A new species of *Nannamoria* (Gastropoda, Volutidae) endemic to northern Queensland's continental shelf: Reassessing the scope of the genus in relation to *Notovoluta*

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urn:lsid:zoobank.org:pub:84956056-DA96-49B1-84DC-D98D00473EE8

https://doi.org/10.17082/wvoa3309

Citation: Healy, J.M., Potter, D.G. & Wilson, N.G. (2026). A new species of *Nannamoria* (Gastropoda, Volutidae) endemic to northern Queensland's continental shelf: Reassessing the scope of the genus in relation to *Notovoluta*. *Memoirs of the Queensland Museum* | *Nature* 67: 11–24. Brisbane ISSN 2204-1478 (Online), ISSN 0079-8835 (Print). Accepted: 2 February 2026. Published online: 19 February 2026.

Keywords:
deep water | endemic marine snails | radula | CIDARIS I expedition | taxonomy | new species.

ABSTRACT

Nannamoria cidaris sp. nov. (Gastropoda, Volutidae) is described based on specimens collected during the CIDARIS I expedition on the continental shelf off northern Queensland. The species appears to be congeneric with *Nannamoria hoskensae* (Poppe, 1992) here transferred from *Notovoluta*. Diagnostic characters of both genera are elucidated (based on the living species), including shell and soft part morphology and radula for *N. cidaris* sp. nov.

The CIDARIS expeditions to the outer continental shelf and slope off central and northern Queensland (1986, 1988 and 1992: Pichon et al. 1986) produced large, diverse and taxonomically important collections of benthic invertebrates (Jones 1992, Baba 1994, Lemaitre 1996, Lamprell & Healy 1998, Castro & Davie 2003, Ahyong 2012, Ekins et al. 2021, Adlard 2023). Among this material, held by the Queensland Museum, is a small number of lots from the gastropod family Volutidae taken at a depth range of 458–503 m but not yet identified. Volutes are unusual among marine gastropods in that all living species are known or likely direct developers (no free-swimming, planktotrophic stage), with the result that they are subject to often marked regional variation and therefore possible speciation (Darragh & Ponder 1998). In the Great Barrier Reef complex and surrounding waters, where populations can be separated by large distances, differing sea bottom topography and often deep water, the potential for speciation is further enhanced. In the present account we describe a new species of *Nannamoria* Iredale, 1929 collected during the first CIDARIS expedition (1986). This species has previously been confused in the literature (Wilson, 1994) with *Notovoluta hoskensae* Poppe, 1992 (herein = *Nannamoria hoskensae* (Poppe, 1992) new combination) taken by commercial fishing trawlers operating to the south of the Swain Reefs in the Capricorn Channel. The new species is discussed and contrasted with other species of *Nannamoria* and *Notovoluta*.

MATERIALS AND METHODS

All material examined was collected during the CIDARIS I expedition (1986) by staff of the CSIRO Research Vessel ‘Franklin’ in May at two sampling sites using sledge gear and operating in a depth range of 458–503 m. The exact method of initial preservation is unknown but judging from the slight surface-whitening of the shells (when dry) and firmness of enclosed animals, neutral-buffered formalin was likely used as a primary fixative before eventual transfer to 70% ethanol for storage. In all specimens the animals had retracted well into the shell aperture, preventing simple extraction using tools (attempted using a range of dental hooks and probes). One adult (paratype 5, QMMO 18011.d) and one juvenile (paratype 22, QMMO 18011.t) were removed from their shells (using a vice) to observe general body features and for scanning electron microscopy (SEM) of radular teeth. The radula of the juvenile was extracted by removing the head and digestion in a 5% sodium hydroxide solution, before being cleaned with distilled water, dried, mounted on a metal stub then sputter-coated with gold before being examined with a Jeol scanning electron microscope. Radulae of *Nannamoria amicula* Iredale, 1929 (from AM C. 94314.001, 10 km east of Long Bay, NSW), *Nannamoria* cf. *inopinata* Darragh, 1979 (from QMMO 86249) and *Notovoluta kreuslerae* (Angas, 1865) (from SAM D18403 Temp number; Marum Island, Sir Joseph Banks Group, South Australia) were also examined (*Nannamoria amicula* using a Jeol SEM, *Nannamoria* cf. *inopinata* and *Notovoluta kreuslerae* using a Hitachi TM-1000 Tabletop SEM). Samples of foot tissue were also processed for molecular analysis but this proved unsuccessful, probably due to initial and prolonged (since 1986) fixation in formalin.

ABBREVIATIONS

AM C: Australian Museum molluscan collection (Sydney, New South Wales), *MEQ:* Mid-east Queensland, *NSW:* New South Wales, *NTM P:* Museum and Art Gallery of the Northern Territory molluscan collection, *QLD:* Queensland, *QMMO:* Queensland Museum molluscan collection (Brisbane, Queensland), *RC:* Reserve Collection (dry shell collection), *SA:* South Australia, *SAM:* South

Australian Museum, Adelaide, *SC:* Spirit Collection, *SEM:* scanning electron microscope/microscopy, *SEQ:* south-east Queensland.

SYSTEMATICS

Class GASTROPODA Cuvier, 1795

Order NEOGASTROPODA Wenz, 1938

Family VOLUTIDAE Rafinesque, 1815

Subfamily AMORIINAE J.E. Gray, 1857

Genus *Nannamoria* Iredale, 1929

Type species: *Nannamoria amicula* Iredale, 1929 (by original designation)

Nannamoria cidaris sp. nov.

