



## Notas breves

### Revalidation of the species *Demoulia tryoni* (Crosse, 1869) (Gastropoda, Nassariidae)

### Revalidación de la especie *Demoulia tryoni* (Crosse, 1869) (Gastropoda, Nassariidae)

Carles GILI\* & Hugo H. KOOL\*\*

Recibido el 10-V-2022. Aceptado el 4-VI-2022

KEY WORDS: Nassariidae, *Demoulia*, systematics, type locality designation.

PALABRAS CLAVE: Nassariidae, *Demoulia*, sistemática, designación de localidad tipo.

#### INTRODUCTION

CROSSE (1869: 409) described in Latin *Nassa (Desmoulea) tryoni* as a new species without figuring it. In 1871(: 70) the same author gave a detailed French description and added two figures (Figs 1-2). In spite of having a fairly differentiated morphology, TRYON (1882: 66, pl. 18, fig. 367) considered *Desmoulea tryoni* as a synonym of *Desmoulea retusa* (Lamarck, 1822), which is the South African *Demoulia ventricosa* (Lamarck, 1816) and reproduced CROSSE's figure. In all the scarce later reports there is always a confusion with one or another *Demoulia* species, either with the West African *Demoulia obtusata* (Link, 1807) (CERNOHORSKY 1982, 1984) or with the South African *D. nataliae* Kilburn, 1972 (ROLÁN & RYALL, 1999; ROLÁN 2005). Crosse did not know the geographical origin of the species and the only reference so far is Sacomar (near Moçâmedes, Angola, 15°7.8'S, 12°8.3'E) given by ROLÁN (2005).

The rarity of the species has probably prevented any citation in the consulted general malacological works about West Africa or South Africa (NICKLÈS, 1950; BARNARD, 1959, 1969; KILBURN, 1972; CERNOHORSKY, 1975; KILBURN & RIPPEY, 1982; ADAM & KNUDSEN, 1984; Bernard, 1984; GOFAS, PINTO ALFONSO & BRANDÃO., 1985; STEYN & LUSSI, 1998, 2005; ARDOVINI & COSSIGNANI, 2004; MARAIS & SECCOMBE, 2010).

The observation that one specimen in the CG collection matches the lectotype of *Nassa (Desmoulea) tryoni* in MNHN (MNHN-IM-2000-6691) (WoRMS, 2020) and the figure by ROLÁN (2005: 38, fig. 43, as *Demoulia nataliae*) allows the revalidation of this taxon. In the present paper *D. tryoni* is described, the type locality is determined and it is compared with other *Demoulia* species.

\* Colaborador del Museu de Ciències Naturals de Barcelona, Castell dels Tres Dragons, Passeig Picasso s/n, 08003 - Barcelona, Spain (nassariusgili@gmail.com).

\*\* Associate Mollusca Collection, Naturalis Biodiversity Center. P.O. Box 9517, 2300 RA Leiden, The Netherlands (hh.kool@hetnet.nl).

## ABBREVIATIONS

CG: Carles Gili collection, Barcelona, Spain.

ICZN: International Commission on Zoological Nomenclature.

MNHN: Muséum national d'Histoire naturelle, Paris, France.

## SYSTEMATICS

Class GASTROPODA Cuvier, 1795  
Order NEOGASTROPODA Wenz, 1938  
Family NASSARIIDAE Iredale, 1916  
Subfamily NASSARIINAE Iredale, 1916  
Genus *Demoulia* GRAY, 1838

Type species: *Buccinum retusum* LAMARCK, 1822 by subsequent designation (HERRMANNSEN, 1847)

### *Demoulia tryoni* (Crosse, 1869) (Fig. 1A-G)

1869. *Nassa (Desmoulea) tryoni*. Crosse: 409.

1871. *Nassa (Desmoulea) tryoni*. Crosse: 70, Pl.1, fig. 3.

1882. *Desmoulea tryoni* (Crosse). Tryon: 66, Pl. 18, fig. 367.

1984. *Demoulia obtusata* (Link, 1807): Cernohorsky: 207, Pl. 46, fig. 3 (misidentification).

