

## RTA, riding to the rescue, rights a wrong; Röding redivivus

by Harry G. Lee

The aquatic prosobranch snail genus *Lanistes*, with about 20 species living in Africa and Madagascar <[Lanistes](#)>, is grouped with the applesnails in the family Ampullariidae. However, it differs from the other ampullariid genera in appearing to have a sinistral shell. With its apex toward the observer, expansion of the coil proceeds counterclockwise, the same geometry as that of the shell of a sinistral snail. However, the animal of snails of this genus has the same dextral asymmetry as its confamilial relatives; it is not a mirror image thereof as one might expect! *Lanistes* has a peculiar type of spiral growth (chirality) termed *ultradextral*, or *hyperstrophic pseudosinistral* often depicted as **on the L**; aperture rightward. The conchologist is compelled to view the axis of growth as diametrically opposite that of the applesnails, and for that matter essentially all other



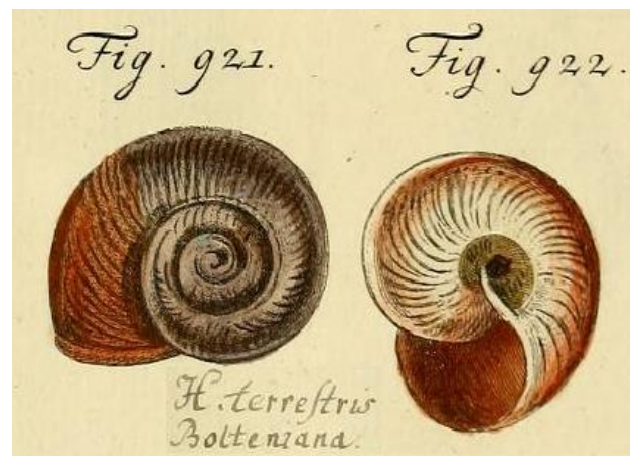
dextral snails. Although there is no absolute "up" or "down" in shell growth, specialists have found the concept "upside-down" convenient for the understanding of this pattern of shell growth. More precise is the term "hyperstrophy," vs. "orthostrophy," the latter being applied to the prevailing right-side-up topology seen in all applesnail, volute, cone, and cowrie species as well as all members of the predominantly sinistral family Triphoridae. There are a few other examples of hyperstrophy, including two large groups of Paleozoic marine snails, certain sea butterflies, and as a transitory condition of the larvae of many marine gastropod taxa.

Recently Allen Aigen, a Staten Island shell-collector, paleontologist, and frequent contributor to the University of Georgia-hosted Conchologists of America list-serve known as Conch-L, let me know he had collected some living left-handed snails in the Nile River during a visit to Cairo in December, 1989. I had been to that ancient city seventeen summers earlier and, despite gathering plenty of gastropods in my parasitological studies, hadn't come across anything quite like the described shells. So I took Allen up on his offer to send me a couple, which had somehow acquired the identification "*Lanistes bolteniana* (Chemnitz)" and exhibited two distinctive spiral keels, one bordering the funnel-shaped umbilicus and the other on the periphery save the latter majority of the adult body whorl. The larger of

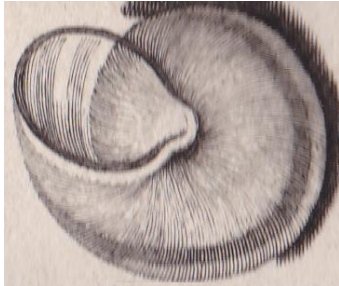


Allen's two specimens is depicted **above**.

The name Johann Hieronymus Chemnitz (1730-1800) applied, "Die Boltenische Linksgewundene Landschnecken [the Boltenian Left-coiled Landsnail], *Helix terrestris bolteniana contraria* ..." (<[Chemnitz](#)>, 1786: 111) is unavailable for the purposes of formal taxonomic nomenclature as all but one of the author's works<sup>a</sup> were inconsistent in their use of the binominal system (ICZN, 1944; 1954; 1987: 319), this name being a classic exemplar. Not long after, countryman Peter Friedrich Röding (1767-1847), while anonymously penning the catalogue of the shell collection belonging to Dr. Joachim Friedrich Bolten (1718-1796), provided it with an available name, *Planorbis*<sup>b</sup> *boltenianus* (<[Roeding](#)>, 1798: 73; sp. no. 933).<sup>b</sup> The sole indication, "Martini" [error for Chemnitz], 1786: pl. 109, figs. 921, 922 **composite figs. on R**], This is