(Figs 1–7, Tables 1 and 2)

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Syonymy: '*Notovoluta hoskensae* Poppe, 1992', Wilson, 1994: 115–116 and 276 (misidentification, non *Notovoluta hoskensae* Poppe, 1992, here = *Nannamoria hoskensae* (Poppe, 1992))

Material examined: HOLOTYPE: (adult) QMMO 17630 (in RC), CIDARIS I station 43.2, 17° 34.58'S, 146° 53.21'E (90 km east of Kurrimine Beach, northern Queensland), depth 458–500 m, 15 May, 1986 (sledge gear). PARATYPES: (1) (adult) QMMO 86078 (in SC) ex CIDARIS I station 43.2, 17° 34.58'S,

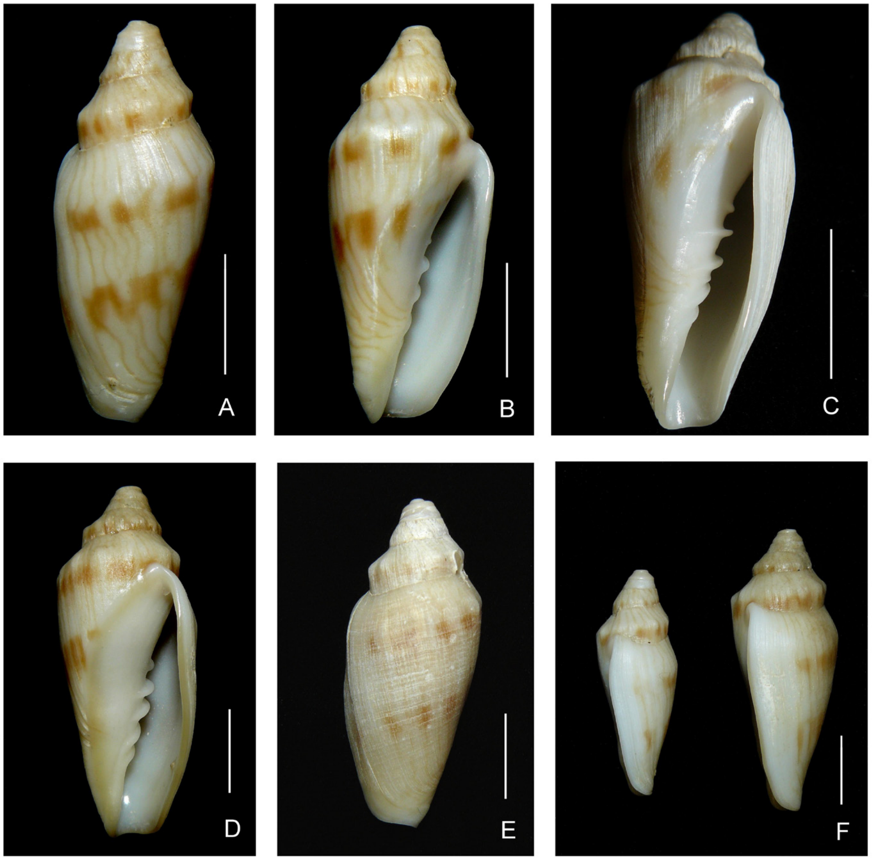

Figure 1. *Nannamora cidaris* sp. nov. **A:** Dorsal view of holotype (QMMO 17630). **B:** Ventral view of holotype. **C:** Tilted ventral view of holotype showing four primary columellar plaits with smaller secondary plaits. **D:** Paratype 2 (QMMO 18011.a), ventral view. Note small secondary plait and thick parietal glaze (olive-yellow tinted at edges). **E:** Paratype 3 (QMMO 18011.b), dorsal view showing fine spiral surface sculpture. **F:** Lateral view of holotype (left) and paratype 2 (right) showing anterior extension of aperture. All scale bars = 10 mm.

