, Java and Bali.

Remarks: the populations of the *trifenestrata*-group from the islands of Bali, Lombok, Sumbawa, Sumba, and Flores belong to the later described subspecies *trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998. The island of Borneo is occupied by *C. bornea* WATSON, 1913, the island of Sumatra by *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010, and the island of Java by *C. trifenestrata javana* WATSON, 1913. *C. elaezia* JORDAN, 1909 is considered to be an endemic species on the islands of Java, and *pelengensis* PAUKSTADT & PAUKSTADT, 2009 is known from the island of Bali (and eastern Java based on the BOLD TaxonID Tree).

Paukstadt & Suhardjono (1992: 253-258) [15.vii.1992] (: 257, fig. 4) illustrated the empty cocoon of *C. trifenestrata tenggarensis* from Bali under the name of *C. trifenestrata*. The cocoon was compared with those of *C. hayatae* PAUKSTADT & SUHARDJONO, 1992. The authors remarked that *C. hayatae* came to light on the island of Flores together with *C. trifenestrata javana* WATSON, 1913. The genus *Cricula* WALKER, 1855 was recorded for the island of Flores for the first time being. The genus *Cricula* WALKER, 1855 was reported never being recorded for Sumbawa, Sumba, and Timor.

Remarks: the populations of the *trifenestrata*-group from the islands of Bali and Flores belong to the subspecies *trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998.

Haruta (1992) recorded *Cricula trifenestrata* (HELPER, 1837) (*Saturnia*) from Nepal. A ♂ adult was illustrated (pl. 25, fig. 4).

Remarks: the illustration not fits to *trifenestrata* (HELPER, 1837) with certainty. Probably the record needs to be assigned to *C. andrei* JORDAN, 1909.

Paukstadt & Paukstadt (1993b: 429-438) [1.xii.1993] reported on observations on the biology and ecology of *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 from

Flores and *C. trifenestrata javana* WATSON, 1913 from West Java, which were found to be not different.

Allen (1993: 52, 62) [1993] recorded *Cricula trifenestrata* HELFER, 1837 [sic] from Nepal. The illustrated ♂ specimen (pl. 45b, recte 45c) most probably not belongs to the *trifenestrata*-group but to the *andrei*-group instead. The legends of *C. trifenestrata* and *Rhodinia* sp. were mixed up.

Nässig (1995: 1-113; A revision of the genus *Cricula* WALKER, 1855 and an attempt of a phylogenetic analysis of the tribus Saturniini) repeatedly recorded *Cricula trifenestrata javana* Watson, 1913 from Sundaland (West Malaysia, Sumatra, Borneo, Java, Bali) (: 13); a remark was done on the possible distribution on the Lesser Sunda Islands? (: 26). He noted that the preimaginal instars of *C. trifenestrata javana* from Sumatra and West Malaysia are well known (: 13). *C. trifenestrata javana* and *C. elaezia* both from West Malaysia were reported to be similar in coloration (: 16). The ♂ was figured in color from Java (: 77, figs. 7-10) from Bawean [island in the Java Sea] (: 77, fig. 11), a ♀ from the Cameron Highlands (: 77, fig. 12), ♀ from West Sumatra (: 77, fig. 13), and a ♀ from West Java (: 77, fig. 14). Nässig (1995: 95) figured the ♂ genitalia structures (fig. 6) in phot. Nässig (1995: 103) figured the ♀ genitalia structures of *C. trifenestrata javana* in phot. (fig. 3).

Remarks: at the time being *C. trifenestrata javana* WATSON, 1913 is considered to be an endemic taxon from Java (and Borneo?). All other records need to be assigned to further subspecies of *C. trifenestrata* (HELPER, 1837) or other species of *Cricula* WALKER, 1855. Those are *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998 (endemic? to the Malay Peninsula), *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 (endemic to Sumatra), and *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 (endemic to Bali, Lombok, Sumbawa, Flores, and Sumba). Some citations of *C. trifenestrata javana* cannot be assigned to any taxon with certainty due to lack of information on the origin.

Paukstadt & Paukstadt (1994: 71-77) [1994] reported *C. trifenestrata javana* to be common at the light trap in Ciseeng, West Java (: 76).

Naumann (1995: 80) compared *C. quinquefenestrata* ROEPKE, 1940 with *C. trifenestrata kransi* JURRIAANSE & LINDEMANS, 1920 both from Sulawesi. He cited *C. trifenestrata javana* WATSON, 1913 from West Malaysia.

Remarks: The populations of the *trifenestrata*-group from West Malaysia belong to *Cricula cameronensis* PAUKSTADT & PAUKSTADT, 1998.

Whitten, Soeriaatmadja & Afiff (1996) reported in “The Ecology of Java and Bali” that the kenari moth *Cricula trifenestrata [javana]* to be a key pest on avocado, cocoa, rose apple, mango, and kenari trees.

Remarks: the report might be partly based on *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 from Bali.

Nässig, Lampe & Kager (1996a: 39-40) [30.vi.1996] understood the taxon *javana* WATSON, 1913 as a Sundaland (Sumatra, Java, Bali, Borneo, West Malaysia; i.l. Nässig, Lampe & Kager (1996a)) representative. Differences in habitus and genitalia structures between the red ♀ specimens from West Malaysia and the orange ♀ from West Sumatra were noted and explained to be geographic variations, altitudinal variations, individual variations or a combination of these

and may require no different taxonomic status. On the other hands was remarked, that these populations still require further studies. The authors noted (: 40) that *C. trifenestrata* was reported as a pest on fruit trees in orchards at least on Java. Nässig, Lampe & Kager (1996a: 35) recorded 2 species of *Cricula* WALKER, 1855 from Java and Bali. Those were *C. elaezia* JORDAN, 1909 and *C. trifenestrata* (HELPER, 1837) [see “Remarks” below].

Remarks: at the time being the populations of the *trifenestrata*-group (sensu Nässig 1995) are assigned to several mostly endemic taxa. Those are *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 from Sumatra, *C. trifenestrata javana* WATSON, 1913, from Java, *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 from Bali and some of the Lesser Sunda Islands, *C. bornea* WATSON, 1913 from Borneo, and *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998 from West Malaysia. *C. trifenestrata javana* WATSON, 1913 is endemic to Java and the related *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 is endemic to some of the Lesser Sunda Islands including Bali.

