

Rebut el 8 d'octubre de 2007; Acceptat el 27 d'octubre de 2007



Reply to Quintana *et al.* (2007): *Darderia bellverica* Altaba, 2007 is the correct name for the Mallorcan fossil helicodontid

CRISTIAN R. ALTABA

Laboratory of Human Systematics, Universitat de les Illes Balears,
07071 Palma de Mallorca, Balearic Islands (Spain)
E-mail: cristianr.altaba@uib.es

For several decades, a very rare, enigmatic land snail found in Quaternary sediments on the island of Mallorca (Majorca) was attributed to *Oestophora barbula* (Rossmässler, 1838), a west-Iberian species never recorded in the Balearics (Gasull, 1963; Cuerda, 1989). This identification was based on superficial similarity and incomplete preparation of the few specimens available. A re-examination of the two shells belonging to the Gasull collection and now deposited at the Museu de Ciències Naturals de la Ciutadella in Barcelona (catalog number MZB 84–6550) allowed the description of a new species within a new endemic genus, *Darderia bellverica* Altaba, 2007 (Figures 1 and 2).

Several months after this description was published in *Animal Biodiversity and Conservation* (Altaba, 2006, published in 2007), a paper has appeared in the *Bolletí de la Societat d'Història Natural de les Balears* (Quintana *et al.*, 2006, published in 2007), where the same taxon is described as a new species, *Oestophora cuerda* Quintana, Vicens et Pons, 2007, on the basis of three additional specimens. Two of these belong to the Cuerda collection, currently located at the Societat d'Història Natural de les Balears (SHNB) in Palma. Now Quintana *et al.* (2007), the authors of this binomen, claim to have priority and

take the occasion to criticize my work. Herewith I present a rebuttal of all their points.

- The original description of *Darderia bellverica* was published in February 2007. Although issue 26.2 of *Animal Biodiversity and Conservation* belongs into the volume corresponding to 2006, the actual publication date is clearly mentioned in both the print and online versions.
- The claim by Quintana *et al.* (2007) that their former paper was published in 2006 is a factual misrepresentation. The *Bolletí* of the SHNB has often been published with great delay relative to the publication date printed in recent issues; volume 49 is no exception. Indeed, on the cover and frontispiece of this issue the date printed is December 2006 (on pages 11 and 13, the date is 2005). This date cannot correspond to the actual publication date for the following reasons. First, there are several papers stating that they were accepted on “29-des-06”; it is most unlikely that any printer would produce and distribute a printed volume in just two days. Second, this issue includes (p. 213) an obituary for someone deceased in late January 2007 (Moyà-Solà & Pons, 2006). This obituary is



Figure 1. Holotype (MZB 84–6550A) of *Darderia bellverica* Altaba, 2007. Maximum diameter: 10.1 mm.

signed by one of the authors of *Oestophora cuerdaei*. Third, *Darderia bellverica* was included in the catalog of Beckmann (2007: p. 91), together with an indication that another “*Oestophora* sp. ind.” would be described in the future by Quintana, Vicens and Pons. Beckmann’s book, to which Quintana himself contributed, was compiled in just a few months and published in July 2007, in a hurry due to the author’s terminal illness (as attested by the biography on p. 255, dated “den 8. Juni 2007”). On p. 68 of the same book it is stated that Quintana was working on another paper, which was finally published in the same *Bolletí* of the SHNB vol. 49 (Quintana, 2006, published in 2007), which was just started to be distributed after September. In summer, a pdf file of this paper circulated through the Internet, with no page numbers and a heading belonging to a monograph of the SHNB entitled “Quaternari i Geomorfologia. Homenatge a Joan Cuerda Barceló”. Such monograph was also cited by Vicens *et al.* (2006), but it was never published. Apparently a late decision was taken not to publish that monograph, including at least the paper

of Quintana (2006) in volume 49 of the *Bolletí*. The recency of the last *Bolletí* is further confirmed by the fact that the summary alone is posted on the web page of SHNB without the pdf files as previous volumes (SHNB, 2007).

