



## Nomenclatural notes on some European marine bivalve species

### Apuntes nomenclaturales sobre algunas especies de bivalvos de Europa

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#### ABSTRACT

Some nomenclatural issues affecting European species are discussed. The following taxa are treated under ICZN Art. 23.9, with the required references provided:

- *Mytilus variabilis* Krauss, 1848 (currently *Brachidontes variabilis* (Krauss, 1848)) is declared *nomen protectum* against the senior homonym *Mytilus variabilis* Fischer von Waldheim, 1807, declared *nomen oblitum*. The still earlier name *Brachidontes ustulatus* (Lamarck, 1819), currently used as the valid name for a native species of Western Australia, should take precedence over *B. variabilis* (Krauss, 1848) were it demonstrated that it is the same biological species, but in the current state of knowledge it is proposed to keep them separate.

- *Modiola nigra* Gray, 1824 (currently *Musculus niger* (Gray, 1824)) is declared *nomen protectum* against the senior synonym *Mytilus discors svecicus* Fabricius, 1788, declared *nomen oblitum*.

- *Ostrea flexuosa* Poli, 1795 (currently *Flexopecten flexuosus* (Poli, 1795)) is declared *nomen protectum* against the senior synonym *Ostrea coarctata* Born, 1778, declared *nomen oblitum*.

- *Chama aculeata* Poli, 1795 (currently *Centrocardita aculeata* (Poli, 1795)) is declared *nomen protectum* against the senior homonym *Chama aculeata* Ström, 1768, declared *nomen oblitum*, thereby making valid the current usage and avoiding the need for using the junior synonym *Centrocardita elegans* (Requien, 1848).

- *Solen marginatus* Pulteney, 1799 is declared *nomen protectum* against the senior synonyms *Hypogaea tentaculata* Poli, 1791, *Solen rotundatus* Spengler, 1794 and *Solen gladius* Röding, 1798, all declared *nomina oblita*.

The following cases are discussed but do not meet the conditions for application of ICZN Art. 23.9:

- *Anadara polii* (Mayer, 1868) is in prevailing usage over *Anadara gibbosa* (Reeve, 1844) but the latter name has been employed once in the XX century so must be used.

- *Chama gryphina* Lamarck, 1819 (currently *Pseudochama gryphina* (Lamarck, 1819)), is not a junior synonym of *Chama cornuta* Dillwyn, 1817. The latter name is made an objective synonym of *Chama bicornis* Linnaeus, 1758 by lectotype designation.

- *Venus rhomboides* Pennant, 1777 (currently *Politiitapes rhomboides* (Pennant, 1777)) should not be superseded by *Venus virginea* Linnaeus, 1767. The extant types of *Venus*

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*virginea* are here figured. Two of them belong to the species currently known as *Venerupis geographica* (Gmelin, 1791) and one to *Venerupis aurea* (Gmelin, 1791). Therefore, the suppression of the name *virginea* seems the best outcome.

- *Ensis arcuatus* (Jeffreys, 1865) and *Solen ensis major* Chenu 1843 are both held as junior synonyms of *Ensis magnus* Schumacher, 1817, therefore the name *Solen siliqua* var. *arcuata* Jeffreys, 1865 does not need to be declared *nomen protectum*.

- *Neaera bicarinata* Jeffreys, 1882 does not need to be declared a *nomen protectum* against *Neaera striata* var. *bicarinata* Jeffreys, 1876, which is a *nomen nudum*, therefore not available.

## RESUMEN

Se discuten algunas cuestiones de nomenclatura que afectan a especies europeas. A los siguientes taxones se aplican las disposiciones del Art. 23.9 del CINZ, aportando las referencias requeridas:

- *Mytilus variabilis* Krauss, 1848 (actualmente *Brachidontes variabilis* (Krauss, 1848)) se declara *nomen protectum* frente al homónimo más antiguo *Mytilus variabilis* Fischer von Waldheim, 1807, declarado *nomen oblitum*. El nombre aún anterior *Brachidontes ustulatus* (Lamarck, 1819), actualmente en uso como el nombre válido para una especie de Australia Occidental, debe prevalecer sobre *B. variabilis* (Krauss, 1848) siempre que se demuestre que se trata de la misma especie biológica. En el estado actual de los conocimientos, se propone mantenerlas separadas.

- *Modiola nigra* Gray, 1824 (actualmente *Musculus niger* (Gray, 1824)) se declara *nomen protectum* frente a *Mytilus discors svecicus* Fabricius, 1788, declarado *nomen oblitum*.

- *Ostrea flexuosa* Poli, 1795 (actualmente *Flexopecten flexuosus* (Poli, 1795)) se declara *nomen protectum* frente al sinónimo más antiguo *Ostrea coarctata* Born, 1778, declarado *nomen oblitum*.

- *Chama aculeata* Poli, 1795 (actualmente *Centrocardita aculeata* (Poli, 1795)) se declara *nomen protectum* frente al homónimo más antiguo *Chama aculeata* Ström, 1768, declarado *nomen oblitum*, con lo cual se convalida el uso actual y se evita la necesidad de utilizar el sinónimo más reciente *Centrocardita elegans* (Requien, 1848).

- *Solen marginatus* Pulteney, 1799 es declarado *nomen protectum* frente a los sinónimos más antiguos *Solen rotundatus* Spengler, 1794 y *Solen gladius* Röding, 1798, todos ellos declarados *nomina oblita*.

Los siguientes casos se discuten, pero no cumplen los requisitos de aplicación del art 23.9 del CINZ:

- *Anadara polii* (Mayer, 1868) está en uso predominante sobre *Anadara gibbosa* (Reeve, 1844), pero este último nombre se ha utilizado una vez en el siglo XX y debe ser utilizado.

- *Chama gryphina* Lamarck, 1819 (actualmente *Pseudochama gryphina* (Lamarck, 1819)), no es un sinónimo más reciente de *Chama cornuta* Dillwyn, 1817. Éste último se hace sinónimo objetivo de *Chama bicornis* Linnaeus, 1758 por designación de un lectotipo.

- *Venus rhomboides* Pennant, 1777 (en la actualidad *Politiitapes rhomboides* (Pennant, 1777)) no debe ser sustituido por *Venus virginea* Linnaeus, 1767. Se firman los tipos existentes de *Venus virginea*. Dos de ellos pertenecen a la especie actualmente conocida como *Venerupis geographica* (Gmelin, 1791) y uno es *Venerupis aurea* (Gmelin, 1791). Por lo tanto, la supresión del nombre *virginea* parece lo más apropiado.

- *Ensis arcuatus* (Jeffreys, 1865) y *Solen ensis major* Chenu 1843 se consideran como sinónimos más recientes de *Ensis magnus* Schumacher, 1817. Por lo tanto, no es necesaria la declaración de *Solen siliqua* var. *arcuata* Jeffreys, 1865 como *nomen protectum*.

