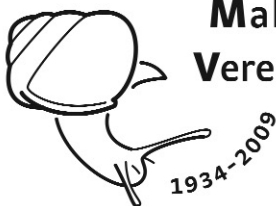


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Type specimens of Pectinidae (Bivalvia) described by Ignaz von Born (1778 - 1780)

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Born described in two publications (1778, 1780) the molluscs in the collection of Empress Maria Theresa (1717-1780), now in the Natural History Museum at Vienna. In this paper the Pectinidae type material is described. Ten new species were introduced of which *Argopecten nucleus* (Born, 1778) and *Minnivola pyxidata* (Born, 1778) are valid taxa. The remaining eight names are junior or senior synonyms and there is also a nomen inquirendum.

Key words: Born, Mollusca, Bivalvia, Pectinidae, type species, taxonomy, nomenclature.

INTRODUCTION

Ignaz [Edler] von Born [pseudonym Johannes Physiophilus] was born on the 26th of December 1742 of a noble family at Karlsburg (now Alba Iulia), in Transylvania in Romania. Educated in a Jesuit college in Vienna, he was for sixteen months a member of the order, but left it and studied law at Prague University. Only later he turned to natural history and travelled extensively in Germany, the Netherlands and France, studying mineralogy, and on his return to Prague in 1770 he entered the department of mines and the mint. He was a well-known mineralogist, metallurgist and palaeontologist. In 1776 he was engaged by Empress Maria Theresa (13 May 1717 - 29 November 1780) to arrange and describe the imperial natural history collection at Vienna, where he was nominated to the council of mines and the mint, and continued to reside here until his early death on 24 July 1791. For biography and bibliography of Born see Lindner (1986) and Riedl-Dorn (1991).

In 1778 Born published a descriptive catalogue of the imperial shell collection, the "Index Rerum Naturalium Musei Caesarei Vindobonensis", referred to hereafter as the "Index". The "Index" on the Mollusca contains descriptions of 22 species of Pectinidae, 10 of which described as new. The descriptions of the "Index" were repeated, altered and also figured in Born's "Testacea Musei Caesarei Vindobonensis", referred to hereafter as the "Testacea", published in 1780. This voluminous folio work appeared with 18 excellent hand-coloured full-page engraved plates of the shell collection of the Empress.

MATERIAL AND METHODS

After Born the collection moved from the 'Mineralienkabinet' to the 'Zoologische Abtheilung' (Fitzinger, 1856, 1868) in 1818. At that time Carl Megerle von Mühlfeld (1809-1818) worked on the molluscan collection and produced an annotated catalogue according to the system of Linnaeus. Under management of Bremser in 1827, the collection contained 1990 species (9755 specimens) and under Partsch in 1835 3500 species (17,004 specimens). Both worked on a new annotated catalogue and more or less arranged the collection according to Lamarck's system. In 1861 Brauer worked on the collection and his findings with the help of Eduard von Martens are embodied in a detailed report in 1878. He arranged the bivalve collection and noted that small oval labels with the notation of Born's

Index were glued to the shell. Also small rectangular labels were found with high numbers on it. Shells with these labels refer to original specimens of Born's time. Specimens with larger rectangular labels were show pieces. At present, a number of these specimens also bear the name "Born" in ink. This source is unknown, but is likely to have been by Brauer.

In style, Born's descriptions of species resemble those of Linnaeus, but they are in general more accurate. A brief diagnosis, headed by the specific name and the German vernacular name, is followed by a reference to the original description in the case of a previously described species. Next the Dutch, English and French vernacular names, if any, are given, like Knorr's "Vergnügen" (1757-1773). A fuller description follows, and the text concludes with references to previously published accounts. For new species, the form of the description is identical to that of Linnaeus (1758). The brief diagnosis is followed by references to previously published figures and a more complete description. In the "Index", the diagnoses and descriptions are given in Latin and German. The "Testacea" is entirely in Latin. The phraseology of diagnoses and descriptions was often altered from that of the "Index", but few changes of content were made.

During a visit from March 23rd until 28th 1992 to the Natural History Museum at Vienna the author had the opportunity to study the pectinids of the molluscan collection and the unpublished annotated catalogues of Megerle von Mühlfeld (1809-1818) and Bremser & Partsch (1827-1835) on the described and figured pectinids of Born's publications (1778, 1780). The specimens remain carefully preserved today. The collection is classified according to the system of Linnaeus and Lamarck.

