

**A Preliminary Annotated Checklist of the
Brahmaeidae of the World – Part IIIB. Further
taxa of the *certhia*-group of the subgenus
Brahmaea WALKER, 1855
(Lepidoptera: Brahmaeidae)**

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Key words: Lepidoptera, Brahmaeidae, *Acanthobrahmaea*, *Brahmaea*, *Brahmophthalma*, *Calliprogonos*, *Dactyloceras*, *Lemonia*, *Sabalia*, *Shinocksiceras*, *Spiramiopsis*, *Transbrahmaea*, *wallichii*-group, *hearseyi*-group, *certhia*-group, annotated checklist, Afrotropical fauna, Oriental fauna, Palearctic fauna, bibliography, checklist.

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Zusammenfassung: Der folgende Beitrag zur Kenntnis der Familie Brahmaeidae SWINHOE, 1892 (Lepidoptera) ist Teil der Serie „*Brahmaeidae of the World*“, die nach Fertigstellung eine möglichst vollständige Übersicht über diese Familie geben sollte. Neue Erkenntnisse und neue Namen wurden eingearbeitet soweit sie bis zur Drucklegung aus der Literatur bekannt und uns zugänglich waren. Auf Grundlage von fast 400 Einzelpublikationen wurde versucht, eine aktuelle und nahezu vollständige Literaturübersicht über die Familie Brahmaeidae zu erstellen. Der Umfang machte eine möglichst zweckmässige Unterteilung in bestimmte Themenbereiche notwendig, die spätere Ergänzungen oder Korrekturen erleichtern sollte. Der Teil IIIB befasst sich speziell mit weiteren Taxa der *certhia*-Gruppe (sensu Paukstadt & Paukstadt 2021) der nominotypischen Untergattung der Gattung *Brahmaea* WALKER, 1855 von der Malaiischen Halbinsel, dem Malaiischen Archipel und China. Diese erste zusammenhängende Analyse der Familie Brahmaeidae soll keine Gattungsrevision darstellen, sondern lediglich den heutigen Kenntnisstand aufzeigen und eine gute Arbeitsgrundlage für weitere Studien zur Familie Brahmaeidae SWINHOE, 1892 bieten.

Summary: The following contribution to knowledge the family Brahmaeidae SWINHOE, 1892 (Lepidoptera) is part of the series "*Brahmaeidae of the World*", which should give a complete overview of this family after completion. New results of studies and new names were incorporated as far as they were known from the literature up to the time of printing and were accessible to us. On the basis of almost 400 individual publications, an attempt was made to create an up-to-date and almost complete overview of the literature on the Brahmaeidae family. The scope made it necessary to subdivide the information into certain subject areas as expediently as possible, which should facilitate subsequent additions or corrections. Part IIIB deals specifically with further taxa of the *certhia*-group (sensu Paukstadt & Paukstadt 2021) of the nominotypical subgenus of the genus *Brahmaea* WALKER, 1855 of the Malay Peninsula, the Malay Archipelago and China. This first coherent analysis of the Brahmaeidae family is not intended to represent a genus revision, but merely to show the current state of knowledge and provide a good working basis for further studies on the family Brahmaeidae SWINHOE, 1892.

Brahmaea (*Brahmaea*)

lunulata (BREMER & GREY, 1853 [“1852”]) (*Saturnia*)

Original citation and spelling: SATURNIA *lunulata* [n. sp.]

Original description: Bremer, O. & Grey, W. in Motschulsky, V. de (ed.) (1853): Diagnoses de Lépidoptères nouveaux, trouvés par MM. Tatarinoff et Gaschkewitsch aux environs de Pekin. – Études Entomologiques, [1], 1853: pp. 58-80.

Remarks: Strand in Wagner (1913: [15]) cited ‘1852’ as date of publication.

Type locality: Environ de Pekin [P. R. China, Beijing env.]

Geographical and altitudinal distribution: records are from the Amur, Wlad.[iwostok], Radd.[efka], Bik.[in river], Blag.[oweschtschensk], Chab.[arowska], cf. Staudinger (1892: 325). Zolotuhin (2016) recorded *lunulata* from the eastern part of the Russian Federation, Korea, North-Eastern China, Shaanxi (Daba Shan) and Sichuan based on the DNA. Zolotuhin in Sinev (ed.) (2019) recorded *lunulata* from three regional divisions of the Russian Federation: Primorsky, Khabarovsk and Amur.

Etymology: concluded from original description “fusco-nigroque undulata” [= brownish-black wavy] the name *lunulata* was chosen by mistake.

Type material: the description based on an unstated number of specimens of unstated sex.

Taxonomic history: *Saturnia* [Saturniidae] – Bremer & Grey (1853); *Brahmaea* – Ménétriers (1859); [Saturniidae] – Butler (1871); [Bombycidae] – Rogenhofer (1873); Endromids [Endromidae] – Staudinger (1878/79); Bombycidae – Staudinger (1881); Saturnidae [sic] – Romanoff (1885); Bombycidae – Kirby (1892); Saturniidae – Wattenwyl von (1897); Brahmaeidae – Leech (1898); Bombycides – Conte (1911); Brahmaeidae – Seitz (1911); Bombycides – Conte (1919); Brahmaeidae – Mell [1930].

Taxonomic notes: Mell [1930] Deutsche Entomologische Zeitschrift, 1929 (5), pp. [337]-494, noted that ‘due to incomprehensible errors, some inappropriate names crept into the first description of Bremer & Gray [sic] (1853), which led to the correction of *Saturnia lunulata* in *Saturnia undulata*’. Staudinger (1879: 359) remarked that especially after *Lunulata* [sic] was brought by Christoph from the Amur, there is no doubt that the highly variable *Ledereri* [sic] is a weak local variety of *Lunulata* [sic] only. Contrary (: 360-361) Staudinger noted that all three forms [in the sense of subspecies?] *Lunulata* [sic], *Ledereri* [sic], and *Christophi* [sic] certainly belong to only one species.

The name *lunulata* BREMER & GREY, [1853] [sic] was listed as species of *Brahmaea* (*Brahmaea*) in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

General notes: this species was not illustrated in the original description. *Brahmaea lunulata* BREMER [sic] was figured dorsally and ventrally in color by Ménétériès (1863: pl. XV, fig. 5). *Brahmaea lunulata* (BREMER & GREY) was illustrated by Yang (1978: pl. 28, fig. 1 [♂]) under the name *B. undulata* (BREMER & GREY). Kozlov (1985) figured the ♂ and ♀ genitalia structures of *lunulata carpenteri* [as *certhia*] (: 107, fig. 2), the 1st, 2^{3rd} and last larval instars (: 108, fig. 3), the chaetotaxy of the 1st and 2^{last} larval instars (: 110, fig. 4), and details of larval legs and the pupa (: 111, fig. 5). Paukstadt, U. & Paukstadt, L. H. (2017a) figured the mature larva of *tancrei* [= *lunulata carpenteri*] from Russia, Siberia, ?Sacha [Russia, Republic of Sakha (Yakutia)] in color. Paukstadt, U. & Paukstadt, L. H. (2017c) described and figured in the preimaginal instars of *tancrei* [= *lunulata carpenteri*] from Russia, Siberia, ?Sacha [Russia, Republic of Sakha (Yakutia)]. The average diameter of the head capsule in each larval instar was shown in Diagram 1 (: 76). The following preimaginal instars were figured in color: Ovum prior and after eclosion (: 77, fig. 1-2), early and late 1st instar larvae (: 78, figs. 3-5), early and late 2nd instar larvae (: 80, figs. 6-8), early and late 3rd instar larvae (: 82, figs. 9-11), early and late 4th instar larvae including close ups of the thoracic segments (: 84, figs. 12-15), 3rd instar larval exuvia (: 85, fig. 16), early 5th instar larvae including close ups of the thoracic segments (: 86, figs. 17-21). Naumenko in Sinev (ed.) (2019: Cover picture) figured *lunulata* from Russia.

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *lunulata* (BREMER & GREY, 1853 [“1852”]) are as follows:

Brahmaea undulata (BREMER & GREY) (*Saturnia*); Status-; junior objective synonym of *lunulata* (BREMER & GREY) (*Saturnia*) [as per treatment by previous authors]

Remarks: *undulata* can be either an incorrect subsequent spelling, just a lapsus, or a replacement name for *lunulata* rather.

Brahmaea lunulata BREMER, 1852; Ménétériès in Schrenck (1859: 55) [not code-conform citation, error in authorship and publication date]

Brahmaea lunulata BREMER; Ménétrières (1863: col.-pl.XV, fig. 5) [not code-conform citation and error in authorship]
Brahmaea Lunulata BREMER; Staudinger (1879: 359-361); [not code-conform citation and error in authorship]
Brahmaea Lunulata BREMER; Romanoff (1885: 13) [not code-conform citation and error in authorship]
Brahmaea Lunulata BREMER; Fixsen (1887 : 345)) [not code-conform citation and error in authorship]
Saturnia lunulata MOTSCHULSKY, 1852; Leech (1889: 635) [error in authorship]
Saturnia Lunulata BREMER & GRAY, 1852; Kirby (1892: 723) [error / misspelling in authorship and publication date]
Brahmaea Lunulata BREMER; Staudinger in Romanoff (1892: 243, 325) [not code-conform citation and error in authorship]
Brahmaea Lunulata BREMER; Austaut (1896: 98) [not code-conform citation and error in authorship]
Brahmaea lunulata BREMER; Wattenwyl von (1897: 7) [not code-conform citation and error in authorship]
Brahmaea Undulosa; Staudinger & Bang-Haas (1897: 10) [‡*undulosa* is an incorrect subsequent spelling of *undulata*]
Brahmaea Undulosa; Staudinger & Bang-Haas (1898: 10) [‡*undulosa* is an incorrect subsequent spelling of *undulata*]
Brahmaea lunulata BREMER; Korb (1899: 170) [not code-conform citation, incorrect subsequent spelling of *Brahmaea*, and error in authorship]
Saturnia lunulata BREMER & GRAY, 1852; Mell ([1930]: 350) [error / misspelling in authorship and publication date]
Lunulata BREMER; Bryk (1949: 22); [not code-conform citation and error in authorship]
Brahmaea lunulata BREMER & GRAY, 1852; Kozlov (1985: 108) [not code-conform citation, error / misspelling in authorship, error in publication date]
Hybridizations: inter-generic and inter-specific pairings with *lunulata* (BREMER & GREY, 1853 [“1852”]) are unknown from literature.

Further readings on *lunulata* (BREMER & GREY, 1853 [“1852”])

Bremer & Grey in Motschulsky (edit.) (1853: 64) Études Entomologiques, [1], 1853: pp. 58-80, placed *lunulata* BREMER & GREY in Motschulsky, 1853 [“1852”] in the genus *Saturnia* together with the new species *Saturnia Artemis* [sic], which was compared with *S. Silene* [sic], and *S. luna*.

Remarks: *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]) is no member of the genus *Saturnia* SCHRANK, 1802 (Lepidoptera: Saturniidae) but belongs to the later described genus *Brahmaea* WALKER, 1855 of the family Brahmaeidae. The taxa *artemis* (BREMER & GREY, 1853 [“1852”]), *sylene* (HÜBNER, [1807]), and *luna* (LINNAEUS, 1748) belong to the genus *Actias* LEACH in Leach & Nodder, 1815 (Lepidoptera: Saturniidae).

Ménétrières in Schrenck (1859) [xii.1859] Reis. Amurl. 2, lfg. 1. p. 55 (1859), listed *Brahmaea lunulata* BREMER [sic], 1852 [sic] from Siberia. He noted that this species forms a natural group, with *certhia* FABRICIUS and *lucina* OLIV. WESTW.

[see ‘Remarks’ below], called *Brahmaea* WALKER, 1855. Schrenck found an individual of this species on the banks of the Amur, at the mouth of the Ussuri; it was placed on a stone near the river, and was easily picked up with the fingers (: 55). *B. undulata* BREMER [sic] was cited in subordination of *lunulata* BREMER [sic].

Remarks: Olivier (1790: 31) listed 27. *Bombix Lucine* [French] and *Bombyx Lucina* [Latin] and in subordination *Phalaena Lucina* [sic] DRURY.

Ménétrières (1863) in: Ménétrières Enumeratio corporum animalium Musei Impériale Académie Sciences, etc. Petropolitane. Pars 3, Lep. Heterocera; figured a ♂ adult of *Brahmaea lunulata* BREMER [sic] in color dorsally and ventrally (: pl. XV, fig. 5).

Remarks: only Bremer was cited by Ménétrières (1863) as author of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]) in the illustration (Plate XV, fig. 5) and in the “Explanations of Plates” [unnumbered page].

Butler (1866b) Proc. zool. Soc. London, 1866, pp. 451-458; made corrections to his 1866a-paper (: 458). The author noted that *Brahmaea petiveri* is identical with *B. lunulata* BREMER [sic] from North China. Butler listed *Brahmaea lunulata* BREMER [sic], 1852 [sic]. *Brahmaea petiveri* BUTLER, 1866 and *Saturnia undulata* BREMER [sic], 1853 were cited in subordination of *B. lunulata*. As distribution of *B. lunulata* ‘Isle of Chusan (Petiver)’ and ‘North China (Bremer, Ménétrières)’ were noted.

Remarks: the record of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]) from Chusan Island based on a misinterpretation; Chusan island is the type locality of *B. (Brahmaea) certhia* (FABRICIUS, 1793). *B. (Brahmaea) petiveri* BUTLER, 1866 is a junior objective synonym of the Chinese *B. (Brahmaea) certhia* (FABRICIUS, 1793) and not of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]).

Butler (1871) Proceedings (: xli) Trans. ent. Soc. London, 1870; described *Brahmaea swanzii* as a new species from West Africa [Ghana] and noted that this species is intermediate between *B. Lucina* [sic] and *lunulata*.

Butler (1871) Lep. Exot., 1869-1874, pp. 1-190, 62 col.-pls., 1 monochr. pl.; placed *Brahmaea Swanzii* [sic] BUTLER, 1871 in the family Saturniidae (: Index, 78). He compared the wing ornamentation of this species with those of *B. Lucina* [sic], *B. lunulata*, *B. Certhia* [sic], and *B. Whitei* [sic] (: 79).

Remarks: the name *Brahmaea certhia* of above list cannot be assigned to a specific taxon with certainty.

Rogenhofer (1873) compared the new species *Brahmaea Ledereri* [sic] from the Cilician Taurus (Turkey) with *B. lunulata* BREMER [sic] (: 574) The author noted that the pupa was in a web similar to that of *Lasiocampa otus*. This showed much more affinity with the bombycids than the Saturnids, from which R. Felder (Wiener entom. Monatschrift, Volume VI, 1862: p. 35) removed them with good reason.

Remarks: error in authorship of *lunulata* (BREMER & GREY, 1853 [“1852”]). *Lasiocampa otus* = *Pachypasa otus* (DRURY, 1773) (*Lasiocampa*) (Lasiocampidae). *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]) (*Saturnia*) (Brahmaeidae) is a distinct species from East Asia.

Staudinger (1878/79) Lepidopteren-Fauna Kleinasien's, in: Hor. Soc. Entom. Rossicae; XIV [14], 1878 [01.xi.1878: pp. 129-320] [15.v.1879]: pp. 321-516], pp. 176-482, placed the genus *Brahmaea* in the Bombycidae. He noted (: 359-361) that all three forms, *Lunulata* [sic] BREMER [sic], *Ledereri* [sic] ROGENHOFER, and *Christophi* [sic] STAUDINGER certainly belong to only one species. The new subspecies *Christophi* [sic] was compared with *Ledereri* [sic] and *Lunulata* [sic]. The author noted that in his opinion, the genus *Brahmaea* belongs to the family Endromids [Endromidae] and not Saturnids [Saturniidae], especially because of the caterpillars (: 361).

Butler (1880) Annl. Mag. Nat. Hist., (5) 5 [ii.1880], 188-189, pointed out that *B. lunulata* BREMER [sic] and *B. undulata* BREMER [sic] are typical *certhia* FABRICIUS.

Remarks: Butler confirmed the misidentification of the Indian *Brahmaea* by Walker (1855). He erroneously placed *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *B. (Brahmaea) undulata* (BREMER & GREY, 1853) as junior synonyms to *B. (Brahmaea) certhia* (FABRICIUS, 1793). *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) is a distinct species and *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is its junior objective synonym.

Butler (1880b) Ent. mon. Mag., XVII, 1880-81, pp. 110-111; was grouping the genus *Brahmaea* as follows: Section I: *Brahmaea Lucina* [sic] DRURY (Sierra Leone), *Brahmaea Swanzvi* [sic] BUTLER (Fantee and Old Calabar); Section II: *Brahmaea Certhia* [sic] FABRICIUS [sic] (= *lunulata* BREMER [sic], = *Petiveri* [sic] BUTLER) (Chusan and North China), *Brahmaea Ledereri* [sic] ROGENHOFER (Asia Minor), *Brahmaea Mniszechii* [sic] FELDER (Japan); Section III: *Brahmaea japonica* BUTLER (Yokohama and Nikko), *Brahmaea nigrans* BUTLER, 1880 (Japan). Without group status remain *Brahmaea Whitei* [sic] BUTLER (Darjiling), *Brahmaea conchifera* BUTLER (Silhet and Darjiling), *Brahmaea rufescens* BUTLER (NE Bengal), and *Brahmaea Wallichii* [sic] GRAY (Nepal). Butler noted that 5 off 11 species [sensu Butler 1880] were not represented in the National Collection.

Remarks: Butler confused taxa of the genus *Brahmaea* WALKER, 1855. *B. (Brahmophthalma) japonica* BUTLER, 1873 with its junior subjective synonyms *B. (Brahmophthalma) mniszechii* FELDER, [1874] and *B. (Brahmophthalma) nigrans* BUTLER, 1880 are conspecific. *B. (Brahmophthalma) wallichii wallichii* (GRAY, 1831) with its junior subjective synonyms *B. (Brahmophthalma) conchifera* BUTLER, 1880 and *B. (Brahmophthalma) rufescens* BUTLER, 1880 are conspecific. A further synonym of *wallichii* was omitted by Butler: *B. (Brahmophthalma) spectabilis* (HOPE, 1841). Another taxon was omitted: *B. (Brahmophthalma) hearseyi* WHITE, 1862 ["1861"] but its junior objective synonym *B. (Brahmophthalma) whitei* BUTLER, 1866 was listed instead. The distinct *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) was erroneously cited as junior synonym of *B. (Brahmaea) certhia* (FABRICIUS, 1793). The Afrotropical taxa were correctly placed in a separate group (Section I).

Silhet = Sylhet, is metropolitan city in northeastern Bangladesh; Darjiling = Darjeeling, is a city and a municipality in the Indian state of West Bengal.

