

Review of the genus *Rajendra* Moore, with systematic notes on the genus *Nannoarctia* Kôda (Lepidoptera, Arctiidae)

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Abstract Based on the study of the type material, the Hindustan genus *Rajendra* Moore, 1879 includes: *R. biguttata* (Walker, 1855) (= *nigricans* Moore, 1872, = *lativitta* Moore, 1879, = *perrottetii* auct.), with a subspecies *R. b. irregularis* Moore, 1882 from Sri Lanka, *R. perrottetii* (Guérin-Ménéville, [1844]) (= *vittata* Moore, 1879), *R. cingulata* (Rothschild, 1910). The status of *R. perrottetii* is defined by the type, which entirely corresponds to the original description. *R. biguttata* is characterized by a more or less pronounced 'hitch' on the forewing light band at vein Cu₂ base (better expressed in *R. b. irregularis*), small black dots on tegulae, presence of a projection on the valva costal edge and two apical valva projections. The other two species are characterized by a smooth forewing light band and absence of a projection on the valva costal edge. Between the two species, *R. cingulata* is characterized by presence of a dark band on tegulae, not a spot as in *R. perrottetii*. In male genitalia structure, *R. perrottetii* has a wavy costal edge of valva and apical spine on the aedeagus, while *R. cingulata* has a smooth ventral edge of valva and no apical spine on aedeagus.

The genus *Rajendra* Moore, 1879 was described for a single new species, *R. lativitta* Moore, 1879. In another article, Moore (1879b) added to this genus *R. sipahi* (Moore, 1872), *R. nigricans* (Moore, 1872), *R. integra* (Walker, 1855), *R. dentata* (Walker, 1855), *R. biguttata* (Walker, 1855), *R. vittata* Moore, 1879, *R. pannosa* Moore, 1879. Cotes and Swinhoe (1887) included a further nine species viz. *R. biguttata*, *R. irregularis* Moore, 1882, *R. khandalla* (Moore, 1859), *R. lativitta* (Moore, 1879), *R. nigricans*, *R. pannosa*, *R. sipahi*, *R. tripartita* (Walker, 1855), *R. vittata*. Kirby (1892) accepted this point of view and included *R. perrottetii* (Guérin-Ménéville, 1844). Later the genus was treated as a synonym of *Alphaea* Walker, 1855 (Hampson, 1894), or *Estigmene* Hübner, [1820] 1816 (Hampson, 1901; Rothschild, 1910, 1914; Strand, 1919); although *Estigmene* is entirely a Nearctic genus with two species, *Alphaea* has been reviewed by Dubatolov and Kishida (2005).

A century later, two additional genera were separated from the genus *Rajendra* sensu Cotes and Swinhoe (1887) and Kirby (1892). Kôda described *Nannoarctia* Kôda, 1988 for *N. integra* (Walker, 1855) (taking into account the Taiwan taxon *takanoi* Sonan, 1934); Kishida (1998) transferred the Transoriental *N. obliquifascia* (Hampson, 1894) to this genus; Fang (2000) added *N. tripartita* (Walker, 1855). According to wing pattern and male genitalia structure, two Sundaland species should also be included into *Nannoarctia*: *N. conjuncta* (Hampson, 1901) from Lombok, and *N. williamsi* (Rothschild, 1910) from Java and Bali. Another three species from Hindustan and Sri Lanka were separated into the subgenus *Hindargina* Dubatolov, 2006 of *Tatargina* Butler, 1877 (Dubatolov, 2006), they are: *T. pannosa* (Moore, 1879), *T. sipahi* (Moore, 1872) and *T. ceylonensis* (Hampson, 1901). So, four species remain unrevised: *R. dentata* (= *khandalla*), *R. perrottetii*, *R. irregularis*, *R. vittata*, together with *R. cingulata* (Rothschild, 1910), which was described as a subspecies of *R. perrottetii*, but later raised to the specific level (Rothschild, 1914; Hampson, 1920). This work is devoted to reviewing the systematic position of these four species.

Rajendra Moore

Rajendra Moore, 1879, in Hewitson & Moore, *Descr. new Indian lepid. Insects Colln late Mr. W. S. Atkinson* (1): 43.

Type species: *Rajendra lativitta* Moore, 1879, by monotypy.

Diagnosis. Head covered with dense short hairs. Male antennae serrate. Eyes large, hemispheric,

naked. Proboscis slightly longer than palpi, but not longer than head width. Palpi porrect, slightly longer than the head hairs. Fore tibiae simple, with naked apical spine, epiphysys not reaching the tibia apex. Middle tibiae with a single pair, hind tibiae – with two pairs of long thin spurs. Claws with a slight incision medially. Patagia and tegulae pale buff, centered with a black spot or band. Forewing vein R₂ stalked with R₃₊₅ (venation type C by Sotavalta, 1964). Tympanum with a small flattened enlargement. Forewings dark brown with an unbroken oblique light band from the apex via the vein Cu₂ base towards the wing base; lacking submarginal spots. Hindwings rosy with brown submarginal spots. Abdomen rosy or red, with transverse brown stripes dorsally.

Male genitalia (Figs 15–31). Uncus triangular, but narrowing towards the base; “collar” of the proximal part of tegumen broad. Tegumen-vinculum ring with finger-like subunci processes; lacking teeth on subunci. Valvae moderately broad, often with two processes apically and one costally. Juxta longer than width, more sclerotized towards apex, convex apically, with two sclerotized processes, covered with small spines. Aedeagus not arched, more sclerotized apically, here with a rounded lobe or a spine. Vesica with two spiniculi patches. VIII abdominal sternite with two lateral sclerotized lobes.

