

Taxonomic review of the genus *Adelomelon* (Gastropoda; Volutidae), based on type material

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(With 11 figures)

Abstract

The genus *Adelomelon* Dall, 1906 comprises a group of South American marine gastropods. We present updated information on the genus *Adelomelon*, with emphasis on the status and location of type material, including that of junior synonyms. *Scaphella arnheimi* Rivers, 1891 and *Voluta paradoxa* Lahille, 1895 are removed from the synonymy of *Adelomelon ancilla* (Lightfoot, 1758) and *Adelomelon barattinii* Klappenbach and Ureta, 1966 is included. The subgenus *Weaveria* Clench and Turner, 1964 is placed in synonymy with *Adelomelon* s.s. A key to the species of *Adelomelon* is provided.

Keywords: southwestern atlantic, Volutidae, taxonomy, Zidoninae, type material.

Revisão taxonômica do gênero *Adelomelon* (Gastropoda; Volutidae), com base em material-tipo

Resumo

O gênero *Adelomelon* Dall, 1906 engloba um grupo de gastrópodes sul-americanos. Apresentamos informações atualizadas sobre o gênero *Adelomelon*, com ênfase no status e localização do material-tipo, também dos sinônimos juniores. Os táxons *Scaphella arnheimi* Rivers, 1891 e *Voluta paradoxa* Lahille, 1895 são removidos da lista sinonímica de *Adelomelon ancilla* (Lightfoot, 1758) e *Adelomelon barattinii* Klappenbach and Ureta, 1966 é incluído. Também o subgênero *Weaveria* Clench and Turner, 1964 é colocado na lista sinonímica de *Adelomelon* s.s. e uma chave para as espécies de *Adelomelon* é apresentada.

Palavras-chave: sudoeste, revisão, Volutidae, taxonomia, Zidoninae, material-tipo.

1. Introduction

The genus *Adelomelon* Dall, 1906 was described to accommodate a group of South American gastropods, to which Dall (1906) referred as a “dull-colored group of South American volutes”. Clench and Turner (1964) substantially revised the genus and resolved several taxonomic problems, especially regarding the proper identification of *Adelomelon ancilla* (Lightfoot, 1786) and *Odontocymbiola magellanica* (Gmelin, 1791).

Clench and Turner (1964) also described the species *Adelomelon riosi*, which they assigned to a new subgenus, *Weaveria*. The subgeneric arrangement proposed by Clench and Turner (1964) is still accepted by many authors. It consists of seven species distributed in three subgenera: *Adelomelon* s.s., *Weaveria* Clench and Turner, 1964, and *Pachycymbiola* Ihering, 1907. In a subsequent paper, Clench and Turner (1970) proposed that *Adelomelon* (?) *subnodosa* (Leach, 1814) be transferred

to *Odontocymbiola* Clench and Turner, 1964, based on the anatomy of its radula.

Poppe and Goto (1992) proposed that the genera *Adelomelon* and *Odontocymbiola* are synonyms, although *Adelomelon* has radular teeth cuspids in the same plane and very short racemose salivary ducts, whereas *Odontocymbiola* has strongly curved, “fang-like” teeth, and very long racemose salivary ducts, as described by Clench and Turner (1964). Furthermore, Poppe and Goto (1992) proposed that the subgenus *Pachycymbiola* be elevated to genus status based solely on conchological characters; however, this arrangement has not been widely accepted and even criticized (Bondarev, 1996).

Herein, we present updated information on valid names and junior synonyms in the genus *Adelomelon* based on type material.

2. Material and Methods

This study is based on examination of type material and, in some cases, on high-resolution photographs sent by curators, together with comparisons of the original descriptions.

- Institution names and abbreviations are as follows:
 BMNH – British Museum of Natural History (or Natural History Museum), London
 MCZ – Museum of Comparative Zoology
 MHNG – Muséum d’Histoire Naturelle Genebra
 MLP – Museo de La Plata
 MNHM – Museo Nacional de Historia Natural de Montevideo
 MNHN – Muséum National d’Histoire Naturelle, Paris
 MNRJ – Museu Nacional do Rio de Janeiro
 MORG – Museu Oceanográfico de Rio Grande
 MZSP – Museu de Zoologia da Universidade de São Paulo
 UFRS – Universidade Federal do Rio Grande do Sul
 UMZC – University Museum of Zoology Cambridge
 USNM – United States National Museum, Washington
 ZMB – Zoologisches Museum Berlin
 ZMUC – Zoological Museum University of Copenhagen
 ZMUH – Zoologisches Museum des Universitaet Hamburg

3. Results

Key to the subgenera and species of *Adelomelon*:

1. acute; protoconch with calcarella* (*Adelomelon* s.s.).....2
 - Shell globose without brown zigzag markings; apex globose or mammilliform; protoconch without calcarella (*Pachycymbiola*)4
2. Shell with knobs or short spines on periphery*A. beckii*
 - Shell without knobs or spines on periphery3
3. columellar fold.....*A. riosi*
 - Whorls convex; spiral lines absent; more than one columellar fold.....*A. ancilla*
4. shoulder usually present; columella thin; protoconch globose.....*A. brasiliana*
 - Interior dark brown; knobs absent; columella strong; protoconch mammillated*A. ferussacii*

*a spur or pointed projection of the early whorl of the protoconch.