- *Neaera bicarinata* Jeffreys, 1882 no necesita ser declarado *nomen protectum* frente a *Neaera striata* var. *bicarinata* Jeffreys, 1876, que es un *nomen nudum*, por lo tanto, no está disponible.

## INTRODUCTION

The rules of zoological nomenclature regarding priority and homonymy are intended for preserving the stability of names, and in most cases are instrumental in doing so. There are nevertheless some instances where undesirable changes may be mandatory when overlooked senior synonyms or homonyms are brought to attention. Digging out forgotten names was legitimate under the previous editions of the Code, and one of the most troublesome cases in the European marine fauna has been the revival of limpet names *Patella nigra*, *P. ulyssiponensis* and *P. rustica* against respectively *Patella safiana*, *P. aspera* and *P. lusitanica* all universally in usage at that time (CHRISTIAENS, 1973). Fortunately, the 1999 edition of the Code (ICZN, 1999, Art. 23.9) has provisions for the conservation of usage when certain conditions are met.

The recent publication of the “Compendium of Bivalves” (HUBER, 2010) has been a landmark in malacology, and provides for the first time a global overview of species-level taxonomy in this class. Precisely because it is comprehensive, it is also influential and, for instance, has been taken as the default standard in the World Register of Marine Species, the leading database for marine biodiversity data. Some changes in nomenclature are suggested therein on the grounds that earlier names which interfere as synonyms or homonyms have been overlooked so far and should be used.

The purpose of this paper is to document the usage which can lead to the application of Art. 23.9, and to discuss some additional cases for which, although the requirements of this article are not met, a conservative treatment is considered desirable for the stability of nomenclature. MARSHALL & SPENCER (2013), in a similar approach, discussed the nomenclatural changes which are derived from HUBER (2010) affecting the New Zealand fauna and propose the rebuttal of some of them, but without declaring any *nomen oblitum* or *nomen*

*protectum*. HUBER (2010) declared eight names as *nomina protecta* and their senior synonyms or homonyms *nomina oblita* but these actions are invalid because they lack citation of the references of usage required by ICZN Art. 23.9; three of these (*Solen arcuatus* Jeffreys, 1865, *Chama gryphina* Lamarck, 1819 and *Cuspidaria bicarinata* Jeffreys, 1882) regard the European fauna and will be discussed herein.

Literature was searched for possible instances of usage using both the Zoological Record and the advanced search function of Google Books <<http://books.google.com/>> and Google Scholar <<http://scholar.google.com/>>, eventually checked against the originals (digital or paper). We have strived to include references from different fields, including palaeontology or archaeology, fisheries, environmental studies as well as checklists or taxonomic papers.

We have made the option to ignore the usage by authors after 2000, including HUBER (2010) for the names to be dismissed, as the Code reads (our italics) “23.9.2. An author who discovers that both the conditions of 23.9.1 are met *should* cite the two names together and state explicitly that the younger name is valid...”. This interpretation is supported by ICZN Art. 23.9.6. which reads “The deliberate use of a name contrary to Article 23.9.1 (...) must not be taken into account in determining usage”.

We have systematically reported the cases in which species considered here are the type of a genus-group name. This is not formally an argument in favour of conserving names but still makes it desirable whenever possible.

### *Article 23.9 of ICZN is here reproduced for guidance:*

23.9.1. *prevailing usage must be maintained when the following conditions are both met:*

23.9.1.1. *the senior synonym or homonym has not been used as a valid name after 1899, and*

23.9.1.2. the junior synonym or homonym has been used for a particular taxon, as its presumed valid name, in at least 25 works, published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years.[i.e. 1963-2012]

23.9.2. An author who discovers that both the conditions of 23.9.1 are met should cite the two names together and state explicitly that the younger name is valid, and that the action is taken in accordance with this Article; at the

same time the author must give evidence that the conditions of Article 23.9.1.2 are met, and also state that, to his or her knowledge, the condition in Article 23.9.1.1 applies. From the date of publication of that act the younger name has precedence over the older name. When cited, the younger but valid name may be qualified by the term *nomen protectum* and the invalid, but older, name by the term *nomen oblitum*. In the case of subjective synonymy, whenever the names are not regarded as synonyms the older name may be used as valid.

## CASES TREATED UNDER ICZN ART. 23.9

*Brachidontes variabilis* (Krauss, 1848) vs. *Brachidontes pharaonis* (Fischer, 1870) and *Brachidontes ustulatus* (Lamarck, 1819)

Names involved:

*Mytilus variabilis* Fischer von Waldheim, 1807, *Muséum Demidoff*, vol. 3: 249.

*Mytilus variabilis* Krauss, 1848, *Die Südafrikanischen Mollusken*: 25-26, pl. 2 fig. 5.

*Mytilus ustulatus* Lamarck, 1819, *Histoire naturelle des animaux sans vertèbres*, vol. 6 (1): 122.

*Mytilus pharaonis* P. Fischer, 1870, *Journal de Conchyliologie*, 18: 169.

A small mytilid species was known from South Africa and also reported as an invader in the Mediterranean Sea under the name *Brachidontes variabilis* (Krauss, 1848) until the mid 1990's, when it was realized that this is a primary homonym of *Mytilus variabilis* Fischer von Waldheim, 1807. Under the current code, Art. 23.9 applies since Fischer von Waldheim's name (currently treated as a junior synonym of *Mytilus edulis* Linnaeus, 1758) has never been used otherwise than in synonymy. The name *variabilis* was dismissed in DEKKER & ORLIN'S (2000) check-list and since then, the junior name *B. pharaonis* (Fischer, 1870) is treated as synonym and is universally used in the Red Sea and Mediterranean realm (ENGL, 1995; BUZZURRO & GREPPI, 1996 and most later authors). However HUBER (2010) proposed to use for this species a still earlier name *Brachidontes ustulatus* (Lamarck, 1819) originally described from "Brazil".

Huber writes "Lamy (1936) (...) considered *M. pharaonis* from the Red Sea, Suez and *arabicus* the same. Furthermore, Lamy analysed Lamarck's

MNHN type series of *M. ustulatus*, described from Brazil and noted it identical to *variabilis* = *arabicus* = *pharaonis*." Nevertheless, knowing this, Lamy still used *B. variabilis* as the valid name for this taxon. There is concurrently a consistent usage of *Brachidontes ustulatus* (Lamarck, 1819) as the valid name of a taxon in Western Australia (BINDON, DORTCH & KENDRICK, 1978; JONES, 2004; PLATELL, ANG, HESP & POTTER, 2007; SCOTT & JOHNSON, 1993; SEMENIUK, 1997; WELLS & BRYCE, 1984; WILSON, 1998 among others) and therefore the question of conserving the name *M. variabilis* is a taxonomic, not nomenclatural issue. The Brazilian type locality is evidently wrong, as no candidate species is reported there; many of the Baudin expedition types are from King George Sound, Western Australia, and that is probably where *B. ustulatus* came from (F. Wells, pers. comm.).