Nässig & Treadaway (1997: 323-366) [26.ii.1997] recorded populations of the *trifenestrata*-group from the Philippines (Palawan, Linapacan, Mindoro, Negros, Cebu, Mindanao, and probably Leyte). The island of Negros is the locus typicus for *C. trifenestrata treadawayi* NÄSSIG, 1989. The authors noted that the *trifenestrata* populations of Palawan do not necessarily belong to the subspecies *treadawayi*, but are likely to be part of the populations of Sundaland

Gupta (1997: 417-418) noted that two species viz., *Cricula andrei* JORDAN and *C. trifenestrata* (HELPER, 1837) represent the genus *Cricula* WALKER, 1855 in India, the former species is dealt with from West Bengal. *C. trifenestrata* was recorded from India (West Bengal, Andamans; Assam, Bihar; Kerala; Meghalaya; Sikkim, and Tamil Nadu), and elsewhere from: Bangladesh, Burma [Myanmar], Indonesia [undefined], and Sri Lanka.

Remarks: the record for Indonesia based on several subspecies of *C. trifenestrata* distributed in the Indonesian Archipelago. Those are *barisanensis* PAUKSTADT & PAUKSTADT, 2010 (Sumatra), *javana* WATSON, 1913 (Java, likely Borneo), *tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 (Bali, Lombok, Sumbawa, Flores, and Sumba), *kransi* JURRIANSE & LINDEMANS, 1920 (Sulawesi), *banggaiensis* NAUMANN & PAUKSTADT, 1997 (Banggai Archipelago), *serama* NÄSSIG, 1989 (Buru, Seram, Ambon), and *halmaheraensis* PAUKSTADT & PAUKSTADT, 2010 (Halmahera).

Paukstadt & Paukstadt (1998) recorded *C. trifenestrata javana* WATSON, 1913 from Thailand?, Peninsular Malaysia?, Borneo?, Sumatra, Java, Bali?, Nusa Tenggara? [=Smaller Sunda Islands] (: 20). *C. trifenestrata javana* and *C. trifenestrata javana?* were recorded for the Eastern Lesser Sunda Islands and mentioned that *C. trifenestrata javana* is only tentatively included into the list of species. Further species of the genus *Cricula* WALKER, 1855 recorded for the Eastern Lesser Sunda Islands were *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 from Flores and Timor and *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 from Sumba (and Flores?).

Remarks: at the time being the populations of *C. trifenestrata* from Thailand are assigned to the nominotypical subspecies *trifenestrata* (HELPER, 1837), those from Peninsular Malaysia to *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998, from Borneo to *C. trifenestrata javana* WATSON, 1913 and *C. bornea* WATSON, 1913, from Sumatra to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010, from Java *C. trifenestrata javana* Watson,

1913, from Bali and Nusa Tenggara [Lesser Sunda Islands = Bali, Lombok, Sumbawa, Sumba, and Flores] *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998.

Paukstadt & Paukstadt (1998: [129]-141) described the new subspecies *C. trifenestrata cameronensis* from the Malay Peninsula. The authors noted that the preimaginal instars of *C. trifenestrata cameronensis* offer reliable characters to identify this taxon. Comparisons were carried out with *C. trifenestrata javana* (Java, Sumatra) [see “Remarks” below], *C. trifenestrata kransi* JURRIAANSE & LINDEMANS, 1920 (Sulawesi) on which the description of the new subspecies was mainly based. The hairbases of the abdominal bristles were found to be different in *C. trifenestrata javana* (Java) and *C. trifenestrata javana* [= *barisanensis* PAUKSTADT & PAUKSTADT, 2010] (Sumatra). The hairbases were reported to be white (Sumatra) and yellowish (Java). The mature larva of *C. trifenestrata javana* was figured in color (: 137, fig.11) and a wild collected cocoon in phot. h.-t. (: 138, fig.13).

Remarks: the populations of *C. trifenestrata* (HELPER, 1837) from Sumatra are assigned to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010.

Paukstadt, Paukstadt & Suhardjono (1998: 232-240) [15.vi.1998] noted that the new subspecies *C. trifenestrata tenggarensis* is closely related to *C. trifenestrata javana* WATSON, 1913 from the islands of Java and Sumatra. *C. trifenestrata tenggarensis* (Sumba) was compared morphologically with *C. trifenestrata javana* WATSON, 1913 (Java). The ♂ genitalia structures of *javana* (West Java) were figured in phot. h.-t. (: 237, fig. 8).

Remarks: the populations from Sumatra were later described as *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010.

Paukstadt & Paukstadt (1998) recorded *C. trifenestrata javana* WATSON, 1913 from Thailand?, Peninsular Malaysia?, Borneo?, Sumatra, Java, Bali?, Nusa Tenggara? [=Smaller Sunda Islands] (: 20). *C. trifenestrata javana* and *C. trifenestrata javana?* were recorded for the Eastern Lesser Sunda Islands and mentioned that *C. trifenestrata javana* is only tentatively included into the list of species. Further species of the genus *Cricula* WALKER, 1855 recorded for the Eastern Lesser Sunda Islands were *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 from Flores and Timor and *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 from Sumba (and Flores?).

Remarks: at the time being the populations of *C. trifenestrata* from Thailand are assigned to the nominotypical subspecies *trifenestrata* (HELPER, 1837), those from Peninsular Malaysia to *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998, from Borneo to *C. trifenestrata javana* WATSON, 1913 [identity and status need investigation] and *C. bornea* WATSON, 1913, from Sumatra to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010, from Jawa *C. trifenestrata javana* Watson, 1913, from Bali and Nusa Tenggara [Lesser Sunda Islands] *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998.