Genus *Adelomelon* Dall, 1906

Adelomelon Dall, 1906: 143. Type-species, *Voluta ancilla* Lightfoot, 1786, by original designation
Janeithoe Pilsbry and Olsson, 1954: 25. Type-species, *Voluta beckii* Broderip, 1847 (sic)

Diagnosis: Shell globose to fusiform, medium to large, generally with elongated spire. Aperture large, semi-circular. Columella with one to five oblique folds. Surface smooth or with knobs at the whorl shoulder. Radula with a single row of flat tricuspid teeth.

Subgenus *Adelomelon* s.s.

Weaveria Clench and Turner, 1964:162. Type-species, *Adelomelon riosi* Clench and Turner, 1964, **Syn. Nov.**

Diagnosis: shell fusiform with brown zigzag markings, pointed apex and protoconch with a calcarella.

Remarks: It is important to keep in mind, when analyzing the calcarella, that it is a fragile protoconch structure and may be eroded in many adult specimens, even in ones taken live.

The subgenus *Weaveria* as described by Clench and Turner (1964) is monotypic, including only *A. riosi*. The subgenus is characterized by very thick deciduous periostracum, absence of zigzag color marking on the shell, and very globose whorls. Examination of several voucher specimens showed that zigzag markings are very common on freshly collected specimens. A thick deciduous periostracum is also found in *A. ancilla* and *A. beckii*. The single remaining distinctive character of very convex whorls is inadequate to support a subgeneric taxon, and therefore the subgenus is here proposed to be

Shell perforated with brown zigzag markings; apex

***Adelomelon ancilla* (Lightfoot, 1786)**

Voluta ancilla Lightfoot, 1786: 84. Type-locality: Straits of Magellan, by original designation (Makes references to Davila and Romé de L’Isle, 1767, Vol. 1. pl. 8 Fig. S.)

Voluta spectabilis Gmelin, 1791: 3468. Type-locality: in freto magellanico. Type figure based on Davila and Romé de L’Isle, 1767, Vol. 1. pl. 8 Fig. S.

Whorls very convex, fine spiral lines present; one

Voluta magellanica Chamnitz, 1795: 139. (*nomen nudum*; work rejected by ICZN Opinion 184, 1944).
Voluta magellanica Lamarck, 1811: 69 (non Gmelin, 1791). Type locality: Détroit de Magellan. Syntype, MHNG 1103/31 and ZMUC.

Interior salmon-colored; one line of knobs on the

Voluta bracteata Mabilie and Rochebrune, 1889: 48-49. (in Rochebrune and Mabilie, 1889). Type locality: Baie Orange – Argentine. Two syntypes, MNHN.
Voluta martensi Strebel, 1906: 124. Type-locality: “Etwas südlich von Rio de La Plata Mündung”. Syntypes, ZMB 18483 and 108666 (two syntypes on the Hamburg Museum were destroyed during the II world war).

“*Voluta bracteata* Mabilie and Rochebrune” Strebel, 1906: 92. (spelling error).

“*Adelomelon ancilla* Solander” Barattini and Ureta, 1960: 124. (spelling error).

Adelomelon barattinii Klappenbach and Ureta, 1966: 2. Type locality: “Desembocadura del río de la Plata, 15 millas al sur de la isla de Lobos”. Holotype, MNHM 1314; Paratype, MNHM 15134. **Syn. Nov.**

Remarks: Lightfoot (1786) made reference to two specimens in the Duchess of Portland Collection (which was later auctioned), and to Davila and Romé de L'Isle (1767). None of these specimens, considered syntypes under ICZN (1999) article 73.2.1, could be located, and were presumed lost by Clench and Turner (1964). According to Weaver and duPont (1970), *Voluta ancilla* Lightfoot, 1786 and *Voluta spectabilis* Gmelin, 1791 are based on the same type material [illustrated by Davila and Romé de L'Isle (1767)] and therefore must be considered objective synonyms.

According to Clench and Turner (1964), the long-lasting confusion regarding *A. ancilla* and *O. magellanica* began when Lamarck (1811) described his *V. magellanica* (= *ancilla* Solander), non Gmelin, 1791, making Chemnitz' name available with a direct bibliographic reference. Many subsequent authors perpetuated Lamarck's misidentification, until Clench and Turner (1964) described the radular morphology and properly distinguished both taxa. At our request, Dr. Yves Finet located Lamarck's type material housed at MNHG 1103/31 (Figure 1), and Dr. Ole Tendal located Chemnitz' syntype in the Spengler Collection, housed at ZMUC. The similarity between specimen MNHG 1103/31 and the illustration by Küster (1845) on Plate 31, Figure 6 (reproduced in Figure 2) is note worthy but we could not determine whether Lamarck's specimen was actually illustrated by Küster (1845).