The Mfantsefo or Fante (Fanti is an older spelling) are an Akan people. The Fanti state occupies the coastal belt of Ghana with the current capital Accra. Calabar, formerly Old Calabar, town and port, capital of Cross River state, southeastern Nigeria, cf. Encyclopedia Britannica.

Staudinger (1881) [05.ii.1881] Lepidopteren-Fauna Kleinasien's, in: Hor. Soc. Entom. Rossicae; XVI [16], 1881, pp. 65-135, placed the genus *Brahmaea* again in the Bombycidae (: 100). He listed *Brahmaea* (*Lunulata* [sic]) v. *Ledereri* [sic] ROGENHOFER (: 100) and *Brahmaea Lunulata* [sic] v. [concluded from text in the sense of subspecies] *Christophi* [sic] (Cauc. m. or.) [Caucasus meridionalis orientalis] in the 'List of the generic, species and variety names newly established in the previous work' (: 131).

Remarks: *B. (Brahmaea) ledereri* ROGENHOFER, 1873 and *B. (Brahmaea) ledereri christophi* STAUDINGER, 1879 are distinct from *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) on species level.

Butler (1883) Ann. Mag. nat. Hist., (5) 11, 1883, pp. 114-115; described *Brahmaea Carpenteri* [sic]. The new species was compared with *B. certhia* (*lunulata* BREMER [sic]), *B. Ledereri* [sic], and *B. conchifera* (Northern India).

Remarks: error in authorship of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). Since no exact origins of *certhia* and *ledereri* were provided in the paper, we are unable to identify the taxa with certainty.

Romanoff (1885) Mémoires sur les Lépidoptères – Tome II; placed the genus *Brahmaea* WALKER in the family Saturniidae [sic], iii + 262 pp., 16 col.-pls. He recorded (: 13) *Lunulata* [sic] BREMER [sic] var. *Christophi* [sic] STAUDINGER from Lenkoran [Azerbaijan]. The ?♂ adult of *Brahmaea lunulata* BREMER [sic] var. *Christophi* [sic] STAUDINGER was illustrated (col.-pl. 1, fig. 5).

Remarks: error in authorship of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). *B. (Brahmaea) christophi* STAUDINGER, 1879 was downgraded by Romanoff as variation [subspecies] of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). The taxon *christophi* STAUDINGER, 1879 is a subspecies of *ledereri* ROGENHOFER, 1873.

Fixsen (1887) Lepidoptera aus Korea, in Romanoff (1887) Mémoires sur les Lépidoptères, Vol. III, 1887, pp. 233-356, pls. XIII-XV; recorded *Brahmaea Lunulata* [sic] BREMER [sic] from Korea and noted that this species has been repeatedly found in the Amur coastal region (: 346). Fixsen placed *Saturnia Undulata* [sic] BREMER & GREY, 1853 in subordination [= synonym] to *B. Lunulata* [sic] BREMER [sic] (: 345).

Remarks: the record of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) from Korea refers to the subspecies *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Leech (1889) [01.iv.1889] Proc. zool. Soc. London, 1888, pp. 580-655; recognized two species in the genus *Brahmaea* from Japan and Corea. Those were *B. japonica* BUTLER, 1873 and *B. certhia* (FABRICIUS). *Bombyx wallichii* GRAY, *Brahmaea carpenteri* BUTLER, 1883, *Saturnia lunulata* MOTSCHULSKY [sic], 1852 [sic], and *Saturnia undulata* BREMER & GREY, 1853 were cited in subordination of *B. certhia*. The author remarked *Brahmaea carpenteri* BUTLER being the only form of *B. certhia* recorded from Japan and Corea, but this at best can only rank as a variety of *certhia* (: 635).

Remarks: the record of *B. (Brahmaea) certhia* (FABRICIUS, 1793) for Korea refers to the more common *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 rather and the record for Japan refers to *B. (Brahmophthalma) japonica* BUTLER, 1873. The nominotypical subspecies *B. (Brahmophthalma) wallichii wallichii* (GRAY, 1831) has been originally described from Nepal. *B. (Brahmaea) lunulata lunulata* (BREMER & GREY, 1853 ["1852"])

and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 are distinct from the Chinese *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Kirby (1892) Syn. Cat. Lep. Het., I, Sphinges and Bombyces, XII + 951 pp.: placed the genus *Brahmaea* in the Bombycidae (: 723-724, Appendix: 933). Kirby was the first who designated a type-species for *Brahmaea* WALKER, 1855: *B. Conchifera* [sic] BUTLER, 1880. He placed *B. Certhia* [sic] sensu Walker (1855: 1316) in its subordination. The author included 14 species in *Brahmaea*. Two of those were 6. *B. Certhia* [sic] FABRICIUS, 1793 [sic] from North China with its synonyms *Saturnia Lunulata* [sic] BREMER & GRAY [sic], 1852 [sic], *Saturnia Undulata* [sic] BREMER & GRAY [sic], 1853, and *B. Petiveri* [sic] BUTLER, 1866 and finally 7. *B. Carpenteri* [sic] BUTLER, 1883 from Corea [Korea; Corea is a former spelling in English].

Remarks: Kirby designated *B. (Brahmophthalma) conchifera* BUTLER, 1880 as type species of the genus *Brahmaea* WALKER, 1855. The type designation by Kirby (1892: 724) is invalid because the name *conchifera* BUTLER, 1880 was not originally included in Walker (1855: 1315-1316) and *B. Certhia* [sic] (sensu Walker 1855: 1316) has been misidentified. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]) and *carpenteri* BUTLER, 1883 from Korea a subspecies of the latter. *B. (Brahmaea) petiveri* BUTLER, 1866 is a junior objective synonym of *B. (Brahmaea) certhia* (FABRICIUS, 1793). *B. (Brahmophthalma) conchifera* BUTLER, 1880 is a junior subjective synonym of *B. (Brahmophthalma) wallichii* (GRAY, 1831).

Staudinger in Romanoff (1892) [12.vii.1892] Die Macrolepidopteren des Amurgebietes . 1. Theil, in: Mém. Lép., VI, 1892, pp. 83-658, col.-pls. IX-XIV, placed the genus *Brahmaea* WALKER in the Bombyces. Staudinger compared the larvae of *Brahmaea Lunulata* [sic] BREMER [sic] from the Amur found on *Fraxinus mandschurica* and *Syringa amurensis* with those of *Brahmaea Lunulata* [sic] BREMER [sic]. He noted (: 243), that the larvae are quite distinct but highly variable and due to this fact species status cannot be confirmed. The larvae of *Ledereri* [sic] and *Christophi* [sic] were briefly described and compared with those of *Lunulata* [sic] (: 325). Staudinger noted (: 325) ‘since the larval patterns are also quite different, one would have to regard them as a different species, according to the larval morphology; but the larvae seem to vary very strongly and no species rights can be established accordingly’.

Remarks: the populations of the genus *Brahmaea* WALKER, 1855 from the Amur belong to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Austaut (1896) Le Naturaliste, (2) 10, p. 98, under the header “Notice on *Brahmaea Lunulata* [sic] BREMER [sic] and on a new variety of this species”; Austaut erroneously noted that the *Brahmaea* are *Bombyx* [sic] who belong to the tribus Saturnides. He reported *Brahmaea Lunulata* [sic] BREMER [sic] from the Amur River, *B. Japonica* [sic] from Japan and Korea, and *B. Ledereri* [sic] from Asia Minor. Contributions on *Lunulata* [sic] by Bremer [sic] and Ménétriès were compared and he found the specimens from Siberia being distinct. His words: “and I think that they belong to a special variety, perhaps to a geographical race which it is useful to make known and which I will designate under the name of

Tancrei [sic] after the lepidopterolist Rudolf Tancre, who was kind enough to enrich my collection with these two preoccupying subjects.”

Remarks: *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 is known from the Amur River, Korea and North-Eastern China

Röber (1897) Entomol. Nachrichten, XXIII, (17 & 18) (1897), pp. 17-288, recorded *Brahmaea ledereri* from the Taurus (: 260). This taxon was listed as *Brahmaea lunulata* BREMER [sic] var. *ledereri* ROGENHOFER (: 271).

Remarks: error in authorship of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]). *B. lunulata* (BREMER & GREY, 1853 [“1852”]) and *B. ledereri* ROGENHOFER, 1873 are distinct species.

Wattenwyl von (1897) Betrachtungen über die Farbenpracht der Insekten, 16 pp. + 9 col.-pls.; placed *Brahmaea* to the Saturniidae and recorded *lunulata* BREMER [sic] from the Transkaukasus [South Caucasus] (: 7). The adult was figured in color dorsally (pl. 4, fig. 59).

Remarks: the record of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]) from the Transkaukasus refers to *B. (Brahmaea) ledereri* ROGENHOFER, 1873. The following terms are associated with ‘Transcaucasus’: South Caucasus, Colchian Plain, Transcaucasian Lowlands, and Lenkoran Lowlands. So the record by von Wattenwyl refers to the subspecies *christophi* STAUDINGER, 1879 rather, which was described from Lenkoran.

Staudinger & Bang-Haas (1897) [xii.1897] Lepidopteren-Liste No. 41, listed *Brahmaea Lunulata* [sic] ♂ 350, *Brahmaea* v.[ariation] *Ledereri* [sic] sup. specimen 175, and *Brahmaea Undulosa* [sic] ♀ 400 (: 10). Prices in unities (or 1/10 Mark).

Remarks: the name *Brahmaea* ‡*Undulosa* most probably has been an incorrect subsequent spelling of *B. (Brahmaea) undulata* (BREMER & GREY, 1853) (*Saturnia*) rather than a new name in the genus *Brahmaea* WALKER, 1855. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]). Consequently we will treat ‡*undulosa* as a misspelling here.

Staudinger & Bang-Haas (1898) [xii.1898] Lepidopteren-Liste No. 42, listed *Brahmaea Lunulata* [sic] ♂ 350, *Brahmaea* v.[ariation] *Ledereri* [sic] sup. specimen 175, and *Brahmaea Undulosa* [sic] ♀ 400 (: 10). Prices in unities (or 1/10 Mark).

Remarks: the name *B. ‡Undulosa* most probably has been an incorrect subsequent spelling of *B. (Brahmaea) undulata* (BREMER & GREY, 1853) (*Saturnia*) rather than a new name in the genus *Brahmaea* WALKER, 1855. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]). Consequently we will treat ‡*undulosa* as a misspelling here.

Leech (1898) [30.ix.1898] listed four species of the genus *Brahmaea* of the family Brahmaeidae from northern China, Japan, and Korea. Those were *Brahmaea certhia* FABRICIUS, 1793 [sic] from Amurland, Korea [Korea], and Northern and Central China, *B. wallichii* GRAY, 1831 [sic] from Nepal, Sikhim [Sikkim], Khasi Hills, Assam, Upper Burma [Myanmar], and Central China, *B. hearseyi* WHITE, 1862 from Mussoorie, Sikhim [Sikkim], Burma [Myanmar], and Western China, and *B. japonica* BUTLER, 1873 from Japan. *Saturnia lunulata* BREMER & GREY, 1852 [sic], *Brahmaea lunulata* MÉN.[sic], 1887 [sic], *Saturnia undulata* BREMER & GREY, 1852 [sic], and *Brahmaea carpenteri* BUTLER, 1883 were listed in

subordination of *certhia*. Leech (: 269) noted that specimens from Kiukiang [Jiujiang, Jiangxi] appear to be referable to the form *undulata*, Butler describes a form from Corea as *carpenteri*, and Fixsen recorded a specimen from Corea which he stated agreed with Bremer's figure of *undulata*.

Remarks: the record of *B. (Brahmaea) certhia* (FABRICIUS, 1793) from the Amur region refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) is distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793). *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 and the citation *Brahmaea lunulata* MÉN.[ETRIES], 1887 has been an error in authorship. The citations of *B. (Brahmophthalma) wallichii wallichii* (GRAY, 1831) and of *B. (Brahmophthalma) hearseyi* WHITE, 1862 ["1861"] can be partly based on misinterpretations and can refer to later described Chinese species of the subgenus *Brahmophthalma* MELL, 1928.

The recorded distribution range of *B. (Brahmaea) certhia* (FABRICIUS, 1793) refers to more than one taxon. The nominotypical *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]), its junior objective synonym *B. (Brahmaea) undulata* (BREMER & GREY, 1853), and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 are distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Korb (1899) [15.ix.1899] Deut. ent. Zeit. "Iris", pp. [168]-170, col.-pl. III (figs. 1-4); described the preimaginal instars of *Brahmea* [sic] *christophi* STAUDINGER and provided information on the biology and ecology. He recognized three forms [in the sense of species] in *Brahmea* [sic]: *lunulata* BREMER [sic] (Amur), *ledereri* ROGENHOFER (Cilician Taurus), and *christophi* STAUDINGER (Talysch). Korb remarked (: 169) that *Brahmea* [sic] is best placed between *Endromis* and *Saturnia*.

Remarks: error in authorship of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). The record from the Amur refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Strecker (1899) Index of Species to Kirby's Syn. Cat. Lep. Het., Vol. I, pp. [1]-45; listed *Lunulata* [sic], 352, 483, 723, 730 (: 26).

Conte (1911) Essai d. Class. Lep. Prod. de Soie, in: Rapp. du Laborat. d'ét. de la Soie, 14, pp. [1]-90; placed *Brahmaea* WALKER, 1855 in the Bombycides. The author recorded *Brahmaea Certhia* [sic] FABRICIUS, 1793 [sic] from North China, Korea, Chusan Island. *Saturnia Lunulata* [sic] BREMER & GRAY, 1852 [sic] was cited in subordination of *B. Certhia* [sic] FABRICIUS, 1793 [sic] [as synonym].

Remarks: *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) is distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793) on species level. *B. (Brahmaea) certhia* (FABRICIUS, 1793) is a Chinese species, but there are scattered records from Korea, too.

Seitz (1911) [10.xi.1911] 15. Familie: Brahmaeidae, in: Seitz (ed.) Die Grossschmetterlinge der Erde . I. Abt., Bd. 2, pp. 227-228, col. pl. 35c; placed only a single genus in the family Brahmaeidae: *Brahmaea* WALKER. The author recognized three Palearctic species and several forms [concluded from text in the sense of subspecies] in the genus *Brahmaea*. Those were 1. *B. certhia* FABRICIUS [sic] (Amur, North and Central China) with its synonyms *undulata* BREMER & GREY [sic] and *petiveri* BUTLER, and the forms [subspecies] *carpenteri* BUTLER (Korea) and *ledereri* ROGENHOFER (Cicilia), and *lunulata* BREMER & GREY [sic]

which represents a unicolorous specimen such as may occur everywhere among typical specimens, 2. *B. christophi* STAUDINGER (Lenkoran, Caucasica), and 3. *B. japonica* BUTLER (Japan). *Brahmaea christophi*, *B. certhia*, *B. ledereri*, and *B. japonica* were figured in color dorsally (pl. 35c).

Remarks: *B. (Brahmaea) certhia* (FABRICIUS, 1793) is absent in the Amur region. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 is a subspecies of the latter. The taxa *ledereri* ROGENHOFER, 1873 and *christophi* STAUDINGER, 1879 are distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Seitz (1911) [10.xi.1911] 15. Family: Brahmaeidae, in: Seitz (ed.) The Macrolepidoptera of the Palearctic Fauna . 2. Volume: The Palearctic Bombyces & Sphinges. I. Division, Vol. 2, pp. 227-228, col.-pl. 35c; - please read: Seitz (1911) German Edition.

Strand in Wagner (1913) [05.ix.1913] Lep. Cat., Pars 16: Brahmaeidae, pp. [3]-5; included a single genus in Brahmaeidae, which has been *Brahmaea* WALKER, 1855. The following taxon was included *Brahmaea: B. certhia* FABRICIUS, 1793 [sic] (China, Chusan, Amur) with its synonyms *undulata* BREMER & GREY, 1853 [sic], *Petiveri* [sic] BUTLER, 1866, v. *Tancréi* [sic] AUSTAUT, 1896, ab. *lunulata* BREMER & GREY, 1852 [sic], and v. *Carpenteri* [sic] BUTLER, 1883. The author distinguished between 'Species' and 'Varitates' [varieties] in the Index Brahmaeidarum (: 6); he explicitly placed *lunulata* BREMER & GREY [sic] as variation in *Brahmaea* WALKER.

Remarks: the record of *B. (Brahmaea) certhia* (FABRICIUS, 1793) from the Amur refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 rather. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *B. (Brahmaea) tancréi* AUSTAUT, 1896 a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Conte (1919) Ess. d. Class. Lep. prod. de Soie, 7, (1919), pp. 246-256, 257, 258; pls. XII-XV, placed *Brahmaea* WALKER, 1855 in the Bombycides. Conte (251-252, 257) recorded *Brahmaea Certhia* [sic] FABRICIUS, 1793 [sic] from North China, Korea and Chusan Island. *Bombyx* C, (sensu Petiver 1710, Gazoph., pl. 18, fig. 3), *Saturnia Lunulata* [sic] BREM [sic] & GRAY [sic], 1852 [sic], *Brahm* [recte *Brahmaea lunulata*, BR.(EMER)] (sensu Ménetries, 1863, Descr. Lep. Acad. Sc. III, pl. 15, fig. 5), *Sat[urnia] Undulata* [sic] BREM [sic] & GRAY [sic], 1853, *B. Petiveri* [sic] BUTLER, 1866, *B. Carpenteri* [sic] BUTLER, 1883, and *B. Christophi* [sic] ROM.[ANOFF] [sic], 1885 were cited in subordination [concluded from text as synonyms].

Remarks: *Bombyx* C, (sensu Petiver 1710) refers to the pre-linnean name ‡*maxima* PETIVER. *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 is a subspecies of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]), and *christophi* STAUDINGER, 1879 is a subspecies of *B. (Brahmaea) ledereri* ROGENHOFER, 1873. *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) is distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793) on species level. *B. (Brahmaea) certhia* (FABRICIUS, 1793) is a Chinese species, but there are scattered records from Korea, too.

Moltrecht (1929) Über die geographische Verbreitung der Macrolepidopteren des Ussuri- und Amur-Gebietes, pp. 5-70 [14-22 in German, 23-68 species list, 69-70 author list]; placed the genus *Brahmaea* WALKER in the family Bombycidae and recorded *B. certhia lunulata* BREMER & GREY [sic] from the Ussuri region.

Remarks: *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) is distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793). The record from the Ussuri env. refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Mell [1930] Deutsche Entomologische Zeitschrift, 1929 (5), pp. [337]-494, distinguished three groups in the family Brahmaeidae: the Central African group with two genera: *Dactyloceras* and [*Spiramiopsis*] and 11 species, the Northern Indian group with 3 species: *hearseyi* WHITE, *wallichii* GRAY [sic], and *japonica* (BUTLER) [sic], and the Palearctic group with 3 species: *certhia* FABRICIUS [sic], *christophi* STAUDINGER, and *ledereri* ROGENHOFER. *Saturnia lunulata* BREMER & GRAY [sic], 1852 [sic], *Saturnia undulata* BREMER & GRAY [sic], 1853 [sic], *Brahmaea petiveri* BUTLER, 1866, and *Brahmaea carpenteri* BUTLER, 1883 were cited as color variation in subordination [= synonym] of *Brahmaea certhia* FABRICIUS, 1793 [sic] (: 350).

