

NEW NAME FOR *CYLINDRELLA INTERMEDIA* G. B. SOWERBY II, 1877 (EUPULMONATA: STYLOMMATOPHORA: UROCOPTIDAE), SELECTION OF NEOTYPE, AND CLARIFICATION OF TYPE LOCALITY

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ABSTRACT: *Cylindrella intermedia* G. B. Sowerby II, 1877, a land snail endemic to Jamaica, has long suffered from taxonomic ambiguity due to its vague original description, lack of a designated type locality, and the absence of type specimen(s). Although later reassigned to the genus *Spirostemma* based on shell morphology, the species has remained poorly documented in both the literature and in natural history collections. Complicating its nomenclature further, *C. intermedia* G. B. Sowerby II, 1877 is a primary homonym of *Cylindrella brevis* var. *intermedia* C. B. Adams, 1849. This study reexamines new and historical collection specimens, provides a redescription for the species based on conchological features, designates a neotype to establish a definitive type locality, and proposes a replacement name to resolve the homonymy: *Spirostemma louhiae* nom. nov.

KEY WORDS: Jamaica; land snails; neotype; *Spirostemma louhiae* nom. nov.; Urocoptoidea

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INTRODUCTION

Cylindrella intermedia G. B. Sowerby II, 1877 is a Jamaican land snail with a convoluted taxonomic history. SOWERBY'S (1877) description is vague and generalised, as far as urocoptid shells go, and insufficient to distinguish "his" species from other similar taxa, though his illustration (and its scale) provides some clues. He also did not indicate a type locality for the species, though it is now known to be Jamaica (PILSBRY 1903). Finally, the illustrated specimen in SOWERBY (1877) is marked as "Mus. Sowerby" but that specimen is presumably lost (see below).

The species has seldom been mentioned in the literature ever since, e.g., simply being reallocated to the genus *Spirostemma* Pilsbry et Vanatta, 1898 based

on shell characters observed in Sowerby's illustration (PILSBRY 1903, 1904), mainly the basal keel of the body whorl. Specimens in natural history collections are also scarce, and the species is largely undocumented in recent literature.

Furthermore, ROSENBERG & MURATOV (2006: 128) noted that *Cylindrella intermedia* G. B. Sowerby II, 1877 is a primary homonym of *Cylindrella brevis* var. *intermedia* C. B. Adams, 1849. Adam's *Cylindrella intermedia* (type locality Jamaica) is currently considered a synonym of *Urocoptis brevis* (L. Pfeiffer, 1841) (type locality Martinique, but the taxon is also present in Jamaica; ADAMS 1849, ROSENBERG & MURATOV 2006). Sowerby's *Cylindrella intermedia* would thus



need a replacement name, provided its status as a distinct species in *Spirostemma* is confirmed.

In the original description, SOWERBY (1877) recognised that the name *intermedia* [non Adams] was in then-current usage, and without knowing its authorship, adopted the name (SOWERBY 1877: unpaginated, species 91: “The writer is obliged to adopt the name, not having the authority”). Shells in natural history collection confirm that the name was in usage before Sowerby’s description, including specimens in the Finnish Museum of Natural History (Helsinki) obtained from shell collector and dealer Robert Damon in 1860 and labeled as *Cylindrella intermedia* (reportedly identified by himself; DANCE 2006, TALMAN 2013). Likewise, specimens in the Museum of Comparative Zoology of Harvard University (Cambridge, USA) are also labeled as such and, interestingly, give the authority of *C. intermedia* to Edward Chitty, noting that it is a manuscript name that was never pub-

lished. Further contemporaneous specimens in the Natural History Museum (London, UK) also bear the name *C. intermedia*. At that time the name was seemingly applied to several morphotypes, but especially to *Spirostemma princeps* (C. B. Adams, 1851); still, it was also applied to other taxa described after the study of SOWERBY (1877). That offers some indication that the original informal usage of the name *intermedia* likely referred to what became *S. princeps*, and what Sowerby later described as *intermedia* was actually a different species, with much smaller shells.

Investigation of specimens in five natural history collections allowed us to produce a redescription of *Cylindrella intermedia* G. B. Sowerby II, 1877, diagnosing it from its congeners based on conchological features. A neotype is selected for it to clarify the type locality and a new replacement name is coined for the taxon.