Abbreviations: H – height (dorsal - ventral); L – length (anterior - posterior); lat. – latitudinal (width = here length); lin. – Austrian Linie (= 2.195 mm); long. – longitudinal (length = here height); lv – left valve (= upper valve); NHMW – Naturhistorisches Museum Wien, Vienna; pol. – Pollex (= 12 Linien or 26.340 mm); pr – pair (= articulated specimen); rv – right valve (= lower valve).

THE NEW SPECIES

The Pectinidae described in Born's Index were placed in the genus *Ostrea* and divided into two groups, i.e. those with 'equal auricles' (6 species) and taxa with 'unequal auricles' (16 species). The latter group contains 10 new species, which are treated here. The Testacea does not contain new species, but redescribes the original Latin descriptions of the Index.

Ostrea elongata Born, 1778 (figs 45-46)

Ostrea elongata Born, 1778: 86; 1780: 103, pl. 6 fig. 2.

References to the type series. – Mühlfeld, 1809-1818: unpagged; Bremser & Partsch, 1827-1835: unpagged [as "*O. Pes felis*"]; Brauer, 1878: 20.

German vernacular name. – "Der lange Mantel" (Index and Testacea).

Original diagnosis. – "Testa ovato elongata, longitudinaliter striata, radiis (8) transversim rugosis, auricula altera minima. Die eyförmige verlängerte und der Länge nach gestreifte Schale hat (8) in die Quere gerunzelte Strahlen, und ein sehr kleines Ohr." (Index, p. 86).

"Testa ovato-elongata, longitudinaliter striata, radiis octo transversim rugosis, auricula altera minima." (Testacea, p. 103).

Original description. – "Testa ovata, elongata, planiuscula subpellucida; striae elevatae longitudinales; costae 8 transversim rugosae. Margo repandus plicatus. Auriculae inaequales supra muricatae, altera minima. Color pallide incarinatus. Die Schale ist eiförmig, verlängert, flach und halb durchsichtig. Nach der Länge laufen erhabene Streifen. Die acht Ribben sind ruzelicht. Der Rand ist ausgeschweist unde gefälten. Die ungleichen Ohren, deren eines sehr klein ist, sind oben raub. Von blasser fleischrother Farbe." (Index, p. 86).

"Testa ovato-elongata, planiuscula subpellucida, striis elevatis longitudinalibus, costis octo transversim rugosis; Margo repandus plicatus; Auriculae inaequales, supra muricatae, altera minima; Color albo & incarnato varius. Long. 1 poll. 2 lin. [= 30.73 mm]. lat. 10 lin. [21.95 mm]. Patriae ignota." (Testacea, p. 103).

Additional description. – Shell up to ca. 75 mm high, usually smaller, rather thin, not transparent, elongate or slightly oblique, flattened; inequivalve, right valve slightly more convex than left valve, inequilateral, anterior auricles larger than posterior ones; umbonal top ca. 70°-78°. Both valves with 6-7 prominent, regularly arranged, radial plicae (Canarian morph with very weak and nearly inflated radial plicae). Anterior auricle of left valve with 11-15 ribs, right valve with 10-12 ribs. Posterior auricles of left and right valve with 4-5 ribs. Microsculpture shagreen or honeycomb-like throughout. Colour variable, creamy, reddish, orange, yellowish, uniform in colour or maculated, right valve paler.

Type locality. – Not indicated (Index, 1778). "Patria ignota" [locality unknown] (Testacea, 1780).