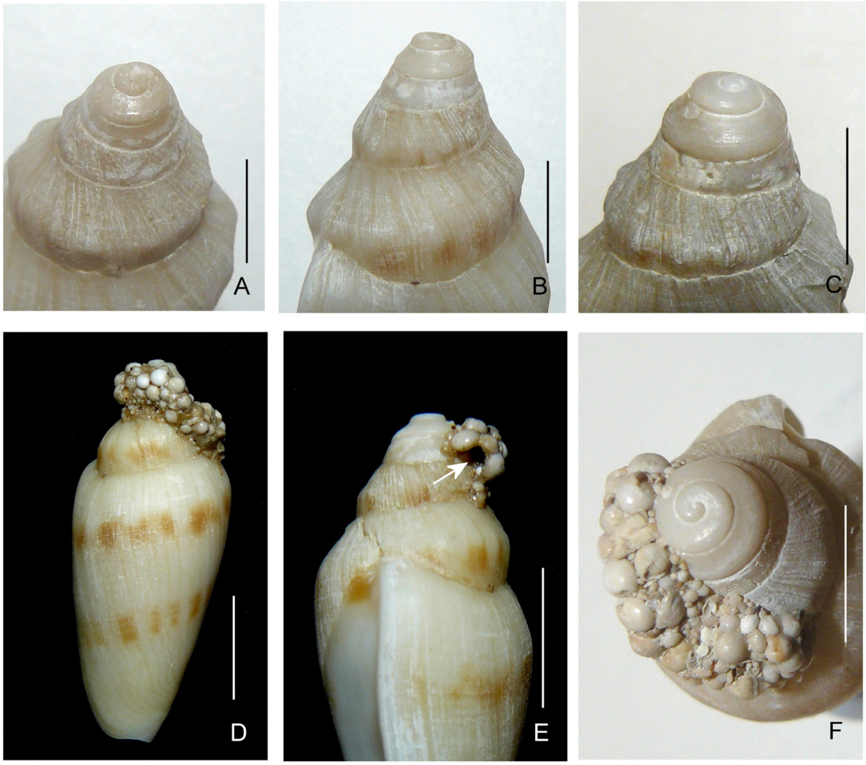

Figure 2. *Nannamoria cidaris* sp. nov. **A–B:** Two views of protoconch of holotype (QMMO 17630). **C:** Protoconch of subadult (paratype 13, QMMO 18011.k) showing faint spiral ridges. **D–F:** Hollow accretion, presumably of polychaete construction, attached to spire of paratype 7 (QMMO 18011f) and consisting of cemented foraminiferan tests, shell pieces and sand particles. **E:** Aperture of accretion. Scale bars A–C, F = 5 mm; D–E = 10 mm

146° 53.21'E (90 km east of Kurrimine Beach, northern Queensland), depth 458–500 m, 15 May, 1986 (sledge gear); (paratypes 2–11 (adults), 12–22 (juveniles)) all QMMO 18011 except paratype 9, NTM P.66497 in SC), (paratype 2 in RC, paratypes 3–8, 10–22 in SC) CIDARIS I station 47.2, 17° 51.76'S, 147° 07.95'E (90 km east of Kurrimine Beach, northern Queensland), depth 497–503 m, 16 May, 1986 (sledge gear).

Etymology: Named for the CIDARIS I expedition (1986), during which the material for this species was collected. The specific name is intended as a noun in apposition.

Description: Shell small (length range of adults 33.1–43.8 mm) solid, fusiform. Protoconch broad (maximum diameter 4.6 mm) with a depressed nucleus, two and a half glossy angulate whorls of low pitch showing sculpture of 6–8 low, spiral ridges. Teleoconch of approximately three and a half whorls, featuring a prominent row of low nodules on spire and on shoulder of first half of body whorl, thereafter becoming obsolete (count on body whorl — typically 7–9, occasionally up to 13 or (rarely) absent). Spire stepped, short in comparison to shell length; spire angle 55–60°; body whorl surface with microscopically fine, spiral striae (in uneroded specimens, especially subsuturally), and axial growth lines often coalescing into irregular, low ridges. Columella bearing four thick, primary plaits, increasing in strength from anterior to posterior, accompanied by a vestigial secondary plait arising posteriorly and/or between the two anterior-most primary plaits; aperture long (at least two-thirds length of the shell), narrow, with outer lip thick, slightly sinuate, and slightly projecting over previous whorl posteriorly. Parietal area of body whorl exhibiting translucent white glaze, which is thickest and olive-tinged at edge in very mature shells; siphonal notch broad but very shallow; anal notch and anterior fasciole weakly developed. Protoconch colour off-white to grey. Teleoconch base colour off-white, overlain with numerous (25–38 on body whorl) fine, meandering, light brown, axial stripes intersected by two light brown, spiral bands of blotches (one band at shoulder, one band on lower half of the body whorl); patterning becoming obsolete on latter part of body whorl approaching outer lip. Aperture translucent white, highly glazed, with outer lip edge tinted olive-yellow in very mature specimens. Preserved animal with pale red head-foot; observed undamaged cephalic tentacle with small eye (brown-mauve in colour) on separate lobe at base of tentacle; siphon well developed and flanked by a pair of equal-sized, oblong siphonal appendages (Figs 3C–D). Internally, paired tubular salivary glands short and occur anterior to paired elongate racemose (accessory salivary) glands. Radula ribbon uniserial, composed of (in juvenile examined) approximately 57 tricuspidate rachidian teeth; each tooth with arched base from which arise dagger-like cusps; central cusp noticeably