- It is worth noticing that one of the authors of *Oestophora cuerdaei* is himself editor of the *Bolletí*. Thus, the claim by Quintana *et al.* (2007) that the publication date of the description of *Oestophora cuerdaei* has to be considered 2006, simply because there is no printed mention of a later date in it, is not only unfounded, but shows that journal’s irregular management of publication dates—no matter how they invoke the Code (ICZN, 1999). The preceding points lead to the conclusion that, although there seems to be no way of determining the exact date of publication of *Bolletí SHNB* vol. 49, this issue was really published in late 2007, certainly much later than *Animal Biodiversity and Conservation* vol. 26.2. *Oestophora cuerdaei* is thus a junior synonym of *Darderia bellverica*.
- The criticism of Quintana *et al.* (2007) on the description of *Darderia bellverica* is equivocal and misleading. The complex apertural dentition consisting

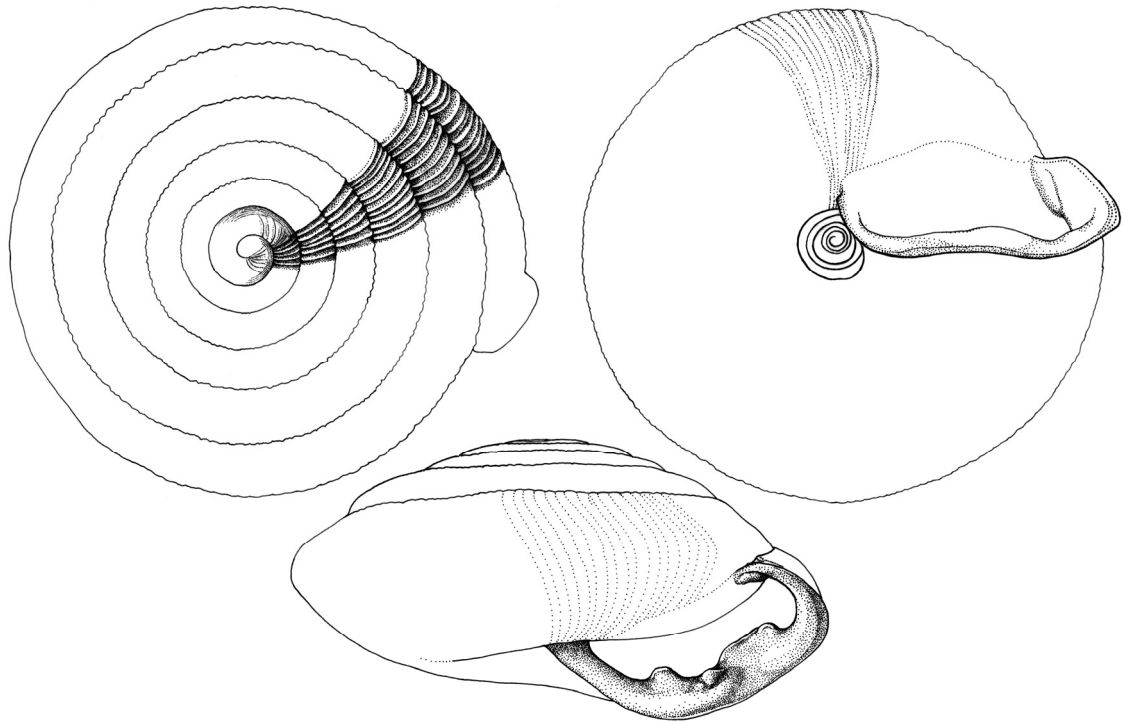


Figure 2 Holotype (MZB 84–6550A) of *Darderia bellverica* Altaba, 2007. Maximum diameter: 10.1 mm. Reprinted from Altaba (2006).

of one angular and several palatal denticles is already well described and figured (Altaba, 2006). The latter at least are clearly visible in Quintana *et al.* (2007: Fig. 1), who employ an incorrect nomenclature to the apertural armature of land snails (*ibid.*: p. 159): “it is only possible to observe a low angular tooth (or basal tooth) accompanied by a very elongated palatal tooth”. This is quite inexact for two reasons. First, an angular tooth is not the same as a basal tooth – the angular lies at the junction of the parietal and palatal margins, whilst a basal is by definition located at the distal end of the aperture. And second, the palatals are not simply one elongated, but five: two basally fused into a nearly lamellar structure just under the peripheral keel, one prominent at the lower angle, a small one between the previously mentioned, and a more bulky, blunt, forward protruding thickening at the lower angle. These palatals can be seen in the figures given by Quintana *et al.* (2006, 2007); why they fail to identify these denticles (and to recognize the angular) is unclear. Furthermore, Quintana *et al.* (2007) are wrong in trying to criticize the diagnosis of *Darderia* in Altaba (2006), because they confuse the traits of the genus (one to

five infrapalatals) with the armature of the type species, *D. bellverica* (five infrapalatals, in contrast with other species included in the genus).