2005. *Demoulia nataliae* Kilburn, 1975: Rolán: 34, figs 12 (radula), 43 (misidentification).

**Type material:** The lectotype is in MNHN, labelled as *Nassa (Desmoulea) tryoni*, 27.3 mm, numbered MNHN-IM-2000-6691, treated as holotype by FISCHER-PIETTE (1950), which must be considered the lectotype (ICZN Art. 74.6). No paralectotypes are known.

**Material studied:** ANGOLA • 1 shell (Fig. 1E-F-G); Namibe province, Bahia do Chapéu Armado; 14°26. 51'S, 12° 20.40'E; 4-5 m depth; private collection of C. Gili, CG 1952-N. • 2 fragmented shells, beached, São Nicolau; 17 17.6'S, 12 22.0'E; MNHN (MNHN-IM-2021-8738) (Gofas pers. comm.).

**Type locality:** CROSSE (1869, 1871) did not specify any locality, the geographical origin is unknown. Angola is here designated as the type locality for the species.

**Description of the species:** Shell solid, height 23-27 mm, whorls convex, suture smooth, spire low, obtuse, last whorl globose, totally covered by narrow cords separated by very narrow and shallow grooves, aperture pyriform.

Protoconch is not conserved in the studied specimen. Teleoconch of 6 whorls, last one 79% of total height and width 67% of height. Cords are slightly wider than grooves, around 50 on last whorl and 22 on penultimate whorl; grooves on shell's base are a little deeper but equally narrow. Columella slightly convex in its apical region, with a thick parietal denticle, some very small tubercles throughout and a pronounced abapical concavity; external lip thickened but not varicose, quite uniformly curved, with 13 thick, not very

deep, lirae within; columellar callosity fine and a little extended on last whorl, thicker and dilated abapically; anal canal narrow and deep; siphonal fasciole short, with some 13 external cords, separated from the base by a large deep groove; siphonal canal narrow.

Colour ochre with brown blotches and dots, more defined on the suture, firsts spire whorls more violet; callosity and labial denticles whitish, interior violet.

Operculum unknown.

**Distribution:** The known specimens of the species, besides the lectotype with an unknown location, are from Angola: the specimen in Rolán (2005) is from Namibe province, Sacomar, the specimen CG 1952-N is from Namibe, Bahia do Chapéu Armado and the two

MNHN fragments are from Namibe, São Nicolau. *D. tryoni* is most probably endemic to the well-characterised biotic region of southern Angola (Caballero-Herrera et al., 2021), coinciding with other species of gastropods and bivalves which are also endemics.

#### Comparison with other species of *Demoulia*

*Demoulia tryoni* shares the principal characters of the genus *Demoulia*: spire low and last whorl large and globose, aperture with a very marked abapical concavity, short siphonal canal and a sculpture with only longitudinal cords and grooves.

*Demoulia ventricosa* (LAMARCK, 1816) (Fig. 1H-I-J) shows a more elongated last whorl than that of *D. tryoni*. It has a lower spire with a concave profile on the initial whorls, a straighter external lip in the upper half, which creates a much longer and deeper anal canal, becoming convex in the anterior part. The columellar callosity does not extend over the whorl nor over the siphonal canal.

*Demoulia obtusata* (LINK, 1807) (Fig. 1N-O-P) has an even more globose last whorl and a lower and concave spire profile than *D. tryoni*. The aperture has a much more pronounced concavity and a labral denticulate edge. This set of characters differentiates it from *D. tryoni*.