A recent molecular study (SIRNA TER-RANOVA, LO BRUTTO, ARCULEO & MITTON, 2007) reveals that the Red Sea and Mediterranean populations, the East African populations and a population from Hong Kong represent three cryptic

species. This implies separating the Red Sea *B. pharaonis* from the East African *B. variabilis* and using both names as valid. The final decision on giving the name *B. ustulatus* (Lamarck, 1819) precedence over *B. variabilis* (Krauss, 1848) depends on whether the Western Australian species is the same as that living in the eastern African coast.

In order to conserve both names potentially valid, we hereby declare, according to the provisions of ICZN Art. 23.9.2 the name *Mytilus variabilis* Krauss, 1848 as *nomen protectum*, and *Mytilus variabilis* Fischer von Waldheim, 1807, as *nomen oblitum*. Usage of *Brachidontes variabilis* (Krauss, 1848) as a valid name has been found in the following sources: ARCDIACONO & DI GERONIMO, 1976; ATAPATTU, 1972; BARNARD, 1964 (p. 395); BARASH & DANIN, 1992 (p. 333-334);

BIGGS, 1973 (p. 382); BRITTON, 1990 (p. 816-817); CHEUNG, LUK & SHIN, 2006; DAVIES, 1980; FELSENBURG & SAFRIEL, 1974; LAVEE & RITTE, 1994; LEE & MORTON, 1985; MORTON, 1988; OLIVER, 1992 (p. 48, 224); NAKHLÉ, COSSA, KHALAF & BELIAEFF, 2006; PARENZAN, 1974 (p. 59); PLAZIAT, BALTZER, CHOUKRI, CONCHON, FREYTET, ORSZAG-SPERBER, RAGUIDEAU & REYSS, 1998 (p. 551); RAJAGOPAL, VENUGOPALAN, VAN DER VELDE & JENNER, 2005; SAFRIEL, FELSENBURG & GILBOA, 1980; SAFRIEL, GILBOA & FELSENBURG, 1980; SAFRIEL & SASSON-FROSTIG, 1988; SIRNA TERRANOVA ET AL., 2007; SLOAN, 1979; STERN & ACHITUV, 1978; TANG, 1992; TRINGALI & VILLA, 1989 (p. 35); ÜNSAL, 1984; VALENTICH-SCOTT, 2003 (p. 265, with additional references cited therein); VAN AARTSEN & KINZELBACH, 1990.

#### *Musculus niger* (J.E. Gray, 1824) vs. *Musculus svevicus* (Fabricius, 1788)

Names involved:

*Mytilus discors* Linnaeus —  $\beta$  *svevicus* Fabricius, 1788, *Nye Samling af det Kongelige Danske Videnskabers Selskabs Skrifter*, 3: 460.

*Modiola nigra* Gray, 1824, *Supplement to Appendix, Parry's Voyage for the Discovery of a north-west passage in the years 1819-1820*, p. ccxlv.

This is a common boreal species, widely distributed in the North Atlantic, Arctic and North Pacific oceans, and of importance in trophic webs. FABRICIUS (1788) introduced the name in the form *Mytilus discors*, L. —  $\beta$  *svevicus*, based on figures 766-767 of CHEMNITZ, 1785 (vol. 8, p. 191-195, pl. 86 fig. 766-767, with type locality in the Kattegat); he did not use the term "variety" and a subspecies concept was not elaborated at that time, but it is clear that the name is available with a subspecific rank in the sense of ICZN. *Modiola nigra* Gray, 1824 is based on the figure given by MONTAGU (1808: pl. 26 fig. 4) of a specimen from Laskey, collected in the Frith of Forth (Scotland) and wrongly assigned to his *Mytilus discrepans* Montagu, 1803. The name has consistently been applied since its publication and is widely used in modern literature. In the XX century, to our knowledge only DAUTZENBERG & FISCHER

(1912), and LAMY (1937) mentioned the name *svevicus* but nevertheless used *Modiolaria nigra* or *Musculus niger*, as valid. In application of ICZN Art. 23.9.2, we declare the name *Mytilus discors svevicus* Fabricius, 1788 as a *nomen oblitum*, and *Modiola nigra* Gray, 1824, a *nomen protectum*. Usage of the name *Musculus niger* as valid was documented in the following sources: AITKEN & GILBERT, 1996; BAHR & GULLIKSEN, 2001; CHAMBERS, 2009 (p. 131); DENISENKO, RACHOR & DENISENKO, 2003; FENCHEL, 1964; GILBERT, 1977; JEWETT & FEDER, 1980; KENDALL, 1996.; KEDRA, GROMISZ, JASKUŁA, LEGEŻYŃSKA, MACIEJEWSKA, MALEC, OPANOWSKI, OSTROWSKA, WŁODARSKA-KOWALCZUK & WĘSLAWSKI, 2010; KRÖNCKE, 1994; LANDE, 1975; LARSEN, FRISCHER, RASMUSSEN & HANSEN, 2005; MCCORMICK-RAY, WARWICK & RAY, 2011; MØHLENBERG & RIISGÅRD, 1978; MUUS, 1973; NORDSIECK,



1969 (p. 36); NORTON, 1975; POLLOCK, 1998 (p. 157); RÓZYCKI, 1992; SCHIÖTTE, 1989; SIFERD & WELCH, 1992; STRAND, JACOBSEN, PEDERSEN & GRANMO, 2003;

TANDBERG, SCHANDER & PLEIJEL, 2010; TEBBLE, 1966 (p. 47); TYLER, 1972; VADER & BEEHLER, 1983; WAGNER, 1977; WILDISH & PEER, 1983.

*Flexopecten flexuosus* (Poli, 1795) vs. *Flexopecten coarctatus* (Born, 1778)

Names involved

*Ostrea coarctata* Born, 1778, *Index Rerum Naturalium Musei Caesarei Vindobonensis*, 1: 90-91.

*Ostrea flexuosa* Poli, 1795, *Testacea Utriusque Siciliae*, vol. 2: 161, pl. 28 fig. 11.

*Flexopecten flexuosus* is a common species found in the Mediterranean and the Atlantic Ibero Moroccan area. *Ostrea flexuosa* Poli, 1795 is the type species of *Flexopecten* Sacco, 1897 by original designation. To our knowledge, the name *coarctatus* was used (in the original combination *Ostrea coarctata*) by Brocchi, 1814 (574, pl. 14 fig. 9) and later cited under the combination *Pecten coarctatus* by DEFRANCE (1824) but, possibly because of the influence of SACCO's (1897) monograph, we could not trace any usage as the valid name in the XX century. Usage of *flexuosus* is widespread and we therefore consider that the conditions are met for application of ICZN Art. 23.9.2 and declare the name *Ostrea flexuosa* Poli, 1791 as *nomen protectum*, and *Ostrea coarctata* Born, 1778, *nomen oblitum*. DIJKSTRA (2009) already proposed this but did not provide the references required by the Code.