- Likewise, the claim by Quintana *et al.* (2007) that there is a mistake in the apertural angle measurement given in Altaba (2006) is based on their failure to correctly measure this angle. There is no discrepancy if the coiling axis is taken as the origin (as explicitly stated in the original description of *Darderia bellverica*).
- Why Quintana *et al.* (2007) cast doubts on the allocation of *Darderia* within Lindholmiolinae remains elusive. As already pointed in the original description (Altaba, 2006), such placement depends critically on the interpretation of homologies in the apertural dentition and protoconch. The overall shape of *Darderia bellverica* is intriguingly reminiscent of *Lindholmiola* Hesse, 1931, a taxonomically isolated helicodontid genus comprising several species from the Eastern Mediterranean region. The only other genus belonging to the Lindholmiolinae Schileyko, 1978, is *Atenia* Gittenberger, 1968, a rare, monotypic endemic genus of eastern Iberia, whose aspect and aperture are quite distinctive and unusual. Nevertheless, the protoconch microsculpture of *Atenia* (Martínez-

Ortí, 2006) is apparently identical to that of *Darderia*, probably indicating phylogenetic proximity. Indeed, the low angular tooth of *Darderia*, a feature absent from other helicodontids, could be homologous to the parietal lip of *Atenia*. The latter feature is a homoplasy (Gittenberger, 1968) shared with *Trissexodon* Pilsbry, 1895, which belongs to a different subfamily, the Trissexodontinae (Nordsieck, 1987). However, the parietal lip of *Trissexodon* is continuous with, and can be interpreted as a prolongation of, its flaring peristome. Thus, the mere presence of a parietal tooth or lip may have a low phylogenetic value; yet, the existence of such an armature extending from the angular area, in addition to the protoconch characters, may indicate a common ancestry of *Atenia* and *Darderia* within the Lindholmiolinae. As a result of an incorrect and incomplete interpretation of the denticles and protoconch, Quintana *et al.* (2007) claim that these traits are widespread among the Helicodontidae. Thus their criticism on the biogeographical implications of homologies within the Lindholmiolinae is not applicable.

- The description of new taxa based on shells alone is obviously unavoidable in the case of fossil snails. The reasons supporting the description of a new species and genus, together with the interpretation of homologous characters, are explicitly given in the original description (Altaba, 2006: p. 198): "A point needs to be made about the decision to create a new genus and species for the Mallorcan specimens. They cannot be placed within any known species, either Recent or fossil, without stretching the morphological variation of the recipient taxon far beyond the limits known in extant species. Likewise, the new species cannot be allocated into any of the currently recognized genus-level taxa, without considerably blurring the definition of the existing taxonomy. Describing a new genus is not convenient simply because its hypothesized relationships are not with *Oestophora* or any other superficially similar taxa. The dilemma between multiplying genera and moving species among existing genera is not a purely nomenclatural problem, but a

fundamental issue if our goal is to know the history of life through a coherent, logical classification based on monophyletic groupings (Cela-Conde & Altaba, 2002). The description of a new genus and species appears herewith justified under the premises of building a taxonomy that aims at reflecting cladistic relationships and being phylogenetically informative." Why Quintana *et al.* (2007) insist in pointing at the absence of anatomical characters remains obscure. At any rate, their statement that the traits of *Darderia* are coincident with those of *Oestophora* is merely based on superficial similarities. *Darderia* has indeed a general habitus similar to *Oestophora* Hesse, 1907, but differs in having much more developed apertural armature (including an angular tooth), protoconch microsculpture lacking distinctive spiral incised lines, and showing hair pits in the teleoconch. Various other extant helicodontid genera also have a similar lenticular appearance, but have very different aperture and/or spire.

- The inclusion of other fossil species from Western Mediterranean islands in *Darderia* is questioned by Quintana *et al.* (2007) on tenuous grounds. The incomplete nature of specimens from certain localities is no reason to cast doubts on the discussion given in Altaba (2006).
- The Plio-Pleistocene age of Menorcan fossils mentioned by Altaba (2006) is criticized by Quintana *et al.* (2007), who state that they come from sites clearly belonging into the Pliocene. Whether the term Plio-Pleistocene can be employed to collectively refer to the Pliocene plus the Pleistocene is a semantic quiz beyond the scope of this paper. At any rate, the age of the fossils from Menorca (Minorca) is surely not Miocene as originally reported by Quintana (1995).
- According to Quintana *et al.* (2007), the holotype of *Darderia bellverica* is deemed incompletely figured and theratological, and thus contrary to the recommendations of the International Code of Zoological Nomenclature. This is not correct, because the only thing that was not figured in the original description of *D. bellverica*, as clearly stated in Altaba (2006), are tiny remnants of encrusted hardened soil

and a crevice in the lower surface. Moreover, the claim that this specimen is malformed contradicts any comparison of all known specimens of this species, and is just based on the incorrect interpretation of apertural dentitions by Quintana *et al.* (2007). In addition, it must be stressed that the provision in the Code against naming theratological forms applies only when the malformed nature of the holotype is explicitly recognized in the original description—a situation that has nothing to do with *Darderia bellverica*.