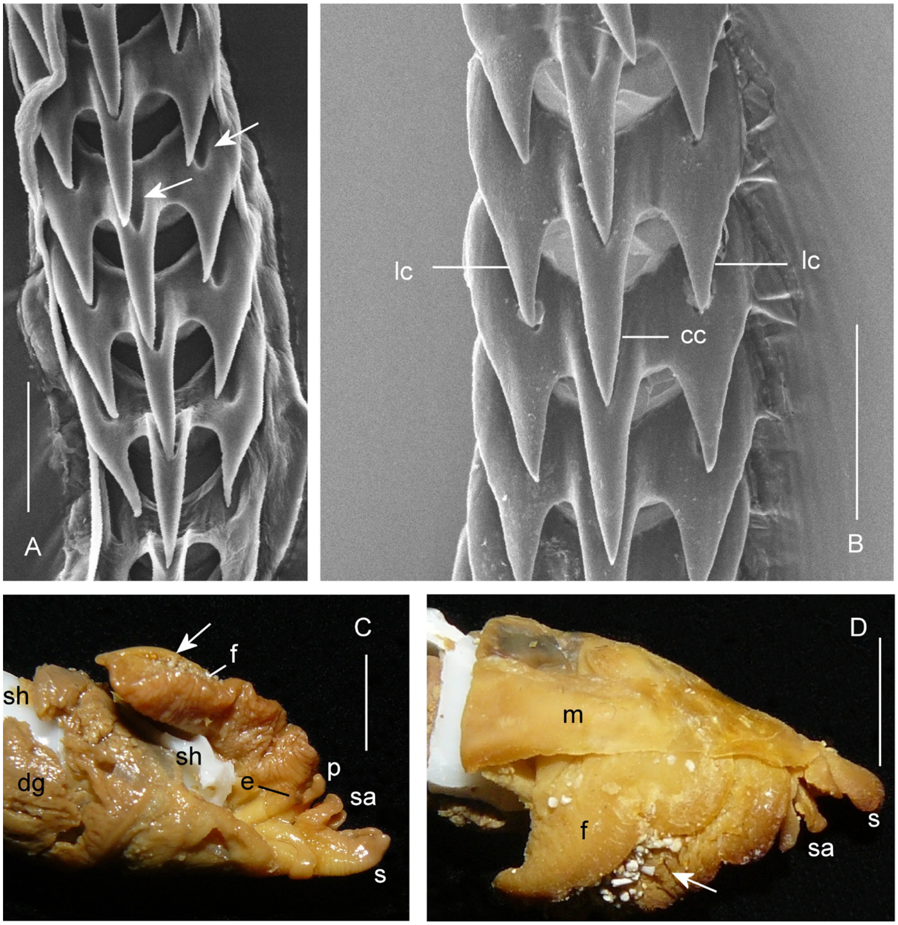

Figure 3. *Nannamoria cidaris* sp. nov. **A–B:** SEM micrographs of portion of radular ribbon from paratype 22 (QMMO 18011.t, juvenile 32 mm length) showing tricuspidate rachidian teeth, each with arched basal edge, and central cusp (**cc**) markedly longer than lateral cusps (**lc**). Note pointed depressions in each tooth to accommodate tips of preceding tooth (arrows). **C–D:** Two views of extracted animal from paratype 5 (QMMO 18011.d), showing digestive gland (**dg**), eye (**e**), foot (**f**), mantle (**m**), proboscis (**p**), siphon (**s**), siphonal appendages (**sa**), columellar portion of shell (**sh**) Underside of the foot has shell pieces and foraminiferan tests attached (arrow). Scale bars: A–B = 50 µm; C–D = 5 mm.

Figure 4. Map showing known distributions of *Nannamoria cidaris* sp. nov. (large square) and *N. hoskensae* Poppe, 1992 (large circle). Small squares indicate cities.

longer than lateral cusps; cusp tips each partially accommodated in groove of preceding tooth (Fig. 3A–B).

Type locality: 90 km east of Kurrimine Beach, northern Queensland, Australia, CIDARIS I station 43.2, 17° 34.58’S, 146° 53.21’E, 458–500m (1986 CIDARIS I expedition).

Diagnosis and comparisons: The species differs from other living *Nannamoria* by its very shallow siphonal notch, coarser primary columellar plaits (associated with fewer secondary plaits) and comparatively rough surface showing microscopically fine spiral grooves. The shell shape of *N. cidaris* sp. nov. is similar to *N. ranya*, although the two species differ markedly in the size and number of columellar plaits and surface sculpture (Willan 1995). *Nannamoria cidaris* sp. nov. differs from *N. hoskensae* (Poppe, 1992) by its much smaller size, lower spire and absence of a flared and strongly recurved outer lip. *Nannamoria hoskensae* has yet to be collected alive: all known specimens are dead and eroded (including the one we examined, QMMO 86079, Fig 6A–C). Of interest here is that Bail & Poppe (2001) had previously questioned the original assignment of *Notovoluta hoskensae* to *Notovoluta*. Although the protoconch of *Nannamoria cidaris* sp. nov. differs in size and shape from a number of other species of *Nannamoria* (*N. amicula*, *N. parabola* and *N. gotoi* all have conical protoconchs) it is similar to some of the larger species, such as *N. inopinata* and *N. bulbosa*, with more flattened whorls (Darragh 1979, Bail & Limpus 2008) and apparently *N. hoskensae* (requiring better preserved specimens).

