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# Designation of a lectotype for *Helix iuloidea* Forbes, 1852 and a history of the citation of the invalid name *Helix juloidea* by various authors (Gastropoda: Eupulmonata: Charopidae)

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## ABSTRACT

Two syntypes of the mid-east Queensland charopid, *Helix iuloidea* Forbes, 1852, presumed to be mis-placed, were located by the author in the mollusc collections of the Natural History Museum, London. These specimens had been mistakenly catalogued under the name *Helix juloidea*. The historical use of *H. juloidea* in 19<sup>th</sup> and early 20<sup>th</sup> century malacological literature is detailed and possible origin of this invalid name is proposed. A lectotype for *Helix iuloidea* Forbes, 1852 is designated herein.

□ *Eupulmonata*, *Charopidae*, lectotype designation, *Helix iuloidea* Forbes, 1852.

*Helix iuloidea* Forbes, 1852 was collected at Port Molle (= Long Island), mid-eastern Queensland by naturalist John Macgillivray on the voyage of the H.M.S. Rattlesnake in 1847. Subsequently two syntypes were deposited in the Natural History Museum, London (formerly British Museum of Natural History) but attempts to locate the specimens for a study of mid-east Queensland Charopidae by Holcroft (2018) were unsuccessful. A visit to the museum by the author resulted in the discovery of the specimens of *H. iuloidea* that were wrongly catalogued as *Helix juloidea*. Further investigations revealed that this erroneous name was also widely used in 19<sup>th</sup> and early 20<sup>th</sup> century literature by various authors in reference to *Helix iuloidea*. Forbes' accompanying notes to the original description provide a possible clue as to the origin of the nomenclatural confusion.

A lectotype for *Helix iuloidea* Forbes, 1852 (now assigned to *Whitcochlea* Holcroft, 2018) is designated from the syntype material.

## MATERIAL AND METHODS

Two syntypes of *Helix iuloidea* Forbes, 1852 in the Natural History Museum, London were studied *in situ* and using images provided by Jonathan Ablett, Senior Curator in Charge of Mollusca, Natural History Museum, London. Historical literature was sourced from the library of the Queensland Museum.

**Abbreviations.** BMNH, British Museum of Natural History; MEQ, Mid-east Queensland; NHMUK, Natural History Museum, London.

## SYSTEMATICS

## Class GASTROPODA

## Order EUPULMONATA

## Superfamily PUNCTOIDEA

## Family CHAROPIDAE

*Whitcochlea* Holcroft, 2018***Whitcochlea iuloidea* (Forbes, 1852)**

(Figs 1, 2)

*Helix iuloidea* Forbes, 1852: 379, pl. 2, fig. 4; Cox, 1864: 13; Cox, 1868: 17, pl. 9, fig. 19; Shirley, 1921: 34.

*Helix juloidea* (Forbes): Reeve, 1854: pl. 207, sp. 1464; Hedley, 1888: 63; Cox & Hedley, 1912: 5 (*nomen nudum*: mis-spelling of species name).

*Charopa juloidea* (Forbes): Pilsbry, 1886: 209; Hedley & Musson, 1892: 553 (*nomen nudum* : mis-spelling of species name).

*Endodonta iuloidea* (Forbes): Pilsbry, 1894: 34; Cox, 1909: 38.

*Gyrocochlea iuloidea* (Forbes): Iredale, 1937: 323; Smith, 1992: 191; Stanisic *et al.*, 2010: 208, sp. 296 (in text).

*Whitcochlea iuloidea* (Forbes): Holcroft, 2018: 18, figs 2c, 3h, 9a-b.

