

On the status of the Australian genus *Ardices* WALKER, 1855 with the description of a new subgenus for *A. curvata* DONOVAN, 1805

(Lepidoptera, Arctiidae)

by

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Abstract: The generic status of the Australian genus *Ardices* WALKER, 1855 is confirmed. The genus consists of two subgenera. The nominotypical one includes the type species *A. glatignyi* (LE GUILLOU, 1841) and *A. canescens* BUTLER, 1875. The new subgenus *Australemyra* **subgen. nov.** is described for *A. curvata* (DONOVAN, 1805).

Zusammenfassung: Der Status der australischen Gattung *Ardices* WALKER, 1855 wird bestätigt. Die Gattung besteht aus zwei Subgenera von denen die namenstypische die Typusart *A. glatignyi* (LE GUILLOU, 1841) beherbergt und *darüberhinaus* *A. canescens* BUTLER, 1875. Als neues Subgenus wird *Australemyra* **subgen. nov.** für *A. curvata* (DONOVAN, 1805) beschrieben.

The genus *Ardices* WALKER, 1855 was described for a single species, *A. fulvohirta* WALKER, 1855 from the Australian Region, which is now considered as a synonym of *A. glatignyi* (LE GUILLOU, 1841). Its generic status considered doubtless until TURNER (1940) combined it with *Spilosoma* CURTIS, 1825; this point of view was accepted also by EDWARDS (1996), but HOLLOWAY (1979) admitted a generic status of *Ardices* Wlk.

Although several species were described within this genus in 19th century, HAMPSON (1901) left only two Australian species in it, *A. glatignyi* (LE GUILLOU), and *A. curvata* (DONOVAN) and found the most important character which can separate it from any species of both *Spilosoma* CURTIS, 1825 and *Spilarctia* BUTLER, 1875, namely, a presence of hairs on the eyes. ROTHSCHILD (1913) described one more species within *Ardices*, *A. novaeguineae* (ROTHSCH.) from New Guinea, but HAMPSON (1920) transferred it into *Spilosoma* CURT. Later TURNER (1940) reestablished specific status of *A. canescens* BTL., that was treated as a synonym of *A. glatignyi* (LE GUILLOU) by HAMPSON (1901), and showed that these moths could be easily separated from *A. glatignyi* (LE GUILLOU) by absence of lateral fuscous streaks on the thorax. Unfortunately, nobody studied the male genitalia structure of the *Ardices* species and relationships of them are still unclear. This situation led me to prepare this work. I used materials from Manchester Museum of the University of Manchester, UK (MMUM) and Zoological Institute, St.-Petersburg, Russia (ZIN).

Ardices WALKER, 1855

List Specimens lepid. Insects Colln Br. Mus. 3: 709-710, London.

Type species *Ardices fulvohirta* WALKER, 1855, by monotypy.

♂-- antennae serrate on fore side and shortly pectinate on hind side, serrate in females. Eyes large, oval, strongly convex, covered with whitish hairs. Palpi stout, porrect, noticeably longer than decumbent hairs on frons. Hairs on vertex ruffle, forming a brow. Proboscis one and half times longer than palpi. Fore tibiae simple, without apical spine. Middle tibiae with one pair, hind one with two pairs of short and narrow spurs, noticeably shorter than a tibiae diameter. Claws with a slight incision at middle. Vein R_2 on forewings stalking with R_{3+5} (according to SOTAVALTA, 1964, venation type C). Wings yellowish, with a characteristic *Spilarctia*-type pattern of dark spots (colour plate 10, figs 1-4). Tympanum with a small flattened inflation.

♂ genitalia (figs 1-4). Uncus broad triangular. "Collar" of proximal part of tegumen broad but moderately short. Valvae elongate, slightly and unevenly curved, with a single additional secondary branch in middle part of ventral side. Juxta short, transversal. Aedeagus slightly curved, with a strongly sclerotized plate on top. Vesica rounded, without cornuti.

Ardices glatignyi (LE GUILLOU)

(colour plate 10, figs 1-2)

Chelonia glatignyi LE GUILLOU, 1841; Rev. Zool. 1841: 257; type locality: "Hobart-Town" [Tasmania].

Chelonia pallida DOUBLEDAY, 1845; Eyre's Centr. Austr. 1: 438, t. 5, f. 3; type locality: "Australian..."

Ardices fulvohirta WALKER, 1855; List. Het. Br. Mus. 3: 710; type species: "Van Dieman's Land." [Tasmania, designated by WATSON et al., 1980: 17].

Spilosoma subocellatum WALKER, 1856; List. Het. Br. Mus. 7: 1697; type locality: "Australia."

Spilosoma conferta WALKER, 1864; List. Het. Br. Mus. 31: 295-296; type locality: "Tasmania."