The most noticeable autapomorphic character of the genus is the presence of finger-like subunci; other synapomorphic characters are: uncus narrowing towards the base and brown forewings with an unbroken oblique light band from the apex base towards the wing base.

Distribution. Hindustan, Sri Lanka, Burma.

***Rajendra biguttata biguttata* (Walker), stat. rev. (Figs 1–5)**

Aloa biguttata Walker, 1855, *List Specimens lepid. Insects Colln. Br. Mus.* **3**: 707; type locality: “Canara, Malabar Coast”.

Aloa nigricans Moore, 1872, *Proc. zool. Soc. Lond.* **1872**: 572-573; type locality: “Bombay ..., Deccan”; Moore, 1879; *Proc. Zool. Soc. London* **1879**: 396.

Rajendra lativitta Moore, 1879, in Hewitson & Moore, *Descr. New Indian lepid. Insects Colln late Mr. W. S. Atkinson* (1): 43; type locality: “Parisnath Hill, Behar”; Moore, 1879; *Proc. zool. Soc. Lond.* **1879**: 396; Kirby, 1892, *Synonymic Cat. Lepid. Heterocera* **1**: 248.

Rajendra biguttata: Moore, 1879, *Proc. zool. Soc. Lond.* **1879**: 396; Swinhoe, 1885, *Proc. zool. Soc. Lond.* **1885**: 296; Cotes & Swinhoe, 1887, *Cat. Moths India* **2**: 124; Hampson, 1891, *Ill. Het. Br. Mus.* **8**: 6; Kirby, 1892, *Synonymic Cat. Lepid. Heterocera* **1**: 248; Swinhoe, 1892, *Cat. Het. Mus. Oxford* **1**: 174.

Rajendra nigricans: Cotes & Swinhoe, 1887, *Cat. Moths India* **2**: 125; Kirby, 1892, *Synonymic Cat. Lepid. Heterocera* **1**: 248.

Alphaea biguttata: Hampson, 1894, *Moths India* **2**: 23.

Alphaea nigricans: Hampson, 1894, *Moths India* **2**: 23.

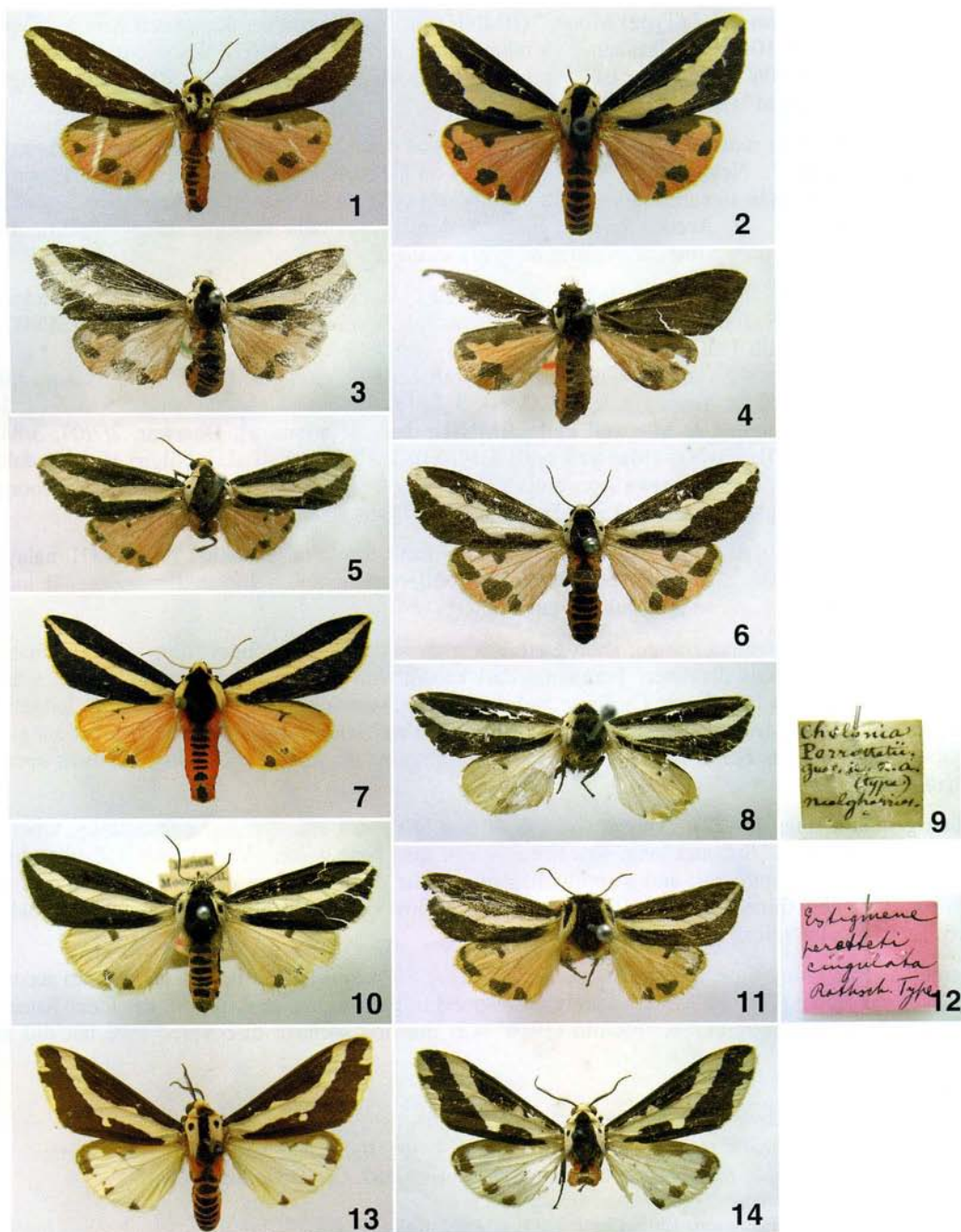
Estigmene nigricans: Hampson, 1901, *Catalogue Lep. Phal. Colln Br. Mus.* **3**: 349, pl. 47, fig. 17; Hampson, 1905; *J. Bombay nat. Hist. Soc.* **16**: 211; Rothschild in Seitz, 1914, *Gross-Schmett. Erde* **10**: 253, fig. 24d; Strand, 1919, *Cat. Lep.* **19**: 255-256.