Usage as valid name in the combination *Flexopecten flexuosus* (unless other-

wise noted) was found in the following sources: BIAGI & CORSELLI, 1978 (p. 11); DIJKSTRA & GOUD, 2002 (p. 60-61); DIJKSTRA, 2009 (p. 105, 110-111); GIANNUZZI-SAVELLI, PUSATERI, PALMERI, EBREO, COPPINI, MARGELLI & BOGI, 2001 (p. 182-183); GIRIBET & PEÑAS, 1997 (p. 57); GOFAS, 2011a (p. 578); MARGUS, 1991; NORDSIECK, 1969 (p. 53); ÖZTÜRK, BUZURRO & BENLİ, 2003 (p. 64); PARENZAN, 1974 (p. 112-113); PEÑA, CANALES, ADSUARA & SOS, 1996; RICO-GARCÍA, 1988 (p. 113); ROLÁN, 2011 (p. 323); ROMBOUTS, COOMANS & VAN PEL, 1991 (p. 40); RUEDA, SALAS & GOFAS, 2000 (p. 104); SCHIAPARELLI, 2008; in the combination *Chlamys flexuosa* or *Chlamys (Flexopecten) flexuosa*: CACHIA, MIFSUD & SAMMUT, 2004 (p. 54); D'ANGELO & GARGIULLO, 1978 (p. 178); LUCAS, 1980 (p. 164); MONTERO AGÜERA, 1971 (p. 171); POPPE & GOTO, 1993 (p. 61); PELORCE, 2007 (p. 47); PÉRÈS & PICARD, 1964 (p. 85, 87); SALAS, 1996 (p. 55); ŠILETIĆ, 2006; ZENETOS, 1997 (p. 464).

*Centrocardita aculeata* (Poli, 1795) vs. *Centrocardita elegans* (Requien, 1848)

Names involved

*Chama aculeata* Poli, 1795: *Testacea Utriusque Siciliae*, vol. 2: 122, pl. 23 fig. 22.

*Chama aculeata* Ström, 1768: *Det Kongelige Norske Videnskabers Selskabs Skrifter*, 4: 368, pl. 16 fig. 4.

*Cardita elegans* Requien, 1848: *Catalogue des coquilles de l'île de Corse*: 27.

*Chama aculeata* Poli, 1795 is the type species of genus *Centrocardita* Sacco, 1899. The name has been displaced for being a primary homonym of *Chama aculeata* Ström, 1768 (synonym of *Hiatella arctica*) which has never, to our knowledge, been used later as the valid name of a taxon. We therefore consider

that the conditions are met for application of ICZN Art. 23.9.2 and declare the name *Chama aculeata* Poli, 1795 as *nomen protectum*, and *Chama aculeata* Ström, 1768, *nomen oblitum*. With this statement, *Cardita elegans* Requien, 1848 is to be treated as a subjective junior synonym of *Centrocardita aculeata* (Poli, 1795).

There is a limited usage of the name *elegans* (in the combination *Glans elegans*) in the recent literature (CACHIA, MIFSUD & SAMMUT, 1993: 59; CACHIA, 1999; ÖZTÜRK *ET AL.*, 2003: 65; REPETTO, ORLANDO & ARDUINO, 2005; CACHIA, MIFSUD & SAMMUT, 2004: 87) but this does not interfere with restoring *C. aculeata*, because the name declared as *nomen oblitum* is the senior homonym of *C. aculeata* (Poli, 1795), not the senior synonym *Cardita elegans*.

Usage of the name *aculeata* (in the combination *Glans aculeata* unless otherwise stated) has been found in the following sources: ALBAYRAK, BALKIS & BALKIS, 2004; ALTIMIRA, 1977 (as *Cardita (Glans) aculeata*); BAKIR, ÖZTÜRK, DOĞAN & ÖNEN, 2012; BERNASCONI & STANLEY, 1997; BORG, HOWEGE, LANFRANCO, MICALLEF, MIFSUD & SCHEMBRI, 1998 (p. 19); DHORA, 2009; GIRIBET & PEÑAS, 1997 (p. 58); GOFAS, 2011b (p. 595); KOULOURI, DOUNAS, ARVANITIDIS, KOUTSOUBAS &

ELEFThERIOU, 2006; LA PORTA, TARGUSI, LATTANZI, LA VALLE, PAGANELLI & NICOLETTI, 2009; MALAQUIAS, BENTES, ERZINI & BORGES, 2006; MANOUSIS, MPARDAKIS, PARASKEVOPOULOS & GALINOU-MITSOUDI, 2010 (p. 166); MARASTI, 1973 (p. 106-107, as *Glans (Centrocardita) aculeata*); MECO CABRERA, 1982 (p. 102, as *Cardita aculeata*); MONTERO AGÜERA, 1971 (p. 155, as *Beguina (Mytilicardita) aculeata*); NORDSIECK, 1969 (p. 74, as *Cardita (Glans) aculeata*); PANCUCCI-PAPADOPOULOU, SIMBOURA, ZENETOS, THESSALOU-LEGAKI & NICOLAIDOU, 1999; PARENZAN, 1974 (p. 153, as *Cardita aculeata*); PÉRÈS & PICARD, 1964 (p. 94, as *Cardita aculeata*); SALAS, 1996 (p. 62); SCHIAPARELLI, 2008; ŠILETIĆ, 2006 (p. 143); TORNARITIS, 1987 (p. 147, as *Cardita aculeata*); TRAPANI, SCOTTI, GIANGUZZA, CHEMELLO & RIGGIO, 1999; ZENETOS, 1996 (p. 125); ZENETOS, 1997 (as *Glans (Centrocardita) aculeata*).

*Solen marginatus* Pulteney, 1799 vs. *Solen rotundatus* Spengler, 1794, *Solen gladius* Röding, 1798 and *Hypogaea tentaculata* Poli, 1791

Names involved:

*Solen marginatus* Pulteney, 1799, *Catalogue of the birds, shells, and some of the more rare plants of Dorsetshire*: 28.

*Hypogaea tentaculata* Poli, 1791, *Testacea Utriusque Siciliae*, vol. 1: 16-17.

*Solen rotundatus* Spengler, 1784, *Skrioter af Naturhistorie-Selskabet*, København, 3 (2): 86-87.

*Solen gladius* Röding, 1798, *Museum Boltenianum*: 154.

The sole European representative of the family Solenidae has been alternatively known under the names *Solen vagina* Linnaeus, 1758 or *Solen marginatus* Pulteney, 1799. The former name has been often used in the XIX century but is now abandoned in the European literature for taxonomic reasons. It has been established that Linnaeus confused two different species under the name *vagina*, which should apply to the Indo-Pacific species, rather than to the European *Solen marginatus* Pulteney, 1799.