Lahille (1895) remarked that the characters given by Rochebrune and Mabilie (1889) to describe *V. braccata* could not distinguish it from *A. ancilla*. At our request, Dr Jacques Le Renard (in 2004) located the two syntypes mentioned by Rochebrune and Mabilie (1889) housed at MNHN.

Weaver and duPont (1970) indicated that the individuals described as *Voluta martensi* Strebel, 1906 are only specimens of *A. ancilla* that show longitudinal ribbing on the early whorls. This observation was confirmed by our observation of syntypes from ZMB 18483 and 108666 (Figures 3-5). Two syntypes, stated by Strebel (1906) to be housed in ZMUH, were destroyed by bombing during World War II, according to Dr. Bernhard Hausdorf (in 2004, pers. comm.).

Adelomelon barattinii Klappenbach and Ureta, 1960 is very rare, and only empty shells have been reported (Carranza, 2005). Rios (1994) stated that *A. barattinii* is only a gerontic form of *A. ancilla*. Our examination of the holotype and paratype of *A. barattinii*, some specimens from the private collection of Mr. Juan Carlos Zaffaroni (Uruguayan Malacological Society) and the report of Carranza (2005) confirmed that *A. barattinii* is only an extreme variation of *A. ancilla*. We observed a great deal of variation in the size of nodules on several specimens, which otherwise could be taken as *A. ancilla*. We therefore consider *A. barattinii* very similar to *A. ancilla* form *martensi*, in which nodules present on the early whorls of the spire continue to the body whorl.

Klappenbach and Ureta (1966) stated that the paratype of *A. barattinii* was housed in the private collection of Dr. Ureta. After his passing, the paratype was donated to the MNHM collection and assigned to lot MNHM 15134.

Rivers described *Scaphella arnheimi* in 1891, in an article in the Proceedings of the California Academy of Sciences. In the following year, the article was reprinted in The Nautilus. Neither of these articles provided an illustration of the specimen, or named a depository institution. Rivers (1891) reported one specimen trawled in Monterey Bay, a location noted to be in error by Clench and Turner (1964) and Weaver and duPont (1970), without further discussion. Although the correct classification of this taxon will only be possible after a proper examination of the type material, attempts to locate this material were unsuccessful. Shell description and type locality would lead us to compare *S. arnheimi* with the genus *Arctomelon* Dall, 1915, and until the material can be located, we propose this taxon to be considered *incertae sedis* and removed from the synonymy of *A. ancilla* as given by Clench and Turner (1964) and Weaver and duPont (1970).

Weaver and duPont (1970) considered *Adelomelon paradoxa* (Lahille, 1895) a valid species, but remarked that some specimens illustrated by Lahille (1895) belong to *Odontocymbiola magellanica* (Gmelin, 1791). Poppe and Goto (1992), on the other hand, indicated *Voluta paradoxa* Lahille, 1895 in the synonymy list of *A. ancilla*. Our examination of the syntypes illustrated by Lahille (1895) and deposited in MLP, indicated that all specimens are actually *O. magellanica*, and therefore the taxon should be removed from the synonymy of *A. ancilla* and considered a synonym of *O. magellanica*. Weaver and duPont (1970) referred to the holotype of *Voluta paradoxa* Lahille, 1895 as having been deposited at BMNH, as lot 1901.8.1.35. This indication is in error, as this lot number refers to the holotype of *Cymbiola mangeri* Preston, 1901 (Dr. Kathie Way, pers. comm., 2004), which is a synonym of *V. paradoxa* Lahille, 1895. The *V. paradoxa* type series (nine syntypes) is deposited at MLP.

Adelomelon beckii (Broderip, 1836)

Voluta beckii Broderip, 1836: 43. Type-locality: Seven Miles off Ilha Rasa, Rio de Janeiro, Brazil (by designation of Weaver and duPont, 1970). Lectotype, UMZC I.100,045 (ex Saul collection, selected by Clench and Turner, 1964; figured by Bishop and May, 1976); Paralectotype, BMNH 1837.12.1.74 (Figure 7).

Voluta fusiformis Kiener, 1839: 41. (non Brocchi, 1814; non Turton, 1819; non Swainson, 1822; non Defrance, 1829). Type-locality: "Habite l'Océan Méridional, les côtes Magellanique.