- Why Quintana *et al.* (2007) question the type locality given in Altaba (2006) is unclear. The original label in the Gasull collection is clearly readable. Furthermore, Quintana *et al.* (2007) question the geologic setting given in that label and in Gasull (1963), simply because the site has been destroyed through housing developments. Why Quintana *et al.* (2007) claim to know best, even when admitting that they have been unable to find the fossil site, remains unexplained.
- The new specimens mentioned by Quintana *et al.* (2007) are just one. The comment in Altaba (2006) concerning the absence of further findings obviously refers to my own experience, since I was not aware of their then unpublished finding. In fact, Vicens *et al.* (2006) only mention a work in press where an "*Oestophora* sp." will be cited. Furthermore, this paper was published in *Endins* vol. 30, which was not distributed before March 2007 (as recorded in the library of the Universitat de les Illes Balears).
- With regard to the impediments to examine the Cuerda collection at the SHNB, I asked several times to examine the specimens, or at least to know the catalogue numbers. As a member of the SHNB, I thought I had the right to use for scientific research a collection recognized as a public resource. Over the previous year, I was repeatedly told that the collection was still getting unpacked and catalogued. My intention was clearly and honestly stated in conversations with Quintana, Vicens, Pons and other members of the SHNB. Only after publication of the description of *Darderia bellverica* I was told about the Cuerda specimens being studied by some foreign malacologists. Quintana and co-workers never showed

any will to share their findings. The discrepancy with Quintana *et al.* (2007) on this issue lies on their account and mine, but surely does not help the goals of the SHNB.

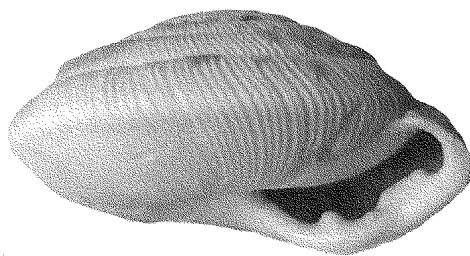
- The conservation state of the fossils examined by Quintana *et al.* (2006, 2007) is, according to them, better than that of the holotype and paratype of *Darderia bellverica*. This statement is subjective and open to critical examination. At any rate, the careful process of cleaning described in Altaba (2006) caused in no way any significant deterioration. Moreover, it is clear from the figures in Quintana *et al.* (2006, 2007) that the holotype of *Oestophora cuerda* is damaged, even having an open hole; both this specimen and the accompanying paratype have encrustations throughout, remain only partially cleaned and have badly eroded undersides. The claim by Quintana *et al.* (2007) that *Darderia bellverica* should have been based on the specimen(s) in their possession is simply unfounded.
- In their final conclusions, Quintana *et al.* (2007: p. 162) boldly point at what constitute their own mistakes: "[it] must be considered as an unfortunate attempt where characters are utilized and interpreted at the authors' convenience". I could not state it more precisely.

From all of the above, it can only be concluded that the attempt by Quintana *et al.* (2007) to sustain their supposed priority and to show the alleged superior quality of their work is entirely flawed. The correct name for the Mallorcan fossil helicodontid is *Darderia bellverica* Altaba, 2007. This taxon was carefully described and illustrated, and *Oestophora cuerda* Quintana, Vicens et Pons, 2007 is just a junior synonym of the former (*contra* Quintana *et al.*, 2007), based on an erroneous and incomplete interpretation of some characters.