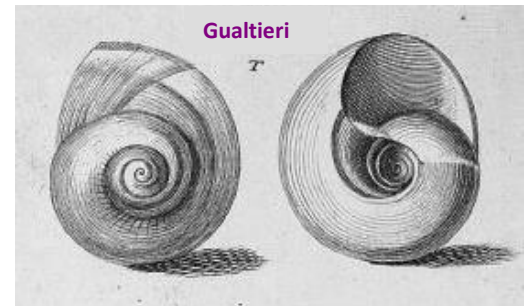


also the type figure of *Helix terrestris bolteniana contraria* ... as cited above: <[Chemplate](#)>. It appears to have a keel at the periphery and around the umbilicus just like Allen's shells. Chemnitz also cited a very similar illustration (Martini, 1776: pl. 2, fig. 24 <[Martinifig](#)>, who mentioned that his specimen also came from Dr. Bolten's collection)



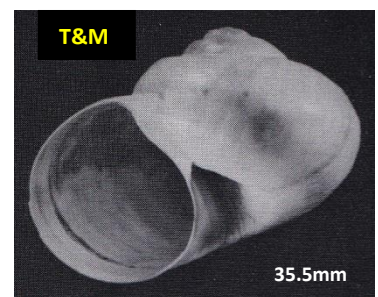
and two other indications (d'Argenville, 1780: pl. 63, fig 1.3; **on L**), which has a nearly concealed umbilicus, and Favart d'Herbigny (1775, vol. 3: 466-467), who vaguely described a "unique" shell consistent with the Martini specimen. According to <[Martini](#)> (1776: 424), Spengler, on Chemnitz's authority, reported it originated in the marine waters of Guinea (west Africa), so it appears the latter conchologist changed his mind over the ensuing decade, after which he indicated

a land snail of unknown geographic provenance. In Martini's footnotes reference was also made to a figure in Gualtieri (1742: Tab. 2, lit. T; **on R**; fig. also cited by Davila [1767: 438-439]), which appears to be a good likeness of figs. 921, 922. Both these earlier authors treated it as a land snail. Although none of these citations has any direct bearing on the Röding taxon, they provide a glimpse at the uneven scientific rigor with which contemporary workers were obliged to deal.



Forty years later, and apparently unaware of Röding's action, Deshayes and Milne Edwards (1838: 536, 537; sp. 8 <[DeshayesAnimaux2](#)>) treated *Ampullaria carinata* "Lamarck"<sup>c</sup> [referring to Lamarck (1819: 176) but actually dating from *Cyclostoma carinatum* Olivier (1804: 39, pl. 31, figs. 2A, 2B)]. In a long footnote and in the chresonymy the Lamarck taxon was deemed synonymous with the Chemnitz appellation, and the authors coined "*Ampullaria bolteniana*"<sup>c</sup> for the species. Lamarck had placed his species "en Egypte dans l'eau du Nil," the type locality actually being a canal in Alexandria (Olivier, 1804). A number of ampulariids in the Lamarck collection ("Mon cabinet;" *Idem*: 537) have survived to at least the mid-Twentieth Century in the Geneva Museum, but this shell(s) was apparently not one of them (Mermod, 1952). This Chemnitz/Olivier/Lamarck/Deshayes (and Milne Edwards) synonymy was supported by Roth (1839: 26 <[Roth1839](#)>), and Jay (1852: 281 <[Jaythirded](#)>) as well as Anton (1839: 50 <[Anton1839](#)>) and Pfeiffer (1840: 82 <[Pfeiffer1840](#)>), both of the latter treating "*Ampullaria bolteniana* Deshayes"<sup>c</sup> as valid. These four workers were but the earliest of many who likewise acknowledged the identity of the two taxa while overlooking Röding and the "Museum Boltenianum."

Fortunately the identity of *Cyclostoma carinatum* Olivier, in contrast to the Chemnitz figure and Lamarck specimen(s), has been clarified by exposition of the type material. Tillier and Mordan (1983: 157; pl. 5, fig. 3; **on R**) reported on five syntypes (the figured one was not designated as the lectotype in anticipation of a more extensive revision) with a label probably written by Olivier making reference to the original figure. "Four probable syntypes relabeled '*Ampullaria bolteniana* Fér.'"<sup>d</sup> completed the suite of nine (? five) specimens at le Muséum National d'Histoire Naturel, Paris.



Röding and his *Museum Boltenianum* might still be languishing in anonymity/obscurity if the American Association for the Advancement of Science had not enabled Sherborn and Sykes (1906) to reproduce the opus. In providing the first index for the work, Dall (1915) made it clear that therein was a treasure trove of available names, many of which were poised to be employed as senior synonyms. The malacological community treated Dall's admonition as a bitter pill, and, even with the later formal attribution of authorship and declaration of availability of its nomina (ICZN, 1956, 1958), was slow to incorporate Röding's destabilizing "innovations." As best as I can determine, the indication of the

priority of *Planorbis boltenianus* Röding over *Cyclostoma*<sup>e</sup> *carinatum* Olivier had to wait nearly two centuries receive notice (Abbott, 1989: 194; **R, w/caption**). Perhaps RTA's collaboration in the Richardson *et al.* (1979) investigation, which work tied the actual Chemnitz figure to the Röding name, was instrumental in Tucker making this long overdue and fitting connection (mistaken familial assignment notwithstanding).