Estigmene perrottetii: Hampson, 1901, *Catalogue Lep. Phal. Colln Br. Mus.* **3**: 348, pl. 47, fig. 16; Hampson, 1905; *J. Bombay nat. Hist. Soc.* **16**: 211; Rothschild, 1910, *Novit. zool.* **17**: 166; Rothschild in Seitz, 1914, *Gross-Schmett. Erde* **10**: 253, fig. 24d; Strand, 1919, *Cat. Lep.* **19**: 256.

Estigmene biguttata: Strand, 1919, *Cat. Lep.* **19**: 256.

Distribution. India: Himachal Pradesh: Simla (Hampson, 1901; Rothschild, 1910), Madhya Pradesh: Jabulpore (=Jabalpur) (Hampson, 1901); Maharastra: Bombay, Palli Hill, Bandera (=Bandra) (Moore, 1872; Swinhoe, 1885; Cotes & Swinhoe, 1887; Hampson, 1894, 1901; Rothschild, 1910), Matheran (Hampson, 1894), Poona (=Pune) (Rothschild, 1910); Karnataka: Belgaum (Swinhoe, 1885; Cotes & Swinhoe, 1887; Rothschild, 1910); Kerala: Canara, Malabar Coast (Walker, 1855; Cotes & Swinhoe, 1887; Hampson, 1894, 1901), Travancore (Rothschild, 1910); Tamil Nadu: Nilgiri Hills (Cotes & Swinhoe, 1887; Hampson, 1901), Coimbatore (Hampson, 1901); Orissa: Ganjam (Rothschild, 1910); West Bengal: Darjiling (Cotes & Swinhoe, 1887); Sikkim (Cotes & Swinhoe, 1887; Hampson, 1894). Bangladesh: West Bengal: Parisnath Hill in the Burdwan range (Moore, 1879b).

Type material. *Aloa biguttata*, ♀, “Canara / 50-26”, “12. *Aloa biguttata*”, “Canara” (BMNH). *Aloa nigricans*, ♂ (lectotype, designated here!), “Moore Coll. / 94-106”, “Deccan / ♂ / Dr. Day”, on the



Figs 1–12. *Rajendra* spp. 1–5. *R. biguttata* (Wlk.). 1–2: ♂, Tamil Nadu, Nilgiris, Gudalur (Kishida coll.); 3: type ♀, Canara (BMNH); 4: lectotype ♂ of *Aloa nigricans* Moore, Deccan (BMNH); 5: type ♂ of *Rajendra lativitta* Moore, Parisnath (BMNH). 6. *R. biguttata irregularis* Moore, lectotype ♂, Ceylon [Sri Lanka], Mackurud (BMNH). 7–10. *R. perrottetii* (Guér.-Mén.). 7: ♂, Kerala, 8 km N Rani, Blachery, 30 km W Changanacheri (Kishida coll.); 8: type ♂, [Tamil Nadu], [Neelgherries, =Nilgiris] (BMNH); 9: ditto, label; 10: type ♂ of *Rajendra vittata* Moore, Burma (BMNH). 11–12. *R. cingulata* (Rothsch.). 11: type ♂, [Tamil Nadu], Nilgiris, Ootacamund (BMNH); 12: ditto, label.

Figs 13–14. *Nannoarctia (Pseudorajendra) dentata* (Wlk.). 13: ♂, Tamil Nadu, Nilgiris, Gudalur (Kishida coll.); 14: ♂, [Maharashtra], Palli Hill, Bandora (=Bandra) (BMNH).

back: "*Aloa / nigricans* ♂ / (Type) Moore" (BMNH); ♂ (paralectotype, designated here!), "Type", "Moore Coll. / 94-106", "Malheshan / Bombay / (Dr. Leith)" (BMNH). *Rajendra lativitta*, ♂, "Moore Coll. / 94-106", "*Rajendra / lativitta* ♂ / (Type) Moore", on the back: "Parisnath / Bengal / ♂ / Russell", "Bengal" (BMNH).

Remarks on the type material. 1. *Rajendra lativitta* was described with additional information: "In coll. Dr. Staudinger". Nevertheless, there is no label on the type material to indicate this. However, all the data above indicates that this should be Moore's type. Also many Staudinger specimens are now in the BMNH. 2. According to the identical male genitalia structure (Figs 17–20), *Aloa nigricans* represents only a melanistic form of *R. biguttata*.