**Material examined.** Lectotype. NHMUK1859.3.11.15/1, Port Molle (= Long Island), MEQ-herein designated.

**Paralectotype.** NHMUK1859.3.11.15/2, same data as the lectotype.

**Remarks.** Holcroft (2018) reviewed the *Gyrocochlea*-grade charopids from MEQ. A key finding of the study was that the species from MEQ classified as *Gyrocochlea* by earlier researchers (Hedley 1924, Iredale 1937, Stanisic 2010) were in fact not part of *Gyrocochlea sensu stricto* (type. *Helix vinitincta*, Cox, 1868) as restricted by Shea *et al.* (2012). These authors confined this genus, characterised by a beaded cancellate protoconch, to the Queensland/New South Wales Border Ranges. Using protoconch sculpture as a diagnostic generic feature, Holcroft (2018) erected a number of new genera to accommodate those species from the MEQ region previously assigned to *Gyrocochlea*. One of the species reviewed was *Helix iuloidea* Forbes, 1852 collected from Port Molle (= Long Island), MEQ by John Macgillivray on the voyage of the *H.M.S. Rattlesnake* in 1847 and lodged in the NHMUK. As part of Holcroft's review, attempts were made to locate two

syntypes of the species cited by Smith (1992) with museum registration details BMNH 1859.3.11.15. In spite of all reasonable efforts by NHMUK staff to locate these specimens the search was unsuccessful. Consequently Holcroft (2018) was reliant on the veracity of Smith's citation and assumed that the type specimens were simply misplaced and not lost or destroyed. Using topotypic material collected on Long Island, MEQ for study, *H. iuloidea* was designated as the type of the newly erected genus *Whitcochlea* Holcroft, 2018. No neotype was erected in the hope that the type material cited by Smith would eventually be located.

A trip to the United Kingdom in late 2019 provided an opportunity to visit the NHMUK and personally examine the type materials of the many Australian species lodged there in the 19<sup>th</sup> Century. By chance, and working from knowledge of a previous erroneous literature citation of the *H. iuloidea* as *H. juloidea*, the two syntypes were located under this name in the type collection. Significantly, *H. juloidea* was also on the original specimen label associated with the type material. The syntype specimens proved to be identical to the topotypic material used in Holcroft's (2018) study. This discovery provided the opportunity to formally designate a lectotype for the species and avert the need for a neotype to be erected in the future.

However, from an historical perspective it is also informative to track the convoluted taxonomic journey of these species names through time and document the various usages of *iuloidea* and *juloidea*.

The name published with the original description in the narrative of the voyage of the *H.M.S. Rattlesnake* (1852, p. 379) was *Helix iuloidea*. However, shortly after this publication Lovell Reeve (1854) published his seventh volume of the *Conchologia Iconica* in which he monographed the genus *Helix*. He listed this species as *Helix juloidea* which represents the first usage of this erroneous name (Plate 207, sp. 1464) and also gave the wrong authorship in the index as British Museum, Keeper of the Zoological Collections, John Gray. Reeve in his



FIG. 1. Lectotype of *Helix iuloidea* Forbes, 1852. NHMUK59.3.11.15/1.

