

Case 3396***Conus jaspideus* Gmelin, 1791 (Mollusca, Gastropoda): proposed conservation of the specific name by designation of a neotype**

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Abstract. The purpose of this application, under Article 75.5 of the Code, is to define and conserve the usage of the specific name of *Conus jaspideus* Gmelin, 1791 by designating a neotype. *C. jaspideus* is a marine gastropod mollusc occurring in the tropical Western Atlantic and Caribbean region. The name is in common usage but it is also a source of confusion, for both nomenclatural and biological reasons. The main nomenclatural reason is that the lectotype is unidentifiable. The main biological reason is disagreement as to whether *C. jaspideus* is a very variable and widely distributed species, or a complex of related species that may have narrower geographic ranges. Replacement of the present unidentifiable name-bearing type by a neotype would solve the first problem and facilitate research to solve the second.

Keywords. Nomenclature; taxonomy; Gastropoda; *Conus*; *Conus jaspideus*; neotype; Western Atlantic.

1. Johann Friedrich Gmelin published an updated and considerably expanded 13th edition of Linnaeus's *Systema Naturae* (1788–1792). Rather than describing species based mainly on specimens as Linnaeus had done, Gmelin added taxa based on literature accounts that had appeared since Linnaeus's 12th and last edition (Linnaeus, 1767). Thus the specimens now regarded as types of most species introduced by Gmelin are accessible only as lectotypes and a few holotypes, designated by subsequent authors. In the case of the 37 *Conus* species introduced by Gmelin, 27 have representations of lectotypes and four have representations of holotypes (Kohn, 1966, 1992). For six species, the illustrations he cited are recognizable individually as of specimens currently preserved in museums, and these have been designated as lectotypes (4) and holotypes (2) (see Kohn, 1992).

2. Many authors have severely criticized Gmelin's work because of the shortcomings caused by the methodology indicated above. These include Maton & Rackett (1804), Lamarck (1810), Bernhard (1816), Swainson (1840), Gill & Coues (1877) and Dodge (1958) (summarized by Kohn, 1992, pp. 39–40). Gmelin's deficiencies helped motivate Lamarck to shift his work from botany to zoology, and his critique is particularly cogent: 'There is in [Gmelin's] work so much confusion in

the synonymies, so many defective or insufficient specific characters which seem to be based merely on figures, that a new determination of species, at least covering the invertebrates) is now greatly to be desired for the advancement of zoology' (Lamarck, 1810, translated by Dodge, 1959).

3. Gmelin (1791, p. 3387) published the name *Conus jaspideus* with a 7-word diagnosis, a 3-word subdescription, and citations of two previously published figures as indications. Clench (1942) selected the first of these (Martini, 1773, pl. 55, fig. 612) as a representation of the lectotype ('type figure') of *C. jaspideus* Gmelin, even though he admitted that the figure (also reproduced in Kohn, 1992, fig. 87) was 'almost valueless' (Clench, 1942, p. 11).

4. Gmelin's original description and Clench's representation of the lectotype do not permit assignment of the name *C. jaspideus* to any single species. Weinkauff (1875, p. 130) pointed this out long ago: 'To arrive at a determination [of *C. jaspideus*] is impossible. No single [species] may be allied to Martini's figure' [translated by Kohn (1992, p. 48)]. Nevertheless the name *C. jaspideus* has long been applied to a valid species of *Conus*, *C. jaspideus* of authors (e.g. Clench, 1942; Abbott, 1958; Kaufmann & Götting, 1970; Van Mol, 1973; Bandel, 1976; Vokes & Vokes, 1983; Costa, 1994; Diaz & Puyana, 1994; Redfern, 2001; Strong, 2003). As Kohn (1992, p. 48) pointed out, 'acceptance of [*C. jaspideus* of authors] as *C. jaspideus* Gmelin thus appears to be traditional, based on the association of the later species *C. pusio* Hwass in Bruguière (1792) with *C. jaspideus* (Lamarck, 1810, p. 286; Dillwyn, 1817; Deshayes & Milne Edwards, 1845)'. However, *C. pusio* is now considered a distinct valid species (Vink, 1989; Kohn, 1992).

5. Prior to the addition of Article 75.5 in the present (fourth) edition of the Code, Vink (1991) proposed a neotype for *Conus jaspideus* in his revisory work *The Conidae of the Western Atlantic: Part XV*. However, Clench (1942) had earlier designated as lectotype the specimen represented by the figure in Martini (1773, pl. 55, fig. 612) that Gmelin cited in his original description. Clench's designation is valid under the third edition of the Code (1985, Article 74 (c)) prevailing at the time of Vink's (1991) publication, as well as under the present fourth edition (1999, Article 74.4). Hence, Vink's (1991) designation of a neotype cannot supersede the existing lectotype, even in the situation when the type series has not been extant.

6. In accordance with Article 75.3 of the Code, we present the following particulars to indicate the exceptional need for a neotype of *Conus jaspideus* Gmelin, 1791.