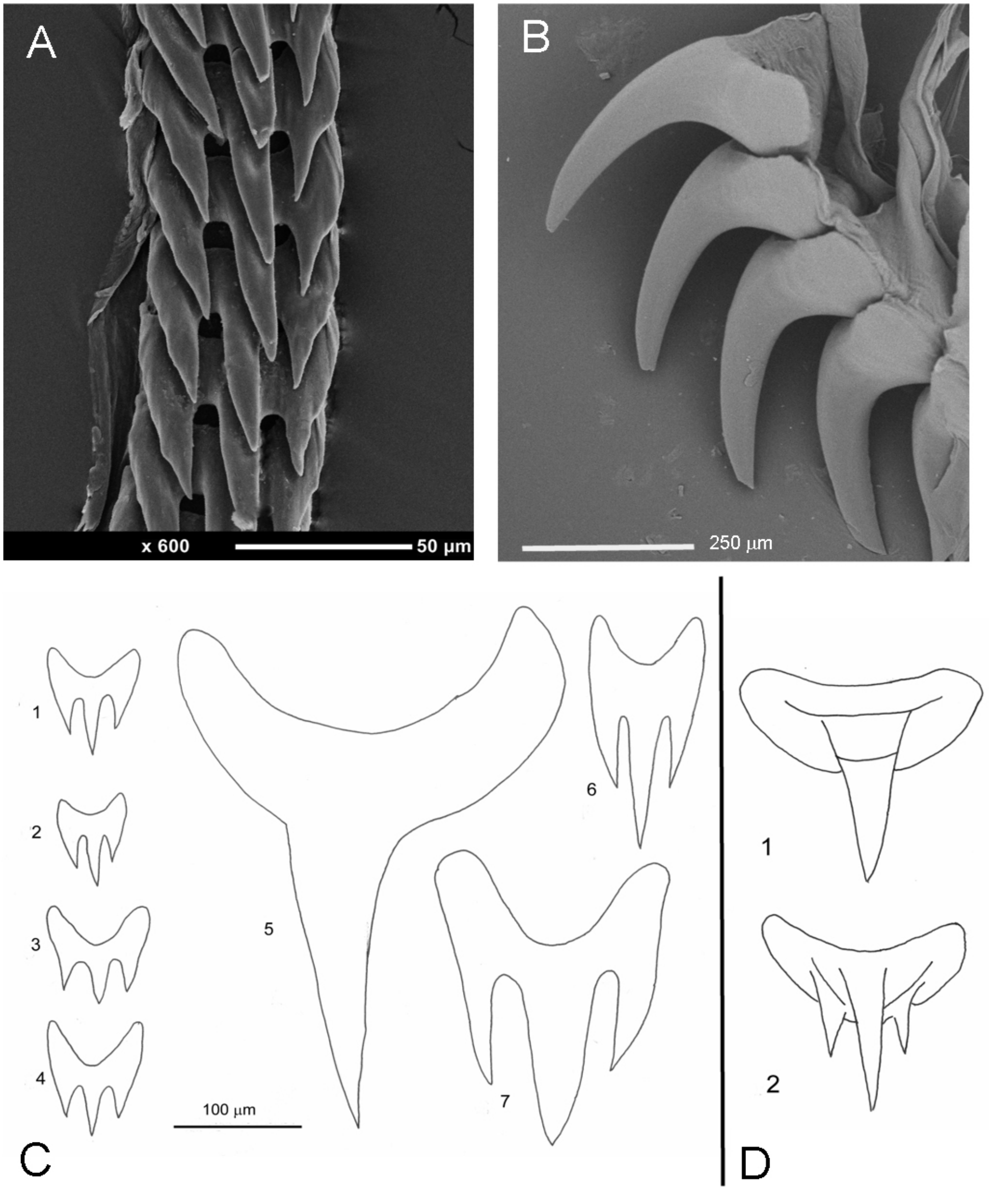

Figure 5. A: SEM of radula portion from *Nannamoria amicula* Iredale, 1929 (from AM C. 94314.001). **B:** SEM of radula portion from *Notovoluta kreuslerae* (Angas, 1865) (from SAM D18403). **C:** Comparative profiles of rachidian teeth from representative *Nannamoria* and *Notovoluta*. **1.** *Nannamoria cidaris* sp. nov. (from paratype 22, QMMO 18011.t). **2.** *Nannamoria amicula* (type species of *Nannamoria* Iredale, 1929) (from AM C. 94314.001). **3.** *Nannamoria inopinata* Darragh, 1979 **4.** *Nannamoria* cf. *inopinata* (from QMMO 86249). **5.** *Notovoluta kreuslerae* (type species of *Notovoluta* Cotton, 1946) (from SAM D18403). **6.** *Notovoluta verconis* (Tate, 1892). **7.** *Notovoluta gardneri* Darragh, 1983. 1, 2, 4 and 5 from present study, 3 redrawn from Darragh (1979), 6 drawn from light microscopic slide image courtesy T. Darragh (Museums Victoria), 7 redrawn from Darragh (1983). **D:** Radulae illustrations, redrawn from Cooke (1922): **1.** '*Voluta papillosa*' (likely a depiction of rachidian *Notovoluta kreuslerae* rachidian; **2.** '*Voluta verconis*' (= *Notovoluta verconis*) note differences to Fig 5C: 6.

Figure 6. A: Comparison between *Nannamoria cidaris* sp. nov. and *N. hoskensae* (left to right: *N. cidaris* sp. nov. holotype (QMMO 17630), paratype 2 (QMMO 18011.a) and *N. hoskensae* (Poppe, 1992) specimen (QMMO 86079, 366 m, trawled off Swain Reefs). **B:** Apertural view of *N. hoskensae* specimen showing thick plaits, posterior callus. **C:** Lateral view of *N. hoskensae* showing flared outer lip with strong posterior projection along spire. **D–E:** Dorsal and ventral views of juveniles of *N. cidaris* sp. nov. (left to right: paratypes 14–16, QMMO 18011.l–n). **F:** *Notovoluta gardneri* Darragh, 1983 adult (QMMO 80209, trawled off Swain Reefs) showing six columellar plaits and thick parietal glaze (tinged with olive-yellow at edges). **G:** Comparison of *Nannamoria cidaris* sp. nov. (paratype 10, QMMO 18011.h) with similar-sized specimens of *Nannamoria parabola* Garrard, 1960 and *Nannamoria gotoi curta* Bail & Limpus, 2008. **H:** Comparison of juvenile *Nannamoria cidaris* sp. nov. (paratype 19, QMMO 18011.q) with juvenile *Nannamoria inflata* Bail & Limpus, 2008 (dredged 503–504 m, east of Kurrimine Beach; QMMO 17968) and *Nannamoria parabola* Garrard, 1960 (trawled 180 m, off Cape Moreton, SEQ, QMMO 80788). All scale bars = 20 mm.

Distribution: Presently only known from the two CIDARIS I sampled sites (depth range 458–503 m) on the continental shelf, 90 km off Kurrimine Beach, northern Queensland (Fig. 4).