D’Abrera (1998: 52-55) [1998] reported the range of *C. trifenestrata* HELPER, 1837 [sic] from Java, Borneo, Sulawesi east to Irian Jaya. *C. banggaiensis* NAUMANN & PAUKSTADT was recorded from Banggai Island [sic] and noted being distinct in the ♂ genitalia. *C. elaezia* JORDAN, 1939 was recorded from the Malay Peninsula, Java, Sumatra, Borneo, and ?western Moluccas. The ♂ holotype from western Java and a ♀ from eastern Java were figured in color. The author noted that the

population from Buru [western Moluccas] has been described as *buruensis* JORDAN. *C. quinquefenestrata* ROEPKE, 1940 was recorded for Sulawesi. A ♂ adult and a ♀ paratype were figured in color. *C. bornea* WATSON, 1913 was recorded from Borneo. A ♂ adult from Sabah and a ♀ paralectotype from Busau were figured in color. The author noted that the specimens are smaller than *trifenestrata* and *elaazia* and might be identified by dissection only. *C. sumatrensis* JORDAN, 1939 was recorded for Sumatra and the ♂ holotype figured. The author noted that variable yellowish and reddish individuals are present. *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 was reported from Flores. ♂ and ♀ adults were illustrated in color.

Remarks: *C. trifenestrata* (HELPER, 1837) has been not cited code-conform. The report from Irian Jaya is considered doubtful and might be based on introduced specimens. The island of Halmahera is occupied by *C. trifenestrata halmaheraensis* PAUKSTADT & PAUKSTADT, 2010 and Sulawesi by *C. trifenestrata kransi* JURRIANSE & LINDEMANS, 1920. *C. elaezia* JORDAN, 1939 is replaced by *C. magnifenestrata elaeziopahangensis* BRECHLIN, 2010 on the Malay Peninsula, by *C. magnifenestrata* NAUMANN & LÖFFLER, 2010 on Borneo, and by *C. separata* NAUMANN & LÖFFLER, 2010 on Sumatra.

Kato, Yamada & Tsubouchi (2000: 1-4) [30.vi.2000] investigated to know the mechanism by which the cocoons of *Cricula trifenestrata* [from Indonesia] are golden in color. The results strongly suggest that golden coloration of cocoons in *C. trifenestrata* is due to the co-existence of yellow pigments and physical fine structure of the silk causing metallic brilliance.

Kuroda (2000: 85-89) [30.vi.2000] reported on wild silkworm development in Indonesia and creating a wild silkworm industry in Yogyakarta [Central Java] based on the species *Attacus [atlas]* and *Cricula [trifenestrata]*.

Akai (2000: 91-97) [30.vi.2000] reported on a successful example of wild silk development from *Cricula trifenestrata* in Indonesia [mainly based on observations carried out in Yogyakarta, Central Java]. Akai listed 12 species of the genus *Cricula* and the distribution of each species. *C. bornea* (Borneo), *C. sumatrensis* (Sumatra), *C. elaezia* (Burma [Myanmar]) [sic], *C. quinauefenestrata* [sic] (South Asia, India, Thailand) [sic] were listed. Six subspecies of *C. trifenestrata* were reported. Those were for the Indonesian fauna *C. t. javana* (Sunda islands), *C. t. serama* (Indonesia), and *C. t. kransi* (Sulawesi) [sic]. Two tables on the species of *Cricula* and subspecies of *C. trifenestrata* and 15 text-figs. were added.

Remarks: *Cricula elaezia* JORDAN, 1909 is considered to be endemic to Java. There are no taxa of the *elaazia*-group present in Myanmar. *C. quinquefenestrata* ROEPKE, 1940 is an endemic species on the island of Sulawesi. *C. trifenestrata javana* WATSON, 1913 is an endemic species from Java and probably Borneo. This species is replaced by *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2000 on Sumatra and *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 on Bali and some of the Lesser Sunda Islands. *C. trifenestrata serama* NÄSSIG, 1989 is an endemic species from the central Moluccas (Buru, Seram, and Ambon).

Whitten, Soeriaatmadja & Afiff (2000: 264) reported that the kenari moth *Cricula trifenestrata [javana]* to be a key pest on avocado, cocoa, rose apple, mango, and kenari trees. Larvae can strip trees of their leaves.

Paukstadt & Paukstadt (2001b: 50-52) [2001] recorded *C. trifenestrata javana* WATSON, 1913 and *C. elaezia* JORDAN, 1909 for the Mt. Halimun National Park, West Java.

Paukstadt & Paukstadt (2001c: 53-55) [2001] reported *Cricula trifenestrata javanica* [sic!] WATSON, 1913 from Jawa, Bali, and Sumatra. The authors noted that the coloration of the hair bases of the mature larva was found distinct from those of *C. trifenestrata javana* from Java, Bali, and Sumatra. *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 was confirmed for Sumbawa Island based on comparisons of the male genitalia structures.

Remarks: at the time being the subspecies *C. trifenestrata javana* WATSON, 1913 is considered to be endemic to Java (and Borneo?). The populations of the *trifenestrata*-group from Sumatra are assigned to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 and the populations from Bali are assigned to *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998.

Wikardi, Djuwarso & Risanti (2001: 18-23) reported on an experiment conducted to study the effect of temperature and host size on the growth and development of *Trichogramma* sp., a taxon of parasitoid which attacks *Cricula trifenestrata* eggs. Although it was hardly measured, however the temperature and host size seemed to have mutual support in influencing *Trichogramma* biological index. The results were expected to guide parasitoid breeders to decide temperature and host size in mass breeding *Trichogramma* sp. under laboratory conditions.

Situmorang & Mulyanto (2002) carried out preference test of egg deposition of *Cricula trifenestrata* HELF. [sic] (Lepidoptera: Saturniidae) on the host plant of parent stock and other host plants. It was found that ♀ of *C. trifenestrata*, which were from cashew, avocado, and mango had preference to lay eggs on cashew, while those ♀ which were originally from kedondong had preference to lay eggs to kedondong again.

Remarks: the contribution on *C. trifenestrata* needs to be assigned to the Javanese subspecies *C. trifenestrata javana* WATSON, 1913.

Paukstadt & Paukstadt (2002: 240-247) [17.viii.2002] recorded *C. trifenestrata javana* WATSON, 1913 and *C. elaezia* JORDAN, 1909 from Bali.

Remarks: at the time being the populations of the *trifenestrata*-group from Bali are assigned to *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 and the populations of the *elaezia*-group are assigned to *C. pelengensis* PAUKSTADT & PAUKSTADT, 2009.