BUCQUOY, DAUTZENBERG & DOLLFUS (1895: 498) give a complete listing of XIX century usage.

There are however three other names which predate *Solen marginatus* and have

a European type locality. *Solen rotundatus* Spengler, 1794 is based on LISTER (1692, pl. 1056, fig. 5) and is stated as Mediterranean. It was listed by MÖRCH (1871) as being *Solen vagina* as understood at that time. Otherwise than through the statement of origin, Lister's figure could not be definitely assigned to one of the species involved. The name had definitely fallen into oblivion when HUBER (2010) proposed that it should supersede *S. marginatus*. *Solen gladius* Röding, 1798 is based on CHEMNITZ (1782, vol. 6, pl. 4 fig. 27) with *Solen vagina* given in synonymy and, to our knowledge, has never been used later as a valid name.

POLI (1791) used for this species the name *Solen vagina*, as usual in his time,

but, in his rather queer system of parallel nomenclature for the soft parts and the shells, named these soft parts *Hypogaea tentaculata*. Such names are here treated as names introduced in synonymy, and therefore not available if never used as valid which is the case here (cited by NORDSIECK, 1969: 145, in synonymy of *Solen marginatus*). The cardiid genus *Cerastoderma*, which was introduced in the same conditions, is widely used nowadays as valid.

An additional reason for preserving the stability of the name *Solen marginatus* is that this name is used in local fisheries regulations (e.g. MINISTÉRIOS DA DEFESA NACIONAL, DAS FINANÇAS, DA JUSTIÇA, DA AGRICULTURA, PESCAS E ALIMENTAÇÃO, DAS OBRAS PÚBLICAS, TRANSPORTES E COMUNICAÇÕES, DA SAÚDE E DO COMÉRCIO E TURISMO, 1989; CONSEJERÍA DE AGRICULTURA Y PESCA, 2009; CONSELLERÍA DEL MEDIO RURAL Y DEL MAR, 2012). Therefore, the name *Solen marginatus* Pulteney, 1799 is declared *nomen protectum* against *Solen rotundatus* Spengler, 1794, *Solen gladius* Röding, 1798 and *Hypogaea*

*tentaculata* Poli, 1791, all declared *nomina oblita*.

Usage of *Solen marginatus* as a valid name was found in the following sources: BAKIR ET AL., 2012 (p. 180); CACHIA, MIFSUD & SAMMUT, 2004 (p. 105); COSEL, 1993; DA COSTA & MARTÍNEZ-PATIÑO, 2009; EALES, 196 (p. 164); FERNÁNDEZ-TAJES & MÉNDEZ, 2007; GIRIBET & PEÑAS, 1997 (p. 59); GUTIÉRREZ ZUGASTI, 2010 (p. 341); HAYWARD & RYLAND, 1995 (p. 616); HODGSON, 1984; LÓPEZ, RODRÍGUEZ & CARRASCO, 2005;; LÓPEZ-FLORES, GARRIDO-RAMOS, DE LA HERRAN, RUIZ-REJÓN, RUIZ-REJÓN & NAVAS, 2008; MANOUSIS ET AL., 2010. (p. 167); MARINA & URRA, 2011 (p. 690); MEIJER, 1993; MONTERO AGÜERA, 1971 (p. 224); NORDSIECK, 1969 (p. 145, erroneously credited to PENNANT, 1777); ÖZTÜRK, BUZURRO & BENLI, 2003 (p. 65); PARENZAN, 1974 (p. 364); PÉRÈS & PICARD, 1964 (p. 58, 113); REMACHA-TRIVIÑO, 2005; RIEDL, 1983 (p. 372); SCHIAPARELL, 2008; TIRADO, RODRÍGUEZ, BRUZÓN, LÓPEZ, SALAS & MÁRQUEZ, 2002; VALE & SAMPAYO, 2002.; ZENETOS, 1996 (p. 125); ZENETOS, 1997 (p. 466).

## CASES WHICH CANNOT BE TREATED UNDER ART. 23.9 OF ICZN

### *Anadara gibbosa* (Reeve, 1844) vs. *Anadara polii* (Mayer, 1868)

This is a moderately common species occurring on the outer shelf of the Mediterranean and the Eastern Atlantic from the Iberian Peninsula to Angola. Until the mid 1990s, most authors (e.g. NORDSIECK, 1969; PARENZAN, 1974; POPPE & GOTO, 1993) misidentified this species as *Anadara diluvii* (Lamarck, 1805) and therefore did not use the specific name *polii*. This usage persisted even later (e.g. ZENETOS, 1997; GIRIBET & PEÑAS, 1997), although it is now widely accepted (OLIVER & COSEL, 1993; HUBER, 2010) that *A. diluvii* is a different, extinct species with a type locality in the Miocene of the Loire basin, France (and type species of *Diluvarca* Woodring, 1925 by original designation).

*Arca gibbosa* Reeve, 1844 was described from unknown locality and

appears to be a senior synonym of *Arca polii* Mayer, 1868. There is one syntype (reg. n° 1969216) in The Natural History Museum, London, recorded by STEVENSON (1972) who did not, however, relate it to *Anadara polii*.

There is unfortunately one instance of a usage of the specific name *gibbosa* Reeve in the XX century (VAN BEEK, 1969), within an archaeological publication regarding South Arabia. The figures given (his pl. 56a) would fit *Anadara natalensis* (Krauss, 1848), a well-known species ranging from the Red Sea and Persian Gulf to South Africa and introduced in the Eastern Mediterranean, rather than *Anadara polii*. Albeit a misidentification, it remains that for nomenclatural purposes it precludes the application of ICZN Art. 23.9. We could



document the 25 usages of the epithet *polii*, but hardly any more, so that it is not realistic to make a case for requesting the suppression of *gibbosa*. Therefore, we endorse HUBER'S (2010) view of using *Anadara gibbosa*.

*Arca gibbosa* Reeve, 1844 is a senior homonym of *Arca gibbosa* d'Orbigny, 1845 (Paléontologie Française, Crétacé III, p. 224, pl. 316 fig. 5-8), a Mesozoic fossil species for which NYST (1848) coined the replacement name *Arca sarthacensis*.

*Chama cornuta* Dillwyn, 1817 vs. *Chama bicornis* Linnaeus, 1758 or *Chama gryphina* Lamarck, 1819 (Figure 1)

Names involved:

*Chama bicornis* Linnaeus, 1758, *Systema Naturae*, ed. 10: 692.

*Chama cornuta* Chemnitz, 1784, *Systematisches conchylien-Cabinet*, vol. 7: 150, pl. 52 fig. 516-520 (unavailable nomenclaturally: ICZN Direction 1).

*Chama cornuta* Dillwyn, 1817, *A descriptive catalogue of Recent shells*: 222.

*Chama gryphina* Lamarck, 1819, *Histoire naturelle des animaux sans vertèbres*, vol. 6 (1): 97.