Habitat: The foot of the adult extracted from its shell (paratype 5, QMMO 18011.d) has a deposit of foraminiferan tests and molluscan shell fragments (pteropod and scaphopod) loosely adhering to its underside (Fig. 3C–D). In addition, paratypes 4 and 7 (QMMO 18011.c, QMMO 18011.f) have an oblong conglomeration of foraminiferan tests, molluscan shell fragments and sand particles cemented to the spire and body whorl (Fig. 2D–F). The presence of one or more openings deep into these conglomerations indicates that they have been produced as shelters, most likely by polychaetes. Occasional polychaete (calcareous) tubes, balanomorph barnacles (with animals) and possible solitary coral bases were variously observed in some of the adults and in one juvenile. Collectively, these observations suggest that *Nannamoria cidaris* sp. nov. lives on a firm sediment composed largely of foraminiferan tests, shell fragments and sand. Given the presence of epibionts and external shell wear, it likely spends most time on the surface rather than below it.

Comments on the type series: We believe the type series is a good representation of the species, including juveniles (specimens with thin outer lip), subadults (specimens with outer lip defined but still thin) and adults (specimens with thickened outer lip and parietal glaze — Fig. 1B–D). Variation in adult size is noticeable (33.1–43.8 mm), but it cannot be concluded whether this is due to natural variation or some degree of underlying sexual dimorphism, as access to animals would have necessitated destroying the shells of every adult in the series. Maturity is accompanied by marked thickening of the outer lip and edge of the parietal glaze, and in

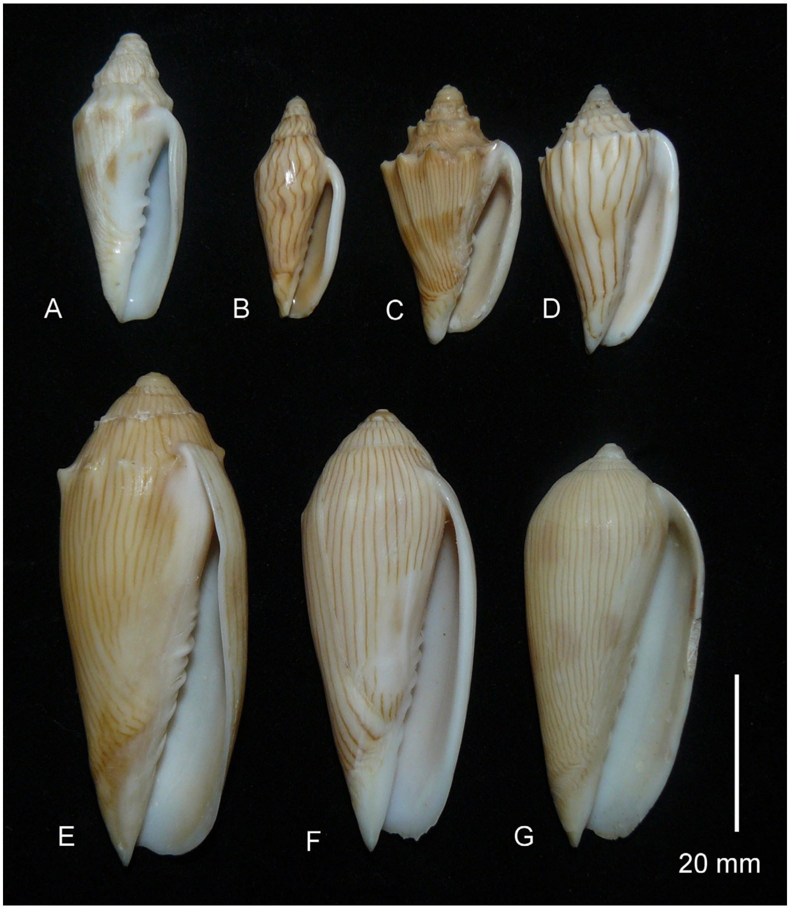

Figure 7. Comparison of various *Nannamoria* species demonstrating diversity in shell morphology. **A:** *Nannamoria cidaris* sp. nov. (holotype QMMO 17630). **B:** *N. amicula* Iredale, 1929 (type species of *Nannamoria*) (AM C.161670, 10 km east of Long Bay, NSW, 86 m). **C:** *N. parabola* Garrard, 1960 (QMMO 86081, north-east of Cape Moreton, SEQ, 175 m. **D:** *N. gotoi* Poppe, 1992 (QMMO 86082, Capricorn Channel, MEQ, 183 m). **E:** *N. inopinata* Darragh, 1979 (east of Lady Musgrave Island, MEQ, 256 m, Whitehead Collection). **F:** *N.* cf. *inopinata* Darragh, 1979 (QMMO 86249, north-east of Hixson Cay, MEQ, 250 m). **G:** *N. inflata* Bail & Limpus, 2008 (QMMO 86185, north-east of Heron Island, MEQ, 293 m).