Mangon & Mangon (2003: 147) reported in “Farmer Field Schools” that the canarium moth *Cricula trifenestrata* is an occasional defoliator of cashew. Presently the moth is cultivated for its silk. Outbreaks were reported being rare, and quickly controlled by parasitoids [unspecified, concluded from text parasites of the eggs], which achieve a very high rate of parasitization of *Cricula* eggs.

Remarks: concluded from text above note can be attributed to the Javanese populations of *Cricula trifenestrata javana* WATSON, 1913.

Paukstadt & Paukstadt (2004a: 3-55) [12.i.2004] noted in “distribution patterns of the genera of the family Saturniidae BOISDUVAL, 1837 (“1834”) that the genus *Cricula* WALKER, 1855 is absent on Taiwan, New Guinea and Australia (: 19, Table 3 and : 20, Table 4). In map 22 (: 37) and map 23 (: 38) the number of

species and percentage of combined totals of species (excluding / including subspecies) of the genus *Cricula* shared between the major parts (mostly islands) of Southeast Asia was illustrated. The authors found that many islands of the archipelago are often colonized sympatrically by two taxa of different species groups. In *Cricula* it was found that one of the taxa is always a subspecies of the widespread *C. trifenestrata*, which occurs in Sundaland as *javana* WATSON, 1913. For *C. elaezia* JORDAN, 1909 a Sundanian distribution was recorded. The various possibilities of colonization of Southeast Asia by *Cricula* were discussed (: 49). *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 and *C. quinquefenestrata* ROEPKE, 1940 were placed into the *elaezia*-group and *C. sumatrensis* JORDAN, 1939 into the *andrei*-group. The authors noted that there has been no dispersal of *Cricula* from the Philippines to Taiwan (: 51). The authors noted (: 49) The *elaezia*-group also includes *C. quinquefenestrata* ROEPKE, 1940 and *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 in the Indonesian archipelago and the taxa around *C. luzonica* JORDAN, 1909 of the *luzonica*-group in the Philippines, but the latter as a relic of an even older settlement.

Remarks: the drawing based on each 3 species for Sumatra and Borneo, each 2 species for Java, Sulawesi, and the Lesser Sunda Islands, and each 1 species for Banggai, Seram / Buru, and Halmahera. At the time being the subspecies *C. trifenestrata javana* WATSON, 1913 is considered to be endemic to Java. The populations of the *trifenestrata*-group from Sumatra are assigned to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010, the populations from Bali are assigned to *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 and those from the Malay Peninsula are assigned to *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998. *C. elaezia* JORDAN, 1909 is considered to be endemic to Java, Bali is occupied by *pelengensis* PAUKSTADT & PAUKSTADT, 2009 and *elaezia* is replaced by *C. separata* NAUMANN & LÖFFLER, 2010 on Sumatra, by *C. magnifenestrata magnifenestrata* NAUMANN & LÖFFLER, 2010 on Borneo and by *magnifenestrata elaeziophangensis* BRECHLIN, 2010 on the Malay Peninsula.

Paukstadt & Paukstadt (2004c: 111-188) [03.ix.2004] provided general information on the genus *Cricula* WALKER, 1855. The *trifenestrata*-group was noted being recorded from Cendrawasih, the western Part of New Guinea, probably based on introduced specimens. The adults and larvae were briefly described. The authors noted that Nässig (1995) placed four species into the *trifenestrata*-group (sensu Nässig 1995). Those were *C. trifenestrata* (HELPER, 1837), *C. andamanica* JORDAN, 1909, the doubtful *C. bornea* WATSON, 1913, and *C. hayatae* PAUKSTADT & SUHARDJONO, 1992. *C. trifenestrata javana* was recorded from Sundaland.

Remarks: at the time being the subspecies *C. trifenestrata javana* WATSON, 1913 is considered to be endemic to Java. The populations of the *trifenestrata*-group from Sumatra are assigned to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010, the populations from Bali are assigned to *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 and those from the Malay Peninsula are assigned to *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998.

Beck & Nässig (2008: 160) included *Cricula trifenestrata* (HELPER, 1837) ssp. into a check-list on Bornean Saturniidae. The author mentioned that this species was not seen at the collecting sites, but data from Holloway (1976) included in analyses. The author noted that the status of Bornean populations (in relation to those from Sundaland [other than Borneo] and Indochina) requires further studies. Distinction

as a separate species from *C. bornea* WATSON, 1913 unproven, can be determined only by genitalia dissection. See Nässig (1995) and Nässig et al. (1996).

Remarks: the habitus (wing shapes) of *bornea* WATSON, 1913 is unmistakable and therefore dissection considered not needed for a safe determination.

Anonymous [daily press Kompas.com] (19/06/2008) reported that about 25 kg of silk of *criculla* [sic] and *attacus* [sic] were exported from Yogyakarta to Japan every month.

Remarks: the report of *Cricula* WALKER, 1855 precisely based on *Cricula trifenestrata javana* WATSON, 1913 which is commonly bred and wild collected near Yogyakarta, Central Java [observations by the authors in Feb 2019].

Brechlin (2009: 47-55) [20.iii.2009] provided a checklist of the Saturniidae and Brahmaeidae of the Kingdom of Bhutan. *C. trifenestrata trifenestrata* (HELPER, 1837) was listed as the only taxon of the genus *Cricula* WALKER, 1855. The distribution of *C. trifenestrata* in SE Asia was recorded as follows: ssp. *javana* WATSON, 1913 (Sundaland), ssp. *kransi* JURRIAANSE & LINDEMANS, 1920 (Sulawesi), ssp. *serama* NÄSSIG, 1989 (Buru, Ambon, Ceram [= Seram]), and ssp. ? (Bali, Lesser Sundas).

Remarks: at the time being *trifenestrata javana* is considered being endemic on Java and probably Borneo (unproven), this subspecies is replaced by *trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 on Sumatra. The island of Bali and further islands of the Lesser Sundas (Lombok, Sumbawa, Flores, and Sumba) are occupied by *trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998, and *C. cameronensis* Paukstadt & Paukstadt, 1998 replaces *trifenestrata javana* at least in the mountain region of the Malay Peninsula.