Voluta festiva d'Orbigny, 1841: 426. (non Lamarck, 1811). Type-locality: habiter toute la côte de Patagonie,

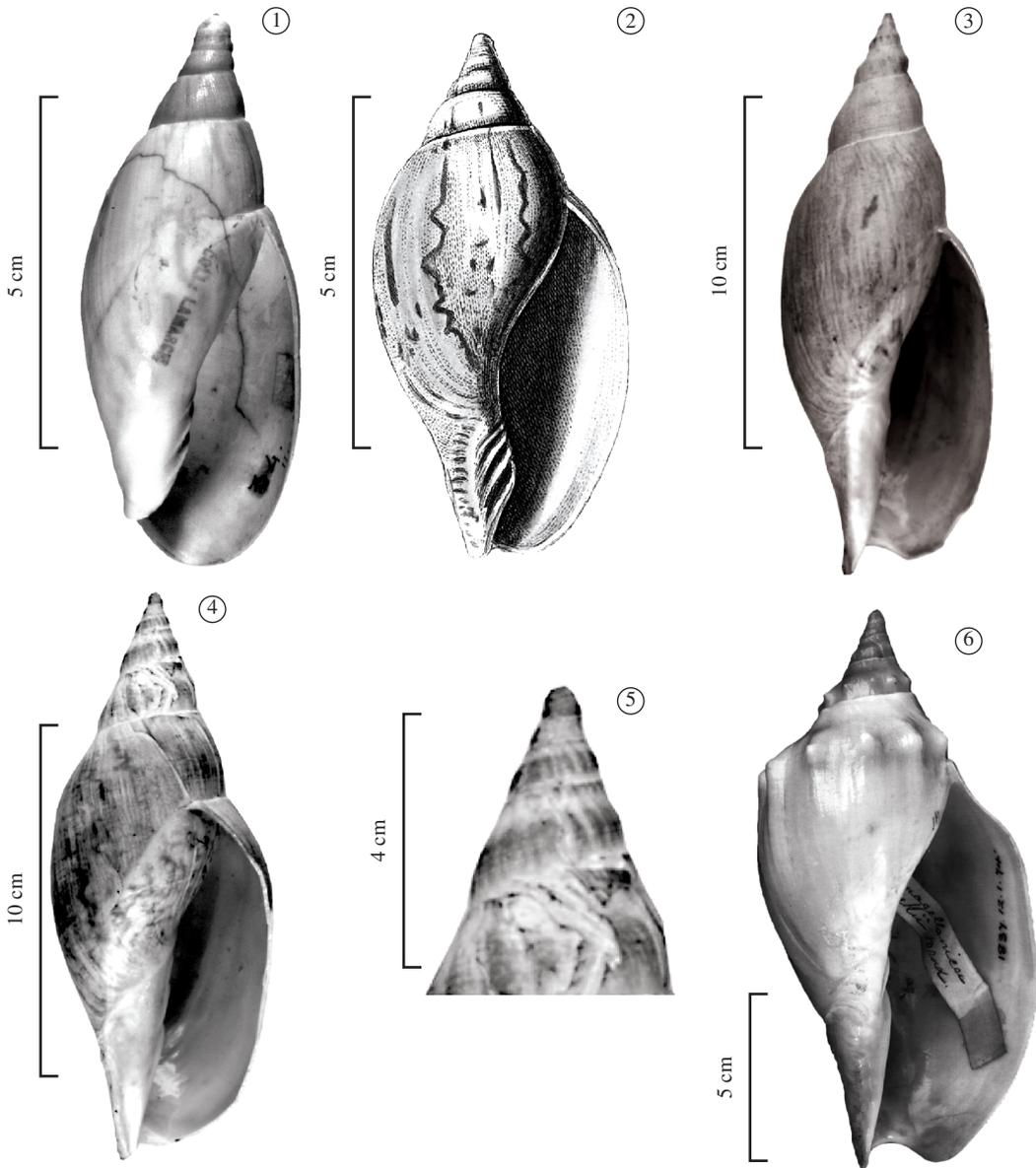


Figure 1-6. 1) *Voluta magellanica* Lamarck, 1811 (non Gmelin, 1791); Syntype (MHNG 1103/31); 2) Reproduction of Küster (1845) illustration of *Voluta magellanica* Lamarck, 1811 (non Gmelin, 1791); 3-5) *Voluta martensi* Strebel, 1906: 3) Syntype ZMB 18483 in ventral view, 4) Syntype ZMB 108666 in ventral view, 5) Detail of the spire, showing axial sculpture; and 6) *Adelomelon beckii* (Broderip, 1836) paralectotype BMNH 1837.12.1.74.

depuis le 39° degré de latitude sud (misidentification by Orbigny).

Adelomelon indigestus Ihering, 1908: 433-434. Type-locality: São Sebastião, São Paulo; Guaratiba, Rio de Janeiro (both southwest Brazil, by designation of Wiggers and Veitenheimer-Mendes, 2005). Syntypes, MNRJ 950, MZSP 5686.

Remarks: Kiener (1839) described *Voluta fusiformis* based on material from the Masséna Collection and from the Paris Museum. The Masséna Collection was later incorporated into the Delessert Collection, which is now

housed at the Geneva Museum (MHNG). Dr. Yves Finet (in 2004, pers. comm.) could not locate the specimen illustrated by Kiener (1839).