The well-known name *Chama gryphina* Lamarck, 1819, currently *Pseudochama gryphina* (Lamarck, 1819), has been declared, by HUBER (2010), *nomen protectum* against *Chama cornuta* Dillwyn, 1817. However this action was backed by references cited by LAMY (1928) whereas Art. 23.9.2 requires references spanning not less than ten years in the immediately preceding 50 years (i.e. since 1963), therefore it is invalid.

Consultation of the original references involved revealed a much more complex issue, rendering pointless the citation of 25 usages of the name *gryphina* which we could easily find. The name *Chama cornuta* Dillwyn, 1817 is based on a suite of references among which *Chama cornuta* Chemnitz, 1784 (non-binominal, therefore unavailable) and *Chama bicornis* Linnaeus, 1758. The species is stated as inhabiting the Mediterranean, reproducing LINNAEUS' (1758) indication for *Chama bicornis*. Chemnitz's original figures show chamids, some of which stated as collected in the Indian Ocean, and all of which have an upper valve coiling counterclockwise. Therefore Chemnitz's specimens are real *Chama*, not *Pseudochama*, and *Chama cornuta*, if based on those figures, cannot be a senior synonym of *Pseudochama gryphina* (Lamarck, 1819).

Although not formally a replacement name, the epithet *cornuta* is meant

by DILLWYN (1817) to stand in place of *bicornis*, considered improper because only one valve, not both, have horn-like projections. Both names are based on shared cited references (see below), so that we consider appropriate to treat *Chama cornuta* Dillwyn, 1817 as an objective synonym of *Chama bicornis* Linnaeus, 1758.

*Chama bicornis* Linnaeus, 1758 is itself a problematic taxon. It is based on three references to pre-Linnean authors: Caput 19 [pp. 29-30] of FABIVS COLUMNA (1616); pl. 214 fig. 49 of LISTER (1687) and p. 174 [misquoted "274" in Linnaeus, 1758], pl. 12 fig. 87-88 of KLEIN (1753), the two latter being copied from COLUMNA (1616). All these references are repeated by DILLWYN (1817) in addition to the reference to *Chama bicornis* Linnaeus, 1758. In order to make the two names formally objective synonyms, the specimen figured by COLUMNA (1616) is here designated as lectotype of *Chama bicornis* Linnaeus, 1758 and of *Chama cornuta* Dillwyn, 1817. The specimens labelled *Chama bicornis* in the Linnean collection in London are believed to be subsequent (HANLEY, 1850: 90; DODGE, 1952: 139) and the latter author advocated the suppression of the name. There are no registered specimens of *Chama bicornis* in Uppsala (WALLIN, 2001). The fact that Linnaeus coined the name "*bicornis*" on the assumption that COLUMNA (1616)

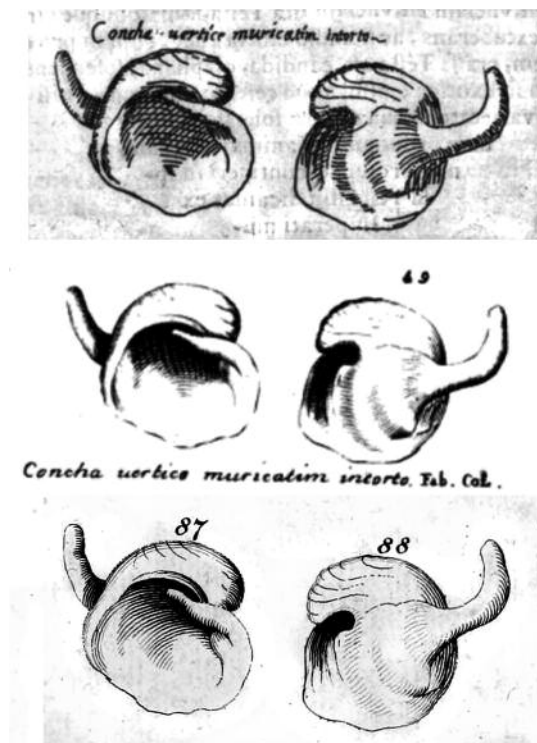


Figure 1. The three figures cited by Linnaeus (1758) in support of his *Chama bicornis*. Above, in FABIVS COLUMNA (1616, caput 19, page 30, lower figure unnumbered); middle, in LISTER (1687, pl. 214 fig. 49); lower, in KLEIN (1753: pl. 12 fig. 87-88) (upper two figures, downloaded from Google Books; lower figure from Biodiversity Heritage Library).

Figura 1. Las tres figuras citadas por Linneo (1758), en apoyo de su *Chama bicornis*. Arriba, en FABIVS COLUMNA (1616, caput 19, página 30, figura inferior sin numerar), en medio, en LISTER (1687, pl 214 Fig. 49); abajo, en KLEIN (1753: pl 12 fig 87-88) (dos figuras superiores, descargados de Google Books, la de abajo desde Biodiversity Heritage Library).

figured both valves and not the inside and outside of the same valve (see DOLLFUS & DAUTZENBERG, 1932: 302) is a good indication that he had only that figure as a source.

The specimen figured by Fabius Columna is a real *Chama*, not *Pseudochama*, according to the coiling direction, and the figures in this book are not “mirror image” of the original, as happened in several XVII century books due to the process of engraving. The protruding item is stated as being a branch of red coral, not part of the shell itself. This supports strongly Linnaeus’ indication of a Mediterranean origin, and sug-

gests that the specimen was collected in rather deep water. This fits the view expressed by PALLARY (1919), DAUTZENBERG (1927) and DOLLFUS AND DAUTZENBERG (1932) that *Chama bicornis* is an earlier name for the Mediterranean *Chama circinata* Monterosato, 1884 = *C. nicolloni* Dautzenberg, 1892. DOLLFUS & DAUTZENBERG (1932) nevertheless refrained from adopting the name *bicornis* as valid, due to the confusion around it.

The name *Chama bicornis* cannot be declared *nomen oblitum* because it has been used as the valid name of a taxon by DAUTZENBERG (1927: 304) as a senior synonym of his own *Chama nicolloni*,

and again by NORDSIECK (1969: 96, authorship erroneously credited to GMELIN, 1790) in an identification guide. The latter usage was followed by EINSELE, ELOUARD, HERM, KÖGLER & SCHWARZ (1977: 11) for West Africa and ZENETOS (1996) for Greece. The outcome is that the name is available, and in the current stage of knowledge, either it

should be used as a senior name for the circalittoral Mediterranean species currently known as *Chama circinata* Monterosato, 1884, or its suppression requested to ICZN. There is a possibility that *C. circinata* turns out to be a synonym of *C. gryphoides* Linnaeus, 1758, which should in this case take precedence over all those names.