KILBURN (1972: 419, fig. 7c) established the subspecies *Demoulia ventricosa nataliae* in order to distinguish certain forms, distributed from Mzamba to Durban (South Africa), from the nominal subspecies *D. ventricosa ventricosa* (LAMARCK, 1816). According to

KILBURN & RIPPEY (1982: 99, Pl. 23, fig. 2b) *D. v. nataliae* replaces *D. v. ventricosa* "from eastern Transkei eastwards", and the same authors indicate that the "Namibian specimens need further study". ROLÁN (2005) figured a shell from the Angolan region as *D. nataliae* following the opinion of CERNOHORSKY (1984: 210) who assessed the validity of *nataliae* as a subspecies as "suspect". ROLÁN & RYALL (1999) did not consider *D. nataliae* a subspecies of *D. ventricosa* as KILBURN originally described this species (Rolán pers. com.) but as a different species, and we agree with this opinion. The shape of the last whorl and of the aperture however are closest to *D. tryoni*. *D. nataliae* KILBURN, 1972 (Fig. 1K-L-M) is smaller in size than *D. tryoni*, has a sharper and strongly concave spire profile and is pink in colour.

The fifth species, *Demoulia abbreviata* (GMELIN, 1791) (Fig. 1Q-S), the largest species within the genus, has a very similar general shape, can easily be differentiated from *D. tryoni* by its stepped spire, its much wider and less numerous but stronger cords, its columellar callus extending on the body whorl showing underlying cords and by its coloration.

The geographical distribution of the other species of *Demoulia* differs from that of *D. tryoni*: *D. abbreviata*, *D. ventricosa* and *D. nataliae* only occur in South Africa. The presence of *D. "nataliae"* in Angola pertains, as shown above, to *D. tryoni*. *Demoulia obtusata* occurs from southern Portugal to Angola. There exists at least one other species of the genus from the coasts of Namibia which has not been studied yet due to the absence of sufficient material.

#### ACKNOWLEDGEMENTS

Thanks to Emilio Rolán, Vigo, Spain, Marcos A. González, Museo de Historia Natural da USC, and Carlos Afonso, Algarve, Portugal, for the information on their Angolan material; to Joaquim Lopez, Barcelona, Spain, for their suggestions on the text, and Pierre Lozouet (MNHN) for his valuable information

about the deposited material in his Institution and his assistance in the related literature as well as Serge Gofas, editor of *Iberus*, for locating supplementary material and for his revision and suggestions that have improved the text. Thanks to Henk Dekker for his efforts to get more material of the relevant species.