Kiener (1839) also referred to material brought to Paris by d'Orbigny when returning from his voyage to southern South America, which was later incorporated into the British Museum Collection (BMNH) and listed by Gray (1854). However, when listing the specimens brought from this voyage, d'Orbigny (1841) did not mention *Voluta fusiformis*, but instead *Voluta festiva* Lamarck, 1811 and Gray (1854) remarked on this speci-

men as being a young *V. beckii*. Strebel (1906) remarked that d'Orbigny's collection arrived in Paris in 1847 and at that time, d'Orbigny most probably identified his material as *V. festiva* based on Lamarck's writings, which had no illustrations. The d'Orbigny specimen is now housed at BMNH (lot 1854.12.4.427), and should be regarded as a syntype of *Voluta fusiformis* Kiener, 1839, by its reference in the original description.

Concerning *V. festiva* sensu d'Orbigny (Figure 7), it has long been known that his identification was in error. Therefore, *Voluta festiva* Lamarck, 1811 is restricted to West Africa, as thoroughly discussed by Lahille (1895) and Strebel (1906).

Adelomelon indigestus Ihering, 1908 was described based on two specimens collected in southeast Brazil. The taxonomic status and type locality were discussed by Wiggers and Veitenheimer-Mendes (2005).

***Adelomelon riosi* Clench and Turner, 1964**

Adelomelon riosi Clench and Turner, 1964: 162. Type-locality: 130 miles east of Mar del Plata,

Argentina, 99 fathoms (by original designation). Holotype, MCZ 245017; Paratypes, USNM 652353, MORG 8.221, Clifton Weaver Collection.

Remarks: *Adelomelon riosi* (Figure 8) commonly has, besides the fine spiral lines, flat, axially elongated nodules restricted to early whorls, similar to those of *A. ancilla* form *martensi*. We believe that this characteristic has no taxonomic importance.

Subgenus *Pachycymbiola* Ihering, 1907

Pachycymbiola Ihering, 1907: 209. Type-species: *Voluta brasiliiana* Lamarck, 1811, by original designation.

Diagnosis: Shell globose without brown zigzag markings, spire low, apex globose to mammillated, and protoconch without a calcarella.

Remarks: Ihering (1907) proposed the subgenus *Pachycymbiola* to accommodate two recent species (*A. brasiliiana* and *A. ferussacii*) and one fossil species (*A. ameghinoi*). According to Ihering (1907), *Pachycymbiola* is characterized by heavy and globose shells, a low spire, and uniform color.

***Adelomelon brasiliiana* (Lamarck, 1811)**

"*La Coloquinte*" Favanne, 1772: 139. (*nomen nudum*; prelinnean work)

Voluta brasiliiana Lightfoot, 1786: 186. (*nomen nudum*; fide Clench and Turner, 1964)

Voluta Colocynthis Brasiliiana Solandri Chemnitz, 1795: 10. (*nomen nudum*; work rejected by ICZN, Opinion 184 (1944); not binomial.)

Voluta brasiliiana Lamarck, 1811: 62 (based on Chemnitz, 1795, pl. 176 figs. 1695-1696). Type-

locality: "Habité l'Océan du Brésil". Lectotype, ZMUC (here designated, as figured by

Chemnitz, 1795); Paralectotypes: ZMUC (referred to by Chemnitz, 1795; lost), MNHN (lost).

"*Voluta cocynthis* Chemnitz" Lamarck, 1811: 62. (spelling error).

Voluta colocynthis Dillwyn, 1817: 574 (Inhabits the coasts of Brazil; Validation of Chemnitz's *V. colocynthis*)

Remarks: The type location restricted by Weaver and duPont (1970) as "the estuary of the Rio Grande do Sul, southern Brazil" does not refer to any specific location and is doubtful. The indication of Weaver and duPont (1970) probably refers to the estuary of the Patos Lagoon, Rio Grande city, Rio Grande do Sul, southern Brazil, because it is the major estuary of the region. Still this is a doubtful assumption. Moreover, *A. brasiliiana* is not an estuarine species, and restriction of the type-locality to an estuary may lead to erroneous conclusions regarding the animal's habitat. Therefore, we find no reason for such type locality restriction.

The "Holotype" [sic] of *A. brasiliiana*, which was stated by Kiener to be in the Paris Museum, could not be located by Dr. D. F. McMichael in 1961 (fide Clench and Turner, 1964), nor by Dr. Le Renard in 2004 (pers. comm.), and is therefore presumed lost. The two specimens described by Chemnitz (1795) and referred to in Lamarck's description must, under ICZN (1999) article 73.1.4, be considered part of the type series.

The specimen illustrated by Chemnitz (1795) is part of the Spengler Collection, and Dr. Ole Tendal (pers. comm.) located it in 2004, housed in the ZMUC Collection (Figure 9). This specimen, being the sole traceable specimen in the type series, is here designated as a lectotype, to assure correct usage of the taxon name. The specimen mentioned but not illustrated by Chemnitz (1795) could not be located; still, it must be considered a paralectotype, as well as Lamarck's Paris Museum specimen.