Additional material. INDIA: 1 ♂, India (Lt. Col. G.R. Oakes, BMNH); 1 ♂, [Himachal Pradesh], Simla, 7,000 ft. (A.E. Jones, BMNH); 1 ♂, [Maharashtra], Bombay (Rothschild Bequest, BMNH); 1 ♂, [Maharashtra], Palli Hill, Bandora (=Bandra), July 1897 (Rothschild Bequest, BMNH); 1 ♂ (f. *nigricans*), [Maharashtra], Poona (=Puna), 1893 (Rothschild Bequest, BMNH); 1 ♂, Maharashtra, Malavli, 30.VII 1967, Dr. Topal Gy. leg. (SZMN); 3 ♂, [Karnataka], Belgaum, Aug. 95, 8-7-14, 26-7-14 (Rothschild Bequest & Maxwell coll., BMNH); 3 ♂, [Karnataka], Dharwar, 2/7/07, 3/8/07 (gen. slide No. 4449), 15/8/07 (Maxwell coll., BMNH); 2 ♂, [Tamil Nadu], Nilgiri Hill: Gudalur, 1200 m, X.-XI.1977 (T. Hasegawa leg., coll. Y. Kishida); 1 ♂, [Tamil Nadu], Madras, N. Coorge, 4.v.1913 (F. Hannington, BMNH); 4 ♂, [Tamil Nadu], Nilgiris (Hampson Coll., BMNH).

Remark on distribution. There is only one specimen from Simla in Himachal Pradesh (Himalayan Region, North India). All other specimens were collected in South Indian Provinces. It looks probable that Simla might be a mistake of labeling.

Diagnosis. Male antennae serrate: short teeth are approximately 1/3, longer teeth – approximately 2/3 of the antenna stock diameter. Forewings dark brown with yellowish-white oblique band, which is straight from apex to the vein Cu₂ base and then to the forewing base; there is a slight 'ledge' on hind margin of band along vein Cu₂. Hindwings rosy-red with several large brown submarginal spots. Discal spot is fused with wide brown costa margin. Tegulae yellowish-white with central small brown spot.

Male genitalia (Figs 15–22). Valvae wide, with two processes apically, and one costally, tapering and bent proximally. Subunci long, four times longer than base width. Vesica with a distinct distal lobe, covered with spiniculi; and a spiniculi patch on the dorsal surface of the middle lobe of the vesica. VIII abdominal sternite with a trapezoidal hollow on the distal edge. Lateral lobes wide, broadly triangular apically.

Remarks. For a long time, the species was known as *R. perrottetii*; nevertheless, taking into account the type specimen (Fig. 8), which entirely correspond to the original description, the latter name is conspecific with *R. vittata*. Rothschild (1910) was the first to have discovered this, but did not publish essential name changes.

***Rajendra biguttata irregularis* Moore, stat. nov. (Fig. 6)**

Rajendra irregularis Moore, 1882, *Lepid. Ceylon* 2: 72-73, t. 107, fig. 2; type locality: "Ceylon"; Kirby, 1892, *Synonymic Cat. Lepid. Heterocera* 1: 248; Cotes & Swinhoe, 1887, *Cat. Moths India* 2: 124.

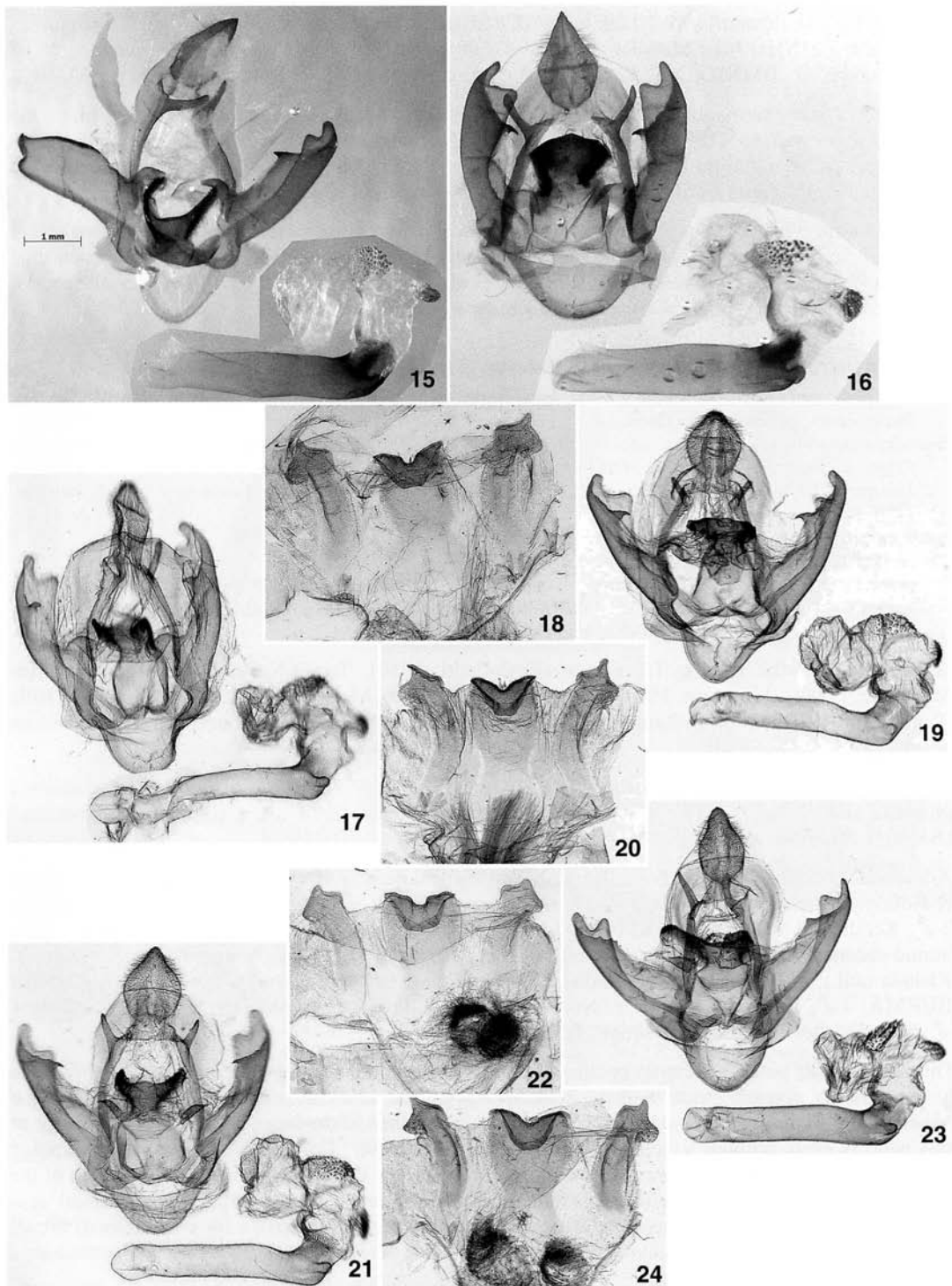
Alphaea irregularis: Hampson, 1894, *Moths India* 2: 23.