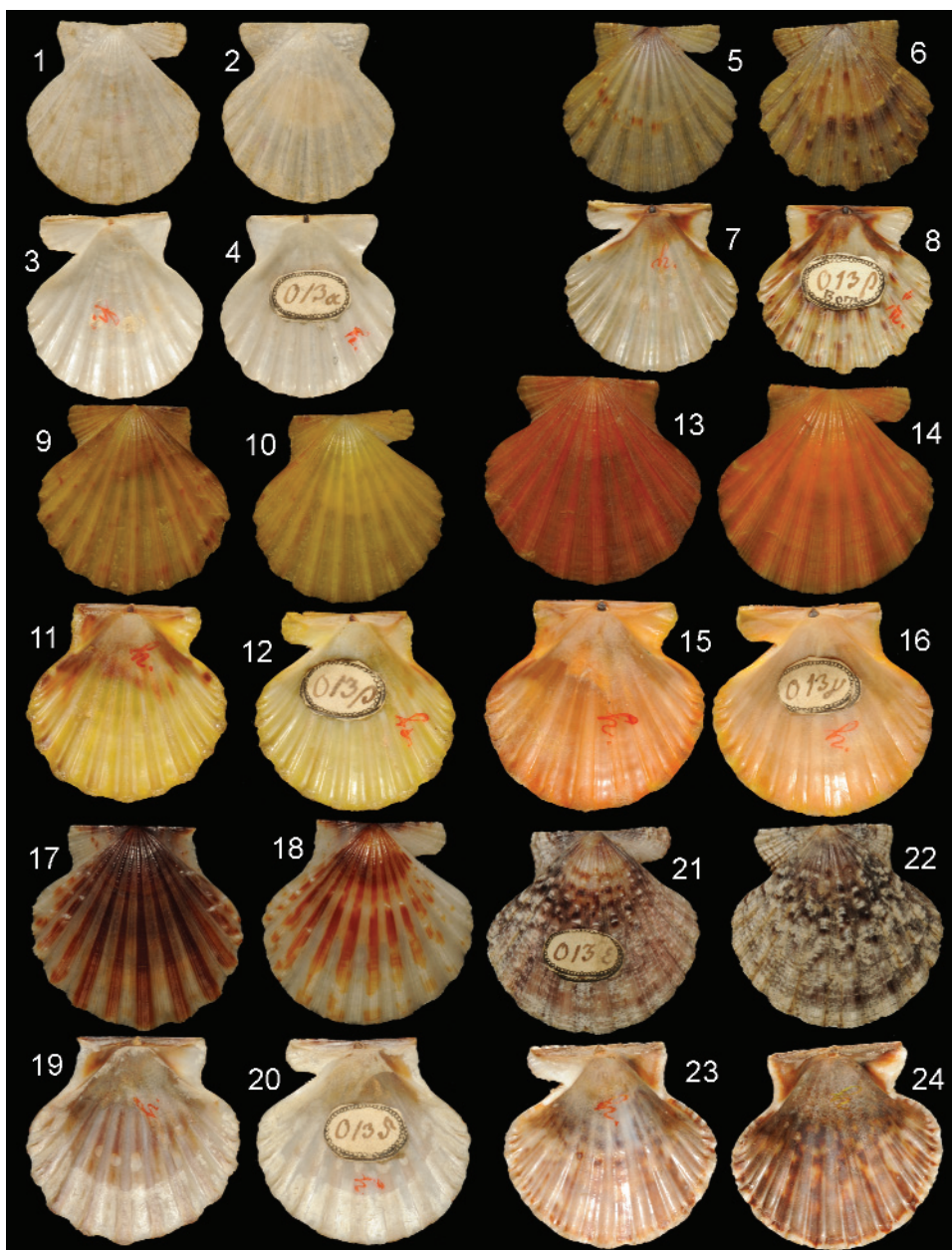
Type material. – There is a single left valve (syntype: H 29.1 mm, W 21.6 mm), NMHW 14105, figured by Born (1780: pl. 6 fig. 2), with two similar small oval labels glued on the inside. The upper label contains "O 52 β" in Indian ink and "Born" in pencil. Also on the inside of the shell "1751 a" is indicated in red ink.

Other material. – According to Megerle von Mühlfeld (1809-1818: "42. Pes Felis. Sp. 44. Ex 2") and Bremser & Partsch (1827-1835: "52. Pes felis. Sp. 44. Ex 2 + 1/2") there are also two articulated specimens in the museum collection, which could belong to the type series. However, Brauer (1878: 20) only refers to the figured syntype "Original vorhanden und genau mit dem Bilde übereinstimmend, aber nur mit der Catalog – Nummer O 52 β *P. pes-felis* ohne Citat von Born.", suggesting that the other two specimens belong to the catalog number "O 52". Also Bremser & Partsch reported that O 52 β [a left valve] is "Born's Type im Schaukasten".