Remarks: *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym, *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym, and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 is a subspecies of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]).

Bryk (1949) Arkiv för Zoologi, Band 41 A, N:o 1 [26.i.1949], pp. 20-26; presented critical remarks on nomenclature. For example, *B. Lunulata* [sic] BREMER [sic] was cited as synonym of *certhia* FABRICIUS [sic].

Remarks: *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) is distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793) on species level..

Hartig (1963) Boll. Ass. Romana ent., XVIII (1); compared *Bramaea* [sic] *europaea* HARTIG, 1963 with *Bramaea* [sic] *certhia* FABRICIUS [sic] (including *ledereri* ROGENHOFER and *carpenteri* BUTLER), *christophi* STAUDINGER, and *japonica* BUTLER.

Remarks: concluded from text above names were most probably used in species rank, though *B. (Brahmaea) ledereri* ROGENHOFER, 1873, *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 were erroneously listed as subspecies of *B. (Brahmaea) certhia* (FABRICIUS, 1793) in the "Bibliografia". *Bramaea* [sic] *cristophi* [sic] STAUDINGER and *B. (Brahmophthalma) japonica* BUTLER were cited in species rank with *B. (Brahmophthalma) nigrans* BUTLER as subspecies of *B. (Brahmophthalma) japonica* BUTLER in the "Bibliografia". *B. (Brahmophthalma) nigrans* BUTLER, 1880 is a junior subjective synonym of *B. (Brahmophthalma) japonica* BUTLER, 1873.

Schepdael (1967) Linneana Belgica, 3 (5): pp. 91-103; provided some information on the biology and the ecology of *Brahmaea europaea*. Schepdael recorded the distribution range of the family Brahmaeidae from Japan, Korea, East and North China, India, Amur, the Caucasus, Cilicus and Ethiopia. He noted that Hartig listed 7 forms for this faunal region, belonging to only three species. Those were *Brahmaea certhia* FABRICIUS [sic], *B. certhia ledereri* ROGENHOFER, *B. certhia lunulata* BREMER & GREY [sic], *B. certhia carpenteri* BUTLER, *B. cristophi* [sic]

STAUDINGER, *B. japonica* BUTLER, and *B. japonica nigrans* BUTLER. The author discussed on the history of the development of the Brahmaeidae.

Remarks: *B. (Brahmaea) ledereri* ROGENHOFER, 1873, *B. (Brahmaea) ledereri christophi* STAUDINGER, 1879 and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 are distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793) on species level. *B. (Brahmophthalma) nigrans* BUTLER, 1880 is a junior subjective synonym of *B. (Brahmophthalma) japonica* BUTLER, 1873.

Yang (1978) Moths of North China, 523 pp, 29 col.pls. [in Chinese without English summary]; recorded *B. certhia* (FABRICIUS) and *B. undulata* (BREMER & GREY) of the genus *Brahmaea* (Brahmaeidae) from North China (: 424-427). Concluded from text *Saturnia lunulata* BREMER & GREY was cited in subordination of *Brahmaea undulata* (BREMER & GREY). The venation in Brahmaeidae was illustrated and described. *Brahmaea certhia* (FABRICIUS) (pl. 28, fig. 2 [♂]) and *Brahmaea undulata* (BREMER & GREY) (pl. 28, fig. 1 [♂]) were figured.

Remarks: the record and figure of *B. (Brahmaea) undulata* (BREMER & GREY, 1853) refer to *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]), which is treated as distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Nässig (1980) [xii.1980] Nachr. entomol. Ver. Apollo, Frankfurt/Main, N. F. Bd. 1 (3/4), pp. 77-91; recognized four genera in the Brahmaeidae. Those were the African *Dactyloceras* MELL [sic], the Italian *Acanthobrahmaea* SAUTER, and the Asian typical *Brahmaea* WALKER and the isolated *Calliprogonos* MELL [sic] from SW China. A lot of general information compiled from literature on the biology and ecology, distribution, the pre-imaginal stages, host plants, climatic and botanical conditions at the collecting sites, and short descriptions on *ledereri* and *christophi*, besides some comments on *europaea*, *lunulata*, and *certhia* were given and quoted from the literature.

Gardiner (1982) A Silkmoths Rearer's Handbook, xiii + 255 pp., 125 figs. phot.h.-t. / line drawings, XXXII col.-pls.; recorded *B. christophi* STAUDINGER (Caucasus), *B. japonica* BUTLER (Japan), *B. ledereri* ROGENHOFER (Asia Minor), and *Brahmaea wallichii* GRAY [sic] (India or Assam). The other species in this genus were listed: *B. carpenteri* BUTLER, *B. certhia* FABRICIUS [sic], *B. lunulata* BREMER & GREY [sic], and *B. nigrans* BUTLER.

Remarks: *christophi* STAUDINGER, 1879 is a subspecies of *B. (Brahmaea) ledereri* ROGENHOFER, 1873 and *carpenteri* BUTLER, 1883 is a subspecies of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). *B. (Brahmophthalma) nigrans* BUTLER, 1880 is a junior subjective synonym of *B. (Brahmophthalma) japonica* BUTLER, 1873.

Kozlov (1985) Arthropods of Siberia and Far East, "Nauka", pp. 105-112; described and figured the preimaginals of *B. lunulata* BREMER & GRAY [sic], 1852 [sic] [as *certhia* FABRICIUS, 1793]. *B. lunulata* BREMER & GRAY [sic], 1852 [sic], *B. undulata* BREMER & GRAY [sic], 1853, *B. petiveri* BUTLER, 1866, *B. carpenteri* BUTLER, 1883, and *B. tancrei* AUSTAUT, 1896 were cited as synonyms of *B. certhia* FABRICIUS, 1793 [sic]. The ♂ and ♀ genitalia structures of *lunulata* [as *certhia*] were figured (: 107, fig. 2), the 1st, 3rd and last larval instars (: 108, fig.

- 3), the chaetotaxy of the 1st and ?last larval instars (: 110, fig. 4), and details of larval legs and the pupa (: 111, fig. 5). [in Russian]
Remarks: the drawings and in particular the figured chaetotaxy and other details of the larvae are of high quality. The description and figures fit to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.
- Bogner (1988) [xii.1988] Nachr. entomol. Ver. Apollo, Frankfurt/Main, N. F. 9 (4), pp. 233-235, reported that *Brahmaea certhia* came to light in South Korea.
Remarks: the record might refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 [“1852”) rather, although *B. (Brahmaea) certhia* (FABRICIUS, 1793) was recorded from Korea, too.
- Zhang (1988) Entomotaxonomia, X (3-4), pp. 229-230; described *Brahmaea jilinensis* ZHANG, 1988 (Brahmaeidae) from the Jilin Province of China. The new species was compared and found similar *Brahmaea undulata* BREMER & GREY [sic].
Remarks: *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”)].
- Paukstadt, U. & Paukstadt, L. H. (1990) [15.vi.1990] Ent. Z. (Essen), 100 (12): pp. 219-225, 8 figs. phot.h.-t.; provided the complete life-history of *Brahmaea (Brahmophthalma) wallichii insulata* INOUE, 1984 from Taiwan. The first instar larva was reported being allied those of *B. (Brahmophthalma) japonica* BUTLER (Japan) and *B. (Brahmophthalma) hearseyi* WHITE (Southeast Asia) but distinct from those of *B. (Brahmaea) tancrei* AUSTAUT (Korea). The larval instars were figured in phot.h.-t.
Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 (Korea) is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. The citation of *B. (Brahmophthalma) hearseyi* WHITE, 1862 [“1861”) (Southeast Asia) refers to *B. (Brahmophthalma) loeffleri* NAUMANN & BROSCH, 2005 (Sumatra) rather, since the preimaginals of other taxa of the *hearseyi*-group (sensu Paukstadt & Paukstadt 2021) were unknown.
- Oberprieler & Duke (1994) [xi.1994] Nachr. entomol. Ver. Apollo, Frankfurt/Main, N.F. 15 (3), pp. 199-244, 8 col.-figs., 8 b/w-figs.; presented a historical review of the taxonomic placements of the genus *Spiramiopsis* HAMPSON, 1901. The immature stages of *S. comma* were compared with those of other selected bombycoids, mainly with those of *Brahmaea* (including *Acanthobrahmaea*, *Brahmophthalma*, and *Brachygnatha*) and *Dactyloceras*. Comparisons were done with larvae of *B. ledereri* ROGENHOFER, 1973 [sic], *B. tancrei* AUSTAUT, 1896, *B. japonica* (BUTLER) [sic], *B. hearseyi* (WHITE) [sic], *B. hearseyi ardjoeno* KALIS, 1934 (sensu Nässig & Paukstadt 1990).
Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 (Korea) is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. *B. (Brahmophthalma) ardjoeno* KALIS, 1934 is distinct from *B. (Brahmophthalma) hearseyi* WHITE, 1862 [“1861”) and the citation of ‘*B. hearseyi ardjoeno* KALIS, 1934 (sensu Nässig & Paukstadt 1990)’ refers to several closely related taxa of the *hearseyi*-group. Those are *B. (Brahmophthalma) hearseyi* WHITE, 1862 [“1861”) (Continental Asia, north of the Isthmus of Kra), *B. (Brahmophthalma) ardjoeno* KALIS, 1934 (endemic to Java), *B. (Brahmophthalma) loeffleri* NAUMANN & BROSCH, 2005 (Malay Peninsula, Sumatra and Borneo), *B. (Brahmophthalma) naessigi*

NAUMANN & BROSCHE, 2005 (Mindanao), and *B. (Brahmophthalma) paukstadorum* NAUMANN & BROSCHE, 2005 (Negros [type locality], Luzon and Samar).

Eitschberger (2008) [ix.2008] Neue Ent. Nachr. (Marktleuthen), 62: p. 133; figured the eggs of *Brahmaea tancrei* AUSTAUT, 1896 from Russia, Far East Russia, Ussuri, Primorje (: 133, figs. 1-3, SEM micrographs).

Remarks: this illustrations refer to *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Zolotuhin (2016) [27.xi.2016] Eversmannia, No. 47-48; pp. 4-10 [+1]; proposed the new subgeneric name *Transbrahmaea* for two species (a geographically disjunctive group) distributed in Transcaucasia and Asia Minor. Those were *B. christophi* STAUDINGER, 1885 [sic] and *B. ledereri* ROGENHOFER, 1873 with its subspecies *zaba* DE FREINA, 1982. The author pointed out that *B. tancrei* AUSTAUT, 1896 represents a junior synonym of *B. lunulata* (BREMER & GREY, [1853] 1852) from eastern China, Shaanxi and Sichuan and that the subspecies *lunulata carpenteri* BUTLER, 1883 with its synonyms *lunulata* var. *tancrei* AUSTAUT, 1896, *bicolor* MATSUMURA, 1921 and *magnificentia* BRYK, 1949 is known from the eastern part of Russian Federation, Korea and North-Eastern China. A tree was figured (: 6, fig. 4) included the taxa of the subgenera *Brahmaea* WALKER, 1855, *Acanthobrahmaea* SAUTER, 1967 and *Transbrahmaea* ZOLOTUHN, 2016. The ♂ genitalia structures were figured in color (: 8) of *lunulata lunulata* (figs. 7, 8) and *lunulata carpenteri* (figs. 9, 10). Adults of *Saturnia undulata* were figured in color dorsally and ventrally [from Bremer & Grey (1853)], *B. lunulata* from Beijing (fig. 7) and *B. lunulata* from Shaanxi, Daba Shan (fig. 8).

Remarks: not only from a biogeographical point of view, but also due to morphological and genetic differences the two species *christophi* STAUDINGER, 1879 and *ledereri* ROGENHOFER, 1873 can be separated and transferred from the nominate subgenus to a separate (new) subgenus: *Transbrahmaea* ZOLOTUHN, 2016. But this makes only sense if the endemic Italian species *europaea* HARTIG, 1963 remains in the monotypic subgenus *Acanthobrahmaea* SAUTER, 1967. *Transbrahmaea* from Asia Minor is then the link between the monotypical *Acanthobrahmaea* from Italy and the species group around *Brahmaea* (*Brahmaea*) *certhia* and *Brahmaea* (*Brahmaea*) *lunulata* in the eastern Palearctic Region.

Paukstadt, U. & Paukstadt, L. H. (2017a) [14.v.2017] Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 15 (2), Cover Illustration; figured the mature larva of *Brahmaea (Brahmaea) tancrei* AUSTAUT, 1896 from Russia, Siberia, ?Sacha [Russia, Republic of Sakha (Yakutia)] in color.

Remarks: the cover illustration refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Paukstadt, U. & Paukstadt, L. H. (2017c) [14.v.2017] Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 15 (2), 73-88; described and figured in the preimaginal instars of *Brahmaea (Brahmaea) tancrei* AUSTAUT, 1896 from Russia, Siberia, ?Sacha [Russia, Republic of Sakha (Yakutia)]. The preimaginal instars of the following taxa of *Brahmaea* and *Brahmophthalma* were reported being well known: *B. japonica* BUTLER, 1873 (Japan), *B. hearseyi* WHITE, 1862 ("1861") (China: Guangdong and Indonesia: Sumatra), *B. tancrei* AUSTAUT, 1896

(South Korea), *B. wallichii insulata* INOUE, 1984 (Taiwan), *B. celebica* TOXOPEUS, 1939 ("1938") (South Sulawesi), and *B. wallichii* (GRAY, 1831) (Central China). Observations on the biology and ecology of *B. tancrei* (Russia) were compared with *B. certhia* (FABRICIUS, 1793) (China: Jiangsu). The average diameter of the head capsule in each larval instar was shown in Diagram 1 (: 76). The following preimaginal instars were figured in color: Ovum prior and after eclosion (: 77, fig. 1-2), early and late 1st instar larvae (: 78, figs. 3-5), early and late 2nd instar larvae (: 80, figs. 6-8), early and late 3rd instar larvae (: 82, figs. 9-11), early and late 4th instar larvae including close ups of the thoracic segments (: 84, figs. 12-15), 3rd instar larval exuvia (: 85, fig. 16), early 5th instar larvae including close ups of the thoracic segments (: 86, figs. 17-21). The larval morphologies of *B. tancrei* from Russia and South Korea were found being distinct and much distinct from those of *B. certhia* from China.

Remarks: all information provided on *B. (Brahmaea) tancrei* AUSTAUT, 1896 from Korea and Russia refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. The citation of *B. (Brahmophthalma) hearseyi* WHITE, 1862 ["1861"] from Indonesia, Sumatra refers to *B. (Brahmophthalma) loeffleri* NAUMANN & BROSCHE, 2005.

Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *undulata* (BREMER, 1853) as species synonym of *B. (Brahmaea) lunulata* BREMER & GREY, [1853] [sic].

Naumenko in Sinev (ed.) (2019) [xii.2019] Catalogue of the Lepidoptera of Russia, Ed. 2, cover illustration; figured *Brahmaea lunulata* (BREMER & GREY, 1853) from the Russian Federation in color.

Zolotuhin in Sinev (ed.) (2019) [xii.2019] Catalogue of the Lepidoptera of Russia, Ed. 2; recorded *Brahmaea lunulata* (BREMER & GREY, 1853) from three regional divisions of the Russian federation. Those were Primorsky, Khabarovsk and Amur.

***undulata* (BREMER & GREY, 1853) (*Saturnia*)**

[junior objective synonym]

Original citation and spelling: [SATURNIA] UNDULATA. Nobis.

Original description: Bremer, O. & Grey, W. (1853): Beiträge zur Schmetterlings-Fauna des Nördlichen China's. – St. Petersburg; p. 16, pl. V, Fig. 3.

Remarks: in contrast to other authors, we see an authorship of Bremer & Grey rather than of Bremer alone. In our opinion, this is clear from the addition of "Nobis" [Latin = we] to the species name, which refers to both authors of the book and not to Bremer alone, who only wrote the foreword of this work. Both descriptions, of *lunulata* BREMER & GREY in Motschulsky, 1853 ["1852"] and of *undulata* BREMER & GREY, 1853 are almost identical in Latin text, but in the latter publication the authors had added a German translation.

Therefore it makes no sense to ascribe *lunulata* to both authors and *undulata* to Bremer only as author of the this new name.

Type locality: not explicitly given by the authors, but concluded from text most likely from northern China. Based on the previous publication of the authors in Motschulsky (1853) *Études Entomologiques*, [1], 1853, pp. 58-80, the type locality exactly must be ‘Environ de Pekin’ [China, Beijing env.].

Geographical and altitudinal distribution: see *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]).

Etymology: concluded from the original description “fusco nigroque undulata” [= brownish-black wavy] the name *undulata* was chosen as “replacement name” for *lunulata* BREMER & GREY, 1853 which, concluded from text, probably was taken by mistake.

Type material: the description probably based on a single ♂ (concluded from figure) specimen of *Saturnia undulata*.

Taxonomic notes: Mell [1930] *Deutsche Entomologische Zeitschrift*, 1929 (5), pp. [337]-494, noted that ‘due to incomprehensible errors, some inappropriate names crept into the first description of Bremer & Gray [sic] (1853), which led to the correction of *Saturnia lunulata* in *Saturnia undulata*’. Bremer & Grey (1853) placed *undulata* in the genus *Saturnia* together with *selene* HÜBNER, *cynthia* DRURY, *paphia* CRAMER, and *mylitta* DRURY. We do not believe that the name *undulata* represents either a new description, nor a replacement name for *lunulata* (BREMER & GREY, 1853 [“1852”]), or a correction of an incorrect original spelling, or a justified or an unjustified emendation, but has been just a lapsus rather in the republished version (incorrect subsequent spelling of *lunulata* BREMER & GREY, 1853 [“1852”]). Following Mell’s (1930) remark *undulata* has been an unjustified emendation rather.

The name *undulata* BREMER [sic], 1853 was listed as species synonym of *Brahmaea (Brahmaea) lunulata* BREMER & GREY [sic], [1853] in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

General notes: the [♂] type specimen of *Saturnia undulata* was figured by Bremer & Grey (1853: pl. V, fig. 3) dorsally and ventrally [most likely a ♂ adult]. *Brahmaea undulata* (BREMER & GREY) was illustrated by Yang (1978: pl. 28, fig. 1 [♂]).