MATERIAL AND METHODS

We analysed specimens of *Spirostemma intermedium* (G. B. Sowerby II, 1877) and other *Spirostemma* spp. from the following natural history collections: ANSP, Academy of Natural Sciences of Philadelphia (Philadelphia, USA); MCZ, Museum of Comparative Zoology, Harvard University (Cambridge, USA); MZH, Finnish Museum of Natural History (Helsinki, Finland); NHMUK, Natural History Museum (London, UK); NMW, Amgueddfa Cymru - National Museum Wales (Cardiff, UK).

All specimens listed below come from Jamaica, but the country’s name was omitted from the entries for brevity. Those specimens that were initially identified as *Cylindrella intermedia* in the collections are indicated by an asterisk before their catalogue number.

***Spirostemma intermedium* (G. B. Sowerby II, 1877):** ANSP 460372, 1 shell, neotype, between Belmont and Jack Land, St. Ann, 540–560 m, JBS 440, 18°21.39'N 77°26.55'W, 21/Oct/2000, col. ROSENBERG & BOND; ANSP 460535, 3 shells, NNW of Cuffie Ridge, St. Ann, 700 m, JBS 447, 18°14.18'N 77°26.06'W, 22/Oct/2000, col. ROSENBERG & HOLMES; ANSP 463187, 2 shells, north of Cascade, Scarborough Mountains, St. Ann, 680 m, JBS 583, 18°15.29'N 77°27.82'W, 13/Mar/2002, col. MURATOV & CLARKE; ANSP 512919 (3 shells), split from neotype lot; *NHMUK 20250005, 1 shell, D’ARCY W. THOMPSON leg.

***Spirostemma* spp.:** *Spirostemma cognatum* (Vendryes, 1901): ANSP 168203, canyon to crest of John Crow Hills west of Haining, 31/Aug/1933, H. B. BAKER leg.; *NHMUK 1857.12.1.630, 9 shells, 1857, E. CHITTY leg.; *NHMUK 1857.12.1.633, 5 shells, 1857, E. CHITTY leg. *Spirostemma dunkeri* (L.

Pfeiffer, 1845): ANSP 86403, Teak Pen, P.W. JARVIS leg. *Spirostemma elatius* (C. B. Adams, 1851): ANSP 72941, A.D. BROWN leg. *Spirostemma inusitatum* (Vendryes, 1901): ANSP 9950, A. D. BROWN & T. BLAND leg.; ANSP 61741, Swift River, W. J. FOX leg.; NHMUK 1857.12.1.629, 9 shells, 1857, E. CHITTY leg.; *NHMUK 20250007, 3 shells, CHARLES T. TRECHMANN leg.; *NMW.Z.1970.040, 2 shells, Cascade, Portland, J. DAVY DEAN leg. *Spirostemma ipswichense* Pilsbry, 1903: ANSP 168209, Cockpit about 1/4 mile west of Ipswich Station, 13/Jul/1933, H. B. BAKER leg.; NHMUK 1854.4.19.43–48, 6 shells, 1854, E. CHITTY leg. *Spirostemma mandevillense* Pilsbry et A. P. Brown, 1910: ANSP 101171, around Mandeville, A. P. BROWN leg.; ANSP 101172, lectotype, Somerset Road, 2 miles from Mandeville, 1910, A. P. BROWN leg.; ANSP 450609, paralectotype, Somerset Road, 2 miles from Mandeville, 1910, A. P. leg. *Spirostemma princeps* (C. B. Adams, 1851): ANSP 1000, 2 possible paralectotypes, C. M. Wheatley collection; ANSP 25106, 1 shell, R. Damon collection; ANSP 72937, 1 shell, A. D. Brown collection, ex T. Bland; ANSP 72938, 1 shell, R. Swift collection; ANSP 454089, 18 shells, Rock Hall, Blue Mountains, Portland, 400 m, JBS 231, 18°09.47'N 76°32.13'W, 18/Feb/2000, col. ROSENBERG, MURATOV & KITSON; *MCZ 157845, 2 shells, T. BLAND leg.; *MZH HLA.101168 (<http://id.luomus.fi/HLA.101168>), 2 shells, 1860, R. Damon collection; NHMUK 1857.12.1.627, 7 shells, 1857, E. CHITTY leg.; NHMUK 20250003, 1 shell, Hugh Cuming collection; *NHMUK 20250004, 2 shells, HENRY F. BLANFORD leg. *Spirostemma pusillum* (C.