One particular reason the synonymy of the species discussed above is important as it relates to the very foundation of their genus. <Montfort> (1810, vol. 2: 122-124) named *Lanistes* and treated *Laniste* (his French translation thereof) as masculine. Since he didn't indicate any inconsistency in gender, the taxon remains masculine under the provision of Article 30.1.4.4 of the Code (ICZN, 1999). The monotype is, natch, *Cyclostoma carinatum* Olivier, 1804, which Montfort unnecessarily renamed<sup>c</sup> *Lanistes Oliverii*<sup>c</sup> [sic; sic]. The figure Montfort provided is either quite poorly drawn or does not depict the Olivier species, but that's a story for another day and doesn't bear on the typology his new genus, *Lanistes*.



**Carinate Lanistes** (2") 5 cm  
*Lanistes boltenianus* (Röding, 1798). Nile River, Egypt. Several operculate, left-handed species in African rivers. Viviparidae.

Failing memory and all, when it strikes my fancy, I create an extra data slip to serve as a terse commemorative of the assorted quirks involved in the identity of the corresponding lot. Consequently I have now penned a second label for Allen's two shells: "***Lanistes boltenianus* (Röding, 1798) [as *Planorbis*; after Gualtieri, 1742, Davila, 1767, Martini, 1776, Chemnitz, 1786, etc.] + *Cyclostoma carinatum* Olivier, 1804 (type species *Lanistes* Montfort, 1810 by original monotypy) + *Lanistes oliverii* [sic] Montfort, 1810 + *L. oliverii* auctores [unjustified emendation] + *Ampullaria carinata* Lamarck, 1819 + *Ampullaria bolteniana* Deshayes and Milne Edwards, 1838, etc.]. Ecology: marine → terrestrial → aquatic; taxonomy: *Helix* → *Wentletrap* → *Applesnail* kin." This little note-to-self vindicates the author who gave these shells nomenclatorial legitimacy and tracks the refinement of their position in the natural order of things from pre- (and otherwise non-) Linnaean opera to present while commemorating the dilatory upheaval of two centuries of nomenclatorial hegemony.**

#### FOOTNOTES:

<sup>a</sup> The unique exception is a 1777 paper describing *Conus gloriamaris*; see <Glory-of-the-Seas> and bibliography.

<sup>b</sup> Two interesting points here: (1) As can be seen from the URL provided, there is no entry in the catalogue for the number of specimens of *Planorbis boltenianus*! Apparently Dr. Bolten divested himself of the specimen(s) before the catalogue was published. Perhaps the Chemnitz shell was the same as that of Martini, and, as d'Herbigny wrote, "unique" in a sense. (2) *Planorbis* Röding, besides being a heterogeneous (more aptly, polyphyletic) assortment of aquatic prosobranchs and pulmonates, both terrestrial and aquatic, is unavailable due to junior synonymy with *Planorbis* Müller, 1774.

<sup>c</sup> Another pair of points: (1) The co-opting of authorship of a species-level taxon by a reviser incidental to his assigning it to another genus, with or without the replacement of the species epithet, was customary, especially in the French School, at the time. Also at this time the *Conchylien-Cabinet* was considered an available work. Today such nomina, if available, are simply regarded as junior objective synonyms, as in the final paragraph of this essay. (2) Eponymous species epithets were often capitalized in those days; today lower case is mandated (ICZN, 1999: Article 5.1)

<sup>d</sup> I could find no evidence that this binomen is an available Férussac name, but it is likely le Baron was referring to the same Chemnitz figures as Herr Röding, albeit several years later, as he wrote this label(s).

<sup>e</sup> In a twist vaguely reiterative of the central theme of this essay, *Cyclostoma* Lamarck (1799: 74 <Cyclostoma>), type species: *Turbo scalaris* Linnaeus, 1758 by original monotypy, is an objective junior synonym of *Epitonium* Röding, 1798 <Epitonium> based on the same type species, subsequently designated by Suter (1913: 319), an action surely facilitated by Sherborn and Sykes' (1906) *Museum Boltenianum* reproduction. Various authorities applied *Cyclostoma* of Lamarck, 1799, or other authors' homonyms thereof, to an assortment of terrestrial prosobranchs over the years.



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