Estigmene irregularis: Hampson, 1901, *Catalogue Lep. Phal. Colln Br. Mus.* 3: 348; Hampson, 1905; *J. Bombay nat. Hist. Soc.* 16: 211, 212; Rothschild in Seitz, 1914, *Gross-Schmett. Erde* 10: 253, fig. 24d; Strand, 1919, *Cat. Lep.* 19: 254-255.

Distribution. Sri Lanka.

Type material. *Rajendra irregularis*, ♂ (lectotype, designated here !), "Ceylon / B. 45. / Mackurud", on the back: "Rajendra / irregularis ♂ / (type) Moore", "Ceylon / Moore Coll. / 94-106.", "Type" (BMNH). 1 ♂ (paralectotype, designated here !), "Ceylon / Moore Coll. / 94-106", "Ceylon / B. 45", on the back: "Rajendra / irregularis / Moore", "Arctiidae / genitalia slide / No. 4443" (BMNH).

Additional material. SRI LANKA: 6 ♂, Wellawaya, 11/05 (ex coll. G.C. Alston, Joicey Bequest,



Figs 15–24. Male genitalia and 8th sternite of *Rajendra biguttata* (Wlk.). 15: specimen on Fig. 2, Tamil Nadu, Nilgiris, Gudalur (Kishida coll.); 16: Maharashtra, Malavli (SZMN); 17–18: [Karnataka], Dharwar, gen. slide No. 4449 (BMNH); 19–20: lectotype of *Aloa nigricans* Moore, Deccan (BMNH); 21–22: type of *Rajendra lativitta* Moore, Parisnath (BMNH); 23–24: paralectotype of *Rajendra biguttata irregularis* Moore, Ceylon, gen. slide No. 4443 (BMNH).

BMNH); 1 ♂, Halldamulla, 10/10 (ex coll. G.C. Alston, Joicey Bequest, BMNH); 2 ♂, Hambantota, 12 (J. Pale, BMNH); 1 ♂, Madulsima, 12.05 (Mackwood Coll., BMNH); 1 ♂, Galgamuwa, 10.07 (Mackwood Coll., BMNH); 2 ♂, Puttalam, 10, 12 (Mackwood Coll. & Rothschild Bequest, BMNH).

Diagnosis. Main external characters as in the nominotypical subspecies: same thorax and hindwing colouration as well as similar bend of the oblique forewing band. Nevertheless, its shape differs noticeably: the fore margin is uneven, and the hind margin has a noticeable 'ledge' behind the vein Cu₂ base. Nevertheless, similar specimens might occur in South Hindustan (Fig. 2).

Male genitalia (Figs 23–24). As in the nominotypical subspecies, valvae are wide, with two apical processes, and one costal process; the latter is broadly triangular, not tapering or bent. Presence of the distal lobe of vesica covered with spiniculi, is also a common character of the two subspecies. VIII sternite structure of both subspecies are similar also.

Rajendra perrottetii (Guérin-Méneville), **stat. rev.** (Figs 7–10)

Chelonia perrottetii Guérin-Méneville, [1844], *Icon. Règne anim. Cuvier (Insectes)*: 515; type locality: "Hab. Les Neelgherries, au sommet des Gates ...".

Rajendra vittata Moore, 1879, *Proc. zool. Soc. Lond.* **1879**: 396-397, t. 32, fig. 12; type locality: "British Burmah"; Cotes & Swinhoe, 1887, *Cat. Moths India* **2**: 125; Swinhoe, 1890, *Trans. ent. Soc. Lond.* **1890**: 185; Hampson, 1891, *Ill. Het. Br. Mus.* **8**: 6; Kirby, 1892, *Synonymic Cat. Lepid. Heterocera* **1**: 248; Swinhoe, 1892, *Cat. Het. Mus. Oxford* **1**: 174.

Rajendra perrottetii: Kirby, 1892, *Synonymic Cat. Lepid. Heterocera* **1**: 248.

Alphaea vittata: Hampson, 1894, *Moths India* **2**: 22-23.

Estigmene vittata: Hampson, 1901, *Catalogue Lep. Phal. Colln Br. Mus.* **3**: 348-349, fig. 154; Hampson, 1905; *J. Bombay nat. Hist. Soc.* **16**: 211-212; Rothschild, 1910, *Novit. zool.* **17**: 166; Rothschild in Seitz, 1914, *Gross-Schmett. Erde* **10**: 253-254, fig. 24d, e; Strand, 1919, *Cat. Lep.* **19**: 258.