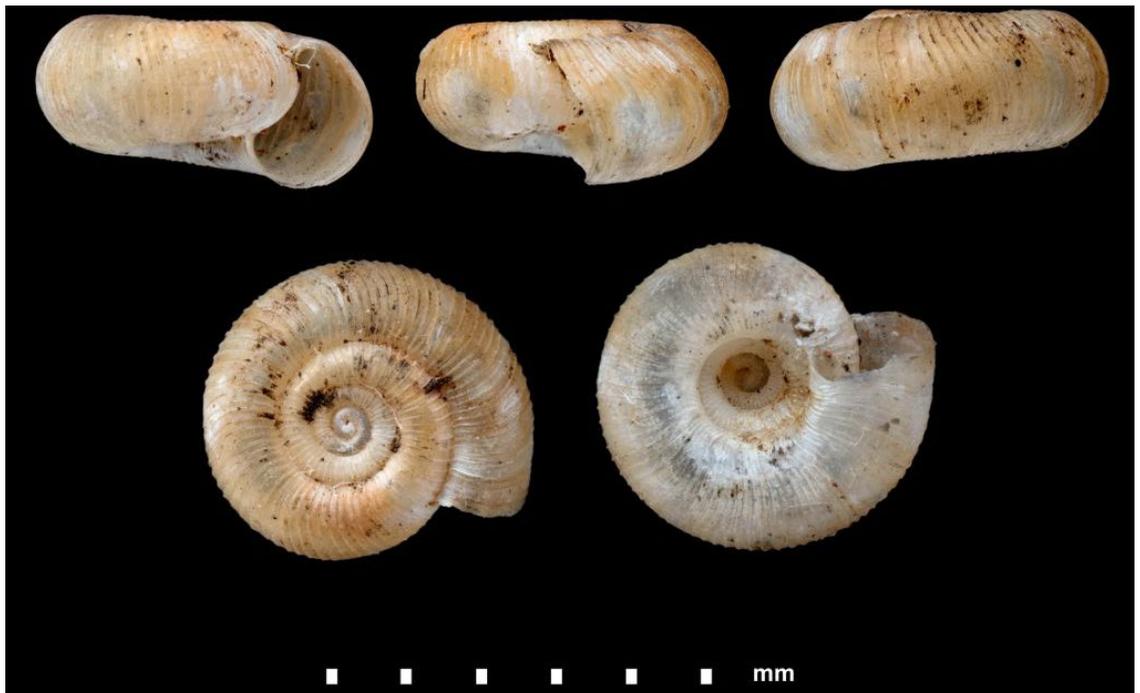


FIG. 2. Paralectotype of *Helix iuloidea* Forbes, 1852. NHMUK59.3.11.15/2.



FIG. 3. Label on specimen box in NHM showing *Helix juloidea* Forbes.

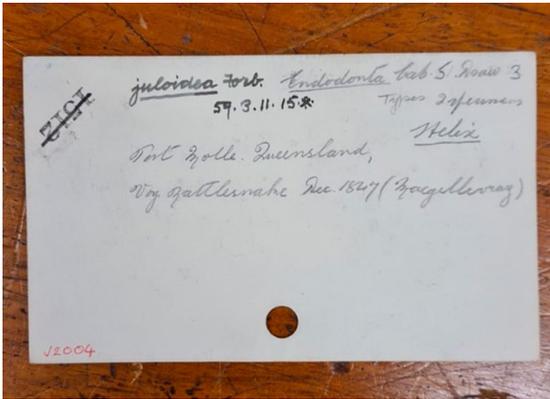


FIG. 4. Type catalogue card showing *Helix juloidea* Forbes.

compilation, illustrated a shell of *H. iuloidea* and recorded the name which was on the museum specimens, that being *H. juloidea*. Hereafter, the name trail takes a number of twists. Henry Pilsbry's second volume of the *Manual of Conchology* (1886, p. 209) lists the species as *Charopa juloidea*, but in the ninth volume of the manual (1894, p. 34) correctly cites *Endodonta iuloidea*. Later, in volume 10 of the manual (1895) that contains the definitive index to the helices cited in the preceding volumes, Pilsbry mystifyingly gives references to both *H. iuloidea* (p. 54) and *H. juloidea* (p. 55) as appearing in volume 2 (1886, p. 209) and volume 9 (1894, p. 34). Somewhat confusing to say the least!

In the Australian literature of the late 19<sup>th</sup> and early 20<sup>th</sup> centuries both names appear. Charles Hedley (1888) in 'A list of land shells recorded from Queensland' cites *H. juloidea*. He was evidently following Reeve's *Conchologia Iconica* as this reference is cited in the synonymy of the species. Tryon (1888) similarly cites *H. juloidea*. Later, in Hedley & Musson (1892), Hedley uses the name *Charopa iuloidea*. Then in a joint paper with William Petterd on Tasmanian land snails (Petterd & Hedley 1909) again refers to *H. iuloidea* in the text. Meanwhile James Cox, who produced Australia's first monograph of land