## BIBLIOGRAPHY

- ADAM W. & KNUDSEN J. 1984. Révision des Nassariidae (Mollusca: Gastropoda, Prosobranchia) de l'Afrique Occidentale. *Bulletin Institut Royal Sciences Naturelles de Belgique, Bruxelles*, 55 (9): 1-95.
- ARDOVINI R. & COSSIGNANI T. 2004. *West African Seashells*. L'Informatore Picens. Ancona, 318 pp.
- BARNARD, K.H. 1959. Contributions to the knowledge of South Africa Marine Mollusca. Part II. Gastropoda: Prosobranchiata: Rhachiglossa. *Annals of the South African Museum*, 45 (1): 1-237.
- BARNARD K.H. 1969. Contributions to the knowledge of South Africa Marine Mollusca. Part VI. Supplement. *Annals of the South African Museum*, 47 (4): 595-661.
- BERNARD P. A. 1984. *Coquillages du Gabon*. Tipografica La Piramide. Roma, 140 pp.
- CABALLERO-HERRERA J.A., OLIVERO J., VON COSEL R. & GOFAS S. 2021. An analytically derived delineation of the West African Coastal Province based on bivalves. *Diversity and Distributions*, 00, 1-15. <https://doi.org/10.1111/ddi.13454>.
- CERNOHORSKY W.O. 1975. The taxonomy of some West American and Atlantic Nassariidae based on their type-specimens. *Records of the Auckland Institute and Museum*, 12: 121-173.
- CERNOHORSKY W.O. 1984. Systematics of the family Nassariidae (Mollusca: Gastropoda). *Bulletin of the Auckland Institute and Museum*, 14: 1-356
- CROSSE H. 1869. Diagnoses Molluscorum novorum. *Journal de Conchyliologie*, 17: 408-410.
- CROSSE H. 1871. Description d'espèces nouvelles, Part II. *Journal de Conchyliologie*, 19: 59-71.
- FISCHER-PIETTE E. 1950. Liste des types décrits dans le Journal de Conchyliologie et conservés dans la collection de ce journal (avec planches) (suite). *Journal de Conchyliologie*, 90: 65-82.
- GOFAS S., PINTO ALFONSO J. & BRANDAO M. 1985. *Conchas e Moluscos de Angola*. Universidade Agostinho Neto. ELF Aquitaine Angola, 140 pp.
- KILBURN R.N. 1972. Taxonomic notes on South African Mollusca (2), with the description of new species and subspecies of *Conus*, *Nassarius*, *Vexillum* and *Demoulia*. *Annals of the Natal Museum*, 21(2), 391-437.
- KILBURN R. & RIPPEY E. 1982. *Sea Shells of South Africa*. Macmillan South Africa Publishers, Johannesburg, 249 pp.
- MARAIAS A. P. & SECCOMBE A.D. 2010. *Identification Guide to the Seashells of South Africa*. Vol. 1. Centre for Molluscan Studies, Groenkloof, South Africa, 376 pp.
- NICKLÈS M. 1950. Mollusques testacés marins de la Côte occidentale d'Afrique. *Manuels Ouest-Africains*, 2: 1-269.
- ROLÁN E. 2005. Some radulae and opercula from West African Nassariidae (Mollusca: Neogastropoda). *Novapex*, 6 (1-2): 31-39.
- ROLÁN E. & RYALL P. 1999. Checklist of the Angolan marine Molluscs. *Reseñas Malacológicas*, 10: 1-132.
- STEYN D.G. & LUSSI M. 1998. *Marine shells of South Africa. An Illustrated collector's guide to beached shells*. Ekogilde Publishers. Hartbeespoort. South Africa, 264 pp.
- STEYN D.G. & LUSSI M. 2005. *Offshore Shells of Southern Africa*. Published by the Authors, Durban, South Africa, 289 pp.
- TRYON G.W. 1882. *Manual of conchology, structural and systematic. With illustrations of the species*. Vol. IV Nassiidae, Turbinellidae, Volutidae, Mitridae. Philadelphia, PA: Privately Published, 276 pp.
- WoRMS Editorial Board 2020. World Register of Marine Species. Accessible in <<http://www.marinespecies.org>>, consulted 11 May 2020.

(Right page) Figure 1. *Demoulia* spp. A, B: original figures of *Nassa* (*Desmoulea*) *tryoni* in CROSSE (1871); C, D: lectotype of *D. tryoni* (Crosse, 1869), MNHN-IM-2000-6691, 27.3 mm; E-G: *D. tryoni* (Crosse, 1869), Angola, Namibe, Baia do Chapéu Armado, 26.4 mm, CG 1952-N; H-J: *D. ventricosa* (Lamarck, 1816), South Africa, East London, Eastern Cape, 23.2 mm, CG 557-N; K-M: *D. nataliae* Kilburn, 1972, South Africa, Natal, 16.4 mm, CG 1389-N; N-P: *D. obtusata* (Link, 1807), Senegal, Mbour, 15.6 mm, CG 1528-N; Q-S: *D. abbreviata* (Gmelin, 1791), South Africa, 29.7 mm, CG 164-N. (Página derecha) Figura 1. *Demoulia* spp. A, B: figuras originales de *Nassa* (*Desmoulea*) *tryoni* en CROSSE (1871). C, D: lectotipo de *D. tryoni* (Crosse, 1869), MNHN-IM-2000-6691, 27,3 mm; E-G: *D. tryoni* (Crosse, 1869), Angola, Namibe, Baia do Chapéu Armado, 26,4 mm, CG 1952-N; H-J: *D. ventricosa* (Lamarck, 1816), África del Sur, East London, Eastern Cape, 23,2 mm, CG 557-N; K-M: *D. nataliae* Kilburn, 1972, África del Sur, Natal, 16,4 mm, CG 1389-N; N-P: *D. obtusata* (Link, 1807), Senegal, Mbour, 15,6 mm, CG 1528-N; Q-S: *D. abbreviata* (Gmelin, 1791), África del Sur, 29,7 mm, CG 164-N.