Although not a usual case, the specimens cited by Chemnitz (1795) and considered the lectotype and paralectotype of *V. brasiliiana* Lamarck, 1811, should be name-bearing syntypes of *Voluta colocynthis* because Dillwyn (1817) made the taxon name available, with a direct reference to Chemnitz (1795) (ICZN, 1999; articles 11.5 and 72.6). Therefore, *V. brasiliiana* and *V. colocynthis* are objective synonyms.

***Adelomelon ferussacii* (Donovan, 1824)**

Voluta ferussacii Donovan, 1824: 67. Type-locality: Straits of Magellan (restricted by Weaver and duPont, 1970). Type, lost (according to Clench and Turner, 1964).

Voluta rudis Griffith and Pidgeon, 1834: 601. Type-locality: not stated. Holotype, BMNH 19920177.

Voluta oviformis Lahille, 1895: 312. Type-locality: Coast of Santa Cruz, Argentine. Nineteen syntypes, MLP.

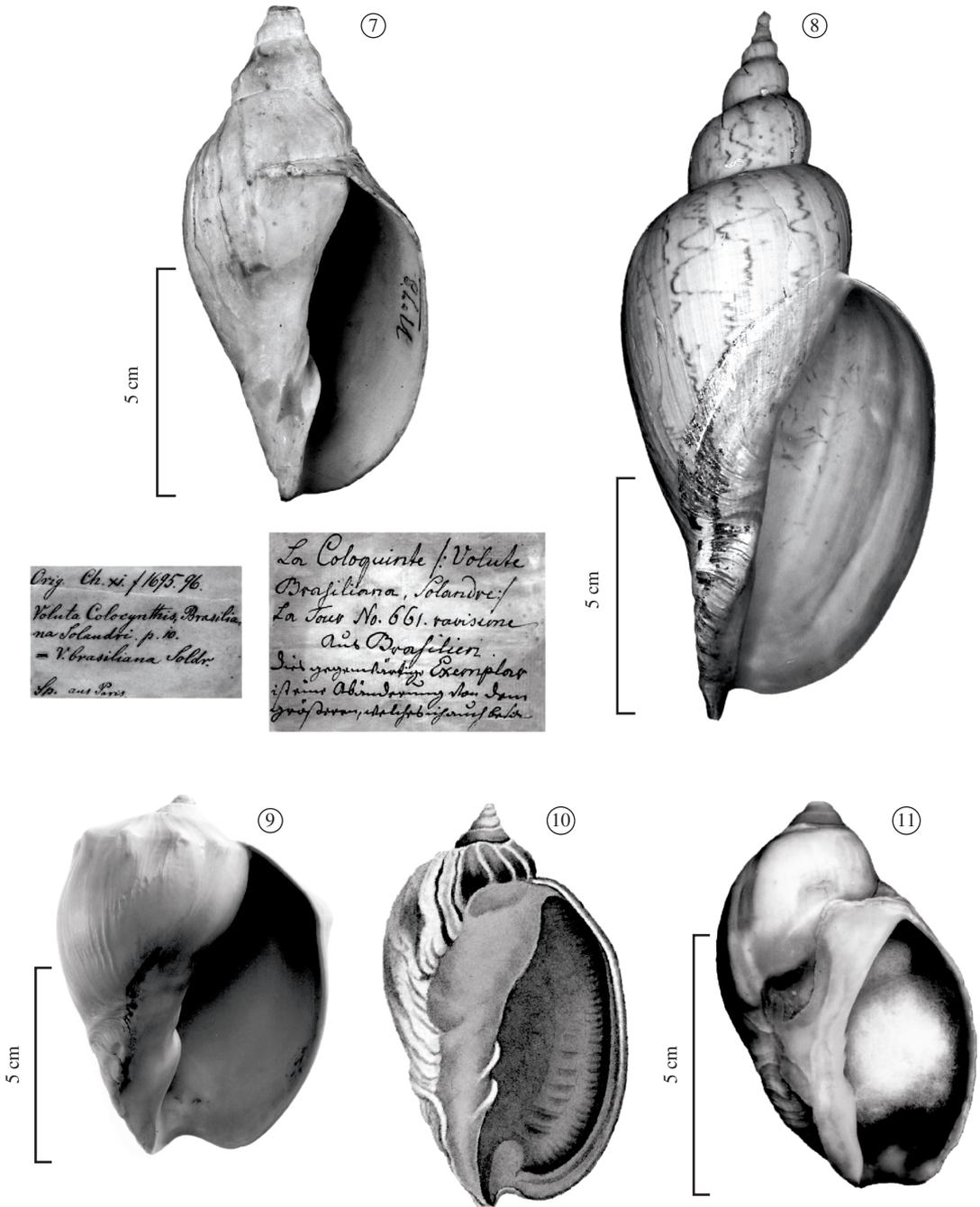


Figure 7-11. 7) *Voluta fusiformis* Kiener, 1839, syntype BMNH 1854.12.4.427 (labeled *Voluta festiva* by d’Orbigny, 1841); 8) *Adelomelon riosi* (UFRS 2892) specimen showing brown zigzag markings; 9) *Adelomelon brasiliana* Lamarck, 1811; Lectotype ZMUC with Spengler (left) and Mörch (right) labels; 10) *Adelomelon ferussacii* Donovan 1824, reproduction of original illustration; and 11) *Voluta rudis* Griffith and Pidgeon, 1834, holotype BMNH 19920177).