Paukstadt, Paukstadt, Suhardjono, Sutrisno & Aswari (2009: 151-204) [21.viii.2009] recorded in “An Annotated Catalogue of the Saturniidae in Coll. Museum Zoologicum Bogoriense (Cibinong) – Saturniini Part II” all specimens of *Cricula* WALKER, 1855 preserved in MZB. The following lists were provided: list of reared specimens (: 158), of food plants recorded (: 157), of altitudinal records (: 159), of collecting years recorded (: 160-161), of collecting months recorded (: 161-162), of collecting sites recorded (: 162-163) all based on data of pin-labels, and a systematic list of taxa (: 164). The following taxa were recorded: *C. trifenestrata* (HELPER, 1837) of uncertain subspecific identity (Halmahera), *C. trifenestrata javana* WATSON, 1913 (North and West Sumatra, Lampung – Sumatra, Jawa, Bali, Krakatau I.), *C. trifenestrata kransi* JURRIAANSE & LINDEMANS, 1920 (South Sulawesi), *C. trifenestrata serama* NÄSSIG, 1989 (Seram I.), *C. trifenestrata banggaiensis* NAUMANN & PAUKSTADT, 1997 (Banggai Arch.), *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 (Flores, Lombok), *C. elaezia* JORDAN, 1909 (Java, Sumatra), *C. sumatrensis* JORDAN, 1939 (Sumatra), *C. quinquefenestrata* ROEPKE, 1940 (South Sulawesi), and *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 (Flores). The pin-labels of all preserved specimens were figured in color with scales and the text was annotated.

Remarks: at the time being the populations of *C. trifenestrata* (Halmahera) are assigned to *C. trifenestrata halmaheraensis* PAUKSTADT & PAUKSTADT, 2010, of *C. trifenestrata* (North and West Sumatra, Lampung / Sumatra) to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010, of *C. trifenestrata* (Jawa, Krakatau I.) to *C. trifenestrata javana* WATSON, 1913, of *C. trifenestrata* (Bali, Lombok, Flores) to *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998, of *C. trifenestrata* (Sulawesi) to *C.*

trifenestrata kransi JURRIAANSE & LINDEMANS, 1920, of *C. trifenestrata* (Seram) to *C. trifenestrata serama* NÄSSIG, 1989, of *C. trifenestrata* (Banggai Arch.) to *C. trifenestrata banggaiensis* NAUMANN & PAUKSTADT, 1997, the member of the *elaezia*-group (Sumatra) to *C. separata* NAUMANN & LÖFFLER, 2010; no changes were in *C. sumatrensis* JORDAN, 1939 (Sumatra), *C. quinquefenestrata* ROEPKE, 1940 (South Sulawesi), and *C. hayatia* PAUKSTADT & SUHARDJONO, 1992 (Flores).

Paukstadt & Paukstadt (2009f: 311-364) [15.ix.2009] reported on “final observations on the wild silkmoths of Nanggroe Aceh Darussalam, Sumatra, Indonesia”. Three species were listed for Aceh. Those were *C. trifenestrata javana* WATSON, 1913, *C. elaezia* JORDAN, 1909, and *C. sumatrensis* JORDAN, 1939. Collecting sites were described and illustrated. Biotop labels attached to specimens were figured (: 322, Table 1), the number of observations each taxon was listed (: 323; 163 specimens of *Cricula* were collected). The distribution of taxa was provided (: 324, Table 2), the altitudinal distribution assorted to regions (: 325, Table 3), and the altitudinal distribution (: 327, Table 4 and: 329, Table 5). Details on *C. trifenestrata javana* WATSON, 1913 are shown (: 343) on the annual frequency (Diagram 24), altitudinal distribution (Diagram 25), circadian flight times (Diagram 26), and the geographic distribution (Map 8).

Remarks: *C. trifenestrata javana* WATSON, 1913 is restricted to Java and replaced by *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 on Sumatra. *C. elaezia* JORDAN 1909 is restricted to Java and southeastern Borneo and replaced on Sumatra by *C. separata* NAUMANN & LÖFFLER, 2010.

Kakati & Chutia (2009: 141) recorded *Persea bombycina* KOST [Persea bombycina (KING ex HOOK f.) KOSTERM. (Lauraceae) is recorded as synonym of *Machilus gamblei* KING ex HOOK f. by Tropicos <http://www.tropicos.org/Name/17803116>], *Litsea cubeba* PERS [Litsea cubeba (LOUR.) PERS. (Lauraceae)], and *Betula alnoides* BUCH-HAM ex D. DON. [(Betulaceae)] as natural foodplants of *Cricula trifenestrata* HELFER [sic] of Nagaland (145 – 1874 m).

Supandi, Wiana, Tresna & Karmila (2009) provided a study on the possibility of cultivation of wild silk. The authors reported that of the wild silkworm species *Attacus Linn Atlas* [sic] and *Criculla* [sic] *Triphenesfrata* [sic] helf [sic] can produce silk atakas [either a local vernacular name or sic?] in West Java.

Remarks: the report on *C. trifenestrata* needs to be assigned to the subspecies *javana* WATSON, 1913 which occupies Java.

The Institut Pertanian Bogor (2009) reported in IPB Repository on the classification of *Cricula*. From Sumatra 3 species were recorded: *C. trifenestrata* (Oriental region), *C. elaezia* (Sunda region), and *C. sumatrensis* (endemic); from West Malaysia *C. trifenestrata* and *C. elaezia* were recorded, from Borneo *C. bornea* (endemic), *C. trifenestrata*, and *C. elaezia* were recorded; from Java and Bali *C. trifenestrata* and *C. elaezia* were recorded. The subspecies *javana* was recorded from Java and Sumatra, the ssp. *kransi* and ssp. *banggaiensis* were recorded from Sulawesi, the ssp. *serama* was recorded from the Moluccas, and finally the ssp. *tenggarrensis* [sic] from Sumba.