- (1) The proposed neotype is designated with the express purpose of clarifying both the taxonomic status and the type locality of *Conus jaspideus*. Several authors have addressed the taxonomic problems surrounding the nominal species, including Clench (1942), Abbott (1958), Walls ([1979]), Vink (1991) and Kohn (1992). While these and all other modern authors who have considered the problem (examples cited in para. 4 above) have concluded that *C. jaspideus* is a valid species, their concepts of its range of morphological variation, included subspecies and varieties, and geographic distribution vary extremely widely. With respect to type locality, Gmelin (1791) stated that he did not know the provenance of his specimen, so there is no original type locality. Clench (1942) stated Puerto Plata, Santo Domingo, to be the type locality, but he did not claim that this was the locality of the lectotype.

- (2) Vink (1991, p. 11) presented a concise statement of the characters that differentiate *C. jaspideus* Gmelin from its closely related congeners, and he focused attention on its white transverse band and granules, characters mentioned in Gmelin's diagnosis and also in Martini's (1773) description of 'the small granulated jasper with white band' that Gmelin cited. Vink's description is largely consistent with those in the subsequent works cited above, e.g. Clench (1942) and Abbott (1958).
- (3) The proposed neotype (Muséum d'Histoire Naturelle, Geneva, no. 16154) is illustrated by Vink (1991, p. 17, lower left) and two images of it are accessible on The *Conus* Biodiversity Website (<http://biology.burke.washington.edu/conus/>). The shell measures 25×13.2 mm and was collected off Monos Island, Trinidad, at a depth of 27 m.
- (4) Kohn (1992) attempted to trace the lectotype of Clench (1942). However, Gmelin (1791) based the many species he described only on earlier published descriptions and figures, and as he is not known to have studied any specimens, no original specimens exist. In most cases Gmelin took the figure citations, or indications, directly from a work by Schröter (1783; see Kohn, 1992). As noted above some of these figures have been subsequently designated representations of lectotypes. Kohn was able to locate in European museums the illustrated specimens of six of the new *Conus* species that Gmelin (1791) described, but the lectotype of *C. jaspideus*, a specimen from the collection of Martini (1773, p. 254, pl. 55, fig. 612), was not among them (Kohn, 1992) and its whereabouts remain unknown.
- (5) The size (estimated as 17×8 mm from the illustration in Martini (1773, pl. 55, fig. 612)), and the pale transverse band on the central portion of the last whorl of the representation of the lectotype of *Conus jaspideus* (see Clench, 1942) are consistent with the concepts of *C. jaspideus* of the subsequent authors cited above. However, as noted above the representation of the name-bearing type is so poorly rendered that it is impossible to identify with any nominal species-group taxon. Moreover, in his description, Martini (1773, p. 254) stated that the specimen had been altered by grinding or polishing. With its present lectotype, the name *C. jaspideus* should thus be considered a nomen dubium. However, this would threaten stability and universality, because no authors have considered it as a nomen dubium; all that have come to our attention regard it as a valid species.
- (6) Because Gmelin (1791) did not know where his specimen came from, there is no original type locality of *C. jaspideus*. Clench (1942) designated Santo Domingo as the type locality, but he based this on the fact that Santo Domingo was one of three islands where Hwass (in Bruguière, 1792) listed the species as occurring, not because it was the locality of Clench's lectotype. The locality of the proposed neotype is Monos Island, Trinidad. Although all authors consulted recognize *C. jaspideus* as a valid species, its geographic range is the subject of considerable dispute. Vink (1991) stated the distribution of *C. jaspideus* s.s. as from off the northern coast of South America south to off the states of Amapá and Ceará, Brazil. For *C. jaspideus* s.l., i.e. the superspecies or 'zoogeographic species' sensu Mayr & Diamond (2001) or 'macrospecies' sensu Brooks & McLennan (2002), the range must be extended

northward to include the southeastern United States Atlantic coast, Gulf of Mexico and Caribbean Sea (Clench, 1942; Walls, [1979]). Establishment of the neotype would facilitate resolution of both taxonomic and geographic problems.

- (7) The proposed neotype has been deposited in the Muséum d'Histoire Naturelle de Genève, where it has the Catalogue no. 16154. This museum holds one of the most important collections of primary type specimens of *Conus*, with types of approximately 100 species, including 74 from the 18th century.

7. We therefore now propose that the Commission set aside under its plenary power the existing lectotype of *Conus jaspideus* Gmelin, 1791 and designate as neotype the specimen in the Muséum d'Histoire Naturelle de Genève (Catalogue no. 16154).

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the nominal species *Conus jaspideus* Gmelin, 1791 and to designate specimen no. 16154 at Muséum d'Histoire Naturelle, Geneva, Switzerland, as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the name *jaspideus* Gmelin, 1791, as published in the binomen *Conus jaspideus* and as defined by the neotype designated in (1) above.

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