Remarks: Donovan (1824) described *V. ferussacii* (Figure 10) with two spellings in the same text. In the title, he spelled the species name “*Voluta ferussacii*”, and further on in the species description he spelled it “*Voluta ferrussacii*”. Given the principle of priority and the dedication of the species to the Baron of Ferussac, the cor-

rect spelling should be the first presented, i.e., *Voluta ferussacii* Donovan, 1824.

Weaver and duPont (1970) stated that the holotype of *A. ferussacii* is housed in the BMNH under No. 19920177 (Figure 11), but the indication is in error because this lot number refers to the holotype of *V. rudis* Griffith and

Pidgeon, 1834 (Dr. Kathie Way, pers. comm., 2004). The holotype of *A. ferussacii* could not be located and is probably lost.

Lahille (1895) illustrated several specimens of *V. oviformis* (some are illustrated more than once in different plates). Among the material figured, 19 are here recognized as syntypes (Table 1). Three specimens were expressly stated to be variants, and therefore should not be considered syntypes under ICZN (1999) article 72.4.1. All specimens are housed in the MLP.

Table 1. List of specimens figured by Lahille (1895) as *V. oviformis*. Specimens marked with * should not be considered syntypes. All specimens housed in MLP (unnumbered).

	Figure	Label inscription
A	Pl. I Figure 1 / Pl. VII Figure 133	533 1.Rugosa
B	Pl. I Figure 2 / Pl. VII Figure 134	532 2.Rugosa
C	Pl. II fig 53 / Pl. VII Figure 121 / Pl. XII Figure 22	1.Typica (2 S)
D	Pl. II Figure 54 / Pl. VII Figure 122 / Pl. XII Figure 23	2.Typica (2S)
E	Pl. II Figure 55 / Pl. VII Figure 125	5.Typica (2S)
F	Pl. II Figure 56 / Pl. VII Figure 129	
G	Pl. VII Figure 123 / Pl. XII Figure 24	4.Typica (2S)
H	Pl. VII Figure 124	3.Typica
I	Pl. VII Figure 126 / Pl. XII Figure 25	6.Typica
J	Pl. VII Figure 127	8.Typica
H	Pl. VII Figure 128	9.Typica
I	Pl. VII Figure 130	11.Typica
J	Pl. VII Figure 131	12.Typica (2S)
K	Pl. VII Figure 132	1.pseudointermedia
L	Pl. VII Figure 135	5.Typica
M	Pl. VII Figure 137	1.Typica
N	Pl. X Figure 4	
O	Pl. X Figure 5	8.Typica (2S)
P	Pl. X Figure 6	(269;534)
Q*	Pl. VII Figure 136 / Pl. X Figure 9	Form longiscula
R*	Pl. X Figure 7	Form fratercula (2301/2;535)
S*	Pl. X Figure 8	Form fratercula (pseudointermedia)

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References

- BISHOP, MJ. and MAY, K., 1976. Type specimens in the Jane Saul collection, University Museum of Zoology, Cambridge. *J. Conch.*, vol. 29, p. 41-46.
- BONDAREV, I., 1996. A phylogenetic classification of Australian Volutidae with description of a new subgenus and a new subfamily. *Conquiglia*, vol. 3, no. 276, p. 25-39.
- BRODERIP, WJ., 1836. Descriptions of some species of shells apparently not hitherto recorded. *Proc. Zool. Soc. London*, vol. 4, p.43.
- CARRANZA, A., 2005. New and Southernmost record of *Adelomelon barattinii* (Neogastropoda; Volutidae). *Com. Soc. Malac. Uy.*, vol. 9, no. 88, p. 377-379.
- CHEMNITZ, IH., 1795. *Neues Systematisches Conchnilien-Chabinet*. Nurnberg: Raspe. 310 p.
- CLENCH, WJ. and TURNER, RD., 1964. The subfamilies Volutinae, Zidoninae, Odontocymbiolinae and Calliotectinae in the Western Atlantic. *Johnsonia*, vol. 4, no. 43, p. 129-180.
- , 1970. The family Volutidae in the Western Atlantic. *Johnsonia*, vol. 4, no. 48, p. 369-372.
- DALL, WH., 1906. Note on some names in Volutidae. *Nautilus*, vol. 19, no. 12, p. 143-144.
- DAVILA, PF. and ROMÉ de L'ISLE, JBL., 1767. *Catalogue Systématique et raisonné des Curiosités de la Nature et de l'Art qui composent le cabinet de M. Davila*. Paris: Chez Briasson. 571 p.
- DILLWYN, LW., 1817. *Descriptive catalogue of recent shells*. London: J & A Arch. 580 p.
- DONOVAN, E., 1824. *The Naturalist's repository*. vol. 2. London: W. Simkin and R. Marshall. p. 208-215.
- GMELIN, JF., 1791. *Systema naturae*. 13 ed. Tomo 1, part 6. Leipzig: Lipsiae. 3910 p.
- GRAY, JE., 1854. *List of the shells of South America in the collection of the British Museum, collected and described by Mr. Alcide d'Orbigny in the "Voyage dans l'Amérique Méridionale"*. London: Taylor and Francis. 89 p.
- GRIFFITH, E. and PIDGEON, E., 1834. The Mollusca and Radiata. In G.L.C.F.D. Cuvier (Ed.). *The Animal Kingdom*. vol. 12. London: Whittaker. 601 p.

