



Emanuel Mendes da Costa's *Conchology*, or natural history of shells, a non-binominal work.

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The "*Conchology*," as it is referred to herein, is a very rare and unusual work. Published in 1770–1771, it has no title page; the "title" is usually taken from later works by da Costa and others, from the few known covers, or from the Preface and first page. No author is shown in this small folio size work. There are twelve color plates, mostly of excellent quality, depicting over 100 species of mollusks. These figures have been referenced by numerous authors. The text is in two columns, the left one in English and the right in French, and stops abruptly in the middle of the description of Plate V, figure 2. Whitehead (1977, 1978) determined that the author was Emanuel Mendes da Costa (1717–1791). Other than a statement by Sherborn (1902: xxx), the only one of the numerous papers discussing this work in which the availability of the names is mentioned is the paper by Christiaens (1974) discussed below.

At least two taxon names have been considered available from the *Conchology*, although it is clearly non-binominal. The usage of these non-binominal names can be traced back to Christiaens (1974) who published a revision of the genus *Patella* in which he listed all available names in the genus. In that paper he stated that the rarity of da Costa's work may explain why Sherborn in his *Index Animalium* did not list the new species that he (Christiaens) had found and that seem to be binominal. That is incorrect, as Sherborn did list the work (1902: xxx). Sherborn attributed it to Humphrey, who was then generally considered to have been the author, and listed it as:

[Humphrey, G.] I–VI Numbers of a *Conchology*. fo. Lond. 1770–71. 12 pls. [No sp. nn; some say this was published by da Costa.]

Sherborn explained the abbreviation "No sp. nn" (1902: xi) as "no specific names." His reason for this listing becomes obvious when the work is consulted, as it does not contain any binomina. Although almost all of the taxa described are limpets that would have been placed in *Patella* by any author of the late 18th Century, there is no usage of that name in the work in a binomen or as a stand-alone genus group name. On the first page is the heading "Family I." Below that, centered on the page, is the heading "*Lepas sive Patellae*", under which are equivalent terms in English, French, German, and Dutch. The descriptions begin with the heading "Genus I. Intire Limpets." The first part of most of the descriptions extends across both columns and consists of extended literature references to the species being treated, then becomes two columns for the author's description and comments. In many cases there is a single descriptive word, interpreted by Christiaens as a species-group name, while in others there is only a phrase. As an example, for Plate 1, figure 8, da Costa lists:

The Black Limpet. Nigra. *Patella integra nigra striata*.
Patella nigra, magna, tenuiter admodum striatum,
 Lister Hist. Conchyl. Fig. 16.
 Bonanni Mus. Kircher. p 437, No. 25, Fig. 25.
 [plus similar citations from Klein, Adanson, and Martini]

Below this "synonymy" is da Costa's description, plus comments extracted from other authors that occupy two pages. There are many places in these comments where binomina could have been used to advantage, but there are no such usages here or elsewhere in this work.

The two nomina attributed by Christiaens to da Costa 1771 are *Patella nigra* and *Patella oculushirci*. Use of these two nomina, incorrectly attributed to da Costa (1771), has become pervasive not only in the popular literature (e.g., Ardovini & Cossignani, 2004) but also in works on pollution (e.g., Espinosa et al., 2007). A work by Ridgway et al. (1998) uses binominal names with these da Costa names in synonymy but they unfortunately state that “in several cases there are disputes about valid specific names; here we have used the most familiar names, and have avoided making nomenclatural judgments.” More recently the name *Patella oculushirci* has disappeared from use, being replaced by *Cymbula oculus* (Born, 1778). The use of *Patella nigra* persists, moved to the genus *Cymbula* but attributed to da Costa, and it is listed as a valid name on the authoritative website WoRMS (Gofas 2013).

A recent paper (Nakano & Ozawa, 2007) on the molecular phylogeny of the group utilized *Cymbula safiana* (Lamarck, 1819) instead of *nigra*. This Lamarck name is placed in the synonymy of *nigra* by Christiaens together with two earlier names of Gmelin. The valid name for the species appears to be *Cymbula safiana* (Lamarck, 1819).