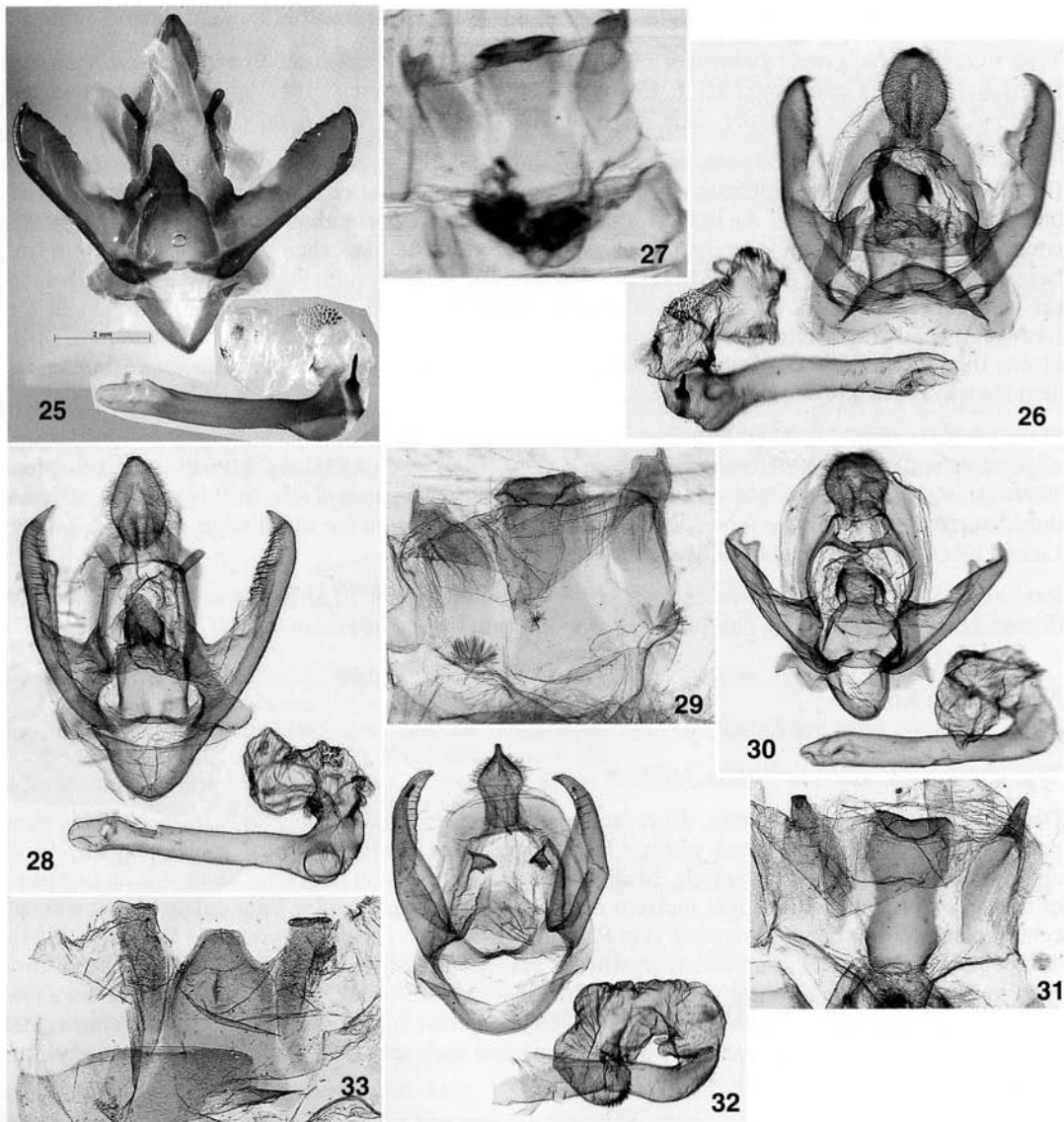
Distribution. India: Kerala: Travancore (Rothschild, 1910); Tamil Nadu: Nilgiri Hills (Guérin-Méneville, [1844]; Hampson, 1894, 1901; Rothschild, 1910), Madura (Rothschild, 1910), Palni Hills (Rothschild, 1910). Burma: Rangoon (Moore, 1879b; Rothschild, 1910). Uncertain locality: Sevan Malley (Rothschild, 1910).

Type material. *Chelonia perrottetii*, ♂, "FELDER / COLLN.", "Rothschild Bequest", "Arctiidae / genitalia slide / No. 4351", "*Chelonia* / *Perrottetii*. / Guer. Ic. R. A. / (type) / Neelgherries." (BMNH). *Rajendra vittata*, ♂, "Moore Coll. / 94-106", "Burma" (BMNH).

Additional material. INDIA: 6 ♂, [Kerala], Travancore, Permad/Peermaad (R.S. Imray, H.J. Elwes & Rothschild Bequest, BMNH); 3 ♂, [Kerala], Travancore (R.S. Imray & Adams Bequest, BMNH); 1 ♂, Kerala, 8 km N Rani, Blachery, 30 km W Changanacheri, 150 m, 9°28' N.L., 76°44' E.B., humid secondary forest, 10.iv.97, e.o. in Dresden, Taraxacum vi 1997 (Schintlmeister leg. + cult.; Y. Kishida coll.); 8 ♂ [4 ♂], [Tamil Nadu], Nilgiris (Hampson coll. & Rothschild Bequest, BMNH); BURMA: 1 ♂, Rangoon, gen. prep. No. 4441 (Rothschild Bequest, BMNH). Uncertain locality: 1 ♂, Sevan Malley (Rothschild Bequest, BMNH).