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect

subsequent spellings for *undulata* (BREMER & GREY, 1853) are as follows:

B. (Brahmaea) lunulata (BREMER & GREY, 1853 ["1852"]); STATUS-; senior subjective synonym

Saturnia Undulata BREMER & GRAY, 1853; Kirby (1892: 723) [error / misspelling in authorship]

Saturnia undulata BREMER & GRAY, 1853; Mell ([1930]: 350) [error / misspelling in authorship]

Saturnia lunulata BREMER & GREY; Yang (1978: 427) [cited in subordination of *Brahmaea undulata* (BREMER & GREY)]

B. undulata BREMER & GRAY, 1853; Kozlov (1985: 108) [not code-conform citation, error / misspelling in authorship]

Hybridizations: n/a.

Further readings on *undulata* (BREMER & GREY, 1853)

Bremer & Grey (1853) Beiträge zur Schmetterlings-Fauna des Nördlichen China's, placed *undulata* Nobis [latin = we] [BREMER & GREY, 1853] in the genus *Saturnia* together with *selene* HÜBNER, *cynthia* DRURY, *paphia* CRAMER, and *mylitta* DRURY (: 16).

Remarks: *lunulata* (BREMER & GREY, 1853 ["1852"]) is no member of the genus *Saturnia* SCHRANK, 1802 (Lepidoptera: Saturniidae) but belongs to the later described genus *Brahmaea* WALKER, 1855 of the family Brahmaeidae. Further names listed belong to the genera *Actias* LEACH in Leach & Nodder, 1815 (*selene*), *Samia* HÜBNER, [1819] (*cynthia*), and *Antheraea* HÜBNER, [1819] (*paphia* and *mylitta* are considered to be conspecific).

Ménétrières in Schrenck (1859) [xii.1859] Reis. Amurl. 2, lfg. 1. p. 55 (1859); listed *Brahmaea lunulata* BREMER [sic], 1852 [sic] from Siberia. *B. undulata* BREMER [sic] was cited in subordination [concluded from text as synonym] of *lunulata* BREMER [sic]. He noted that this species forms a natural group, with *certhia* FABRICIUS and *lucina* OLIV. WESTW. [see 'Remarks' below], called *Brahmaea* WALKER, 1855. Schrenck found an individual of this species on the banks of the Amur, at the mouth of the Ussuri; it was placed on a stone near the river, and was easily picked up with the fingers (: 55).

Remarks: Olivier (1790: 31) listed 27. *Bombix Lucine* [French] and *Bombyx Lucina* [Latin] and in subordination *Phalaena Lucina* [sic] DRURY.

Felder, C. & Felder, R. (1862) [i./ii.1862] Wien. entom. Monatschr., 6 (1), pp. 22-32, 6 (2), pp. 33-40; placed *Brahmaea* in the family Lasiocampidae, a family confirmed being intermediate Saturniidae and Bombycidae. The only taxon cited in *Brahmaea* has been *Brahmaea* ? *undulata* (BREMER) [sic]. The species was compared with *Saturniae* [sic] *Pyri* [sic] LINNAEUS and *Lasiocampa Taraxaci* [sic]. The author noted that he is in doubt whether this species is actually congeneric with *Brahmaea* WALKER (*Brahmaea Certhia* [sic] FABRICIUS) [free translated from Latin].

Remarks: *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). *Brahmaea* WALKER, 1855 became later a genus in the new family Brahmaeidae SWINHOE, 1892.

Walker (1865) List Spec. lepid. Insects Colln Brit. Mus., XXXII, Supplement.-Part 2, listed *Brahmaea? undulata* BREMER [sic] from Ning-po [Ningbo, Zhejiang] (: 539). He cited *Brahmaea undulata*, Ménétr. Schrencks Reis. Amurlande, ii, 1, 5 and *Brahmaea? undulata*, Feld. Wien. Ent. Mon. vi. 35 in subordination of *Saturnia undulata* BREMER [sic].

Remarks: the record from Ning-po [Ningbo, Zhejiang] refers to *B. (Brahmaea) certhia* (FABRICIUS, 1793) rather.

Butler (1866b) Proc. zool. Soc. London, 1866, pp. 451-458; made corrections to his 1866a-paper (: 458). The author cited *Saturnia undulata* BREMER [sic], 1853 in subordination [concluded from text as synonym] of *B. lunulata*.

Butler (1880) Annl. Mag. Nat. Hist., (5) 5 [ii.1880], 188-189; pointed out that *B. lunulata* BREMER [sic] and *B. undulata* BREMER [sic] are typical *certhia* FABRICIUS.

Remarks: Butler confirmed the misidentification of the Indian *Brahmaea* by Walker (1855). He placed *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *B. (Brahmaea) undulata* (BREMER & GREY, 1853) as junior synonyms to *B. (Brahmaea) certhia* (FABRICIUS, 1793). At the time being *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) is treated as a distinct species and *B. (Brahmaea) undulata* (BREMER & GREY, 1853) as its junior objective synonym.

Fixsen (1887) Lepidoptera aus Korea, in Romanoff (1887) Mémoires sur les Lépidoptères, Vol. III, 1887, pp. 233-356, pls. XIII-XV, recorded *Brahmaea Lunulata* [sic] BREMER [sic] from Korea and noted that this species has been repeatedly found in the Amur coastal region (: 346). Fixsen placed *Saturnia Undulata* [sic] BREMER & GREY, 1853 in subordination [= synonym] to *B. Lunulata* [sic] BREMER [sic] (: 345).

Remarks: Leech's (1898: 269) citation of '*Brahmaea lunulata*, Mén., Rom. sur Lép., iii, p. 345 (1887)' actually refers to Fixsen (1887: 345).

Leech (1889) [01.iv.1889] Proc. zool. Soc. London, 1888, pp. 580-655; recognized two species in the genus *Brahmaea* from Japan and Korea. Those were *B. japonica* BUTLER, 1873 and *B. certhia* (FABRICIUS). *Bombyx wallichii* GRAY, *Brahmaea carpenteri* BUTLER, 1883, *Saturnia lunulata* MOTSCHULSKY [sic], 1852 [sic], and *Saturnia undulata* BREMER & GREY, 1853 were cited in subordination of *B. certhia*. The author remarked *Brahmaea carpenteri* BUTLER being the only form of *B. certhia* recorded from Japan and Korea, but this at best can only rank as a variety of *certhia* (: 635).

Remarks: the record of *B. (Brahmaea) certhia* (FABRICIUS, 1793) for Korea refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 rather, and the record for Japan refers to *B. (Brahmophthalma) japonica* BUTLER, 1873. *B. (Brahmaea) lunulata lunulata* (BREMER & GREY, 1853 ["1852"]) and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 are distinct from the Chinese *B. (Brahmaea) certhia* (FABRICIUS, 1793). *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]).

Kirby (1892) Syn. Cat. Lep. Het., I, Sphinges and Bombyces, XII + 951 pp.; placed the genus *Brahmaea* in the Bombycidae (: 723-724, Appendix: 933). Kirby was the first who designated a type-species for *Brahmaea* WALKER, 1855: *B. Conchifera* [sic] BUTLER, 1880. He placed *B. Certhia* [sic] sensu Walker (1855:

1316) in its subordination. The author included 14 species in *Brahmaea*. Two of those were 6. *B. Certhia* [sic] FABRICIUS, 1793 [sic] from North China with its synonyms *Saturnia Lunulata* [sic] BREMER & GRAY [sic], 1852 [sic], *Saturnia Undulata* [sic] BREMER & GRAY [sic], 1853, and *B. Peiveri* [sic] BUTLER, 1866, and finally 7. *B. Carpenteri* [sic] BUTLER, 1883 from Corea [Korea; Corea is a former spelling in English].

Remarks: Kirby designated *B. (Brahmophthalma) conchifera* BUTLER, 1880 as type species of the genus *Brahmaea* WALKER, 1855. The type designation by Kirby (1892: 724) is invalid because the name *conchifera* BUTLER, 1880 was not originally included in Walker (1855: 1315-1316) and *B. Certhia* [sic] (sensu Walker 1855: 1316) has been misidentified. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *carpenteri* BUTLER, 1883 from Korea the subspecies of the latter. *B. (Brahmaea) petiveri* BUTLER, 1866 is a junior objective synonym of *B. (Brahmaea) certhia* (FABRICIUS, 1793). *B. (Brahmophthalma) conchifera* BUTLER, 1880 is a junior subjective synonym of *B. (Brahmophthalma) wallichii* (GRAY, 1831).

Staudinger & Bang-Haas (1897) [xii.1897] Lepidopteren-Liste No. 41, listed *Brahmaea Lunulata* [sic] ♂ 350, *Brahmaea* v.[ariation] *Ledereri* [sic] sup. specimen 175, and *Brahmaea Undulosa* [sic] ♀ 400 (: 10). Prices in unities (or 1/10 Mark).

Remarks: the name *B. ‡Undulosa* most probably has been an incorrect subsequent spelling of *B. (Brahmaea) undulata* (BREMER & GREY, 1853) (*Saturnia*) rather than a new name in the genus *Brahmaea* WALKER, 1855. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). Consequently we will treat *‡undulosa* as a misspelling here.

Leech (1898) [30.ix.1898] Trans. ent. Soc. London, Part III, 1898, pp. 261-379; listed in 'Heterocera from China, Japan, and Corea' four species of the genus *Brahmaea* WALKER, 1855 in the family Brahmaeidae (: 269-270). One of those has been 17. *Brahmaea certhia* (FABRICIUS, 1793) (*Bombyx*) from Amurland, Corea [Korea], Northern and Central China with its synonyms *Saturnia lunulata* BREMER & GREY, 1852 [sic], *Saturnia undulata* BREMER & GREY, 1853 and *Brahmaea carpenteri* BUTLER, 1883.

Remarks: the provided distribution range of *B. (Brahmaea) certhia* (FABRICIUS, 1793) refers to more than one taxon. The nominotypical *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) including its junior objective synonym *B. (Brahmaea) undulata* (BREMER & GREY, 1853) and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 are distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793) on species level.

Staudinger & Bang-Haas (1898) [xii.1898] Lepidopteren-Liste No. 42, listed *Brahmaea Lunulata* [sic] ♂ 350, *Brahmaea* v.[ariation] *Ledereri* [sic] sup. specimen 175, and *Brahmaea Undulosa* [sic] ♀ 400 (: 10). Prices in unities (or 1/10 Mark).

Remarks: the name *Brahmaea ‡Undulosa* most probably has been an incorrect subsequent spelling of *B. (Brahmaea) undulata* (BREMER & GREY, 1853) (*Saturnia*) rather than a new name in the genus *Brahmaea* WALKER, 1855. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). Consequently we will treat *‡undulosa* as a misspelling here.

Strecker (1899) Index of Species to Kirby's Syn. Cat. Lep. Het., Vol. I, pp. [1]-45; listed *Undulata* [sic], 168, 611, 723, 805, 846, 915 (: 43).

Conte (1911) Essai d. Class. Lep. Prod. de Soie, in: Rapp. du Laborat. d'ét. de la Soie, 14, pp. [1]-90; placed *Brahmaea* WALKER, 1855 in the Bombycides. The author recorded *Brahmaea certhia* [sic] FABRICIUS, 1793 [sic] from North China, Korea, Chusan Island. *Saturnia lunulata* [sic] BREMER & GRAY, 1852 [sic] was cited in subordination of *B. certhia* [sic] FABRICIUS, 1793 [sic] [as synonym].

Remarks: *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) is distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793) on species level. *B. (Brahmaea) certhia* (FABRICIUS, 1793) is a mainly Chinese species, but there are scattered records from Korea, too.

Seitz (1911) [10.xi.1911] 15. Familie: Brahmaeidae, in: Seitz (ed.) Die Grossschmetterlinge der Erde . I. Abt., Bd. 2, pp. 227-228, col. pl. 35c; placed only a single genus in the Brahmaeidae: *Brahmaea* WALKER. The author recognized three Palearctic species and several forms [concluded from text in the sense of subspecies] in *Brahmaea*. Those were 1. *B. certhia* FABRICIUS [sic] (Amur, North and Central China) with its synonyms *undulata* BREMER & GREY [sic] and *petiveri* BUTLER, and the forms [subspecies] *carpenteri* BUTLER (Korea) and *ledereri* ROGENHOFER (Cicilia), and *lunulata* BREMER & GREY [sic] which represents a unicolorous specimen such as may occur everywhere among typical specimens, 2. *B. christophi* STAUDINGER (Lenkoran, Caucasia), and 3. *B. japonica* BUTLER (Japan).

Remarks: *B. (Brahmaea) certhia* (FABRICIUS, 1793) is absent in the Amur region. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 is a subspecies of the latter. The taxa *ledereri* ROGENHOFER, 1873 and *christophi* STAUDINGER, 1879 are distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Seitz (1911) [10.xi.1911] 15. Family: Brahmaeidae, in: Seitz (ed.) The Macrolepidoptera of the Palearctic Fauna . 2. Volume: The Palearctic Bombyces & Sphinges. I. Division, Vol. 2, pp. 227-228, col.-pl. 35c; - please read: Seitz (1911) German Edition.

Strand in Wagner (1913) [05.ix.1913] Lep. Cat., Pars 16: Brahmaeidae, pp. [3]-5; included a single genus in Brahmaeidae, which has been *Brahmaea* WALKER, 1855. The following taxon was included *Brahmaea*: *B. certhia* FABRICIUS, 1793 [sic] (China, Chusan, Amur) with its synonyms *undulata* BREMER & GREY, 1853 [sic], *Petiveri* [sic] BUTLER, 1866, v. *Tancrei* [sic] AUSTAUT, 1896, ab. *lunulata* BREMER & GREY, 1852 [sic], and v. *Carpenteri* [sic] BUTLER, 1883. The author distinguished between 'Species' and 'Varitates' [varieties] in the Index Brahmaedarum (: 6); he explicitly placed *undulata* BREMER & GREY [sic] as variation in *Brahmaea* WALKER.

Remarks: the record of *B. (Brahmaea) certhia* (FABRICIUS, 1793) from the Amur refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Conte (1919) Ess. d. Class. Lep. prod. de Soie, 7, (1919), pp. 246-256, 257, 258; pls. XII-XV, placed *Brahmaea* WALKER, 1855 in the Bombycides. Conte (251-252, 257) recorded *Brahmaea Certhia* [sic] FABRICIUS, 1793 [sic] from North China, Korea and Chusan Island. *Bombyx* C, (sensu Petiver 1710, Gazoph., pl. 18, fig. 3), *Saturnia Lunulata* [sic] BREM [sic] & GRAY [sic], 1852 [sic], *Brahm* [recte *Brahmaea lunulata*, BR.(EMER)] (sensu Ménetries, 1863, Descr. Lep. Acad. Sc. III, pl. 15, fig. 5), *Sat*[urnia] *Undulata* [sic] BREM [sic] & GRAY [sic], 1853, *B. Petiveri* [sic] BUTLER, 1866, *B. Carpenteri* [sic] BUTLER, 1883, and *B. Christophi* [sic] ROM.[ANOFF] [sic], 1885 were cited in subordination [concluded from text as synonyms].

Remarks: *Bombyx* C, (sensu Petiver 1710) refers to the pre-linnean name ‡*maxima* PETIVER. The taxon *carpenteri* BUTLER, 1883 is a subspecies of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]), and *christophi* STAUDINGER, 1879 is a subspecies of *B. (Brahmaea) ledereri* ROGENHOFER, 1873. *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) is distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793) on species level. *B. (Brahmaea) certhia* (FABRICIUS, 1793) is a Chinese species, but there are scattered records from Korea, too.

Mell [1930] Deutsche Entomologische Zeitschrift, 1929 (5), pp. [337]-494, distinguished three groups in the family Brahmaeidae: the Central African group with two genera: *Dactyloceras* and [*Spiramiopsis*] and 11 species, the Northern Indian group with 3 species: *harseyi* WHITE, *wallichii* GRAY [sic], and *japonica* (BUTLER), and the Palearctic group with 3 species: *certhia* FABRICIUS [sic], *christophi* STAUDINGER, and *ledereri* ROGENHOFER. *Saturnia lunulata* BREMER & GRAY [sic], 1852 [sic], *Saturnia undulata* BREMER & GRAY [sic], 1853 [sic], *Brahmaea petiveri* BUTLER, 1866, and *Brahmaea carpenteri* BUTLER, 1883 were cited as color variation in subordination [= synonym] of *Brahmaea certhia* FABRICIUS, 1793 (: 350). Mell remarked that 'due to incomprehensible errors, some inappropriate names crept into the first description of Bremer & Gray (1853), which led to the correction of *Saturnia lunulata* in *Saturnia undulata*'.

Remarks: *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]). *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *carpenteri* BUTLER, 1883 is a subspecies of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]).

Yang (1978) Moths of North China, 523 pp, 29 col.pls. [in Chinese without English summary]; recorded *B. certhia* (FABRICIUS) and *B. undulata* (BREMER & GREY) of the genus *Brahmaea* (Brahmaeidae) from North China (: 424-427). Concluded from text *Saturnia lunulata* BREMER & GREY was cited in subordination of *Brahmaea undulata* (BREMER & GREY). The venation in Brahmaeidae was illustrated and described. *Brahmaea certhia* (FABRICIUS) (pl. 28, fig. 2 [♂]) and *Brahmaea undulata* (BREMER & GREY) (pl. 28, fig. 1 [♂]) were figured.

Remarks: the record and the figure of *B. (Brahmaea) undulata* (BREMER & GREY, 1853) refer to *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]).

Kozlov (1985) Arthropods of Siberia and Far East, "Nauka", pp. 105-112; described and figured the preimaginals of *B. certhia* FABRICIUS, 1793 [sic] from Russia Far East. *B. lunulata* BREMER & GRAY [sic], 1852 [sic], *B. undulata* BREMER & GRAY

[sic], 1853, *B. petiveri* BUTLER, 1866, *B. carpenteri* BUTLER, 1883, and *B. tancrei* AUSTAUT, 1896 were cited as synonyms of *B. certhia* FABRICIUS, 1793 [sic]. [in Russian]

Zhang (1988: 229-230) Entomotaxonomia, X (3-4), described *Brahmaea jilinensis* ZHANG, 1988 (Brahmaeidae) from the Jilin Province of China. The new species was compared with and found similar *Brahmaea undulata* BREMER & GREY [sic].

Remarks: *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]).

Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *undulata* (BREMER, [sic] 1853) as species synonym of *B. (Brahmaea) lunulata* BREMER & GREY, [1853] [sic].

***diastemata* (ZHANG & YANG, 1993) (*Brachygnatha*)**

[junior subjective synonym]

Original citation and spelling: *Brachygnatha diastemata* Zhang et Yang, sp. nov.

Original description: Zhang, Xiu rong & Yang, Chi-kun (1993) A new genus and species of Brahmaeidae (Lepidoptera). – Entomotaxonomia, 15 (1), 1993 [iii.1993], pp. 48-52 [pp. 48-50 in Chinese / pp. 51-52 English translation]; 6 figs.