*Solen ensis major* Chenu 1843 vs. *Ensis arcuatus* (Jeffreys, 1865) and  
*Ensis magnus* Schumacher, 1817

Names involved

*Ensis magnus* Schumacher, 1817, *Essai d'un nouveau système des habitations des vers testacés*: 143, pl. 14 fig. 1a, b.

*Solen ensis major* Chenu, 1843, *Illustrations conchyliologiques*, vol. 2: pl. 3 fig. 2, 2a, b, e.

*Solen siliqua* var. *arcuata* Jeffreys, 1865, *British Conchology*, vol. 3: 19.

The taxonomic recognition of *Ensis arcuatus* (Jeffreys, 1865) as a distinct species has come relatively late but is currently widely accepted. However the still earlier name *Ensis magnus* Schumacher, 1817, has been adopted as valid by COSEL (2009), with *E. arcuatus* treated as a synonym. The name *magnus* has been used repeatedly in the XX century (e.g. BLOOMER, 1905; NORDSIECK, 1969: 146; VAN URK, 1982: 30; SEAWARD, 1990: 83; POPPE & GOTO, 1993: 107) and is by no means “*oblitum*”. *Ensis magnus* is the type species of *Ensis* Schumacher, 1817,

by monotypy. HUBER (2010) proposed to declare *Solen ensis major* Chenu 1843 *nomen oblitum* in order to protect *Solen arcuatus* Jeffreys, 1865, but did not complete the action by providing the 25 instances of usage for *S. arcuatus*. We consider however this unnecessary, since *Ensis magnus* has precedence. In the event that *Ensis arcuatus* should be recognized as specifically distinct from *Ensis magnus*, the latter name remains valid because *Solen ensis major* would become a junior synonym of *Ensis magnus*.

*Polititapes rhomboides* (Pennant, 1777) vs. *Polititapes virgineus* (Linnaeus, 1767) (Figure 2, Table I)

Names involved:

*Venus virginea* Linnaeus, 1767, *Systema Naturae*, ed. 12: 1136.

*Venus rhomboides* Pennant, 1777: *British Zoology*, vol. 4: 97.

The name *Venus virginea* Linnaeus, 1767 was used for a common European species currently known as *Polititapes rhomboides* (Pennant, 1777), by most British authors in the XIX century as summarized in FORBES & HANLEY (1848: vol. 1, p. 388, pl. 25 fig. 4, 6) and JEFFREYS (1864, vol. 2, p. 353-355). Jeffreys explicitly wrote that this was *Tapes virgineus* “of modern authors”, probably not of Linnaeus. Synonymy and reasons

for preferring *rhomboides* for the European species were thoroughly discussed in BUCQUOY, DAUTZENBERG & DOLLFUS (1893: 397-400). Modern usage of *rhomboides* as the valid specific name was started by PETIT (1851: 297, in the binomen *Pullastra rhomboides*) but was triggered by the influential work of BUCQUOY, DAUTZENBERG & DOLLFUS and became universal after being adopted in WINCKWORTH'S (1932: 244)

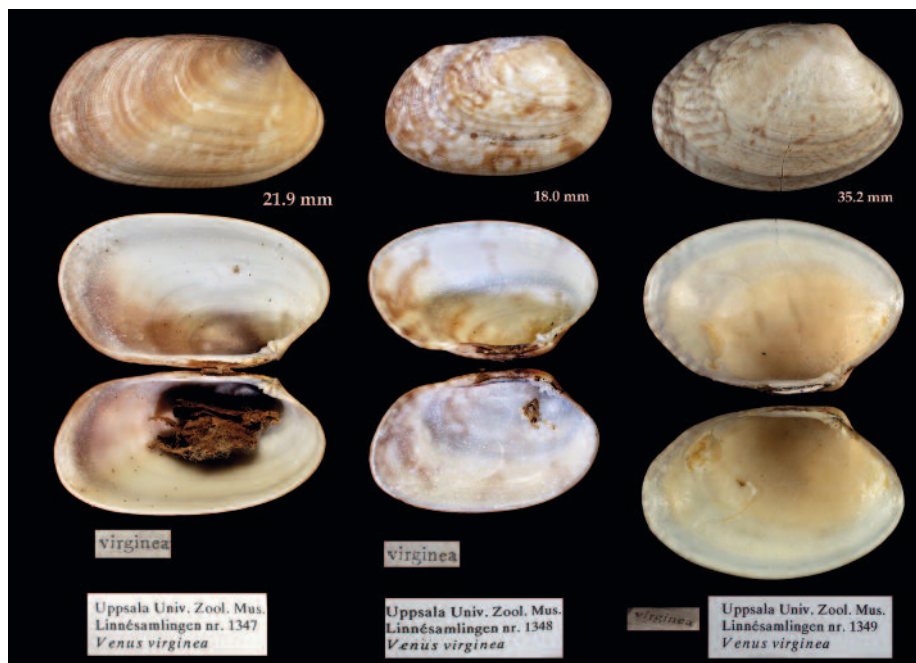


Figure 2. The Linnean types of *Venus virginea* in the Museum of Evolution, Uppsala. Specimen 1347 (actual length: 21.9 mm) and 1348 (actual length: 18.0 mm) are *Venerupis geographica* (Gmelin, 1791); Specimen 1349 is *Polittitapes aureus* (Gmelin, 1791). The Swartz labels and the modern label are shown below each specimen. Photos courtesy of Erica Mejlon, the Evolution Museum, Uppsala.

Figura 2. Los tipos de Linneo de *Venus virginea* en el Museo de la Evolución, Uppsala. Especimen 1347 (longitud: 21,9 mm) y 1348 (longitud: 18,0 mm) son *Venerupis geographica* (Gmelin, 1791); Especimen 1349 es *Polittitapes aureus* (Gmelin, 1791). Las etiquetas de Swartz y la etiqueta moderna se muestran debajo de cada espécimen. Fotos cortesía de Erica Mejlon, el Museo de la Evolución, Uppsala.

list of British molluscs. Type material of *Venus rhomboides* is stated as still existing by SMITH (1913).

The other taxon which has been denoted as *Venus virginea* Linnaeus, 1767 in the XIX century literature is currently known as *Marcia hiantina* (Lamarck, 1818) = *flammiculata* (Lamarck, 1818) = *rimularis* (Lamarck, 1818) = *vermiculosa* (Lamarck, 1818), and agrees with the type locality "in Indiis" stated by LINNAEUS (1767). The name *Venus virginea* was used in this sense by PHILIPPI (1849: vol. 3, p. 22 (28), pl. 8 figure 2-4), who was very critical over LAMARCK's (1818) taxonomic treatment of venerids but still distinguished *Venus hiantina* Lamarck, 1818 from *Venus vir-*

*ginea* Linnaeus, 1767 (Philippi stated "not of authors") = *rimularis* Lamarck, 1818 = *vermiculosa* Lamarck, 1818 = *flammiculata* Lamarck, 1818, all currently placed in synonymy of *Marcia hiantina*.