Specimen designation	Registration number	Shell length (in mm)	Aperture length (in mm)	Maximum shell width (in mm)
Holotype	QMM0 17630	35.3	23.5	14.7
Paratype 1	QMMO 86078	33.1	22.6	14.2
Paratype 2	QMMO.18011.a	43.8	32.0	19.1
Paratype 3	QMMO.18011.b	39.8	29.6	17.7
Paratype 4	QMMO.18011.c	38.7	27.0	16.1
Paratype 5	QMMO.18011.d	36.2	26.0	16.5
Paratype 6	QMMO.18011.e	35.2	26.5	15.5
Paratype 7	QMMO.18011.f	36.3	26.8	15.7
Paratype 8	QMMO.18011.g	36.6	25.2	16.3
Paratype 9	NTM P.66497	35.0	24.6	15.2
Paratype 10	QMMO.18011.h	35.1	23.2	15.8
Paratype 11	QMMO.18011.i	33.8	23.4	15.5

Table 1. Dimensions of adult specimens: type series

individuals that are likely the oldest, the defining outer edges of both these structures are tinged with olive-yellow (Fig. 1D) We have noted the same olive-yellow colouring in some *Notovoluta gardneri* Darragh, 1983 (Fig. 6F) and in some *Nannamoria bulbosa* (Bail & Limpus 2008). The surfaces of many adults show evidence of erosion, which is here attributed to natural wear (chemical and physical). In terms of shell colour pattern, the type series is consistent albeit with some variation in the number of axial brown lines and the extent and fusion of the blotches making up the two brown bands. Regarding the columellar plaits, it is interesting to note that a small secondary plait occurs posteriorly to the four large primary plaits in 10 out of the 12 adults in the series. Similarly, the presence of a secondary plait (or two) between the two most anterior primary plaits was observed in only six of the 12 adults and in none of juveniles (which only show the four primary plaits, Fig. 6E, H).

DISCUSSION

This species was first recorded in the literature under the name '*Notovoluta hoskensae* Poppe, 1992' by Wilson (1994). Although his colour photograph is undoubtedly our *Nannamoria cidaris* sp. nov., his text summary of features largely reflects Poppe's original description of *Notovoluta hoskensae*, which is demonstrably a different species (and has been here transferred to *Nannamoria*). From his comment that 'The Museum of Tropical Qld has recently taken live specimens off Townsville' (Wilson 1994, p. 116) it is likely that he had seen the CIDARIS I material of *Nannamoria cidaris* sp. nov. (collected 1986). However, the CIDARIS I material was collected approximately 250 km north of Townsville, not 'off Townsville', and neither of Wilson's illustrated specimens exactly matches any of those examined by us. Wilson had evidently accepted a high degree of variation in *Nannamoria hoskensae*, but the comprehensive type series of *N. cidaris* sp. nov. (comprising 12 adults, 2 subadults and 9 juveniles) clearly demonstrates that the new species is consistent in its form and colour pattern, not a distant northern population of *N. hoskensae*. *Nannamoria hoskensae* is recorded from south of the Swain Reefs (Poppe 1992, Poppe & Goto 1992), whereas *N. cidaris* sp. nov. is currently only known from two sampling sites from the CIDARIS I expedition some 650 km distant from locality records for *N. hoskensae*. In addition, *N. hoskensae* has yet to be taken alive: all specimens, including the one held in the Queensland Museum (QMMO 86079), are dead and usually have variously eroded shells (Gomersall 1986, Poppe 1992, Poppe & Goto 1992, Fig. 6 A–C). Only further collecting will establish whether the species is still extant.

Specimen designation	**Registration number**	**Shell length (in mm)**	**Aperture length (in mm)**	**Maximum shell width (in mm)**
Paratype 12*	QMMO.18011.j	38.2	27.1	16.4
Paratype 13*	QMMO.18011.k	35.3	25.9	15.0
Paratype 14	QMMO.18011.l	34.6	23.3	15.3
Paratype 15	QMMO.18011.m	29.9	20.2	14.9
Paratype 16	QMMO.18011.n	29.1	19.3	14.1
Paratype 17	QMMO.18011.o	29.6	20.4	13.8
Paratype 18	QMMO.18011.p	27.2	19.1	12.2
Paratype 19	QMMO.18011.q	26.2	17.2	12.0
Paratype 20	QMMO.18011.r	25.2	17.3	12.9
Paratype 21	QMMO.18011.s	19.2	13.6	9.9
Paratype 22	QMMO.18011.t	32.0	20.0	14.0

Table 2. Dimensions of subadult (*) and juvenile specimens: type series

Although we had initially considered including *Nannamoria cidaris* sp. nov. within *Notovoluta* Cotton, 1946 (type species: *Notovoluta kreuslerae* Angas, 1865), a careful overview of the shell features and known anatomy overwhelmingly favoured its placement in *Nannamoria* Iredale, 1929 (type species: *Nannamoria amicula* Iredale, 1929). Certainly, the features given by Iredale for *Nannamoria amicula* (introduced as 'gen et sp. nov.') — small shell size, axial lines colour pattern, shoulder nodules, narrow aperture with thick lip and small and large columellar plaits — accord better with features of *N. cidaris* sp. nov. than those cited by Cotton for *Notovoluta* (an elongate shell with turreted spire and axial plications and only four columellar plaits). The tent patterning of *Notovoluta kreuslerae*, shared with most other *Notovoluta* species (Darragh 1983, Limpus 1988, Bail & Limpus 2005, 2015) was not mentioned by Cotton. Significantly, all living *Nannamoria* (and *N. hoskensae*) exhibit fine axial lines and not the tent patterning seen in *Notovoluta* (Iredale 1929, Garrard 1960, Darragh 1979, Gomersall 1986, Poppe 1992, Willan 1995, Bail & Limpus 2008, Fig. 7). *Notovoluta* and *Nannamoria* have both been re-diagnosed several times since their introduction (Weaver & duPont 1970, Wilson 1994, Darragh 1989, Willan 1995, Bail & Limpus 2008) and there is consensus that the two genera can be reliably distinguished from each other. Radular morphology of *Nannamoria* species that have been examined to date (including the type species of *N. amicula*) is highly consistent in tooth size and shape and very different from that seen in *Notovoluta kreuslerae* (type species of *Notovoluta*), *Notovoluta verconis* (Tate, 1892) and to a lesser degree *Notovoluta gardneri* (Figs. 5A–C). Darragh (1989, p. 217) has referred to the *Notovoluta radula* as 'somewhat fanglike and therefore quite unlike the radulae of most Australian volutes'. However, the major radular differences between *Notovoluta kreuslerae*, *N. verconis* and *N. gardneri* raises an interesting question regarding the taxonomic homogeneity of the genus unless one invokes a structural transition (as seen in *Scaphella*, Pilsbry & Olsson 1954, Clench & Turner 1964; for summary and comparative figures, see Bondarev, 1995). The huge, single cusp rachidian of *Notovoluta kreuslerae* is remarkable and invites further investigation to determine the exact prey of this species. Cooke (1922) illustrates a very similar tooth that he states came from '*Voluta papillosa*' (= *Ericusa papillosa* Swainson, 1822) (Fig 5D 1.) but almost certainly is the first record of the radula of *Notovoluta kreuslerae*. Interestingly, Weaver & duPont (1970) had previously rejected Cooke's result as an error in identification (although not suggesting the tooth depicted was from *Notovoluta kreuslerae*). Similarly, Cooke's illustration of the rachidian of *Notovoluta verconis* (Fig 5D 2.) differs substantially from reality (Fig. 5C 6.), casting doubt on the species he actually examined.