Type locality: Haoping, Taibaishan, Shaanxi Province [China].

Geographical and altitudinal distribution: see under *lunulata* (BREMER & GREY, 1853 ["1852"]).

Etymology: not given in the English abstract of the original description, but most likely pointing to the pattern morphology of the ♂ adult.

Type material: the description based on a ♂ singleton. ♂ holotype by original designation (figured in the original description) was cited being preserved in the Insect Collection of the Beijing Agricultural University.

Taxonomic notes: *diastemata* ZHANG & YANG, 1993 is the type species for *Brachygnatha* ZHANG & YANG, 1993.

The name *diastemata* (ZHANG & YANG, 1993) was listed as species synonym of *Brahmaea (Brahmaea) lunulata* BREMER & GREY, [1853] [sic] in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

General notes: the ♂ holotype was illustrated in the original description (: 50, fig. 5 dorsally and fig. 6 ventrally), as well as the ♂ genitalia structures (: 19, figs. 1 and 2).

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *diastemata* (ZHANG & YANG, 1993) are as follows:

B. (Brahmaea) lunulata (BREMER & GREY, 1853 [“1852”]); STATUS-; senior subjective synonym

Hybridizations: inter-generic and inter-specific pairings with *diastemata* (ZHANG & YANG, 1993) are unknown from literature.

Further readings on *diastemata* (ZHANG & YANG, 1993)

Zhang & Yang (1993) [iii.1993] Entomotaxonomia, 15 (1), pp. 48-52; described a new species and a new genus of the Brahmaeidae: *Brachygnatha diastemata* ZHANG & YANG, 1993 from the Shaanxi Province of the P. R. China. The ♂ holotype and its genitalia structures were figured in the original description. Notes on *Brahmaea* WALKER, 1855, *Bombyx certhia* FABRICIUS, *Brahmophthalma* MELL were provided. *Brahmaea jilinensis* ZHANG, 1988 was transferred to the new genus *Brachygnatha* ZHANG & YANG, 1993, which has been a new combination.

Remarks: *Brachygnatha* ZHANG & YANG, 1993 is a junior synonym of *Brahmaea* WALKER, 1855. *B. (Brahmaea) diastemata* (ZHANG & YANG, 1993) is a junior subjective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]).

Oberprieler & Duke (1994) [xi.1994] Nachr. entomol. Ver. Apollo, Frankfurt/Main, N.F. 15 (3), pp. 199-244, 8 col.-figs., 8 b/w-figs., gave a historical review of the taxonomic placements of the genus *Spiramiopsis* HAMPSON, 1901. The immature stages of *S. comma* were compared with those of other selected bombycoids, mainly with those of *Brahmaea* (including *Acanthobrahmaea*, *Brahmophthalma*, and *Brachygnatha*) and *Dactyloceras*. The immature stages of *Calliprogonos miraculosa* MELL, 1937 from China were recorded being still unknown, as well as those of *Brachygnatha* (= *Brahmaea*) *diastemata* ZHANG & YANG.

Zhang, Hao & Yang (1999) J. China Agricult. Univers., 1999, 4 (5), pp. 37-42; presented an overview on the Chinese brahmids moths. The authors recognized four genera of the family Brahmaeidae in China. One of those has been the genus *Brachygnatha* ZHANG & YANG, 1993 with the species *diastemata* ZHANG & YANG, 1993, *ledireri* [sic] ROGENHOFER, 1873 [sic], *christophi* STAUDINGER, 1853 [sic], and *jilinneus* [sic] ZHANG, 1988 [sic].

Wu (2017) The Marvelous Moths of China, 403 pp.; noted (: 272) that China has four genera in the family Brahmaeidae. Those were *Brahmaea*, *Brachygatha* [sic] with its species *diastemata* (ZHANG & YANG, 1993) [sic], *christophi* (Staudinger, 1853 [sic]), *jilinneus* [sic] (ZHANG, 1988), and *ledereri* (ROGENHOFER, 1873), *Brahmophthlma* [sic], and finally *Brahmidia*.

Remarks: *Brahmaea* WALKER, 1855 and *Brahmophthalma* MELL, 1928 are subgenera of *Brahmaea* WALKER, 1855. *Brachygnatha* ZHANG & YANG, 1993 is a junior synonym of

Brahmaea WALKER, 1855 and *Brahmidia* BRYK, 1949 is a junior synonym of *Brahmophthalma* MELL, 1928. The Chinese *Calliprogonos* MELL & HERING, 1937 was omitted by the author.

Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *diastemata* (ZHANG & YANG, 1993) as species synonym of *B. (Brahmaea) lunulata* BREMER & GREY, [1853] [sic]. *Brachygnatha* ZHANG & YANG, 1993 was listed as genus synonym of *Brahmaea (Brahmaea)*.

***lunulata carpenteri* BUTLER, 1883 (*Brahmaea*)**

Original citation and spelling: *Brahmaea Carpenteri*, sp. n.

Original description: Butler, A. G. (1883): On Lepidoptera from Manchuria and the Corea. – The Annals and Magazine of Natural History; including Zoology, Botany, and geology, (5) 11, 1883: pp. 109-117.

Type locality: Corea, Chosan Harbour [Korea, Busan Port]

Remarks. Busan Harbor was known in English sources as Chosan Harbor.

Geographical and altitudinal distribution: Regions of the Russian Federation: Lower Amur, Upper Amur and Primorsky, cf. <http://insecta.pro/taxonomy/14184>. Zolotuhin (2016) recorded *carpenteri* from North Korea (Chagang), from the Russian Federation: Primorsky Krai, Khabarovsk Krai (Bikin Area), Yakutia (Inkagirskoe ploskogorie), South Korea, and from China based on DNA analysis.

Etymology: not explicitly mentioned in the original description and cannot conclude from text.

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

Taxonomic notes: the name *carpenteri* BUTLER, 1883 was listed as subspecies of *Brahmaea (Brahmaea) lunulata* BREMER & GREY, [1853] [sic] in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

General notes: Owada in Sugi (ed.) figured the early larva and the mature larvae of *tancrei* [= *carpenteri*] from Korea (pl. 51, figs. 8-10). Paukstadt & Ragus (1990) figured the preimaginal instars of *tancrei* from Korea; the 1st, 2nd, and 3rd larval instars (: 17), 5th larval instar (:

21), pupa (: 23), highly variable imagines (: 24-27), and the ♂ genitalia structures (: 28) were figured in phot. halftone. Eitschberger (2008) [ix.2008] figured the eggs of *tancrei* from Russia, Far East Russia, Ussuri, Primorje (: 133, figs. 1-3, SEM micrographs).

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *lunulata carpenteri* BUTLER, 1883 are as follows:

tancrei AUSTAUT, 1896; STATUS-; junior subjective synonym

bicolor MATSUMURA, 1921; STATUS-; junior subjective synonym

magnificentia BRYK, 1949; STATUS-; junior subjective synonym

Hybridizations: inter-generic and inter-specific pairings with *lunulata carpenteri* BUTLER, 1883 are unknown from literature.

Further readings on *lunulata carpenteri* BUTLER, 1883

Butler (1883) Ann. Mag. nat. Hist., (5) 11, 1883: pp. 114-115; described *Brahmaea Carpenteri* [sic]. The new species was compared with *B. certhia* (*lunulata* BREMER [sic]), *B. Ledereri* [sic], and *B. conchifera* (Northern India).

Remarks: since no exact origins / locality data of *certhia* and *ledereri* were given, no statements about the actual identity can be made.

B. (Brahmaea) lunulata (BREMER & GREY, 1853 ["1852"]) (as *B. (Brahmaea) certhia* (FABRICIUS, 1793) in the paper) was erroneously cited in subordination (synonym) of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Leech (1889) Proc. zool. Soc. London, 1888, pp. 580-655; recognized two species in the genus *Brahmaea* from Japan and Corea [Korea]. Those were *B. japonica* BUTLER, 1873 and *B. certhia* (FABRICIUS). *Bombyx wallichii* GRAY, *Brahmaea carpenteri* BUTLER, 1883, *Saturnia lunulata* MOTSCHULSKY [sic], 1852 [sic], and *Saturnia undulata* BREMER & GREY, 1853 were cited in subordination of *B. certhia*. The author remarked *Brahmaea carpenteri* BUTLER being the only form of *B. certhia* recorded from Japan and Corea [Korea], but this at best can only rank as a variety of *certhia* (: 635).

Remarks: the record of *B. (Brahmaea) certhia* (FABRICIUS, 1793) for Korea might refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 rather, and/or *B. (Brahmaea) certhia* (FABRICIUS, 1793). The record for Japan refers to *B. (Brahmophthalma) japonica* BUTLER, 1873. The nominotypical subspecies *Brahmaea (Brahmophthalma) wallichii wallichii* (GRAY, 1831) has been originally described from Nepal. *B. (Brahmaea) lunulata lunulata* (BREMER & GREY, 1853 ["1852"]) and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 are distinct from the Chinese *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Kirby (1892) Syn. Cat. Lep. Het., I, Sphinges and Bombyces, XII + 951 pp.; placed the genus *Brahmaea* in the Bombycidae (: 723-724, Appendix: 933). Kirby was the first who designated a type-species for *Brahmaea* WALKER, 1855: *B. Conchifera* [sic] BUTLER, 1880. He placed *B. Certhia* [sic] sensu Walker (1855: 1316) in its subordination. The author included 14 species in *Brahmaea*. Two of those were 6. *B. Certhia* [sic] FABRICIUS, 1793 [sic] from North China with its

synonyms *Saturnia Lunulata* [sic] BREMER & GRAY [sic], 1852 [sic], *Saturnia Undulata* [sic] BREMER & GRAY [sic], 1853, and *B. Petiveri* [sic] BUTLER, 1866, and finally 7. *B. Carpenteri* [sic] BUTLER, 1883 from Corea [Korea; Corea is a former spelling in English].

Remarks: Kirby designated *B. (Brahmophthalma) conchifera* BUTLER, 1880 as type species of the genus *Brahmaea* WALKER, 1855. The type designation by Kirby (1892: 724) is considered to be invalid because the name *conchifera* BUTLER, 1880 was not originally included in Walker (1855: 1315-1316) and *B. Certhia* [sic] (sensu Walker 1855: 1316) considered being misidentified.

B. (Brahmaea) undulata (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *carpenteri* BUTLER, 1883 from Korea, Russia Far East and NE China, is a subspecies of the latter. *B. (Brahmophthalma) conchifera* BUTLER, 1880 is a junior subjective synonyms of *B. (Brahmophthalma) wallichii wallichii* (GRAY, 1831). *B. (Brahmaea) petiveri* BUTLER, 1866 is a junior objective synonym of *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Leech (1898) [30.ix.1898] Trans. ent. Soc. London, Part III, 1898, pp. 261-379; listed in 'Heterocera from China, Japan, and Corea' four species of the genus *Brahmaea* WALKER, 1855 in the family Brahmaeidae (: 269-270). One of those has been 17. *Brahmaea certhia* (FABRICIUS, 1793) (*Bombyx*) from Amurland, Corea [Korea], Northern and Central China with its synonyms *Saturnia lunulata* BREMER & GREY, 1852 [sic], *Saturnia undulata* BREMER & GREY, 1853 and *Brahmaea carpenteri* BUTLER, 1883.

Remarks: the cited distribution range of *B. (Brahmaea) certhia* (FABRICIUS, 1793) refers to more than one taxon. The nominotypical *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) including its junior objective synonym *B. (Brahmaea) undulata* (BREMER & GREY, 1853) and its subspecies *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 are distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793) on species level.

Leech (1889) [01.iv.1889] Proc. zool. Soc. London, 1888, pp. 580-655, col.pls. XXX-XXXII; listed in 'Lepidoptera of Japan and Corea' two species of the genus *Brahmaea* (: 635). Those were *Brahmaea japonica* with its probable synonym *mniszecchi* [sic] FELDER, 1864-5 [sic] and *Brahmaea certhia* FABRICIUS with its synonyms *Bombyx wallichii* GRAY, *Brahmaea carpenteri* BUTLER, 1883, *Saturnia lunulata* MOTSCHULSKY, *Saturnia undulata* BREMER & GREY, 1853. The author remarked that *Brahmaea carpenteri* BUTLER is the only form of *B. certhia* recorded from the region under consideration, but at best can only rank as a variety of *certhia*.

Remarks: *B. (Brahmophthalma) mniszecchi* FELDER, [1874] is a junior subjective synonym of *B. (Brahmophthalma) japonica* BUTLER, 1873. *B. (Brahmophthalma) wallichii* (GRAY, 1831), *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 are distinct from the Chinese *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Austaut (1896) Naturaliste (2) 10, p. 98; described *Brahmaea Lunulata* [sic] BREMER [sic], var. *Tancrei* [sic] as new species from Korea.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Strecker (1899) Index of Species to Kirby's Syn. Cat. Lep. Het., Vol. I, pp. [1]-45; listed *Carpenteri* [sic], 723 (: 11).

Conte (1911) Essai d. Class. Lep. Prod. de Soie, in: Rapp. du Laborat. d'ét. de la Soie, 14, pp. [1]-90; placed *Brahmaea* WALKER, 1855 in the Bombycides. The author recorded *Brahmaea Certhia* [sic] FABRICIUS, 1793 [sic] from North China, Korea, Chusan Island. *B. Carpenteri* [sic] BUTLER, 1883 was cited in subordination of *B. Certhia* [sic] FABRICIUS, 1793 [sic] [as synonym].

Remarks: *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 is distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Seitz (1911) [10.xi.1911] 15. Familie: Brahmaeidae, in: Seitz (ed.) Die Grossschmetterlinge der Erde . I. Abt., Bd. 2, pp. 227-228, col. pl. 35c; placed only a single genus in the Brahmaeidae: *Brahmaea* WALKER. The author recognized three Palearctic species and several forms [concluded from text in the sense of subspecies] in *Brahmaea*. Those were 1. *B. certhia* FABRICIUS [sic] (Amur, North and Central China) with its synonyms *undulata* BREMER & GREY [sic] and *petiveri* BUTLER, and the forms [subspecies] *carpenteri* BUTLER (Korea) and *ledereri* ROGENHOFFER (Cicilia), and *lunulata* BREMER & GREY [sic] which represents a unicolorous specimen such as may occur everywhere among typical specimens, 2. *B. christophi* STAUDINGER (Lenkoran, Caucasia), and 3. *B. japonica* BUTLER (Japan).

Remarks: *B. (Brahmaea) certhia* (FABRICIUS, 1793) is absent in the Amur region. Above record refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]).

Seitz (1911) [10.xi.1911] 15. Family: Brahmaeidae, in: Seitz (ed.) The Macrolepidoptera of the Palearctic Fauna . 2. Volume: The Palearctic Bombyces & Sphinges. I. Division, Vol. 2, pp. 227-228, col.-pl. 35c; - please read: Seitz (1911) German Edition.

Strand in Wagner (1913) [05.ix.1913] Lep. Cat., Pars 16: Brahmaeidae, pp. [3]-5; included a single genus in Brahmaeidae, which has been *Brahmaea* WALKER, 1855. The following taxa were included *Brahmaea*: *B. certhia* FABRICIUS, 1793 [sic] (China, Chusan, Amur) with its synonyms *undulata* BREMER & GREY, 1853 [sic], *Petiveri* [sic] BUTLER, 1866, v. *Tancréi* [sic] AUSTAUT, 1896, ab. *lunulata* BREMER & GREY, 1852 [sic], and v. *Carpenteri* [sic] BUTLER, 1883. The author distinguished between 'Species' and 'Varitates' [varieties] in the Index Brahmaeidarum (: 6); he explicitly placed *Carpenteri* [sic] BUTLER as variation.

Remarks: the record of *B. (Brahmaea) certhia* (FABRICIUS, 1793) from Amur refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) and *B. (Brahmaea) tancrei* AUSTAUT, 1896 a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Conte (1919) Ess. d. Class. Lep. prod. de Soie, 7, (1919), pp. 246-256, 257, 258; pls. XII-XV, placed *Brahmaea* WALKER, 1855 in the Bombycides. Conte (251-252, 257) recorded *Brahmaea Certhia* [sic] FABRICIUS, 1793 [sic] from North China, Korea and Chusan Island. *Bombyx* C, (sensu Petiver 1710, Gazoph., pl. 18,

fig. 3), *Saturnia Lunulata* [sic] BREM [sic] & GRAY [sic], 1852 [sic], *Brahm* [recte *Brahmaea lunulata*, BR.(EMER)] (sensu Ménétries, 1863, Descr. Lep. Acad. Sc. III, pl. 15, fig. 5), *Sat[urnia] Undulata* [sic] BREM [sic] & GRAY [sic], 1853, *B. Petiveri* [sic] BUTLER, 1866, *B. Carpenteri* [sic] BUTLER, 1883, and *B. Christophi* [sic] ROM.[ANOFF] [sic], 1885 were cited in subordination [concluded from text as synonyms].

Remarks: *Bombyx* C. (sensu Petiver 1710) refers to the pre-linnean name ‡*maxima* PETIVER, 1710. The record of *B. (Brahmaea) certhia* (FABRICIUS, 1793) for Korea refers to *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]) rather, although *B. (Brahmaea) certhia* (FABRICIUS, 1793) occurs in Korea, too. The taxon *carpenteri* BUTLER, 1883 is a subspecies of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]). The taxa *christophi* STAUDINGER, 1879 and *ledereri* ROGENHOFER, 1873 are distinct from the Chinese *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Mell [1930] Deutsche Entomologische Zeitschrift, 1929 (5), pp. [337]-494, distinguished three groups in the family Brahmaeidae: the Central African group with two genera: *Dactyloceras* and [*Spiramiopsis*] and 11 species, the Northern Indian group with 3 species: *harseyi* WHITE, *wallichii* GRAY [sic], and *japonica* (BUTLER) [sic], and the Palearctic group with 3 species: *certhia* FABRICIUS [sic], *christophi* STAUDINGER, and *ledereri* ROGENHOFER. *Saturnia lunulata* BREMER & GRAY [sic], 1852 [sic], *Saturnia undulata* BREMER & GRAY [sic], 1853 [sic], *Brahmaea petiveri* BUTLER, 1866, and *Brahmaea carpenteri* BUTLER, 1883 were cited as color variation in subordination [= synonym] of *Brahmaea certhia* FABRICIUS, 1793 (: 350).