59. 3. 11	1	<i>Pupina grandis</i> Forbes	specimen fig. in Zool. Proc.	
	2	"	"	
	3	<i>Helix Franklandiensis</i> Forbes	(fig. specimen)	Lizard Island Frankland Island
	4	"	"	
	5	<i>Nanella pulchella</i> Forbes	(fig. specimen)	
	6	<i>Cylinodrella</i> ?	"	
	7	<i>Helix Dunkiensis</i> Forbes	"	Dunk Island
	8	<i>Pupina Thompsoni</i> "	"	Fitzroy Island
	9	" <i>bilinguis</i> "	"	Cape York
	10	<i>Helicina Gouldiana</i> "	"	Cape Flattery
	11	" <i>Stanleyi</i> "	"	St. Duchateau, Louisiana Archipelago
	12	<i>Helix ptychomphala</i> Pfeiff. (= <i>intermissa</i> , Forbes?)		Cape Napier
	13	" (= <i>intermissa</i> , var. Forbes?)		Port Moller
	14	<i>Pupa pacifica</i> "		Sunday Island
	15	<i>Helix iuloidea</i>		Australia
	16	<i>Gastrochus</i> ( <i>Helix</i> )	on trees	Night Island
	17	<i>Macjillivrayia</i>	trailing net	off coast of New S. Wales
	18	<i>St. ...</i>		

FIG. 5. Official NHM register showing *Helix iuloidea* entry.

shells, makes references to *Helix iuloidea* (1864, 1868) and *Endodonta iuloidea* (1909). However, in a subsequent joint paper with Hedley (Cox & Hedley 1912), Cox defers to *Endodonta juloidea*. Fortunately, all subsequent citations in the Australian literature have correctly been listed as *iuloidea* (Shirley 1921, Iredale 1937, Smith 1992, Stanisic *et al.* 2010, Holcroft 2018) albeit in various generic associations (*Helix*, *Gyrocochlea*, *Whitcochlea*).

So what was the cause of this nomenclatural misunderstanding? The remarks accompanying the description of *H. iuloidea* by Forbes states:

‘This curious little snail, resembling a rolled-up *Iulus*’...

...a generic epithet alluding to some look-alike creature in the animal kingdom. A search of the historical literature revealed that this name was not available as a taxonomic appellation at the time of Forbes’ description. *Iulus* was only introduced as a valid genus name in zoological nomenclature sometime later (Wollaston 1878). Forbes in his description was almost certainly referring to a rolled-up species of millipede in the genus *Iulus* to which the shell of this snail genuinely bears a resemblance. It is inconceivable that as a taxonomist of the time, Forbes would have mis-spelt or mistaken the name of the millipede genus *Iulus* as *Iulus*. So where did the name *Iulus* (derived from a character in Greek mythology), come from in 1852 when it was not in the nomenclatural lexicon of the time. We can only surmise, but most likely the mistake was made in the typesetting process and overlooked in the proof-reading process. The typesetter in the offices of the printer (T. & W. Boone, London) in translating Forbes’ hand written manuscript, could certainly have interpreted a ‘J’ as an ‘I’, especially given the flowery styles of handwriting at the time. This would seem to be the only logical explanation.

That *H. juloidea* was Forbes’ intent for the name of the species is supported by the name *H. iuloidea* being on the original specimen label and accompanying museum type catalogue card (Figs 3, 4). Subsequently, *Helix iuloidea* was the name recorded in the museum’s official register when the specimen was eventually

accessioned from the Admiralty in 1859 (Fig. 5). This name would presumably have been taken from the voyage narrative rather than from the specimen label.

However, regardless of Forbes’ intent for the name, *Helix iuloidea* remains valid while *H. juloidea*, following a brief literary epiphany, endures taxonomic obscurity. A fascinating story of what can happen in the complex world of taxonomic publication, but one that highlights the importance of carefully proofing drafts of a typeset manuscript.

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