Diagnosis. Male antennae shortly pectinae: short teeth are equal to, longer teeth approximately twice as long as the antenna stock diameter. Forewings almost blackish with yellowish-white oblique band, which is straight from apex to the vein M₃ base and then to the forewing base; the hind edge of this band is even, without a 'ledge' behind the vein Cu₂ base. Dark ground colour not extending beyond the cell in cubital and medial part of the forewing; the light band touches the hind vein of the cell. Hindwings yellowish, with two (sometimes absent) small brown tornal spots. Discal spot narrow, not fused with the narrow brown costa margin. Tegulae whitish with central small brown spot.

Male genitalia (Figs 25–29). Valvae with broadly separated apical valva processes, one is nearer the middle part of costa and is poorly separated. There is no costal spine or processus; costal edge is wavy. Subunci only three times longer than base width and not as long as in the former or next species. Aedeagus with a distinct apical spine on right side. Vesica with no separate distal lobe; the middle lobe with a small patch of spiniculi on dorsal surface. VIII abdominal sternite flat on the distal edge, without a hollow. Lateral lobes wide, with external angle extended apically.



Figs 25–33. Male genitalia and 8th sternite. 25–29. *Rajendra perrottetii* (Guér.-Mén.). 25: Kerala, 8 km N Rani, Blachery, 30 km W Changanachery (Kishida coll.); 26–27: type of *R. perrottetii* (Guér.-Mén.), [Tamil Nadu], [Neelgherries, =Nilgiris] (BMNH); 28–29: type of *R. vittata* Moore, Burma (BMNH). 30–31. Type of *Rajendra cingulata* (Rothsch.), [Tamil Nadu], Nilgiris, Ootacamund (BMNH). 32–33. *Nannoarctia* (*Pseudorajendra*) *dentata* (Wlk.), [Maharashtra], Palli Hill, Bandora (=Bandra), gen. slide No. 4440 (BMNH).

Remarks. For a long time it was known under the name *R. vittata*; nevertheless, according to the type specimen (Fig. 8), the elder name for this species is *R. perrottetii*.

***Rajendra cingulata* (Rothschild), comb. nov.** (Figs 11–12)

Estigmene perrottetii cingulata Rothschild, 1910, *Novit. zool.* **17** (2): 166; type locality: "Ooty" [Madras, Nilgiris, Ootacamund] (Hampson, 1920).

Estigmene cingulata: Rothschild in Seitz, 1914, *Gross-Schmett. Erde* **10**: 253; Hampson, 1920; *Catalogue Lep. Phal. Colln Br. Mus.* **2** (Suppl.): 438, pl. 42, fig. 9.

Estigmene biguttata var. *cingulata*: Strand, 1919, *Cat. Lep.* **19**: 256.

Distribution. India: Tamil Nadu: Nilgiris (Rothschild, 1910; Hampson, 1920).

Type material. *Estigmene perrottetii cingulata*, ♂, "Ooty", "*Estigmene l perrottetii l cingulata l* Rothschild. Type", "Collection / H. J. Elwes / Rothschild Bequest / BM 1939-1", "Ootacamund / Nilgiris", "Arctiidae / genitalia slide / No. 4350" (BMNH). Known only from the single type specimen.

Diagnosis. Male antennae serrate: short teeth approximately 1/4, longer teeth – approximately 1/2 the antenna stock diameter. As in the former species, forewings are almost blackish with yellowish-white oblique band, which is straight from apex to the vein M3 base, then evenly curved to vein Cu₂ base, then straight to the forewing base; the hind margin of this band is even, without a ledge behind the vein Cu₂ base. Dark ground colour extends beyond the cell in cubital and medial part of the forewing. Hindwings yellowish with strong rosy tint between the cell and anal margin; there are two brown tornal spots and one subapical band. Discal spot narrow, fused with brown costa margin. Tegulae whitish, with central brown band.

Male genitalia (Figs 30–31). Valvae with two apical processes, but lacking costal process; costal edge of valva is smooth. Subunci are long, as in *R. biguttata*. Aedeagus without an apical spine. There is no separate distal lobe on vesica; a small (if present) patch of spiniculi is poorly visible on dorsal surface of the middle lobe. VIII abdominal sternite flat on the distal edge, without a hollow. Lateral lobes narrow, elongated apically.

Remarks. Similar to the former species, differs mainly by dark band (not spot) on tegulae, more distinct bend of the forewing oblique band; smooth ventral edge of valvae.

Nannoarctia Kôda

Nannoarctia Kôda, 1988, *Tyô Ga* 39: 4-6.

Type species: *Aloa integra* Walker, 1855.

Diagnosis. Male antennae serrate. Eyes large, hemispheric, naked. Proboscis noticeably longer than palpi, but not longer than head width. Fore tibiae simple, without apical spine. Epyphysis is approximately 1/3 of the tibia length. Middle tibiae with one apical pair, hind tibiae – with two pairs of thin spurs. Claws with a slight incision medially. Patagia and tegulae light coloured, but without central black spot or band. Forewing vein R₂ stalked with R₃₊₅ (venation type C by Sotavalta, 1964). Tympanum with a small flattened enlargement. Forewings brown, with an oblique light band from apex towards the wing base, which consists of distinct fused or connected spots; often there are a few white submarginal spots. Hindwings yellow, without any rose tint; costal margin brown; submarginal spots small if present. Tegulae light, lacking a central dark spot. Abdomen yellow as hindwings, with transverse brown stripes dorsally.

Male genitalia (Figs 32–33). Uncus triangular, not narrowing to the base; collar of the proximal part of the tegumen broad. Subunci short, triangular shape, without any teeth. Valvae elongate, without additional processes or spines. Juxta short. Aedeagus sharply bent at apex. Vesica covered with two patches of small dense spines.