B. Adams, 1850): ANSP 86462, Aenon Town, P. W. JARVIS, leg. *Spirostemma simile* (C. B. Adams, 1849): ANSP 72945, A. D. BROWN, & T. BLAND

leg. *Spirostemma tenellum* (C. B. Adams, 1849): ANSP 84134, W. of Ocho Rios, J. B. HENDERSON leg.

SYSTEMATICS

Superfamily Urocoptoidea

Family Urocoptidae

Genus *Spirostemma* Pilsbry et Vanatta, 1898

Spirostemma louhiae nom. nov.

Figs 1–3

Cylindrella intermedia G. B. SOWERBY II 1877: unpaginated (species 91), pl. 10, fig. 91. [non *Cylindrella columna* var. *intermedia* C. B. Adams, 1849]

Spirostemma intermedia – PILSBRY 1903: 287, 293; PILSBRY 1904: pl. 11, fig. 74.

Spirostemma intermedium – ROSENBERG & MURATOV 2006: 128, 157.

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Neotype: ANSP 460372. The type specimen of *Cylindrella intermedia* G. B. Sowerby II, 1877 (indicated as “Mus. Sowerby” in the original description) could not be located. Sowerby’s collection was dispersed and many of the types made their way to the NHMUK or the NMW (DANCE 1966). We have directly contacted curators in those institutions

(see Acknowledgements), who were very helpful in our search for the type. None of the specimens in those collections have indications on their original labels or collection documents that they could be the type specimen (e.g., indications that the material belonged to Sowerby II, labels containing the word ‘type’ or similar). Thus, we consider the type as probably lost and, according to Article 75 of the Code (ICZN 1999), we designate here a neotype to define the nominal taxon objectively and establish a definitive type locality (Art. 75.3.1). The specimen selected as neotype is the specimen ANSP 460372 (between Belmont and Jack Land, St. Ann, Jamaica, 540–560 m, JBS 440, 18°21.39'N 77°26.55'W, 21/Oct/2000, col. ROSENBERG & BOND).

Thus, the present taxonomic revision fulfils the qualifying conditions for neotype selection delineated in ICZN Art. 75.3, namely: Art. 75.3.1 – the statement of purpose for neotype designation was given above; Art. 75.3.2 – a diagnosis is presented below and a detailed differential comparison with all congeners can be found in the Discussion section; Art. 75.3.3 – sufficient data and description provided below; Art. 75.3.4 – reasons for considering the original type(s)



Figs 1–3. Shells of *Spirostemma louhiae* nom. nov., scale bar 5 mm 1 – neotype of *Cylindrella intermedia* G. B. Sowerby II, 1877 [non C. B. Adams, 1849], ANSP 460372, shell height 11.3 mm; 2 – ANSP 460535, shell height 12.2 mm; 3 – ANSP 463187, shell height 13.1 mm