- ICZN - International Commission on Zoological Nomenclature, 1944. *Opinion 184*. On the status of names first published in volumes 1 to 11 of Martini and Chemnitz, Neues Systematisches Conchylien-Cabinet, Nürnberg, 1769-1795. Opinions and Declarations rendered by the ICZN, vol. 3, p. 25-36.
- ICZN - INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1999. *International Code of Zoological Nomenclature*. 4 ed. London: International Trust for Zoological Nomenclature. 306 p.
- IHERING-VON, H., 1907. Les Mollusques fossiles du tertiaire et du crétacé supérieur de L'Argentine. *Anal. Mus. Nac. Buenos Aires*, vol. 7, no. 3, p. 201-212.
- , 1908. Mollusques du pampéen de Mar del Plata et Chapalmalán recueillis par M. le Dr. Florentino Ameghino em 1908. *Anal. Mus. Nac. Buenos Aires*, vol. 10, no. 3, p. 429-438.
- KIENER, LC., 1839. Espèces general et Iconographie des conquilles vivantes. *Voluta*, vol. 3, 69 p.
- KLAPPENBACH, MA. and URETA, EH., 1966. Nueva especie de la Familia Volutidae (Moll. Gastropoda) obtenida al sur de la isla de Lobos, Uruguay. *Com. Zool. Mus. Hist. Nat. Montevideo*, vol. 9, no. 111, p. 1-6.
- KÜSTER, HC. 1845. *Systematisches Conchylien-Cabinet von Martini und Chemnitz. Neu herausgegeben und vervollständigt*. Nürnberg: Baur and Raspe.
- LAHILLE, F., 1895. Contribución al estudio de las Volutas Argentinas. *Rev. Mus. La Plata*, vol. 6, no. 33, p. 295-332.
- LAMARCK, JBPAMC., 1811. Suite de la Détermination des espèces de Mollusques Testacés, Voluta. *Ann. Mus. d'Hist. Nat.*, vol. 17, p. 54-80.
- LIGHTFOOT, A., 1786. *A Catalogue of the Porland Museum*. London: Privately printed. 194 p.
- D'ORBIGNY, A., 1841. *Voyage dans l'Amérique Méridionale, Mollusques*, vol. 5, no. 3. Paris: Bertrand. 758 p.
- PILSBRY, HA and OLSSON, AA., 1954. Systems of the Volutidae. *Bull. Am. Paleo.*, vol. 35, no. 152, p. 5-29.
- POPPE, GT. and GOTO, Y., 1992. *Volutes*. Ancona: L'Informatore Piceno. 348 p.
- RIOS, EC., 1994. *Seashells of Brazil*. 2 ed. Rio Grande: Ed. Da FURG. 368 p. 113 pl.
- RIVERS, JJ., 1891. A new volutoid shell from Monterey Bay. *Proc. Calif. Acad. Sci. 2nd Ser.*, vol. 3, no. 2, 107 p.
- ROCHEBRUNE, AT. and MABILLE, J., 1889. Misson Scientifique du Cap Horn. *Mollusques*, vol. 6, p. 1-143.
- STREBEL, H., 1906. Beiträge zur Kenntnis der Molluskenfauna der Magalhaen-Provinz. *Zool. Jahrb.*, vol. 24, no. 4, p. 91-174.
- WEAVER, CS. and DUPONT, JE., 1970. Living *Volutes*; A monograph to the recent Volutidae of the world. Delaware: Delaware Museum of Natural History. 375 p.
- WIGGERS, F. and VEITENHEIMER-MENDES, IL., 2005. Type material of *Adelomelon indigestus* von Ihering, 1908 (Gastropoda, Volutidae). *Biotemas*, vol. 18, no. 2, p. 227-231.