In contrast to Darragh's (1989) broad concept of *Nannamoria* Iredale, 1929, which embraces numerous fossil species as well as the living ones, Willan (1995) restricted the genus to only the living species (i.e. *N. amicula* Iredale, 1929 (type species of *Nannamoria*), *N. parabola* Garrard, 1960, *N. inopinata* Darragh, 1979 and *N. ranya* Willan, 1995). To these, Bail & Limpus (2008) added a further three new species (*N. breviforma*, *N. bulbosa* and *N. inflata*) plus a new subspecies (*N. gotoi curta*) and we here have added *N. hoskensae* (originally in *Notovoluta*) assuming it is extant. Certainly, the relationships between fossil *Nannamoria* and living species are difficult to determine, although we would agree with Willan (1995) that some fossil taxa belong elsewhere (e.g. *N. lundeliusae* Ludbrook, 1978 to *Paramoria* McMichael, 1960; Bail & Limpus 1997). *Nannamoria cidaris* sp. nov. appears to show some affinity with certain fossil species, notably *N. limbata* (Tate 1888) and *N. deplexa* Darragh, 1989 (fine spiral sculpture, weak siphonal notch, dominance of four primary plaits over secondary plaits; Darragh 1989) rather than with any living species. However, until molecular results are available, any attempt to subdivide *Nannamoria*, even informally (Darragh 1989, Bail & Limpus 2008) is premature. UV fluorescence and EDX spectroscopy are showing considerable promise at revealing shell patterns in suitable *Nannamoria* fossil material (Fergusen et al. 2025), which may shed new light on relationships between extinct and extant species in the genus (and it is hoped, also for fossil species of *Notovoluta*). *Nannamoria* is apparently a conchologically diverse genus represented in the living fauna as mostly tropical and subtropical species (Fig. 7); perhaps future deep water collecting may add to its size. In conclusion, the essential elements of Willan's 1995 definition of *Nannamoria* still hold, but we would offer the following amplification: amoriniines with small or relatively small, narrow, solid shells, with a turbinate to flat-topped protoconch (showing weak spiral ridging); spire height variable from stepped to low; axial sculpture usually of knobs or low spines at the shoulder but sometimes entirely lacking; shell surface usually smooth but sometimes with very fine spiral grooves; aperture narrow with a thick, slightly sinuous outer lip projecting posteriorly onto previous whorl; columellar thick, glazed, featuring a combination of 4 or 5 primary plaits and variable number of small secondary plaits; shell pattern of numerous brown axial lines and two bands of purple-brown blotches; siphonal notch shallow to moderately deep.

ACKNOWLEDGEMENTS

We thank Barbara Done (Queensland Museum Tropics, Townsville: formerly Museum of Tropical Queensland) for providing access to the material used in this study, which is now housed at the Queensland Museum Kurilpa (Brisbane). Erica Lovas (University of Queensland Centre for Microscopy and Microanalysis) took the SEM images of the radula of *Nannamoria cidaris* sp. nov. and Merrick Ekins and Lorelle Stanisic (both Biodiversity and Geosciences Program QM) took the SEM images of radulae of *Nannamoria* cf. *inopinata* and *Notovoluta kreuslerae* (respectively). Andrea Crowther of the South Australian Museum lent preserved material of *Notovoluta kreuslerae* for radula study and Alison Miller of the Australian Museum lent preserved animals (radular study) and shells of *Nannamoria amicula* for comparison with *N. cidaris* sp. nov. Tom Darragh generously showed us images of his light microscope radula mounts from *Notovoluta krueslerae*, *N. verconis* and *N. gardneri*. Elena Kupriyanova (Australian Museum) is thanked for her advice regarding the likely origins of the conglomerate worm tubes. We would like to thank the reviewers of this paper (Richard Willan (Museum and Art Gallery of the Northern Territory) and an anonymous reviewer) for their very valuable suggestions, corrections and commentary on the original manuscript, all of which have improved it. Funding for this study was obtained for JMH and NGW through the Australian Biological Resources Study (RF211-178).

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