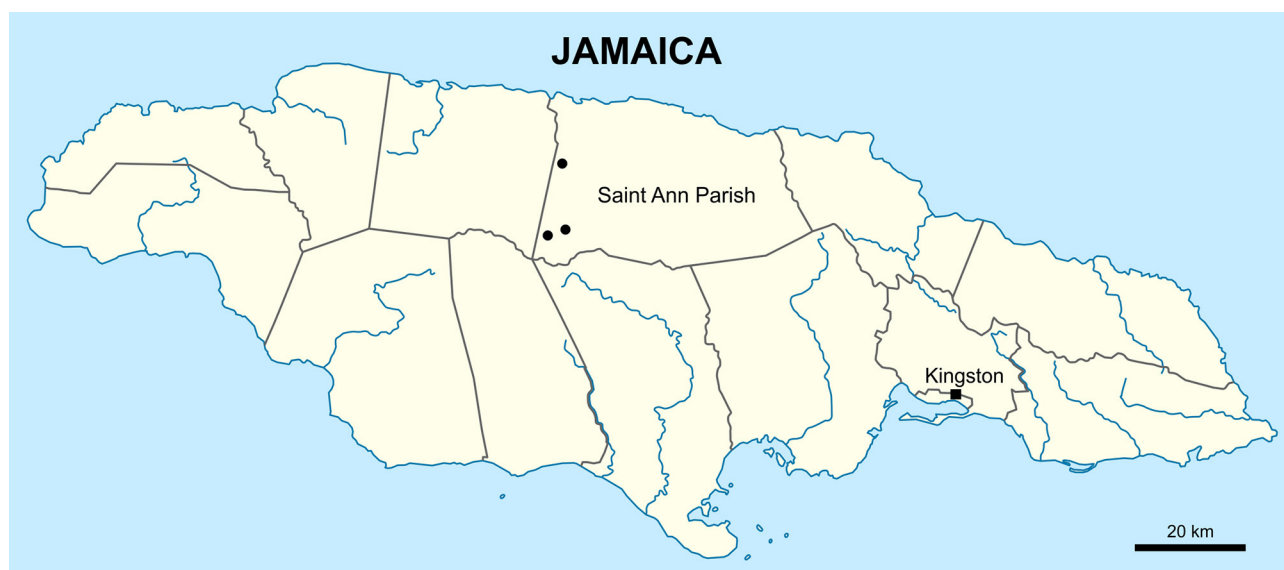


Fig. 4. Relief map of Jamaica showing the known occurrences of *Spirostemma louhiae* nom. nov. in Saint Ann Parish (black circles). The capital of Jamaica, Kingston is also shown for reference. Base map obtained from Wikimedia Commons (author NordNordWest, 2009; CC BY-SA 3.0 license), and modified to include the data points, location names, and scale

lost and efforts to trace them were delineated above; Art. 75.3.5 – evidence that the neotype is consistent with original description and illustration is provided in the Discussion section; Art. 75.3.6 – the original description did not provide a type locality for the species, but that was later defined as Jamaica (PILSBRY 1903), the same country of origin of the neotype; Art. 75.3.7 – the neotype is deposited in the collection of the ANSP, a recognised scientific and educational institution (the oldest natural sciences research institution and museum in the Americas) that maintains facilities suitable for preserving type specimens and that enables access to such specimens for study.

Type locality: Jamaica, St. Ann Parish, between Belmont and Jack Land, St. Ann, 540–560 m, JBS 440, 18°21.39'N, 77°26.55'W.

Etymology: The specific epithet (a name in the genitive case) is given after Louhi, the mythical witch queen of the Kalevala, to acknowledge the serendipitous finding in Finland of the specimens that kick-started this study.

Diagnosis: Shell on the smaller side of the genus. Whorl profile almost straight; except for body whorl, which bears a concavity. Suture very light. Whorl height short, particularly body whorl. Axial ribs strongly prosocline.

Description: Shell dextral, small (shell height ~11–13 mm, shell width ~2 mm; neotype = 12.2 and 2.3 mm, respectively), elongated fusiform; shell decollate, with 12–13 whorls (neotype = 12). Shell colour beige to light brown. Spire acuminate. Whorl profile flattened; suture lightly marked. Whorls short. Teleoconch sculpture: well-marked axial ribs, prosocline, separated by space equivalent to 1–2 ribs; ribs become more prosocline on last whorls. Body whorl with slight concavity on median to abapical portion; strong basal keel present. Aperture circular, slightly “detached” from shell, bent abapically. Peristome thickened, whitish. Columellar lamellae absent.

Distribution: Jamaica, western and southwestern St. Ann Parish (Fig. 4).

DISCUSSION

After our search for the original type specimens in the appropriate collections (NHMUK and NMW) failed, we decided to select a neotype for *Cylindrella intermedia* G. B. Sowerby II, 1877. The chosen specimen is the best-preserved specimen available (Fig. 1) and a close match to the original illustration by SOWERBY (1877) (Fig. 5) in terms of size (the scale bar in the original suggests 12–13 mm), colour, and

shape, including: number of whorls, height and proportion of whorls, the slight constriction on the body whorl, the basal keel of the body whorl (noticeable in the figure but not mentioned in the description, as already noted by PILSBRY 1903), and the aperture's shape and position. Sowerby's figure, however, shows a slightly taller body whorl (Fig. 5). The chosen neotype also has precise collection and locality



Fig. 5. Original illustration of *Cylindrella intermedia* G. B. Sowerby II, 1877, reproduced from Sowerby (1877: pl. 10, fig. 91)

data. The specimens from lot ANSP 460535 (Fig. 2) are an even closer match to Sowerby's illustration, but these specimens became too damaged after being handled for photography and, thus, none was suitable for becoming a neotype.