Ardices garida SWINHOE, 1892; Cat. Het. Oxford Mus. 1892: 179, t. 4, f. 7; type locality: "Australia".

Spilosoma Queenslandi TH. P. LUCAS, 1898; Pr. R. Soc. Queensl. 13: 60. TL: "North Queensland".

Diacrisia meridionalis ROTHSCHILD, 1910; Novit. Zool. 17: 134; type locality: "Parkside, South Australia".

Maenas fremantlei STRAND, 1924; Dt. Ent. Z., Iris 37: 136-137; type locality: "Südwest-Australien ... Stat. 118, Fremantle".

Diagnosis: The species vary considerably in the forewing pattern, but the thorax always with dark stripes on the tegulae. ♂ genitalia (figs 1-2): costal edge of valvae jagged subapically.

Material: 1 ♂, without label (MMUM); 1 ♀, without label (ZIN).

Distribution: Throughout Australia and Tasmania (TURNER, 1940). Recorded from New Hebrides (HAMPSON, 1901), but HOLLOWAY (1979) consider this record as questionable.

Ardices canescens BUTLER

(colour plate 10, figs 3-4)

Ardices canescens BUTLER, 1875; Cist. Ent. 2: 29; type locality: "Australia".

Diagnosis: The species also vary by the forewing pattern, but the thorax is always uniformly light, without any dark spots on the tegulae. Male genitalia (figs 3-4): subapical part of costal margin of valva even.

Material: 2 ♂♂, Queensland (MMUM).

Distribution. East Australia: Queensland, New South Wales, Victoria; Tasmania (TURNER, 1940).

***Australemyra* subgen. nov.**

Type species: *Bombyx curvata* DONOVAN, 1805.

Most of the characters are common with species of the nominotypical subgenus, but male antennae with very a long pectination, hairs on frons not strongly decumbent, there is one pair of spurs on middle tibiae and two pairs on hind ones not shorter than the tibiae diameter. Forewings yellowish with dark spots disposed in 5 bands or rows, hindwings rose with dark discal spot and two submarginal and marginal rows of more or less fused spots.

The ♂ genitalia (fig. 5) are most characteristic for the subgenus and differs from the species of the nominotypical subgenus by simple finger-like valvae without any secondary branches, but with a very small subapical broadening of the ventral margin.

Ardices (Australemyra) curvata (DONOVAN)

(colour plate 10, fig. 5-6)

Bombyx curvata DONOVAN, 1805; Ins. New Holland: t. 34, f. 3; type locality: New Holland [Australia].

Chelonia fuscinula DOUBLEDAY, 1845; Eyre's Centr. Austr. 1: 438, t. 5, f. 4; type locality: "Australian..."

Arctia fuscinula WALKER, 1855; List Specimens lepid. Insects Colln. Br. Mus. 3: 616; type locality: "Sydney" and "New Holland".

Arctia vittata MÖSCHLER, 1872; Stett. Ent. Zeit. 33: 351-352; type locality: "Melbourne".

Phaos nigriceps BUTLER, 1878; Proc. Zool. Soc. London 1878: 383; type locality: "Victoria ...; Sydney".

Phaos lacteatum BUTLER, 1878; Proc. Zool. Soc. London 1878: 384; type locality: "Moreton Bay".

Phaos notatum BUTLER, 1878; Proc. Zool. Soc. London 1878: 383-384; type locality: "Victoria".

Phaos nexum BUTLER, 1878; Proc. Zool. Soc. London 1878: 384; type locality: "Victoria".

Spilosoma quinquefascia TH. P. LUCAS, 1890; Proc. Linn. Soc. N.S.Wales (2) 4: 1084-1085; type locality: "Victoria".

Phaos vigens BUTLER, 1878; Proc. Zool. Soc. London 1878: 383; type locality: "Tasmania".

Spilosoma brisbanensis Th.P.Lucas, 1890; Proc. Linn. Soc. N. S. Wales (2) 4: 1083-1084; type locality: "Brisbane neighbourhood".

Spilosoma curvata local race *athertonensis* TURNER, 1940; Proc. Roy. Soc. Qd. 51: 123; type locality: "North Queensland: Atherton Plateau".

Material: 1 ♂, Australia, Canberra, 10-14.XI 1980, M. TÓTH leg. (SZMN); 1 ♂, Australia, New South Wales, Black Derry Rest Area, Kosciusko Nat. Park, No. 106, 13.I.1981, exp. Dr. A. VOJNITS (SZMN).

Distribution: East Australia: Queensland, New South Wales, Victoria; Tasmania (TURNER, 1940).