Remarks: *C. elaezia* is an endemic to Java and replaced by *C. separata* NAUMANN & LÖFFLER, 2010 on Sumatra, by *C. magnifenestrata elaeziophangensis* BRECHLIN, 2010 on the Malay Peninsula, by *C. magnifenestrata magnifenestrata* NAUMANN & LÖFFLER, 2010 on Borneo, and by *C. pelengensis* PAUKSTADT & PAUKSTADT, 2009 on the island of Bali.

The record of *C. trifenestrata* from the Malay Peninsula can be assigned to *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998 rather, since no true *trifenestrata* from the Peninsula are known with certainty. The record of *C. trifenestrata* from Bali should be assigned to the subspecies *tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 and the record of *elaezia* from Bali to *pelengensis* PAUKSTADT & PAUKSTADT, 2009.

Paukstadt & Paukstadt (2010a: 3-14) [23.i.2010] described for the first time being the unknown ♀ of *C. sumatrensis* JORDAN, 1939 (Nanggroe Aceh Darussalam Province), which was compared with the ♀ of *C. trifenestrata javana* WATSON, 1913 (Aceh) and the ♀ of *C. elaezia* JORDAN, 1909 (Aceh). The ♀ specimens of all three taxa were figured in color dorsally and ventrally. The ♀ genitalia structures of *C. sumatrensis* (Aceh), *C. trifenestrata javana* (Aceh) and *C. elaezia* ([West] Malaysia) were figured in color. The ♀ specimens were separated by DNA analysis (by BOLD).

Remarks: the populations of the *elaezia*-group (sensu Nässig 1995) from Peninsular Malaysia are presently assigned to *C. magnifenestrata elaeziopahangensis* BRECHLIN, 2010. The populations of the *elaezia*-group from Sumatra Island are presently assigned to *C. separata* NAUMANN & LÖFFLER, 2010. The populations of the *trifenestrata*-group from Sumatra Island are assigned to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010. The paper by Paukstadt & Paukstadt was issued only 5 days later than the paper by Naumann & Löffler and new taxonomic results could not be included.

Brechlin (2010: 37) [16.i.2010] compared *C. elaeziosumatrana* BRECHLIN, 2010 with *C. trifenestrata javana* WATSON, 1913 (Java).

Paukstadt & Paukstadt (2010c: 80-88) [30.iii.2010] recorded the Saturniidae of Sumatra with special reference to the Nanggroe Aceh Darussalam Province. *C. elaeziosumatrana* BRECHLIN, 2010, *C. trifenestrata javana* WATSON, 1913, and *C. sumatrensis* JORDAN, 1939 were listed in the check-list. *C. separata* NAUMANN & LÖFFLER, 2010 was listed as junior subjective synonym of *C. elaeziosumatrana* BRECHLIN, 2010. The authors noted that *elaeziosumatrana* replaces the Javanese *C. elaezia* JORDAN, 1909 on the island of Sumatra.

Remarks: at the time present *C. trifenestrata javana* is considered being replaced by *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 on Sumatra, *C. elaeziosumatrana* BRECHLIN, 2010 is considered to be a nomen nudum and *C. elaeziosumatrana* BRECHLIN, 2010 is considered to be a junior subjective synonym of *C. separata* NAUMANN & LÖFFLER, 2010.

Paukstadt & Paukstadt (2010d: 89-100) [30.iii.2010] described the new subspecies *C. trifenestrata halmaheraensis* from the island of Halmahera, North Moluccas Province. The new subspecies was confirmed to be a taxon of the *trifenestrata*-group (sensu Nässig 1995) and compared with *C. trifenestrata kransi* JURRIANSE & LINDEMANS, 1920 (Sulawesi), *C. trifenestrata serama* NÄSSIG, 1989 (Seram), *C. trifenestrata banggaiensis* NAUMANN & PAUKSTADT, 1997 (Banggai Archipelago), and *C. trifenestrata javana* WATSON, 1913 (Java). ♀ adults of *banggaiensis*, *serama*, *javana*, and *kransi* were illustrated in color (: 93, figs. 3-6). *C. trifenestrata javana* was reported from Java and Bali (: 92) and from the Lesser Sunda Islands (: 94). The ♀ genitalia structures of the new subspecies were illustrated in phot. h.-t. and compared to those of *serama*, *banggaiensis*, *kransi*, and *javana* (: 96, 97, figs. 8-11).

Remarks: the report of *C. trifenestrata javana* from Bali and the Lesser Sunda Islands needs to be assigned to *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998.

Lampe (2010) [31.iii.2010] illustrated the preimaginal instars of *C. trifenestrata javana* WATSON, 1913 from Sumatra (: 302, pl. 297, 10 col.-figs.) and *C. trifenestrata javana* from Java (: 303, pl. 298, 10 col.-figs. and : 304, pl. 299, 10 col.-figs.). Each plate shows the ♂ and ♀ adults, eggs, 1st up to 5th larval instars, pupa and cocoon.

Remarks: the populations of the *trifenestrata*-group from Sumatra are assigned to *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010.

Paukstadt & Paukstadt (2010e: 159-174) [13.v.2010] provided a preliminary checklist of the Saturniidae of Indonesia (New Guinea excluded). *C. trifenestrata javana* WATSON, 1913 from Java and Borneo was listed (: 166). The authors noted that the locus typicus was fixed to East Java, Malang due to the designation of a lectotype by Nässig (1989).

Remarks: the records of *C. trifenestrata javana* WATSON, 1913 from Borneo need further investigation. Records in some older literature can be based on misidentifications of further endemic taxa of this genus restricted to Borneo.

Paukstadt & Paukstadt (2010f: 203-228) [14.v.2010] listed the following subspecies of *C. trifenestrata*: *barisanensis* PAUKSTADT & PAUKSTADT, 2010, *javana* WATSON, 1913, *kransi* JURRIANSE & LINDEMANS, 1920, *serama* NÄSSIG, 1989, *banggaiensis* NAUMANN & PAUKSTADT, 1997, *tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998, *halmaheraensis* PAUKSTADT & PAUKSTADT, 2010, and the species *bornea* WATSON, 1913, *hayatae* PAUKSTADT & SUHARDJONO, 1992, *cameronensis* PAUKSTADT & PAUKSTADT, 1998, and *maxalorensis* NAUMANN & LÖFFLER, 2010 as members of the *trifenestrata*-group (sensu Nässig, 1995). *C. kalimantanensis* BRECHLIN, 2010 was included into this species-group but remarked that the placement within this group is uncertain.