We consider several characters to be synapomorphic for this genus: elongate finger-like valvae, presence of short triangular subunci, aedeagus strongly arched at apex.

Distribution. Taiwan, South China, East India, Indo-China, Philippines, West Sundaland.

Composition. *N. integra* (Walker, 1855) from Philippines; *N. takanoi* (Sonan, 1934) from Taiwan; *N. obliquifascia* (Hampson, 1894) from East India (Himachal Pradesh, Assam); Nepal (Kishida, 1998); Burma, South China (Yunnan, Guangdong, Hainan); *N. tripartita* (Walker, 1855) from South China (Guangdong, Hainan), East India (Assam) and Indo-China (Vietnam, Laos, Cambodia) (Candèze, 1927); *N. williami* (Rothschild, 1910) from Java and Bali (Indonesia); *N. conjuncta* (Hampson, 1901) from Lombok (Indonesia). Good specific status of at least four former species remains uncertain, due to significant forewing pattern variation and almost identical male genitalia structure.

Subgenus *Pseudorajendra* subgen. nov.

Type species: *Aloa dentata* Walker, 1855.

Diagnosis. Male antennae pectinate: antennae branches are approximately 2–3 times longer than the antenna stock diameter. Proboscis approximately twice the length of the palpi. Fore tibiae simple, without apical spine. Forewings brown, light oblique band originating from the costal margin (not the wing apex); there is an additional light marginal broken band, forming two spots. Tegulae light, centered with a dark spot. Abdomen rosy, but hindwings pale yellow.

Male genitalia (Figs 32–33). Uncus triangular, but noticeably narrowing to the base. Subunci, triangular, not short, covered with teeth on the hind side. Vesica with only one apical patch of small dense spines.

Autapomorphic character of the new subgenus is presence of teeth on subunci.

Remarks. The new subgenus combine characters of two different but related genera – *Rajendra* and *Nannoarctia*: like the former, it has tegulae centered with a dark spot and uncus narrowing towards the base, but there are several significant common characters with the latter genus (synapomorphic characters for both subgenera): presence of light marginal band, short triangular subunci, tapering valva apex, aedeagus arched at apex.

Nannoarctia (*Pseudorajendra*) *dentata* (Walker), **comb. nov.** (Figs 13–14)

Aloa dentata Walker, 1855, *List Specimens lepid. Insects Colln. Br. Mus.* **3**: 708; type locality: “?” [Canara] (Hampson, 1901).

Aloa khandalla Moore in Horsfield & Moore, 1859, *Cat. Lep. Ins. Mus. nat. Hist. East Ind. House* **2**: 361, t. IXa, fig. 13; type locality: “Canara ... Khandall Hill, Bombay”.

Rajendra khandalla: Swinhoe, 1885, *Proc. zool. Soc. Lond.* **1885**: 296; Cotes & Swinhoe, 1887, *Cat. Moths India* **2**: 124; Kirby, 1892, *Synonymic Cat. Lepid. Heterocera* **1**: 248.

Rajendra dentata: Hampson, 1891, *Ill. Het. Br. Mus.* **8**: 6; Kirby, 1892, *Synonymic Cat. Lepid. Heterocera* **1**: 248; Swinhoe, 1892, *Cat. Het. Mus. Oxford* **1**: 174.

Alphaea dentata: Hampson, 1894, *Moths India* **2**: 23.

Pericallia dentata: Hampson, 1901, *Catalogue Lep. Phal. Colln Br. Mus.* **3**: 355; Hampson, 1905, *J. Bombay nat. Hist. Soc.* **16**: 213; Rothschild, 1910, *Novit. zool.* **17**: 169; Rothschild in Seitz, 1914, *Gross-Schmett. Erde* **10**: 255, fig. 24e; Strand, 1919, *Cat. Lep.* **19**: 259-260.

Distribution. India: Maharastra: Bombay, Khandalla Hill, Palli Hill, Bandora (=Bandra) (Moore, 1859; Swinhoe, 1885; Cotes & Swinhoe, 1887; Rothschild, 1910); Kerala: Canara (Moore, 1859; Cotes & Swinhoe, 1887; Hampson, 1894, 1901); Tamil Nadu: Nilgiri Hills (Hampson, 1894, 1901).

Type material. *Aloa dentata*, ♀, “Type”, “39.6.19 / 830”, “14. *Aloa dentata*” (BMNH). *Aloa khandalla*, ♂, “Type”, “Bombay / Ind. Mus. / 79.64”, “*Aloa khandala* Type Moore” (BMNH); ♂, “*Aloa / khandalla / Moore / Bombay*”, “Moore Coll. / 94-106” (BMNH).

Additional material. INDIA: 1 ♂, India (Mrs Hamilton, BMNH); 3 ♂, [Maharastra], Palli Hill, Bandora (=Bandra), 13.vii.96 (gen. slide No. 4440), 15.vii.96 (Rothschild Bequest, BMNH); 1 ♂, [Maharastra], Bombay (BMNH); 1 ♂, [Kerala], Canara (S.N. Ward, BMNH); 2 ♂ 2 ♀, [Tamil Nadu], Nilgiris (Moore & Hampson Coll., BMNH), 1 ♂, [Tamil Nadu], Nilgiri Hills, Gudalur, 1200 m, X-XI 1977, T.Hasegawa leg. (Kishida coll.). Uncertain locality: 1 ♂, S. India, Wadi, Ombedi [unclear writing], 18-9-8[9]1 (T.R. Bell, BMNH).

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