Notes on systematics: TURNER (1940) wrote: "This is a most variable species. Apart from individual variations, it tends to form local forms..." Such local forms look probably to be geographically outlined subspecies. So, following TURNER (1940), four subspecies could be isolated: *A. c. athertonensis* (TURNER) from North Queensland: Atherton Plateau, with the longitudinal "dark costal, median, and dorsal streaks from [the forewing] base to termen"; *A. c. curvata* (DONOVAN) (= *fuscinula* Doubleday; = *fuscinula* WALKER; = *lacteatum* BUTLER; = *brisbanensis* TH. P. LUCAS)

from Queensland and New South Wales, "with longitudinal streaks thinner and incomplete, followed by subterminal and terminal series of spots"; *A. c. vittata* (MÖSCHLER) from Victoria and the mountains of New South Wales, "without longitudinal streaks but with four transversal fasciae more or less confluent, the basal fascia containing a whitish spot"; *A. c. vigens* (BUTLER) from Tasmania, which is "smaller than the preceding, darker, the fasciae more completely confluent, and without basal white spot".

Discussion: Although all *Ardices* species have the wing pattern not differing from the *Spilarctia*-type, they possess one very important synapomorphic character – presence of the small hairs on the eyes. This character is frequent among genera in Micrarctiini, but in Spilosomini from the North Hemisphere I know only two genera with hairs on eyes – the North American *Leptactia* STRETCH, 1872 and West Chinese *Lithosarctia* DANIEL, 1954, both belonging to the *Ocnogynagenus* group. Nevertheless, *Ardices* do not belong to this group, because the tegumen in the male genitalia lacks a longitudinal chamfer on its dorsal surface. By the male genitalia, the *Ardices* species most resemble the species of the genus *Lemyra* WALKER, 1856 from East Asia, Sundaland, and North Australia; their valvae are of two main types: either elongate with a small secondary branch on the ventral margin, or simple finger-like. Both types of the valva structure occur in *Ardices* species, so both genera look to be most closely related. Among other Australian Spilosomini genera studied by me, *Phaos* WALKER, 1855 also has the hairy eyes, moreover, the valvae of *P. interfixa* WALKER, 1855 are also finger-like. The forewing pattern of this species (colour plate 10, fig. 7) resembles that of *A. curvata* (DONOV.), ♂ genitalia of both species (figs. 5-6) are also similar, and it looks very likely that *Ardices* and *Phaos* are related genera as well. Moreover, this lineage most probably includes some other genera, like *Cheliosea* WATSON, 1980 and *Metacrias* MEYRICK, 1887.