Remarks: at the time being *C. kalimantanensis* BRECHLIN, 2010 is preliminary and tentative included by us in the *agria*-subgroup of the *trifenestrata*-group based on the BOLD TaxonID Tree. The species *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 from Flores and the closely relative *C. maxalorensis* NAUMANN & LÖFFLER, 2010 from the nearby island of Alor were included into the *hayatae*-subgroup of the *luzonica*-group.

Smith (2010) recorded *Cricula trifenestrata* (HELPER, 1837 (*Saturnia*) for Nepal. The work contains no information on the genus *Cricula* WALKER, 1855 from the Indonesian Archipelago.

Solihin & Fuah (2010: 9) reported that the silk of *Cricula trifenestrata* is used in the region of Yogyakarta, Mt. Kidul, and Bali. No further information was provided.

Remark: this note might be attributed to *C. trifenestrata javana* WATSON, 1913 (Java) and *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 (Bali).

Budaya & Segaragunung (2011) illustrated in color a necklace made by golden „kepompong sutera criculla“ [= silk cocoons of *Cricula*] [sic]. This catalogue was published in conjunction with the exhibition *Fiber Face 3* at Taman Budaya Yogyakarta, 12 - 25 February 2011.

Remarks: though the origin of the cocoons was not explicitly mentioned in the catalogue we believe that cocoons of *Cricula trifenestrata javana* WATSON, 1913 from Central Java (Yogyakarta env.) were used for the production of this particula item.

Sunarintyas, Siswomihardjo & Tontowi (2012) [2012 Aug 5] reported on studies by the University Gadjah Mada, Yogyakarta [Central Java] on cytotoxicity of *Cricula trifenestrata* [sic] cocoon extract on human fibroblasts. The researchers concluded that *Cricula trifenestrata* [sic] cocoon extract was not cytotoxic on human gingival fibroblast cells.

Prasetyawati (2012) reported on the composition of protein and other elements in the cocoon of *Cricula trifenestrata* HELFER [sic] from most probably Central Java [thesis]: viii + 59 pp.

Anonymous – News Reporter-Staff News Editor at Life Science Weekly (2012 Sep 18) reported on studies by the University Gadjah Mada, Yogyakarta [Central Java] on cytotoxicity of *Cricula trifenestrata* [sic] cocoon extract on human fibroblasts. The researchers concluded that *Cricula trifenestrata* [sic] cocoon extract was not cytotoxic on human gingival fibroblast cells.

Furry (2012: 1-51) [2012 Aug 10] provided a study [thesis] on the production and possible economy of *Cricula trifenestrata* from Mete Desa Imogiri Yogyakarta [Central Java, Indonesia]. Several errors and misspellings are in this paper. *C. trifenestrata javana* was reported from Nusa Tenggara Timur (e.g. Flores) based on Watson (1913), *C. trifenestrata tenggarensis* was recorded from Sumba, *trifenestrata* from Sumatra, *trifenestrata kransi* from Sulawesi, *trifenestrata banggaiensis* from the Banggai Archipelago, and *trifenestrata bornea* from Kalimantan (: 5). The life history of *C. trifenestrata javana* from Yogyakarta (Central Java) was described and figured in color: fig. 8 (: 26), fig. 9 (: 27), fig. 10 (: 28), figs. 11 and 12 (: 29), fig. 13 (: 30), and fig. 14 (: 31), the ♂ and ♀ adults were figured in color: fig. 2 (: 5) and fig. 15 (: 32).

Remarks: Bali and Nusa Tenggara are occupied by *Cricula trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998, which ranges in Nusa Tenggara Barat and Nusa Tenggara Timur from Bali to Flores and on Sumba. Sumatra is occupied by the subspecies *trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010. The taxon *bornea* has been unintentionally lowered to subspecific rank following the original description. There are actually no reliable records of *bornea* from Kalimantan (the Indonesian provinces) but from East Malaysia instead.

Hardoyo (2012) [2012 Oct 09] reported in “*The Jakarta Post*” on creative industry. He reported that Y. S. Lenan offered his wild silk creations, consisting mainly of shawls and fabrics to potential buyers. Amid the recent promotion of batik products in New York City, Y. S. Lenan stole the show by offering his wild silk products made from natural and raw silk materials, threads and yarns and hand-woven silks. Aside from presenting beautifully arranged decorated boxes consisting of hand fans under his “Lenan Pearl of Silk” trade mark, Lenan offered his products, which consisted mostly of various shawls and fabrics. His products were uniquely handmade by weaving materials and silk yarn taken from *Attacus Atlas* [sic] and *Criculla* [sic] *Triphenestrata* [sic] silkworms. *Attacus* silkworms, which breed on mahogany trees, produce exotic brown-colored wild silk, while the *Criculla* [sic] silkworms, which breed on cashew produce a golden wild silk.

Remarks: based on further literature and own observations the taxon above needs to be assigned to the Javanese *Cricula trifenestrata javana* WATSON, 1913.

Paukstadt & Paukstadt (2013b: 29-40) [28.ii.2013] reported on an entomological expedition to the Papandayan volcano in West Java. The authors noted that in November 2012 even common taxa like *C. trifenestrata javana* WATSON, 1913 (*Cricula*) not came to light.

Paukstadt & Paukstadt (2013e: 66-74) [01.iii.2013] reported on an entomological expedition to the Dieng Plateau, Central Java. The authors noted that no members of the genus *Cricula* WALKER, 1855 came to light.

Naumann & Löffler (2013) [07.iii.2013] figured a barcode similarity tree including *Cricula trifenestrata javana* from Indonesia, Jawa Timur [East Java], Bawean I. (p. 181). Further details on this specimen were provided in Table 1 (p. 182).

Paukstadt & Paukstadt (2013f: cover illustration) [30.iv.2013] illustrated in color the 4th instar larvae of *C. trifenestrata javana* WATSON, 1913 from Central Java just before moulting to the 5th (last) instar (anal prolegs and head only).