Then, considering *C. intermedia* G. B. Sowerby II, 1877 is a primary homonym of *Cylindrella brevis* var. *intermedia* C. B. Adams, 1849, we propose the replacement name *Spirostemma louhiae* nom. nov.

Spirostemma louhiae nom. nov. can be diagnosed from its congeners by a combination of conchological features that is unique to it. *Spirostemma abnorme* is of similar size (ca. 11 mm; VENDRYES 1901: 3–4, pl. 1 figs 5–6), but has fewer whorls, a bulging apex, and a knob-like structure on the aperture. *Spirostemma altum* has a narrow and tall shell, with a tapered spire and an oval aperture (SOWERBY 1877: as “*C. cylindrus*”, pl. 8 fig. 68). *Spirostemma bellevuense* is of similar size (ca. 13 mm) but has two fewer whorls and its shell has a more truncate and barrel-like shape (VENDRYES 1901: 2–3, as *C. propinqua* [non Arango, 1882], pl. 1 figs 5–6). *Spirostemma cognatum* is slightly larger (c. 16 mm) and has a narrower shell profile, with the final whorls being taller, particularly the body whorl; the body whorl has a faint angulation on its mid-sec-

tion and its basal keel is much weaker; the axial ribs of the whorls are much less prosocline. *Spirostemma dunkeri* is slightly larger (ca. 15.5–16.5 mm) and has a taller body whorl; the axial ribs of the whorls are more “vertically positioned”; the aperture is smaller and not “detached” from shell. *Spirostemma elatus* is larger (ca. 18.5–19.5 mm) and more cylindrical, with the first whorls being wider, which gives the spire top a more bulging look; the final whorls are taller, particularly the body whorl; overall, it has a much fainter axial ribbing pattern, and the ribs are much less prosocline. *Spirostemma inusitatum* is larger (ca. 17–18 mm) and has more convex shells, a taller body whorl with a faint median angulation, and less prosocline ribs. *Spirostemma ipswichense* is just marginally larger (14.5 mm), has a taller body whorl, and less prosocline ribs; the ribs are also greater in number, being more closely packed; the aperture is well “detached” from the shell. *Spirostemma mandevillense* is just marginally larger (14.5 mm) and more cylindrical rather than spindle-like, having an extra whorl and displaying more convex whorls with a more deeply incised suture. *Spirostemma princeps* is larger (19.5–24.5 mm) and has one fewer whorl; the body whorl is much taller and its concavity consequently more prominent; the ribs are more “vertically” positioned; the aperture is not as bent abapically. *Spirostemma pusillum* has the most unique shell in the genus, small (ca. 6 mm), compact and not elongated, with few whorls; whorls have a more convex profile and suture is more incised; the aperture is smaller and not “detached” from shell. *Spirostemma simile* is virtually the same size (ca. 10.5 mm) and has fewer whorls, which have a more convex profile (especially on the first whorls of the spire) with a more deeply incised suture; the basal keel of the body whorl is much weaker; the axial ribs of the whorls are much less prosocline. *Spirostemma tenellum* is generally smaller (but size distributions overlap; ca. 8–11 mm), has one fewer whorl and is much smaller (ca. 8 mm); the first whorls have a more convex profile; the final whorls are taller, particularly the body whorl; body whorl concavity more prominent; the aperture is smaller and not “detached” from shell.

Older “*Cylindrella*” specimens dating from the 19th century and roughly contemporary with G. B. Sowerby II can be found in museum collections. They typically only have indication of a general locality (e.g., “Jamaica”), if they have one at all. Most of the shells identified as “*C. intermedia*” among those specimens, upon inspection during this study, were deemed to belong to *S. princeps* or to species described after *C. intermedia* (see the ‘Analysed material’ section above). The specimens (including the neotype) collected in the 2000's (Fig. 1), however, allow us to define the species distribution with a higher degree of preci-



sion, even though the currently available data is still scarce. *Spirostemma louhiae* nom. nov. is only known from three localities in western and southwestern St. Ann Parish (Fig. 4): Cuffie Ridge, the Scarborough

Mountains, and the type locality “between Belmont and Jack Land”. We hope that future surveys will be able to record live animals and acquire specimens for anatomical and molecular studies.

CONCLUSION

We hope that through this study we could clarify the status, nomenclature, type locality, and known distribution of *Spirostemma louhiae* nom. nov. pro *Cylindrella intermedia* G. B. Sowerby II, 1877 [non C. B. Adams, 1849].

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