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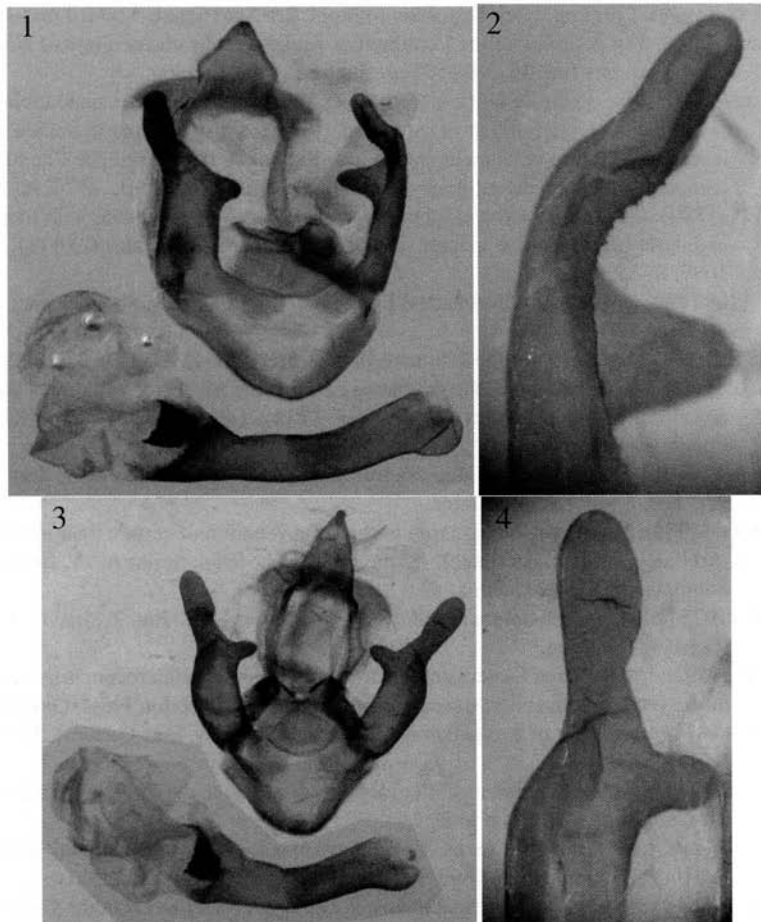
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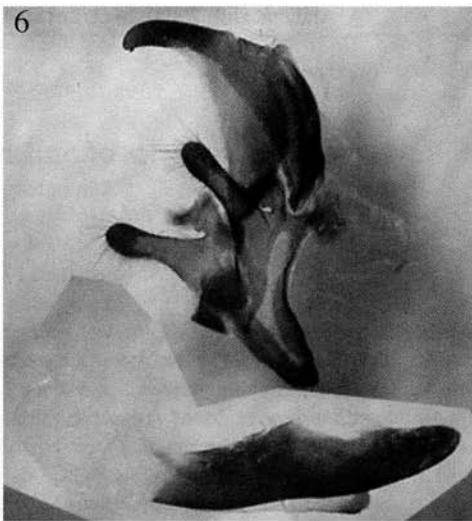
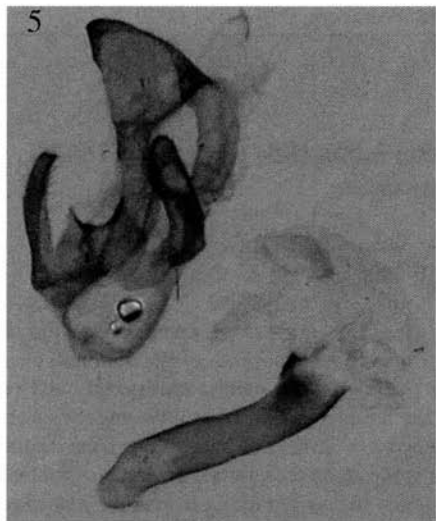
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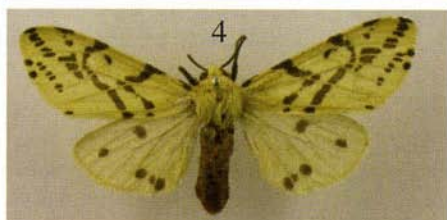
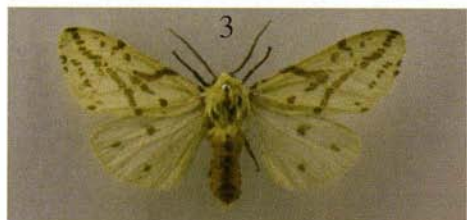
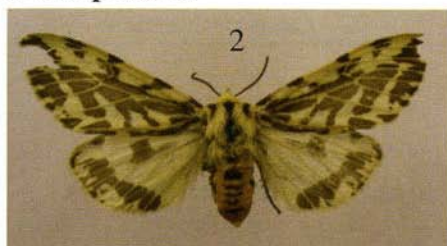


- Fig. 1. ♂ genitalia of *Ardicces glatignyi* (LE GUILLOU, 1841), [Australia], without label.
 Fig. 2. Valva apex of *Ardicces glatignyi* (LE GUILLOU, 1841), [Australia], without label.
 Fig. 3. ♂ genitalia of *Ardicces glatignyi canescens* BUTLER, 1875, Australia, Queensland.
 Fig. 4. Valva apex of *Ardicces glatignyi* (LE GUILLOU, 1841), Australia, Queensland.
 Fig. 5. ♂ genitalia of *Ardicces (Austrelemyra) curvata* (DONOVAN, 1805), Australia, New South Wales, Black Derry Rest Area, Kosciusko Nat.Park, No. 106, 13.I.1981, exp.Dr. A. VOJNITS.
 Fig. 6. ♂ genitalia of *Phaos interfixa* WALKER, 1855, Australia, Queensland, Birropp, 23.II 1888 (MMUM coll.).

Colour plate 10:

- Fig. 1. *Ardicces glatignyi* (LE GUILLOU, 1841), ♂, [Australia], without label.
 Fig. 2. *Ardicces glatignyi* (LE GUILLOU, 1841), ♀, [Australia], without label.
 Fig. 3. *Ardicces canescens* BUTLER, 1875, ♂, Australia, Queensland.
 Fig. 4. *Ardicces canescens* BUTLER, 1875, ♂, Australia, Queensland.
 Fig. 5-6. *Ardicces (Austrelemyra) curvata* (DONOVAN, 1805), ♂♂, Australia, Canberra, Black Mountain, 6-11.XI 1990, KIREJTSHUK leg. (ZIN)
 Fig. 7. *Phaos interfixa* WALKER, 1855, ♂, Australia, Queensland, Birropp, 23.II 1888 (MMUM).

Farbtafel 10/ Colour plate 10



8

Euprepia
leopardina
Koll. Type ♂

Hügel.
Himalaya
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