REFERENCES

- ALTABA, C.R. (2006). A new land snail from the Quaternary of Mallorca (Balearic Islands, Western Mediterranean): *Darderia bellverica* n. gen., n. sp. (Gastropoda, Pulmonata, Helicodontidae). *Anim. Biodiv. Cons.*, 29: 195–200.
- BECKMANN, K.-H. (2007). *Die Land- und*

- Süsswassermolluken der Balearischen Inseln*. Conchbooks, Hackenheim.
- CELA-CONDE, C. & ALTABA, C.R. (2002). Multiplying genera versus moving species: a new taxonomic proposal for the family Hominidae. *S. Afr. J. Sci.*, 98: 1-4.
- CUERDA, J. (1989). *Los tiempos cuaternarios en Baleares*. 2nd ed. Conselleria de Cultura, Educació i Esports del Govern Balear, Palma de Mallorca.
- GASULL, L. (1963). Un nuevo molusco terrestre fósil para la fauna cuaternaria de Baleares. *Oestophora (id.) barbula* Charp. *Bol. Soc. Hist. Nat. Bal.*, 9: 81-82.
- GITTENBERGER, E. (1968). Zur Systematik der in die Gattung *Trissexodon* Pilsbry (Helicidae, Helicodontinae) gerechneten Arten. *Zool. Meded.*, 43: 165-172.
- INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE (ICZN). (1999). *International Code of Zoological Nomenclature. Fourth Edition*. The International Trust for Zoological Nomenclature, London.
- MARTÍNEZ-ORTÍ, A. (2006). New anatomical data on the Iberian endemic *Atenia quadras* (Hidalgo, 1885) (Pulmonata, Helicodontidae). *J. Conchol.*, 39: 55-60.
- MOYÀ-SOLÀ, S. & PONS, G.X. (2006). Rafael Adrover, paleontòleg (1911 - 2007) in memoriam. *Boll. Soc. Hist. Nat. Bal.*, 49: 213-215.
- NORDSIECK, H. (1987). Revision des Systems der Helicoidea (Gastropoda: Stylommatophora). *Arch. Moll.*, 118: 9-50.
- QUINTANA, J. (1995). Fauna malacològica associada a *Cheirogaster gymnesica* (Bate, 1914). Implicaciones biogeogràfiques. *Boll. Soc. Hist. Nat. Bal.*, 38: 95-119.
- QUINTANA, J. (2006). Reconsideració taxonòmica de *Chondrula (Mastus)* fòssil de Mallorca i Menorca (Gastropoda: Pulmonata: Enidae). *Boll. Soc. Hist. Nat. Bal.*, 49: 21-38.
- QUINTANA, J.; VICENS, D.; PONS, G.X. (2006). A new species of the genus *Oestophora* Hesse, 1907 (Gastropoda: Pulmonata: Trissexodontidae) from the Upper Pleistocene of Mallorca (Balearic Islands, Western Mediterranean). *Boll. Soc. Hist. Nat. Bal.*, 49: 51-58.
- QUINTANA CARDONA, J.; PONS I BUADES, G.X.; VICENS XAMENA, D. (2007). Algunas anotaciones críticas sobre *Oestophora cuerda* Quintana, Vicens et Pons, 2006 (Mollusca: Pulmonata: Helicodontidae). *Spira*, 2: 157-162.
- SOCIETAT D'HISTÒRIA NATURAL DE LES BALEARS (SHNB). (2007). Publicacions. <http://shnb.org/publicacions.htm>
- VICENS, D.; CRESPI, D.; GINARD, A.; GRÀCIA, F.; PONS, G.X. (2006). Les coves litorals situades a la franja costanera entre es Mal Pas i el Cap Gros (Alcúdia, Mallorca) (2a part). Troballa de restes de vell marí (*Monachus monachus*) a la cova des Fonoll Marí. *Endins*, 30: 87-100.



Nota de l'Editor.—El Comitè Editorial d'*Spira* considerarà que l'article de Quintana *et al.* (2007) publicat en aquest número de la revista s'havia d'interpretar com una rèplica a l'article d'Altaba (2006), i per això el seu manuscrit es va acceptar condicionalment al fet de donar dret de contrarèplica al Dr. Altaba. El Comitè Editorial d'*Spira* ha mantingut en tot moment una posició neutral pel que fa als treballs de tots dos autors. Tot i que el Dr. Quintana forma part del Comitè Editorial d'*Spira*, pel que fa a la revisió del manuscrit del Dr. Altaba i del seu propi manuscrit, el primer fou exclòs del Comitè a tots els efectes.

* * * * *

Editor's note.—The Editorial Committee of *Spira* considered that the paper by Quintana *et al.* (2007) published in this issue of the journal must be interpreted as a reply to the paper by Altaba (2006), and hence their paper was accepted conditionally to giving right to counter-reply to Dr. Altaba. The Editorial Committee of *Spira* has always maintained a neutral position regarding the works of the two authors. Even though Dr. Quintana is part of the Editorial Committee of *Spira*, with regard to the revision of Dr. Altaba's manuscript and his own manuscript, the former was excluded from the Committee to all effects.