Remarks: *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]) and *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Bryk (1949) [26.i.1949] Arkiv för Zoologi, Band 41 A, N:o 1, pp. 20-26, described a new species from North Korea, *Brahmaea magnificentia* BRYK, 1949, which was compared with *carpenteri* BUTLER, *B. certhia certhia* FABRICIUS [sic], *tancrei* [sic] AUSTAUT, *ledereri* ROGENHOFER, and *christophi*. Bryk treated *B. carpenteri* BUTLER from S Korea as an albinistic form of *B. certhia*. Observations on the venation in *Brahmaea* and *Dactyloceras* were done and several species in Brahmaeidae shortly described, compared, and several conclusions presented.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Hartig (1963) Boll. Ass. Romana ent., XVIII (1), compared *Brama* [sic] *europaea* HARTIG, 1963 with *Brama* [sic] *certhia* FABRICIUS [sic] (including *ledereri* ROGENHOFER and *carpenteri* BUTLER), *christophi* STAUDINGER, and *japonica* BUTLER. *Brama* [sic] *certhia ledereri* ROGENHOFER, *certhia lunulata* BREMER & GREY and *certhia carpenteri* BUTLER were listed in the “Bibliografia”. *Brama* [sic] *cristophi* [sic] STAUDINGER and *japonica* BUTLER were cited in species rank with *nigrans* BUTLER as subspecies of *japonica* BUTLER in the “Bibliografia”.

Remarks: *B. (Brahmaea) certhia* (FABRICIUS, 1793) is distinct from *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]), *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883, *B. (Brahmaea) ledereri* ROGENHOFER, 1873, and *B. (Brahmaea) ledereri christophi*

- STAUDINGER, 1879. *B. (Brahmophthalma) nigrans* BUTLER, 1880 is a junior subjective synonym of *B. (Brahmophthalma) japonica* BUTLER, 1873.
- Schepdael (1967) *Linneana Belgica*, 3 (5): pp. 91-103; provided some information on the biology and the ecology of *Brahmaea europaea*. Schepdael recorded the distribution range of the family Brahmaeidae from Japan, Korea, East and North China, India, Amur, the Caucasus, Cilicus and Ethiopia. He noted that Hartig listed 7 forms for this faunal region, belonging to only three species. Those were *Brahmaea certhia* FABRICIUS [sic], *B. certhia ledereri* ROGENHOFER, *B. certhia lunulata* BREMER & GREY [sic], *B. certhia carpenteri* BUTLER, *B. cristophi* [sic] STAUDINGER, *B. japonica* BUTLER, and *B. japonica nigrans* BUTLER. The author discussed on the history of the development of the Brahmaeidae.
- Remarks:** *B. (Brahmaea) ledereri* ROGENHOFER, 1873, *B. (Brahmaea) ledereri christophi* STAUDINGER, 1879 and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 are distinct from *B. (Brahmaea) certhia* (FABRICIUS, 1793). *B. (Brahmophthalma) nigrans* BUTLER, 1880 is a junior subjective synonym of *B. (Brahmophthalma) japonica* BUTLER, 1873.
- Gardiner (1982) *A Silkmoths Reared's Handbook*, xiii + 255 pp., 125 figs. phot.h.-t. / line drawings, XXXII col.-pls.; listed *Brahmaea carpenteri* BUTLER as 'another species' in the genus *Brahmaea* WALKER, no further information was provided.
- Remarks:** *B. (Brahmaea) carpenteri* BUTLER, 1883 is a subspecies of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]).
- Kozlov (1985) *Arthropods of Siberia and Far East*, "Nauka", pp. 105-112; described and figured the preimaginals of *B. lunulata* BREMER & GRAY [sic], 1852 [sic] [as *certhia* FABRICIUS, 1793 [sic] in his paper]. *B. lunulata* BREMER & GRAY [sic], 1852 [sic], *B. undulata* BREMER & GRAY [sic], 1853 [sic], *B. petiveri* BUTLER, 1866, *B. carpenteri* BUTLER, 1883, and *B. tancrei* AUSTAUT, 1896 were cited as synonyms of *B. certhia* FABRICIUS, 1793 [sic]. [in Russian]
- Remarks:** the drawings and in particular the figured chaetotaxy and other details of the larvae are of high quality. The description and figures fit to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.
- Paukstadt, U. & Paukstadt, L. H. (1990) [15.vi.1990] *Ent. Z. (Essen)*, 100 (12): pp. 219-225, 8 figs. phot.h.-t.; provided the life-history of *Brahmaea (Brahmophthalma) wallichii insulata* INOUE, 1984 from Taiwan. The first instar larva was reported being allied those of *B. (Brahmophthalma) japonica* BUTLER (Japan) and *B. (Brahmophthalma) hearseyi* WHITE (Southeast Asia) but distinct from those of *B. (Brahmaea) tancrei* AUSTAUT (Korea). The larval instars were figured in phot.h.-t.
- Remarks:** *B. (Brahmaea) tancrei* AUSTAUT, 1896 (Korea) is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. The citation of *B. (Brahmophthalma) hearseyi* WHITE, 1862 ["1861"] (Southeast Asia) refers to *B. (Brahmophthalma) loeffleri* NAUMANN & BROSCHE, 2005 (Sumatra) rather.
- Oberprieler & Duke (1994) [xi.1994] *Nachr. entomol. Ver. Apollo*, Frankfurt/Main, N.F. 15 (3), pp. 199-244, 8 col.-figs., 8 b/w-figs.; presented a historical review of the taxonomic placements of the genus *Spiramiopsis* HAMPSON, 1901. The immature stages of *S. comma* were compared with those of other selected bombycoids, mainly with those of *Brahmaea* (including *Acanthobrahmaea*,

Brahmophthalma, and *Brachygnatha*) and *Dactyloceras*. Comparisons were done with larvae of *B. ledereri* ROGENHOFER, 1973 [sic], *B. tancrei* AUSTAUT, 1896, *B. japonica* (BUTLER) [sic], *B. hearseyi* (WHITE), *B. hearseyi ardjoeno* KALIS, 1934 (sensu Nässig & Paukstadt 1990).

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 (Korea) is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. *B. (Brahmophthalma) ardjoeno* KALIS, 1934 is distinct from *B. (Brahmophthalma) hearseyi* WHITE, 1862 [“1861”] and the citation of ‘*B. hearseyi ardjoeno* KALIS, 1934 (sensu Nässig & Paukstadt 1990)’ refers to several closely related taxa of the *hearseyi*-group: *B. (Brahmophthalma) hearseyi* WHITE, 1862 [“1861”] (Continental Asia north of the Isthmus of Kra), *B. (Brahmophthalma) ardjoeno* KALIS, 1934 (endemic to Java), *B. (Brahmophthalma) loeffleri* NAUMANN & BROSCHE, 2005 (Malay Peninsula, Sumatra and Borneo), *B. (Brahmophthalma) naessigi* NAUMANN & BROSCHE, 2005 (Mindanao), and *B. (Brahmophthalma) paukstatorum* NAUMANN & BROSCHE, 2005 (Negros [type locality], Luzon and Samar).

Paukstadt, U. & Paukstadt, L. H. (2017c) [14.v.2017] Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 15 (2), 73-88; presented the life-history of *B. (Brahmaea) tancrei* AUSTAUT, 1896 from Russia, Siberia, ?Sacha [Russia, Republic of Sakha (Yakutia)]. The preimaginals of the following taxa of *Brahmaea* and *Brahmophthalma* were reported being well known: *B. japonica* BUTLER, 1873 (Japan), *B. hearseyi* WHITE, 1862 (‘1861’) (China: Guangdong and Indonesia: Sumatra), *B. tancrei* AUSTAUT, 1896 (South Korea), *B. wallichii insulata* INOUE, 1984 (Taiwan), *B. celebica* TOXOPEUS, 1939 (‘1938’) (South Sulawesi), and *B. wallichii* (GRAY, 1831) (Central China). The larval morphologies of *B. tancrei* from Russia and South Korea were found being distinct and much distinct from those of *B. certhia* from China.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. The citation of *B. (Brahmophthalma) hearseyi* WHITE, 1862 [“1861”] from Sumatra refers to *B. (Brahmophthalma) loeffleri* NAUMANN & BROSCHE, 2005.

Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *carpenteri* BUTLER, 1883 as subspecies of *B. (Brahmaea) lunulata* BREMER & GREY, [1853] [sic].

***tancrei* AUSTAUT, 1896 (*Brahmaea*)**

[junior subjective synonym]

Original citation and spelling: *Br. Lunulata* Bremer, variété *Tancrei*, Austaut [variété nouvelle]

Original description: Austaut, J. L. (1896): Notice sur le *Brahmaea Lunulata* [sic] Bremer [sic] et sur une variété nouvelle de cette espèce (*Br. Lunulata* [sic] Bremer [sic], variété *Tancrei*, Austaut). – Le Naturaliste . Revue illustrée des Sciences Naturelles, (2) 10: p. 98.

Type locality: sibérienne [Russian Federation, Siberia]

Geographical and altitudinal distribution: n/a.

Etymology: named after the lepidopterologist Mr. Rudolf Tancre, who was kind enough to enrich Austaut's collection with these two preoccupying subjects [translated from French].

Type material: the description clearly based on two ♂ specimens collected by Rudolf Tancre. The syntypes were stated in the original description being preserved in coll. Austaut. The present location of the type material was not determined by us.

Taxonomic notes: Austaut (1896) originally placed *tancrei* to the tribe Saturniidae of the Bombycidae. The name *tancrei* was originally not explicitly proposed in infrasubspecific rank ("and I think that they belong to a special variety, perhaps to a geographical race"), and has been adopted as valid name, cf. ICZN (1999) Art.45.6.4.1.

The name *tancrei* AUSTAUT, 1896 was listed as species synonym of *Brahmaea (Brahmaea) lunulata carpenteri* BUTLER, 1883 in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

General notes: see under "*lunulata carpenteri* BUTLER, 1883".

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *tancrei* AUSTAUT 1896 are as follows:

Brahmaea (Brahmaea) lunulata carpenteri BUTLER, 1883; STATUS-; senior subjective synonym

‡*tancrei*; Strand in Wagner (1913: [3]) [incorrect subsequent spelling]

‡*tancrei*; Mell (1930: 353) [incorrect subsequent spelling]

‡*tancrei*; Bryk (1949: 22-26); [incorrect subsequent spelling]

Hybridizations: inter-generic and inter-specific pairings with *tancrei* AUSTAUT 1896 are unknown from literature.

Further readings on *tancrei* AUSTAUT, 1896

Austaut (1896) Le Naturaliste, (2) 10, p. 98, under the header "Notice on *Brahmaea Lunulata* [sic] BREMER [sic] and on a new variety of this species"; Austaut erroneously noted that the *Brahmaea* are *Bombyx* [sic] who belong to the tribus Saturnides. He reported *Brahmaea Lunulata* [sic] BREMER [sic] from the Amur River, *B. Japonica* [sic] from Japan and Korea, and *B. Ledereri* [sic] from Asia Minor. Contributions on *Lunulata* [sic] by Bremer [sic] and Ménétriers were compared and he found the specimens from Siberia being distinct. His words: "and I think that they belong to a special variety, perhaps to a geographical race which it is useful to make known and which I will designate under the name of

Tancrei [sic] after the lepidopterist Rudolf Tancré, who was kind enough to enrich my collection with these two preoccupying subjects.”

Remarks: Austaut (1896) noted that the populations of *Brahmaea* from Siberia probably might belong to a [new] geographical race.

Strand in Wagner (1913) [05.ix.1913] Lep. Cat., Pars 16: Brahmaeidae, pp. [3]-5; included a single genus in Brahmaeidae, which has been *Brahmaea* WALKER, 1855. The following taxon was included *Brahmaea*: *B. certhia* FABRICIUS, 1793 [sic] (China, Chusan, Amur) with its synonyms *undulata* BREMER & GREY, 1853 [sic], *Petiveri* [sic] BUTLER, 1866, v. *Tancrei* [sic] AUSTAUT, 1896, ab. *lunulata* BREMER & GREY, 1852 [sic], and v. *Carpenteri* [sic] BUTLER, 1883. The author distinguished between ‘Species’ and ‘Varitates’ [varieties] in the Index Brahmaeidarum (: 6); he explicitly placed *Tancrei* [sic] AUSTAUT as variation in *Brahmaea* WALKER.

Remarks: *tancrei* is an incorrect subsequent spelling of *tancrei* AUSTAUT, 1896. *B. tancrei* was named in honour of Rudolf Tancré. The ICZN (1999) Art. 27 clearly regulates that no diacritic and other marks are to be used in a scientific name regulated by the Code, cf. also ICZN (1999) Glossary under “mark, diacritic”.

Above remark is also valid for the following publications: Mell [1930] and Bryk (1949).

The record of *B. (Brahmaea) certhia* (FABRICIUS, 1793) from the Amur refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852]). *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Mell [1930] Deutsche Entomol. Zeitschrift, 1929 (5), pp. [337]-494; distinguished three groups in the family Brahmaeidae: the Central African group with two genera: *Dactyloceras* [and *Spiramiopsis*] and 11 species, the Northern Indian group with 3 species: *harseyi* WHITE, *wallichii* (GRAY), and *japonica* (BUTLER), and the Palearctic group with 3 species: *certhia* (FABRICIUS), *christophi* STAUDINGER, and *ledereri* ROGENHOFER. More specific information on *Brahmaea certhia* (FABRICIUS) and *B. certhia tancrei* [sic] AUSTAUT was provided (: 349-353). The subgenus *Brahmaea* WALKER was cited under ‘Palearctic Asian group’, which included *certhia certhia* FABRICIUS [sic], *certhia tancrei* [sic] AUSTAUT, *ledereri* ROGENHOFER, and *christophi* STAUDINGER. Mell recognized two geographic races of *certhia*, the nominotypic subspecies and *B. certhia tancrei* [sic] AUSTAUT, 1896, all other names were recognized as synonyms of *certhia* FABRICIUS, 1793 [sic], or, as in *B. carpenteri* BUTLER from Korea as a variation of *certhia* only.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Bryk (1949) Arkiv för Zoologi, Band 41 A, N:o 1 [26.i.1949], pp. 20-26; described a new species from North Korea: *Brahmaea magnificentia* BRYK, 1949. The new species was compared with *carpenteri* BUTLER, *B. certhia certhia* FABRICIUS [sic], *tancrei* [sic] AUSTAUT, *ledereri* ROGENHOFER, and *christophi*. He remarked, that *magnificentia* BRYK, 1949 might be a subspecies of *tancrei* [sic] AUSTAUT which he believed to be a variation of *certhia* FABRICIUS. Some observations on the

venation in *Brahmaea* and *Dactyloceras* were done and several species in Brahmaeidae shortly described, compared, and several conclusions presented.

Remarks: *B. (Brahmaea) magnificentia* BRYK, 1949 cannot be treated as subspecies of *B. (Brahmaea) tancrei* AUSTAUT, 1896 if this taxon is already considered to be a variation of *B. (Brahmaea) certhia* (FABRICIUS, 1793). *B. (Brahmaea) magnificentia* BRYK, 1949 and *B. (Brahmaea) tancrei* AUSTAUT, 1896 are both junior subjective synonyms of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Kozlov (1985) Arthropods of Siberia and Far East, "Nauka", pp. 105-112; described and figured the preimaginals of *B. lunulata* BREMER & GRAY [sic], 1852 [sic] [as *certhia* FABRICIUS, 1793]. *B. lunulata* BREMER & GRAY [sic], 1852 [sic], *B. undulata* BREMER & GRAY [sic], 1853, *B. petiveri* BUTLER, 1866, *B. carpenteri* BUTLER, 1883, and *B. tancrei* AUSTAUT, 1896 were cited as synonyms of *B. certhia* FABRICIUS, 1793 [sic]. [in Russian]

Remarks: *B. (Brahmaea) certhia* (FABRICIUS, 1793) and *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]) are distinct species, *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym and *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883 a subspecies of the latter. *B. (Brahmaea) petiveri* BUTLER, 1866 is a junior objective synonym of *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Owada, Brahmaeidae, in Sugi (ed.) (1987) Larvae of Larger Moths in Japan; remarked that there are two taxa of *Brahmaea* present in Korea. One is *certhia* FABRICIUS and for the other the name *tancrei* AUSTAUT may be valid, but the application is tentative. The early larva [?1st instar] and mature larvae of *Brahmaea tancrei* AUSTAUT were figured in color (pl. 51, figs. 8-10).

Remarks: the record of *B. (Brahmaea) tancrei* Austaut, 1896 refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. *B. (Brahmaea) certhia* (FABRICIUS, 1793) is known from South Korea based on larval morphologies and DNA.

Paukstadt, U. & Ragus (1990) [15.i.1990] Ent. Z. (Essen), 100 (1/2): pp. 11-30, 29 figs. phot.h.-t., described and figured the preimaginal instars of *B. (Brahmaea) tancrei* AUSTAUT 1896 from Korea for the first time. The range of variability of the adults was demonstrated in several figures. Comments on the taxa in *Brahmaea* WALKER, 1855 and taxonomy were presented. A distribution map (: 13) included *Brahmaea certhia* FABRICIUS, 1793 [sic], *B. tancrei* AUSTAUT, 1896, *B. "porphyria"* (likely a junior synonym of *certhia*) CHU & WANG, 1977, *B. japonica* BUTLER, 1880, *B. wallichii*, *B. wallichi insulata*, *B. hearseyi*, and *B. japonica*. The authors noted that further comparisons with the life-histories of *B. ledereri ledereri* ROGENHOFFER, 1874 [sic], *B. ledereri christophi* STAUDINGER, 1879, *B. porphyria* CHU & WANG, 1977 of the subgenus *Brahmaea* WALKER are projected. The 1st, 2nd, and 3rd larval instars (: 17), 5th larval instar (: 21), pupa (: 23), highly variable imagines (: 24-27), and the ♂ genitalia structures (: 28) were figured in phot. h.-t.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Paukstadt, U. & Paukstadt, L. H. (1990) [15.vi.1990] Ent. Z. (Essen), 100 (12): pp. 219-225, 8 figs. phot.h.-t.; provided the life-history of *Brahmaea (Brahmophthalma) wallichii insulata* INOUE, 1984 from Taiwan. The first instar larva was reported being allied those of *B. (Brahmophthalma) japonica* BUTLER

(Japan) and *B. (Brahmophthalma) hearseyi* WHITE (Southeast Asia) but distinct from those of *B. (Brahmaea) tancrei* AUSTAUT (Korea). The mature larva was compared with the nominotypical *wallichii* Gray [sic] from India? figured by Villiard (1969) and found being distinct. The larval instars were figured in phot.h.-t.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 (Korea) is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. The citation of *B. (Brahmophthalma) hearseyi* WHITE, 1862 [“1861”] (Southeast Asia) refers to *B. (Brahmophthalma) loeffleri* NAUMANN & BROSCHE, 2005 (Sumatra) rather.