Paukstadt & Paukstadt (2013g: cover illustration) [01.v.2013] illustrated in color the 5th instar larvae of *C. trifenestrata javana* WATSON, 1913 from Central Java (head and thoracic segments only).

Paukstadt, L. H. & Paukstadt, U. (2013b: 143-146) [01.v.2013] reported on rearing observations on *Cricula trifenestrata javana* WATSON, 1913 from Java. It was observed that the mature larvae prepare the opening of the cocoon by using the mandibles. *C. trifenestrata javana* was reported being restricted to Java and adjacent smaller islands and replaced by *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 on the Lesser Sunda Islands and *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 on Sumatra. Two col.-figs. on the spinning mature larva were attached.

Paukstadt & Paukstadt (2013h: cover illustration) [31.viii.2013] illustrated in color two ♂ adults of *C. trifenestrata javana* WATSON, 1913 showing a rare asymmetric reduction of the forewing fenestrae and the standard ocelli morphology.

Paukstadt, L. H. & Paukstadt, U. (2014b: 30-48) [28.ii.2014] described and illustrated the preimaginal instars of *C. trifenestrata tenggarensis* PAUKSTADT, PAUKSTADT & SUHARDJONO, 1998 from Bali. Based on DNA barcoding (by BOLD) the authors noted that *C. trifenestrata javana* WATSON, 1913 is endemic to the island of Java (and adjacent smaller islands?), this subspecies is replaced by *C. trifenestrata barisanensis* PAUKSTADT & PAUKSTADT, 2010 on Sumatra, by *C. cameronensis* PAUKSTADT & PAUKSTADT, 1998 on the Malay Peninsula, and by *C. trifenestrata tenggarensis* in some of the Lesser Sunda Islands (Bali, Lombok, Sumbawa, Sumba, and Flores). *C. trifenestrata tenggarensis* was reported being sympatric with *C. pelengensis* PAUKSTADT & PAUKSTADT, 2009 on Bali. *C. pelengensis* was upgraded to species rank due to the unclear situation of the range of *C. elaezia* JORDAN, 1909 on Java. *C. trifenestrata tenggarensis*, *C. hayatae* PAUKSTADT & SUHARDJONO, 1992 and *C. brechlini* PAUKSTADT & PAUKSTADT, 2013 were reported being sympatric on Flores. Three species of the *hayatae*-group were recorded from Alor and Timor. Those were *C. hayatae*, *C.*

maxalorensis NAUMANN & LÖFFLER, 2010, and *C. timorensis* NAUMANN & LANE, 2010. The preimaginal instars of *C. trifenestrata tenggarensis* (Bali) were figured in color. Eggs (: 39, figs. 1-2), 1st larval instar (: 39, fig. 3), 2nd larval instar (: 40, fig. 4), 3rd larval instar (: 40, fig. 5), 4th larval instar (: 41, figs. 6-7), 5th larval instar (: 42, fig. 8), cocoons (: 43, figs. 9-10), and pupa (: 44, figs. 11-13).

Nindhia, Knejzlik, Rumli & Nindhia (2014: 140-143) [vi. 2014] reported on studies how to find a degumming method in order for a possible use of cocoons of *C. trifenestrata* [unspecified origin, probably from Central Java] in future as biomaterial instead cocoons of *Bombyx mori*. The degumming process is explained and illustrated.

Putro (2014) [thesis] provided a report on the possibility to increase the cocoon weight of *C. trifenestrata* [from Java] while feeding with chestnut (*Anacardium occidentale* L.) while adding glycine [$C_2H_5NO_2$] to the plants. On effects on the length of the larva, survival of the larva, weight of the pupa, weight of the cocoon, size of the moth, number of eggs laid, and on the general quality of the adults was discussed in detail.

Remarks: the experiments were carried out with the Javanese subspecies *C. trifenestrata javana* WATSON, 1913 with certainty.

Putro, Prihatin & Suratno (2015: 100-102) reported on fortification of cashew nut leaf (*Anacardium occidentale* L.) using glycine on the growth and development of wild silkworm (*Cricula trifenestrata* HELFER [sic]).

Putri (2015) the study aimed to compare the ability of parasitoid *Trichogramma chilonis* ISHII (Hymenoptera: Trichogrammatidae) that have and have not copulated to parasitize smaller and bigger size *Corcyra cephalonica* STANTON eggs. The author reported that larvae of *Cricula* [sic] *trifenestrata* defoliates cashew trees (: 5).

Nagashima (2017) reported that he proposed the following process for fabrication of *Cricula* silk [from Yogyakarta env.]: *Cricula trifenestrata javana* WATSON, 1913. In order not to lose its radiant gold color trying to make gold thread has to be stopped and instead the cocoons to be flattened and attached like wall paper by gluing them together with starch. Doing so not only simplifies the work but also preserves the gold color. Thereafter, this innovation in Indonesia was not only used in lampshades, handbags, and other goods, but the subsequent research further showed that the cocoon thread contained an astounding level of lutein (known for its medicinal use with glaucoma and found abundantly in plants like marigolds). Today there are many different things being innovated under zero emission conditions, including not just the golden wall paper made by adults but also golden silk foil made by children by cutting the cocoons into small pieces with scissors, as well as lutein that is extracted from the effluent produced during the making of thread.

Remarks: very recently (February 2019) we investigated in Yogyakarta that the production of wild silk using cocoons of *Cricula* and other local Saturniidae has been completely stopped. It was told that cocoons of *Cricula* are exported to Japan for further treatment.

Herlina & Hadiyanti (2018: 93-107) conducted a study on the genetic variation of *C. trifenestrata* collected from several sampling locations on the island of Java using

ISSR (*Inter-Simple Sequence Repeat*) molecular markers. Based on genetic variation it was found that the level of genetic variation and polymorphism of *C. trifenestrata* [subspecies *javana* from Java] is high with a percentage of 98.9%. A provided dendrogram showed that the 29 studied samples of *C. trifenestrata* separate into two major groups at the similarity level of (0,60) 60%.

Remarks of the authors: References for the complete series on this genus are available in the final Part of this contribution on the genus *Cricula* WALKER, 1855.

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