Christiaens (1974: 1369) averred that 41 of the 61 figures “décrite ont reçu un nom latin; il n’y a que 3 des 20 espèces restantes qui ont été nommées par leur nom vernaculaire (l’oeil violet de d’Argenville, le liri et le gadin d’Adanson). Les 17 autres figures n’ont pas reçu de nom ...” [...described have received a Latin name; only three of the remaining 20 species bear their vernacular names (Argenville’s “l’oeil violet” and Adanson’s “liri” and “gadin”). The other 17 figures are not named...].

This is demonstrably incorrect, even if the uninominal adjectives are accepted as “Latin names.” In any event, the presence of such “names” as “*Pileus Morionis major*” (pl. 4, fig. 18), “*Patella integra minima complanata, alba, aspersa*” (pl. 5, fig. 2), “*Pileus Morionis parvus*” (pl. 4, fig. 10) and “*Musculo Lepas*” (pl. 3, fig. 9) are sufficient to render the work non-binominal.

Christiaens himself recognized that the *Conchology* was not binominal but used the names anyway. He remarked (1974: 1369; translated) that “... we propose to take again the oldest name, *P.*

nigra da Costa, 1771, even if later the Commission decides to reject this rather special book (book rare, without date, name of author, not 100% binominal).” However, Christiaens’ comment that the *Conchology* is not 100% binominal is misleading; it is not at all binominal.

Before Christiaens’ paper was published these da Costa names had not been in use, having been recognized by other authors as non-binominal. Da Costa was not even mentioned by Powell in his 1973 monograph of the Patellidae. Since the publication of Christiaens’ paper, many authors have adopted his nomenclature, either without reading the text or checking the original sources.

In his references Christiaens listed another da Costa work, the 1776 *Elements of Conchology*. Although that work is also non-binominal, it evidently escaped his attention that some of these *Patella* nomina, including *nigra*, are listed therein in binominal form (p. 15).

Christiaens was inconsistent in his acceptance of da Costa’s names. He utilized *Patella cochlear* Born, 1778 instead of *Patella pyriformis* da Costa, 1771, that he considered to be the same. His reason (p. 1353, translated) was: “Though the name *P. pyriformis* corresponds to a well described and illustrated shell, with exact habitat, and it takes precedence over the name *cochlear*, of unknown habitat, we regard it as a *nomen oblitum* to ensure the stability of the nomenclature.” This is a misuse of the term *nomen oblitum*, but has no effect as da Costa’s *pyriformis* is not available under any circumstance.

The flexible nomenclature used by Christiaens deserves one other comment, although it has nothing directly to do with da Costa. Christiaens’ (1974: 1320) disposal of *Patella conus* Röding as a “*nomen non desideratum*” is singular.

It must be mentioned that the *Conchology* text ends abruptly at the bottom of page 26 in the middle of the description of a *Patella* on Plate 5, figure 1. There is no text to the remaining figures of Plate 5 or to Plates 6 to 12. The plates are excellent and have been referenced by numerous later authors. A letter from Humphrey to Swainson, in which many of the figures are given binominal names, was published by Jackson (1937). As only figure references and no descriptions were given, the names were not made available there under

Article 13 of the Code (International Commission on Zoological Nomenclature 1999).

Neither da Costa, 1771 nor da Costa, 1776 are on the Official Index. As these two works are so obviously non-binominal, a fact no one has disputed, and are not being used as a source for nomina other than for selected species of Patellidae, no petition has been prepared requesting such action. It is hoped that those interested in the Patellidae will determine the earliest available name for the species now masquerading as *Patella nigra* da Costa and for other names attributed to da Costa 1771 or 1776.

Bouchet & Rocroi (2005: 5–6) recently commented on the genera ‘introduced’ by da Costa in 1776.

It is hoped that this short note will encourage authors, editors and reviewers to halt this incorrect usage without having the Commission take action.

The citation of “da Costa” assumes many forms with “da” being either capitalized or lower case and with or without a following space. Da Costa himself placed “da” in lower case (da Costa 1776: viii and elsewhere). The Natural History Museum [London] library catalogue now lists his works under “M” as Mendes da Costa”. In papers on the dates and authorship of the *Conchology*, Whitehead rendered the author’s name as da Costa, as did Rousseau and Haycock (2000), who examined almost 3,000 of da Costa’s letters in the archives of the British Library.

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