Nässig & Paukstadt, U. (1990) [xii.1990] *Heterocera Sumatrana* (Göttingen), 6 (Dec 1990), pp. 117-136; tentatively placed *tancrei* AUSTAUT, 1896 (sensu Sugi et al. 1987) to the genus *Brahmaea* WALKER, 1855. Some further general notes on taxonomy of the family Brahmaeidae were presented.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 (Korea) is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Oberprieler & Duke (1994) [xi.1994] *Nachr. entomol. Ver. Apollo*, Frankfurt/Main, N.F. 15 (3), pp. 199-244, 8 col.-figs., 8 b/w-figs., gave a historical review of the taxonomic placements of the genus *Spiramiopsis* HAMPSON, 1901. The immature stages of *S. comma* were compared with those of other selected bombycoids, mainly with those of *Brahmaea* (including *Acanthobrahmaea*, *Brahmophthalma*, and *Brachynatha*) and *Dactyloceras*. Comparisons were done with larvae of *B. ledereri* ROGENHOFFER, 1973 [sic], *B. tancrei* AUSTAUT, 1896, *B. (Brahmophthalma) japonica* (BUTLER) [sic], *B. (Brahmophthalma) hearseyi* (WHITE) [sic], *B. (Brahmophthalma) hearseyi ardjoeno* KALIS, 1934 (sensu Nässig & Paukstadt 1990). The authors concluded that the taxonomic position of *Spiramiopsis* remains not entirely clear but proposed to place this genus in a family of its own.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 (Korea) is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. *B. (Brahmophthalma) ardjoeno* KALIS, 1934 is distinct from *B. (Brahmophthalma) hearseyi* WHITE, 1862 [“1861”] and the citation of ‘*B. hearseyi ardjoeno* KALIS, 1934 (sensu Nässig & Paukstadt 1990)’ refers to several closely related taxa of the *hearseyi*-group: *B. (Brahmophthalma) hearseyi* WHITE, 1862 [“1861”] (Continental Asia north of the Isthmus of Kra), *B. (Brahmophthalma) ardjoeno* KALIS, 1934 (endemic to Java), *B. (Brahmophthalma) loeffleri* NAUMANN & BROSCHE, 2005 (Malay Peninsula, Sumatra and Borneo), *B. (Brahmophthalma) naessigi* NAUMANN & BROSCHE, 2005 (Mindanao), and *B. (Brahmophthalma) paukstadtorum* NAUMANN & BROSCHE, 2005 (Negros [type locality], Luzon and Samar).

Eitschberger (2008) [ix.2008] *Neue Ent. Nachr. (Marktleuthen)*, 62: p. 133; figured the eggs of *Brahmaea tancrei* AUSTAUT, 1896 from Russia, Far East Russia, Ussuri, Primorje (: 133, figs. 1-3, SEM micrographs).

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Paukstadt, L. H. & Paukstadt, U. (2015) [20.vi.2015] *Beiträge zur Kenntnis der wilden Seidenspinner* (Wilhelmshaven), 13 (8), pp. 388-404; described and figured the immature stages of *Brahmaea wallichii* (GRAY, 1831) from the mountainous China (Lepidoptera: Brahmaeidae). The following species was cited:

B. (Brahmaea) tancrei AUSTAUT, 1896 with uncertain status. The authors noted that the preimaginal instars of *B. tancrei* from South Korea were ample described and figured.

Remarks: the citation of *B. (Brahmaea) tancrei* AUSTAUT, 1896 from Korea refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Mader (2015) galathea, Vol. 31, pp. 53-131, presented a contribution on the copulation of insects which was reported taken place in antipodal, sympodal, epipodal, clinopodal, schizopodal, cyclopodal or sinusoidal position of the ♂ and ♀ adults. The selenocyclinal evaluation of the data of the pairing of butterflies, moths, and other insects confirmed the lunar erotic behaviour according to the abundant copulation around full moon and new moon. The Brahmaeidae and Lemonidae were grouped as follows. Wings attached to the body like a roof which included the Brahmaeidae and Lemonidae (: 61-62); the Indo-Chinese [sic] *Brahmaea tancrei* AUSTAUT, 1896 was placed in a group which exhibits an antipodal position during mating (: 70, 82).

Remarks: the term “Indo-Chinese” was first known used in ca. 1934 in the meaning defined as follows: “a native or inhabitant of Indochina”; a further definition is “Sino-Tibetan” today, cf. <https://www.merriam-webster.com/dictionary/Indo-Chinese>. We do not believe that the term “Indo-China” somehow describes the distribution range of *B. (Brahmaea) tancrei* AUSTAUT, 1896. However, the name *tancrei* is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Gegechkori & Didmandze (2015) American Journal of Environmental Protection, 2015, 4 (3-1), pp. 82-92, recognized four genera in the Brahmaeidae, namely the Oriental and Palearctic genus *Brahmaea* WALKER with 8 species, a monotypic European genus *Acanthobrahmaea* SAUTER, a monotypic Chinese genus *Calliprogonos* MELL [sic], and the Afrotropical genus *Dactylocerus* [sic] MELL [sic] with 8 species. Gegechkori & Didmandze remarked that the Palearctic *Lemonia* HÜBNER with about 20 species was included in the Brahmaeidae by some authors. 5-6 species of *Brahmaea* were reported endemic to the Palearctic region. One of those has been *Brahmaea tancrei* AUSTAUT from Russian Far East and Korea. Quite controversial citations of Brahmaeidae taxa and probably erroneous collecting sites in literature were noted.

Remarks: the citation of *B. (Brahmaea) tancrei* AUSTAUT, 1896 from Korea and Russia Far East refers to *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Zolotuhin (2016) [27.xi.2016] Eversmannia, No. 47-48; pp. 4-10 [+1]; proposed the new subgeneric name *Transbrahmaea* for two species (a geographically disjunctive group) distributed in Transcaucasia and Asia Minor. Those were *B. christophi* STAUDINGER, 1885 [sic] and *B. ledereri* ROGENHOFER, 1873 with its subspecies *zaba* DE FREINA, 1982. The author pointed out that *B. tancrei* AUSTAUT, 1896 represents a junior synonym of *B. lunulata* (BREMER & GREY, [1853] 1852) from eastern China, Shaanxi and Sichuan and that the subspecies *lunulata carpenteri* BUTLER, 1883 with its synonyms *lunulata* var. *tancrei* AUSTAUT, 1896, *bicolor* MATSUMURA, 1921 and *magnificentia* BRYK, 1949 is known from the eastern part of Russian Federation, Korea and North-Eastern China. A tree was figured (: 6, fig. 4) included the taxa of the subgenera

Brahmaea WALKER, 1855, *Acanthobrahmaea* SAUTER, 1967 and *Transbrahmaea* ZOLOTUHN, 2016.

Paukstadt, U. & Paukstadt, L. H. (2017a) [14.v.2017] Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 15 (2), Cover Illustration, figured the mature larva of *Brahmaea* (*Brahmaea*) *tancrei* AUSTAUT, 1896 from Russia, Siberia, ?Sacha [Russia, Republic of Sakha (Yakutia)] in color.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Paukstadt, U. & Paukstadt, L. H. (2017c) [14.v.2017] Beiträge zur Kenntnis der wilden Seidenspinner (Wilhelmshaven), 15 (2), 73-88, described and figured in the preimaginal instars of *Brahmaea* (*Brahmaea*) *tancrei* AUSTAUT, 1896 from Russia, Siberia, ?Sacha [Russia, Republic of Sakha (Yakutia)]. *Brahmaeidae* HAMPSON in Blanford, 1893 ("1892") was cited as junior homonym of *Brahmaeidae* SWINHOE, 1892. *Brahmaea* WALKER, 1855 was listed as nomen nudum. *Brahmaea* WALKER, 1855 and *Brahmophthalma* MELL in Seitz, 1928 were cited as subgenera of *Brahmaea* WALKER, 1855. The preimaginal instars of the following taxa of *Brahmaea* and *Brahmophthalma* were reported being well known: *B. japonica* BUTLER, 1873 (Japan), *B. hearseyi* WHITE, 1862 ("1861") (China: Guangdong and Indonesia: Sumatra), *B. tancrei* AUSTAUT, 1896 (South Korea), *B. wallichii insulata* INOUE, 1984 (Taiwan), *B. celebica* TOXOPEUS, 1939 ("1938") (South Sulawesi), and *B. wallichii* (GRAY, 1831) (Central China). Observations on the biology and ecology of *B. tancrei* (Russia) were compared with *B. certhia* (FABRICIUS, 1793) (China: Jiangsu). The average diameter of the head capsule in each larval instar was shown in Diagram 1 (: 76). The following preimaginal instars were figured in color: Ovum prior and after eclosion (: 77, fig. 1-2), early and late 1st instar larvae (: 78, figs. 3-5), early and late 2nd instar larvae (: 80, figs. 6-8), early and late 3rd instar larvae (: 82, figs. 9-11), early and late 4th instar larvae including close ups of the thoracic segments (: 84, figs. 12-15), 3rd instar larval exuvia (: 85, fig. 16), early 5th instar larvae including close ups of the thoracic segments (: 86, figs. 17-21). The larval morphologies of *B. tancrei* from Russia and South Korea were found being distinct and much distinct from those of *B. certhia* from China.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883. The citation of *B. (Brahmophthalma) hearseyi* WHITE, 1862 ["1861"] from Sumatra refers to *B. (Brahmophthalma) loeffleri* NAUMANN & BROSCHE, 2005. The citation of *Brahmaea* WALKER, 1855 as nomen nudum was based on Walker (1855) List of the Specimens Lepidopterous Insects in The Collection of the British Museum, Part V [10.xi.1855]: p. 1200, which is considered to be nomenclaturally available but without included species until Walker, 1855 (continuation dated 08.xii.1855).

Kaleka, Singh & Saini (2017) J. Entomol., 14 (5), pp. 234-240, 2017; noted that the family Brahmaeidae is presented by four genera, namely the Oriental and Palearctic genus *Brahmaea* WALKER with 8 species, the monotypic European genus *Acanthobrahmaea* SAUTER, the Chinese genus *Calliprogonos* MELL [sic], and the Afrotropical genus *Dactyloceras* MELL [sic] with 8 species. Six species

of *Brahmaea* endemic to the Palearctic region were listed. One of those has been *Brahmaea tancrei* AUSTAUT from Russian Far East and Korea.

Remarks: *B. (Brahmaea) tancrei* AUSTAUT, 1896 is a junior subjective synonym of *B. (Brahmaea) lunulata* BUTLER, 1883.

Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *tancrei* AUSTAUT, 1896 as species synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

***bicolor* MATSUMURA, 1921**

[junior subjective synonym]

Original citation and spelling: *Brahmaea bicolor* n. sp. (pl. LXIV, fig. 1, ♂)

Original description: Matsumura, S. (1921): Shin Nihon senchu zukai / Thousand Insects of Japan. – Additamenta [Supplementum] IV. – Keiseisha (Tokyo); pp. 743-962, pls. 54-71.

Type locality: Formosa [Taiwan]. Remarks by Matsumura (: 936) ‘exact habitat being not well known’. Zolotuhin (2016: 7) cited [Korea] as type locality. See “Remarks” under Matsumura (1921).

Geographical and altitudinal distribution: originally described from Taiwan which is considered being unlikely.

Etymology: not explicitly mentioned in the original description. Concluded from the description the name *bicolor* refers to the two-tone wings, which were described as velvety black and the outer third olivaceous brown (: 935).

Type material: the description based on a ♂ singleton which was collected by Mr. M. Suzuki in habitat Formosa. Matsumura (: 936) noted that its exact habitat being not well known.

Taxonomic notes: the name *bicolor* MATSUMURA, 1921 was listed as species synonym of *Brahmaea (Brahmaea) lunulata carpenteri* BUTLER, 1883 in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

The color figures in Zolotuhin (2016) might confirm that *Saturnia lunulata* BREMER et GREY, [1853] from the ZISP / Saint Petersburg, Russia (: [11] fig. 4) and *Brahmaea bicolor* MATSUMURA, 1921 from the EDSU / Entomological Department of the Sapporo University, Japan (:

[11] fig. 5) are conspecific. The figured specimen from the EDSU does not fit perfectly to the drawing by Matsumura (pl. LXIV, fig. 1) but obviously both belong to the same taxon.

General notes: the ♂ adult of *Brahmaea bicolor* was figured in the original description (pl. LXIV, fig. 1).

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *bicolor* MATSUMURA, 1921 are as follows:

Brahmaea (Brahmaea) lunulata carpenteri BUTLER, 1883; STATUS-; senior subjective synonym

Hybridizations: inter-generic and inter-specific pairings with *bicolor* MATSUMURA, 1921 are unknown from literature.

Further readings on *bicolor* MATSUMURA, 1921

Matsumura (1921) figured the ♂ adult of *Brahmaea bicolor* MATS. (pl. LXIV, fig. 1). *Brahmaea* was cited in the index and mentioned in the text and the ♂ singleton being collected by Mr. M. Suzuki in habitat Formosa [Taiwan]. Matsumura (: 936) noted that its exact habitat being not well known. Description in Japanese and English.

Remarks: Zolotuhin (2016: 7) cited as type locality of *Brahmaea bicolor* MATSUMURA, 1921 [Korea] which rather fits to the title of Matsumura's book "Thousand Insects of Japan" [see below regarding the history of Korea and Japan].

History: The Korean Empire was proclaimed in 1897 and became a protectorate of Japan with the Japan-Korea Treaty of 1905. Japan formally annexed Korea in 1910 in the Japan-Korea Treaty of 1910. Between 1910 and 1945, Korea was part of the Empire of Japan following the annexation. Japanese rule over Korea ended on 15 August 1945; upon the World War II surrender of Japan ending 35 years of Japanese occupation. During the time of Matsumura the Korean Peninsula has been administratively part of Japan.

Zolotuhin (2016) [27.xi.2016] Eversmannia, No. 47-48; pp. 4-10 [+1]; proposed the new subgeneric name *Transbrahmaea* for two species (a geographically disjunctive group) distributed in Transcaucasia and Asia Minor. Those were *B. christophi* STAUDINGER, 1885 [sic] and *B. ledereri* ROGENHOFER, 1873 with its subspecies *zaba* DE FREINA, 1982. The author pointed out that *B. tancrei* AUSTAUT, 1896 represents a junior synonym of *B. lunulata* (BREMER & GREY, [1853] 1852) from eastern China, Shaanxi and Sichuan and that the subspecies *lunulata carpenteri* BUTLER, 1883 with its synonyms *lunulata* var. *tancrei* AUSTAUT, 1896, *bicolor* MATSUMURA, 1921 and *magnificentia* BRYK, 1949 is known from the eastern part of the Russian Federation, Korea and North-Eastern China. A tree was figured (: 6, fig. 4) which included the taxa of the subgenera *Brahmaea* WALKER, 1855, *Acanthobrahmaea* SAUTER, 1967 and *Transbrahmaea* ZOLOTUHN, 2016.

Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018

Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *bicolor* MATSUMURA, 1921 as species synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

***magnificentia* BRYK, 1949 (*Brahmaea*)**

[junior subjective synonym]

Original citation and spelling: *Brahmaea magnificentia* (m.) spec. nova.

Original description: Bryk, F. (1949): Zur Kenntnis der Großschmetterlinge von Korea. – Arkiv för Zoologi, Band 41 A, N:o 1: pp. 1-225; pls. phot. h.-t. I-VII [description pp. 22-26]

Type locality: Shuotsu, North Korea.

Geographical and altitudinal distribution: n/a.

Etymology: concluded from the text, the naming could refer to the eye-like pattern of the median area of the forewings.

Type material: the description based on a single ♂ specimen called typus in the original description.

Taxonomic notes: the name *magnificentia* BRYK, 1949 was listed as species synonym of *Brahmaea (Brahmaea) lunulata carpenteri* BUTLER, 1883 in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

General notes: see *lunulata carpenteri* BUTLER, 1883.

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *magnificentia* BRYK, 1949 are as follows:

B. (Brahmaea) lunulata carpenteri BUTLER, 1883; STATUS-; senior subjective synonym

‡*magnifica* BRYK; Sauter (1967: 126) [incorrect subsequent spelling]

Hybridizations: inter-generic and inter-specific pairings with *magnificentia* BRYK, 1949 are unknown from literature.

Further readings on *magnificentia* BRYK, 1949

Bryk (1949) [26.i.1949] Arkiv för Zoologi, Band 41 A, N:o 1, pp. 20-26, described a new species from North Korea: *Brahmaea magnificentia* BRYK, 1949. The new species was compared with *carpenteri* BUTLER, *B. certhia certhia* FABRICIUS [sic], *tancréi* [sic] AUSTAUT, *lederer* ROGENHOFER, and *christophi*. Bryk treated *B. carpenteri* BUTLER from South Korea as an albinistic form of *B. certhia* FABRICIUS [sic]. Some observations on the venation in *Brahmaea* and *Dactyloceras* were

recorded and several species in Brahmaeidae shortly described, compared, and various conclusions presented.

Remarks: *B. (Brahmaea) magnificentia* BRYK, 1949 is a junior subjective synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

Sauter (1967) [20.vii.1967] Mitt. schweiz. ent. Ges., XL (1/2), 1967: pp. [125]-129, 2 text-figs., reported that only species of the genera *Brahmaea* (without *magnifica* [sic] BRYK), *Brahmaeops*, and *Brahmaeophthalma* [sic] were available to him for comparisons. No further remarks on *magnificientia* BRYK by Sauter.

Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *magnificentia* BRYK, 1949 as species synonym of *B. (Brahmaea) lunulata carpenteri* BUTLER, 1883.

***jilinensis* ZHANG, 1988 (*Brahmaea*)**

Original citation and spelling: *Brahmaea jilinensis* Zhang, sp. nov.

Original description: Zhang, Xiurong (1988): A new species of *Brahmaea* from China (Lepidoptera: Brahmaeidae). – Entomotaxonomia, X (3-4): pp. 229-230; 5 figs. [pp. 229-230 in Chinese, p. 230 English translation].

Type locality: [China,] Huinan [County], Jilin [province].

Geographical and altitudinal distribution: known from the type locality, Jilin Province, China.

Etymology: the name *jilinensis* is pointing to the collecting site in the Huinan County of the Jilin Province, P. R. China.

Type material: the description based on a single ♂ specimen (figured in the original description). The ♂ holotype by original designation was recorded being preserved in Entomological Museum of the Jilin Agricultural University.

Taxonomic notes: the taxon *jilinensis* was originally described in *Brahmaea* WALKER, 1855 by Zhang (1988) but was transferred by Zhang (1993: 50) to the new genus *Brachygnatha* ZHANG & YANG, 1993: *Brachygnatha jilinensis* (ZHANG, 1988).

The name *jilinensis* ZHANG, 1988 was listed as species of *Brahmaea* (*Brahmaea*) in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

General notes: the ♂ holotype (: 229, fig. 1) and the genitalia structures (: 229, figs. 2-5 [front view, tegumen and uncus, dorsal view, cornuti of the phallus]) were figured in the original description.

