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

Vladimir V. Dubatolov

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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 Guill.), and *A. curvata* (Donov.) 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 Guill.) by Hampson (1901), and showed that these moths could be easily separated from *A. glatignyi* (Le Guill.) 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


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 tibia diameter. Claws with a slight incision at middle. Vein \( R_2 \) on forewings stalking with \( R_{1+5} \) (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.


**Ardices glatignyi (Le Guillou)**
(couleur plate 10, figs 1-2)

_Chelonia pallida_ Doubleday, 1845; Eyre’s Centr. Austr. 1: 438, t. 5, f. 3; type locality: “Australian...”


**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”
Spilosoma quinquefascia Th. P. LUCAS, 1890; Proc. Linn. Soc. N.S.Wales (2) 4: 1084-1085; type locality: “Victoria”
Spilosoma brisbanensis Th.p.Lucas, 1890; Proc. Linn. Soc. N. S. Wales (2) 4: 1083-1084; type locality: “Brisbane neighbourhood”

Material: 1 ♂, Australia, Canberra, 10-14.XI 1980, M. TÖTH leg. (SZMN); 1 ♂, Australia, New South Wales, Black Derry Rest Area, Kosciusko Nat. Park, No. 106, 13.I 981, 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 Micrarctini, 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 *Ocnogyna*-genus 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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177
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Address of the author

Dr. Vladimir V. Dubatolov
Siberian Zoological Museum
Institute of Animal Systematics and Ecology
Siberian Branch of Russian Academy of Sciences
Frunze street 11
Novosibirsk 91, 630091 Russia
Fig. 1. ♀ genitalia of *Ardices glatignyi* (Le Guillou, 1841), [Australia], without label.
Fig. 2. Valva apex of *Ardices glatignyi* (Le Guillou, 1841), [Australia], without label.
Fig. 3. ♀ genitalia of *Ardices glatignyi canescens* Butler, 1875, Australia, Queensland.
Fig. 4. Valva apex of *Ardices glatignyi* (Le Guillou, 1841), Australia, Queensland.
Fig. 5. ♀ genitalia of *Ardices (Australemyra) 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. *Ardices glatignyi* (Le Guillou, 1841), ♀, [Australia], without label.
Fig. 2. *Ardices glatignyi* (Le Guillou, 1841), ♀, [Australia], without label.
Fig. 3. *Ardices canescens* Butler, 1875, ♀, Australia, Queensland.
Fig. 4. *Ardices canescens* Butler, 1875, ♀, Australia, Queensland.
Fig. 5-6. *Ardices (Australemyra) 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).

Fig. 1. Ardices glatignyi (LE GUILLOU, 1841), ♂, [Australia], without label.
Fig. 2. Ardices glatignyi (LE GUILLOU, 1841), ♀, [Australia], without label.
Fig. 3. Ardices canescens BUTLER, 1875, ♂, Australia, Queensland.
Fig. 4. Ardices canescens BUTLER, 1875, ♀, Australia, Queensland.
Fig. 5-6. Ardices (Australemyra) 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).


Fig. 8: Spilarctia leopardina leopardina KOLLAR, labels of the lectotype ♂.
Fig. 9: Spilarctia leopardina leopardina KOLLAR, lectotype ♂, Himalaya.