The interference with the European species seems to originate from the treatment of *Venus virginea* in GMELIN's (1791) edition of the *Systema Naturae*, where the description (p. 3294) is different from that of 1767 and a reference to CHEMNITZ (1784: vol 7, p. 60, pl. 43 Fig. 457-458) is added. The latter figures were published with the unavailable name *Venus edulis*, and Chemnitz wrote that the species is brought to the Viennese markets from Trieste and Fiume [now Rijeka, Croatia] in the Adriatic sea.

Table I. Number of hits for generic combinations of *Venerupis decussata*, *V. aurea* and *V. rhomboides* in Google Books (G.B.) and Google Scholar (G.S.), accessed May 20, 2013.

Tabla I. Número de resultados para las combinaciones genéricas de *Venerupis decussata*, *V. aurea* y *V. rhomboides* en Google Books (G.B.) y Google Scholar (G.S.), consultado el 20 de mayo de 2013.

	G.B.	G.S.		G.B.	G.S.
<i>Ruditapes decussatus</i>	3870	3450	<i>R. philippinarum</i>	5200	8780
<i>Tapes decussatus</i>	10300	1760	<i>T. philippinarum</i>	5950	4090
<i>Venerupis decussata</i>	2770	720	<i>V. philippinarum</i>	1210	780
<i>Venerupis rhomboides</i>	996	307	<i>V. aurea (aureus)</i>	1590 (264)	428 (74)
<i>Polititapes rhomboides</i>	5	0	<i>P. aureus</i>	65	12

The specimens on Figs. 457-458 are unquestionably European, but are more likely forms of *Polititapes aureus* (Gmelin, 1791). LAMARCK (1818: 600) wrote "Les fig. de Chemnitz que cite Gmelin, me paraissent étrangères à cette espèce". Anyway all this does not interfere nomenclaturally with Linnaeus' species: either Gmelin's usage is a misidentification, or if treated as a separate taxon it is a primary junior homonym.

There is a limited usage of *Tapes virgineus* in XX century as valid name for a European species (NEWTON, 1907; HARGREAVES, 1910; FORD, 1923; FISHER & TEMPLETON, 1935; MARRES, 1947), which precludes application of Art. 23.9. NORDSIECK (1969: 118) states in synonymy of *Tapes rhomboides*: "*Tapes virgineus* L., pars?" but does not use it.

DODGE (1952) stated an unmarked specimen of *Venus virginea* with no proven type status in the Linnean Society, London, which would agree with the specimen figured by REEVE (1864, pl. 4 sp. 17a) as *Tapes virginea*. Reeve's figure is clearly the same as *Venus rhomboides* Pennant, 1777 but, again, this has no bearing on the Linnean species. This shell is not currently registered as a type on the Linnean Society website <<http://linnean-online.org>>. Conversely there is a lot in University Museum, Uppsala (# 1347-1349) labelled as this species (WALLIN, 2001). These types are accompanied with the so-called 'Swartz labels', printed using

the 12th edition of "Systema Naturae" as a model (WALLIN, 2001). We consider specimens 1347 and 1349 to belong to the species currently known as *Venerupis geographica* (Gmelin, 1791) and specimen 1349 to belong to the species currently known as *Polititapes aureus* (Gmelin, 1791). The latter resembles *Polititapes rhomboides* but is unequivocally distinguished by the much more narrow and less robust hinge plate, and the colour pattern with yellowish inside and brown streaks outside is more typical of *aureus* than of *rhomboides*.

From the preceding discussion we conclude that, would the name *Venus virginea* be revived, it should stand as a senior synonym of *Polititapes aureus* (Gmelin, 1791) or *Venerupis geographica* (Gmelin, 1791) if based on the extant types, and is not *Venus rhomboides* Pennant, 1777. Since both species (*Venus hiantina* and *V. rhomboides*) for which Linnaeus' name *Venus virginea* has actually been used have another accepted name with established usage, and since so much confusion surrounds the Linnean name, it is our intention to request suppression of the latter from the ICZN. In the meanwhile, we propose to continue the accustomed usage of the specific name *Polititapes rhomboides* (Pennant, 1777) as valid.

*Polititapes rhomboides* is a commercial species, albeit not of major importance, its marketing is regulated under this name in Spain and Portugal, and it is known under this name in legal texts regarding size and close season.



Another issue related to this name change is the generic placements for the European species of Tapetinae, particularly the option of ranking *Ruditapes* Chiamenti, 1900 (type species: *Venus decussata* Linnaeus, 1758, subsequent designation by DALL, 1902: 363) as a subgenus of *Venerupis* but *Polititapes* Chiamenti, 1900 (type species: *Venus aurea* Gmelin, 1791, subsequent designation by DALL, 1902: 363) as a genus. Without this being backed by a novel phylogenetic analysis of the

Tapetinae, we feel it is preferable to follow a conservative usage, particularly for these names which apply to commercial species and are used by many non-taxonomists and also in legal documents. We can agree that *Tapes* (based on *Venus literata* Linnaeus, 1758) is not appropriate for the species considered here but the two most obvious options seem to be either to place all in *Venerupis* and rank *Polititapes* also as subgenus, or rank *Ruditapes* as full genus as well.

*Cuspidaria striata* var. *bicarinata* (Jeffreys, 1876) vs. *Cuspidaria bicarinata* (Jeffreys, 1882)

Names involved

*Neaera striata* var. *bicarinata* Jeffreys, 1876, *Annals and Magazine of Natural History*, (4) 18: 496.

*Neaera bicarinata* Jeffreys, 1882, *Proceedings of the Zoological Society of London* (1881): 939, pl. 71 fig. 1.

HUBER (2010: 792-793) declared *Neaera bicarinata* Jeffreys, 1882 a *nomen protectum* and *Neaera striata* var. *bicarinata* Jeffreys, 1876, a *nomen oblitum*. The species was not cited by ALLEN & MORGAN (1981), is merely listed in POUTIERS & BERNARD (1995), and has hardly ever been cited any more in the XX century literature, so that we are certain that the requirements of Art. 23.9.1 are not met. Anyway *Neaera bicarinata* Jeffreys, 1882 is not preoccupied. JEFFREYS (1876) mentioned a fragment of a species of *Neaera* from 'Valorous' sta. 13, described it and then wrote "It probably belongs to a

species which I dredged in the 'Porcupine' Expedition of 1870, off the coast of Portugal, at depths of from 740 to 1095 fathoms, and which I propose to name *bicarinata*." The words "it probably belongs" exclude that described fragment from the type series of *Neaera bicarinata* (as of 1876) according to ICZN Art. 72.4.1, so that *bicarinata* remains a *nomen nudum* until its formal description in 1882. It is anyway the same name, with no connection whatsoever with *Neaera striata* (the previous species in the 1876 text) and the only issue is the date of availability, here retained as 1882.

## ACKNOWLEDGEMENTS

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