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *jilinensis* ZHANG, 1988 are as follows:

‡*jilinneus*; Zhang, Hao & Yang (1999: 38) [lapsus, incorrect subsequent spelling]

‡*jilinneus*; Zolotuhin (2016: 4-10) [incorrect subsequent spelling]

‡*jilinneus*; Wu (2017: 272) [incorrect subsequent spelling]

Hybridizations: inter-generic and inter-specific pairings with *jilinensis* ZHANG, 1988 are unknown from literature.

Further readings on *jilinensis* ZHANG, 1988

Zhang (1988: 229-230) Entomotaxonomia, X (3-4), described *Brahmaea jilinensis* ZHANG, 1988 (Brahmaeidae) from the Jilin Province of China. The new species was compared and found similar *Brahmaea undulata* BREMER & GREY [sic].

Remarks: *B. (Brahmaea) undulata* (BREMER & GREY, 1853) is a junior objective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]).

Zhang & Yang (1993) [iii.1993] Entomotaxonomia, 15 (1), transferred the taxon *jilinensis* ZHANG, 1988 from the genus *Brahmaea* WALKER, 1855 to the genus *Brachygnatha* ZHANG & YANG, 1993: *Brachygnatha jilinensis* (ZHANG, 1988).

Remarks: *Brachygnatha* ZHANG & YANG, 1993 is a junior synonym of *Brahmaea* WALKER, 1855.

Zhang, Hao & Yang (1999) J. China Agricult. Univers., 1999, 4 (5), pp. 37-42; presented an overview on the Chinese brahmids moths. The authors recognized four genera in the family Brahmaeidae for China. One of those has been the genus *Brachygnatha* ZHANG & YANG, 1993 with the species *diastemata* ZHANG & YANG, 1993, *ledireri* [sic] ROGENHOFER, 1873 [sic], *christophi* STAUDINGER, 1853 [sic], and *jilinneus* [sic] ZHANG, 1988 [sic].

Remarks: *Brachygnatha* ZHANG & YANG, 1993 is a junior synonym of *Brahmaea* WALKER, 1855. *B. (Brahmaea) diastemata* (ZHANG & YANG, 1993) is a junior subjective synonym of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 ["1852"]).

Zolotuhin (2016) [27.xi.2016] Eversmannia, No. 47-48; pp. 4-10 [+1]; proposed the new subgeneric name *Transbrahmaea* for two species distributed in Transcaucasia and Asia Minor. Those were *B. christophi* STAUDINGER, 1885 [sic] and *B. ledereri* ROGENHOFER, 1873 with its subspecies *zaba* DE FREINA, 1982. The recently described *jilinneus* [sic] ZHANG, 1988, *separata* YANG & ZHANG, 1994, *recta* YANG & ZHANG, 1994, and *goniata* ZHANG & YANG, 1994 were supposed to be only forms of the polymorph *B. certhia*.

Wu (2017) The Marvelous Moths of China, 403 pp.; noted (: 272) that China has 4 genera in the family Brahmaeidae. Those were *Brahmaea*, *Brachygatha* [sic] with its species *diastemata* (ZHANG & YANG, 1993) [sic], *christophi* (STAUDINGER,

1853 [sic]), *jilinneus* [sic] (ZHANG, 1988), and *ledereri* (ROGENHOFER, 1873), *Brahmophthlma* [sic], and finally *Brahmidia*.

Remarks: *Brahmaea* WALKER, 1855 and *Brahmophthalma* MELL, 1928 are subgenera of *Brahmaea* WALKER, 1855. *Brachygnatha* ZHANG & YANG, 1993 is a junior synonym of *Brahmaea* WALKER, 1855 and *Brahmidia* BRYK, 1949 is a junior synonym of *Brahmophthalma* MELL, 1928. *Calliprogonos* MELL & HERING, 1937 from China was omitted by the author.

Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *jilinensis* ZHANG, 1988 as species of *Brahmaea* (*Brahmaea*).

***goniata* ZHANG & YANG, 1994 (*Brahmaea*)**

Original citation and spelling: *Brahmaea goniata* Zhang et Yang, sp. n.

Original description: Zhang, Xiurong & Yang, Chi-kun (1994): A new species of *Brahmaea* (Lepidoptera: Brahmaeidae) from China. – Entomotaxonomia, 16 (4) (1994) [xii.1994]: [275]-277; 4 figs. [pp. [275]-277 in Chinese, p. 277 English translation].

Type locality: [China], Shaanxi Province, Zhenan [Zhen'an].

Geographical and altitudinal distribution: known from the Shaanxi Province of China, Zhenan [also Zhen'an] and from the neighboring province Henan, Lingbao [also Ling Bao]. No altitudinal distribution known from literature.

Etymology: not provided in the English text part of the description.

Type material: the description based on three ♂ specimens. The ♂ holotype and two ♂ paratypes by original designation were confirmed being preserved in the Insect Collections of the Beijing Agricultural University. A ♂ specimen was figured in the original description but unfortunately not stated (in the English text part) whether this specimen represents the holotype or one of the two paratypes.

Taxonomic notes: Zhang & Yang (1994: 277) noted *goniata* being similar *Brahmaea recta* YANG & ZHANG but differs in a few morphological aspects, mainly in the ♂ genitalia structures.

The name *goniata* ZHANG & YANG, 1994 was listed as species of *Brahmaea* (*Brahmaea*) in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

General notes: the new species was figured in the original description but not stated whether the holotype or one of the two paratypes were figured (: 276, fig. 1 dorsally, fig. 2 ventrally, figs. 3 and 4 ♂ genitalia structures).

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *goniata* ZHANG & YANG, 1994 are as follows: thus far nothing found in literature.

Hybridizations: inter-generic and inter-specific pairings with *goniata* ZHANG & YANG, 1994 are unknown from literature.

Further readings on *goniata* ZHANG & YANG, 1994

Zhang, X. & Yang, C. (1994b) [xii.1994] Entomotaxonomia, 16 (4) (1994), pp. [275]-277, described and figured a new species of the genus *Brahmaea* of the family Brahmaeidae. The new species was reported being allied *Brahmaea recta* YANG & ZHANG. No further remarks on Brahmaeidae were made in the English text part.

Zhang, Hao & Yang (1999) J. China Agricult. Univers., 1999, 4 (5), pp. 37-42; presented an overview on the Chinese brahmids. The authors recognized four genera of the family Brahmaeidae in China. One of those has been *Brahmaea* WALKER [sic] with the species *certhia* (FABRICIUS, 1793), *porphyria* CHUO [sic] & WANG, 1977, *separata* YANG & ZHANG, 1994, *recta* YANG & ZHANG, 1994, and *goniata* ZHANG & YANG, 1994.

Remarks: *B. (Brahmaea) porphyria* CHU & WANG, 1977 is a junior subjective synonym of *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Zolotuhin (2016) [27.xi.2016] Eversmannia, No. 47-48; pp. 4-10 [+1]; proposed the new subgeneric name *Transbrahmaea* for two species distributed in Transcaucasia and Asia Minor. Those were *B. christophi* STAUDINGER, 1885 [sic] and *B. ledereri* ROGENHOFER, 1873 with its subspecies *zaba* DE FREINA, 1982. The recently described *jilinneus* [sic] ZHANG, 1988, *separata* YANG & ZHANG, 1994, *recta* YANG & ZHANG, 1994, and *goniata* ZHANG & YANG, 1994 were supposed to be only forms of the polymorph *B. certhia*.

Wu (2017) The Marvelous Moths of China, 403 pp.; noted (: 272) that China has four genera in the family Brahmaeidae. Those were *Brahmaea* with its species *goniata* (ZHANG & YANG, 1994) [sic], *porphyria* (CHUO [sic] & WANG, 1977) [sic], *recta* (YANG & ZHANG, 1994) [sic], and *separata* (YANG & ZHANG, 1994) [sic], *Brachygatha* [sic], *Brahmophthlma* [sic], and finally *Brahmidia*.

Remarks: *B. (Brahmaea) porphyria* CHU & WANG, 1977 is a junior subjective synonym of *B. (Brahmaea) certhia* (FABRICIUS, 1793). *Brahmaea* WALKER, 1855 and *Brahmophthlma* MELL, 1928 are subgenera of *Brahmaea* WALKER, 1855. *Brachygnatha* ZHANG & YANG, 1993 is a junior synonym of *Brahmaea* WALKER, 1855 and *Brahmidia* BRYK, 1949 is a junior synonym of *Brahmophthlma* MELL, 1928. *Calliprogonos* MELL & HERING, 1937 from China was omitted by the author.

Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *goniata* ZHANG & YANG, 1994 as species of *Brahmaea* (*Brahmaea*).

***recta* YANG & ZHANG in Zhang & Yang, 1994 (*Brahmaea*)**

Original citation and spelling: *Brahmaea recta* Yang et Zhang, sp. nov.

Original description: Zhang, Xiurong & Yang, Ciu-kun (1994): Two new species of *Brahmaea* (Lepidoptera: Brahmaeidae) from China. – Entomotaxonomia, 16 (2), 1994 [vi.1994]: pp. [111]-114; 8 figs. [pp. [111]-113 in Chinese, p. 114 English translation].

Type locality: [China,] Zhejiang Province, Mt. Xitianmushan [Tianmu Shan, Mt. Tianmu].

Geographical and altitudinal distribution: known from the Zhejiang Province of China. The altitudinal distribution remains unknown from literature.

Etymology: not provided in the English text of the original description.

Type material: concluded from text the description based on an unstated number of ♂ (at least two ♂). The ♂ holotype by original designation. The types [indefinite number] were confirmed to be preserved in the Insect Collection of Beijing Agricultural University (: 114). No paratypes were designated in the English text part of the original description.

Taxonomic notes: the name *recta* YANG & ZHANG, 1994 was listed as species of *Brahmaea* (*Brahmaea*) in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

General notes: the ♂ [holotype?] was figured in the original description (: 112, fig. 7) dorsally, (fig. 8) ventrally, and (figs. 3-4) the ♂ genitalia structures.

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *recta* YANG & ZHANG, 1994 are as follows: thus far nothing found in literature.

Hybridizations: inter-generic and inter-specific pairings with *recta* YANG & ZHANG, 1994 are unknown from literature.

Further readings on *recta* YANG & ZHANG, 1994

Yang & Zhang in Zhang & Yang (1994) Entomotaxonomia, 16 (2), pp. [111]-114, described the new species *Brahmaea recta* of the family Brahmaeidae from the Zhejiang Province. The description based on an unstated number of ♂ specimens (at least two ♂) with a forewing length of 61-66 mm. The ♂ holotype was designated by original designation, no paratypes were listed. The ♂ [holotype?] and the ♂ genitalia structures were figured.

Zhang, Hao & Yang (1999) J. China Agricult. Univers., 1999, 4 (5), pp. 37-42; presented an overview on the Chinese brahmids. The authors recognized four genera of the family Brahmaeidae in China. One of those has been *Brahmaea* WALKER [sic] with the species *certhia* (FABRICIUS, 1793), *porphyria* CHUO [sic] & WANG, 1977, *separata* YANG & ZHANG, 1994, *recta* YANG & ZHANG, 1994, and *goniata* ZHANG & YANG, 1994.

Remarks: *B. (Brahmaea) porphyria* CHU & WANG, 1977 is a junior subjective synonym of *B. (Brahmaea) certhia* (FABRICIUS, 1793).

Zolotuhin (2016) [27.xi.2016] Eversmannia, No. 47-48; pp. 4-10 [+1]; proposed the new subgeneric name *Transbrahmaea* for two species distributed in Transcaucasia and Asia Minor. Those were *B. christophi* STAUDINGER, 1885 [sic] and *B. ledereri* ROGENHOFER, 1873 with its subspecies *zaba* DE FREINA, 1982. The recently described *jilinnus* [sic] ZHANG, 1988, *separata* YANG & ZHANG, 1994, *recta* YANG & ZHANG, 1994, and *goniata* ZHANG & YANG, 1994 were supposed to be only forms of the polymorph *B. certhia*.

Wu (2017) The Marvelous Moths of China, 403 pp.; noted (: 272) that China has four genera in the family Brahmaeidae. Those were *Brahmaea* with its species *goniata* (ZHANG & YANG, 1994) [sic], *porphyria* (CHUO [sic] & WANG, 1977) [sic], *recta* (YANG & ZHANG, 1994) [sic], and *separata* (YANG & ZHANG, 1994) [sic], *Brachygatha* [sic], *Brahmophthlma* [sic], and finally *Brahmidia*.

Remarks: *B. (Brahmaea) porphyria* CHU & WANG, 1977 is a junior subjective synonym of *B. (Brahmaea) certhia* (FABRICIUS, 1793). *Brahmaea* WALKER, 1855 and *Brahmophthlma* MELL, 1928 are subgenera of *Brahmaea* WALKER, 1855. *Brachygnatha* ZHANG & YANG, 1993 is a junior synonym of *Brahmaea* WALKER, 1855 and *Brahmidia* BRYK, 1949 is a junior synonym of *Brahmophthlma* MELL, 1928. *Calliprogonos* MELL & HERING, 1937 from China was omitted by the author.

Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *recta* YANG & ZHANG, 1994 as species of *Brahmaea* (*Brahmaea*).

***separata* YANG & ZHANG in Zhang & Yang, 1994
(*Brahmaea*)**

Original citation and spelling: *Brahmaea separata* Yang et Zhang, sp. nov.

Original description: Zhang, Xiurong & Yang, Chi-kun (1994): Two new species of *Brahmaea* (Lepidoptera: Brahmaeidae) from China. – Entomotaxonomia, 16 (2), 1994 [vi.1994]: pp. [111]-114; 8 figs. [pp. [111]-113 in Chinese, p. 114 English translation].

Type locality: [China], Hubei Province, Wuchang

Geographical and altitudinal distribution: known from the Hubei Province of China. The altitudinal distribution remains unknown from literature.

Etymology: not explicitly mentioned in the original description. Concluded from text the name *separata* is pointing to the fact that this brahmids moth is different in the ♂ adult from *certhia* FABRICIUS by the wing pattern and ♂ genitalia morphology (separate from *certhia*).

Type material: the description most likely based on a single ♂ specimen. The ♂ holotype by original designation was confirmed in the original description being preserved in the Insect Collection of Beijing Agricultural University.

Taxonomic notes: the name *separata* YANG & ZHANG, 1994 was listed as species of *Brahmaea* (*Brahmaea*) in Kitching, I.J., Rougerie, R., Zwick, A., Hamilton, C.A., St Laurent, R.A., Naumann, S., Ballesteros Mejia, L. & Kawahara, A.Y. (2018): A global checklist of the Bombycoidea (Insecta: Lepidoptera); published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236.

General notes: the ♂ holotype was figured in the original description (: 112, fig. 5) dorsally, (fig. 6) ventrally, and (figs. 1-2) ♂ genitalia structures.

Synonyms: for misinterpretations see the appropriate text parts. Junior subjective synonyms, junior objective synonyms, errors and incorrect subsequent spellings for *separata* YANG & ZHANG, 1994 are as follows: thus far nothing found in literature.

Hybridizations: inter-generic and inter-specific pairings with *separata* YANG & ZHANG, 1994 are unknown from literature.

Further readings on *separata* YANG & ZHANG, 1994

Yang & Zhang in Zhang & Yang (1994) Entomotaxonomia, 16 (2), pp. [111]-114, described the new species *Brahmaea separata* of the family Brahmaeidae from the Hubei Province of China. Concluded from text the description based on a ♂

- singleton with a forewing length of 47 mm. ♂ holotype by original designation, no paratypes were listed. The ♂ holotype and the ♂ genitalia structures were figured.
- Zhang, Hao & Yang (1999) J. China Agricult. Univers., 1999, 4 (5), pp. 37-42; presented an overview on the Chinese brahmids moths. The authors recognized four genera in the family Brahmaeidae of China. One of those has been *Brahmaea* WALKER [sic] with the species *certhia* (FABRICIUS, 1793), *porphyria* CHUO [sic] & WANG, 1977, *separata* YANG & ZHANG, 1994, *recta* YANG & ZHANG, 1994, and *goniata* ZHANG & YANG, 1994.
- Zolotuhin (2016) [27.xi.2016] Eversmannia, No. 47-48; pp. 4-10 [+1]; proposed the new subgeneric name *Transbrahmaea* for two species distributed in Transcaucasia and Asia Minor. Those were *B. christophi* STAUDINGER, 1885 [sic] and *B. ledereri* ROGENHOFER, 1873 with its subspecies *zaba* DE FREINA, 1982. The recently described *jilinensis* [sic] ZHANG, 1988, *separata* YANG & ZHANG, 1994, *recta* YANG & ZHANG, 1994, and *goniata* ZHANG & YANG, 1994 were supposed to be only forms of the polymorph *B. certhia*.
- Wu (2017) The Marvelous Moths of China, 403 pp.; noted (: 272) that China has four genera in the family Brahmaeidae. Those were *Brahmaea* with its species *goniata* (ZHANG & YANG, 1994) [sic], *porphyria* (CHUO [sic] & WANG, 1977) [sic], *recta* (YANG & ZHANG, 1994) [sic], and *separata* (YANG & ZHANG, 1994) [sic], *Brachygatha* [sic], *Brahmophthlma* [sic], and finally *Brahmidia*.
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- Kitching, Rougerie, Zwick, Hamilton, St Laurent, Naumann, Ballesteros Mejia & Kawahara (2018) A global checklist of the Bombycoidea (published online 2018 Feb 12. doi: 10.3897/BDJ.6.e22236) listed the name *separata* YANG & ZHANG, 1994 as species of *Brahmaea (Brahmaea) certhia*.

Remarks: regarding the Chinese names in the subgenus *Brahmaea* WALKER, 1855 we assume that the “recently” described *B. (Brahmaea) jilinensis* ZHANG, 1988, *B. (Brahmaea) separata* YANG & ZHANG, 1994, *B. (Brahmaea) recta* YANG & ZHANG, 1994, and *B. (Brahmaea) goniata* ZHANG & YANG, 1994 of the *certhia*-group (sensu Paukstadt & Paukstadt 2021) are either variations of the polymorphic *B. (Brahmaea) certhia* (FABRICIUS, 1793), as already presumed by Zolotuhin (2016), or of *B. (Brahmaea) lunulata* (BREMER & GREY, 1853 [“1852”]). The illustrations in the original descriptions are insufficient to assess the taxonomic status of the names. Further investigations are considered necessary as part of a generic revision.

Remarks: A “Preliminary Checklist” of the names in the family Brahmaeidae, the “References” and the “Internet References”, and the “Acknowledgments” are supposedly provided with the last issue of this series.

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ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Beiträge zur Kenntnis der wilden Seidenspinner](#)

Jahr/Year: 2021

Band/Volume: [19](#)

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Artikel/Article: [A Preliminary Annotated Checklist of the Brahmaeidae of the World – Part IIIB. Further taxa of the certhia-group of the subgenus Brahmaea WALKER, 1855 \(Lepidoptera: Brahmaeidae\) 299-348](#)