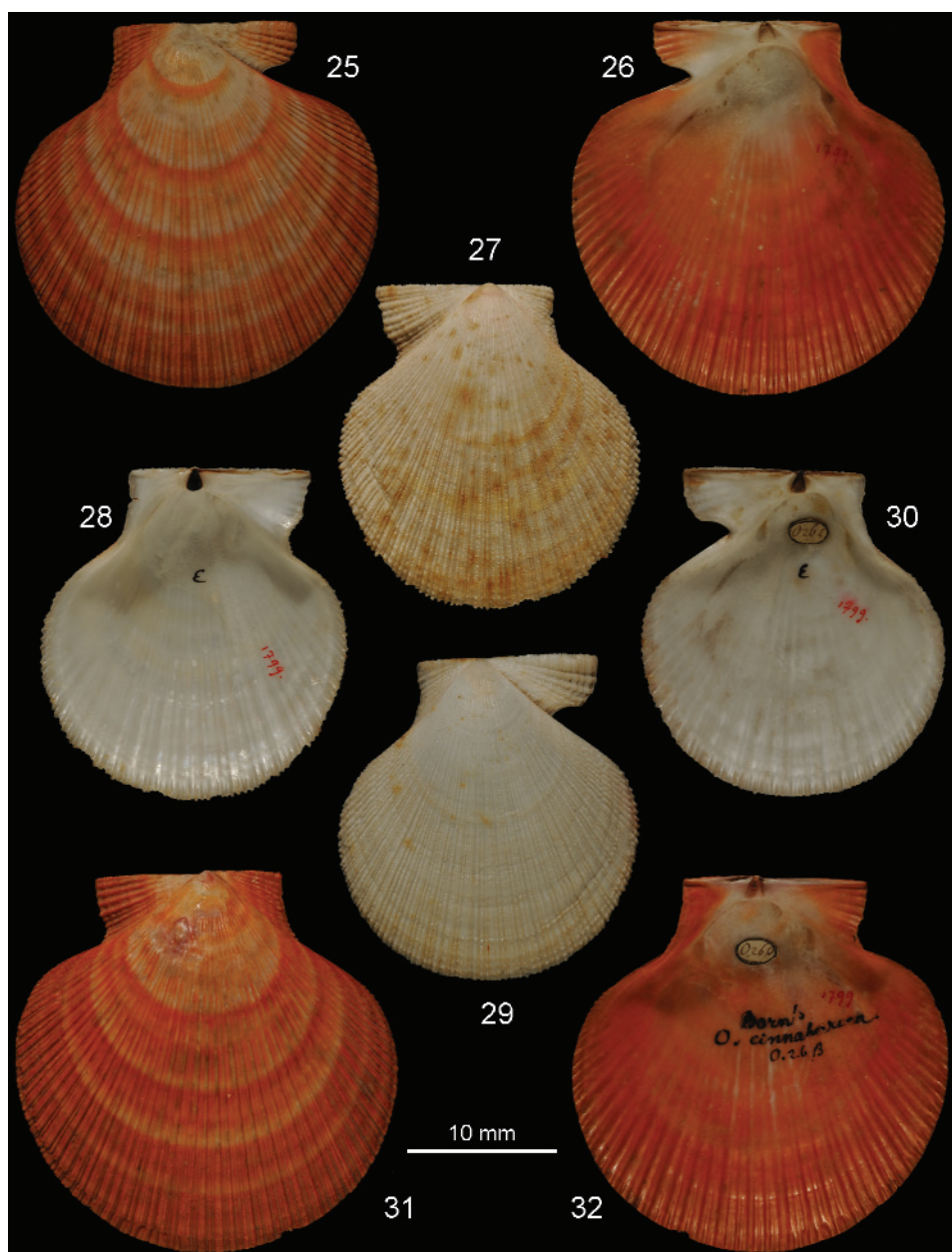
Remarks. – Born (1780: 103) repeated the original diagnosis (1778: 86) with minor emendations. He added the measurements "Long. 1 poll. 2 lin. [= 30.73 mm] lat. 10 lin." [21.95 mm] of the figured specimen "TAB. VI. fig. 2." and the type locality "Patria ignota." The synopsis of the German description of this species in the "Index" (1778) is omitted in the "Testacea" (1780).

Taxonomic position. – Although Born (1778) usually referred to Linnaeus' *Systema Naturae* (1758), he seems to have overlooked *Ostrea pesfelis* Linnaeus, 1758, which is unquestionable a senior synonym of *O. elongata*. The species is currently placed in *Manupecten* Monterosato, 1889.

Distribution. – *Manupecten pesfelis* occurs in the Mediterranean Sea and the adjacent part of the Atlantic Ocean, from Portugal to the Azores and southwards to the Cape Verde Islands.



Figs 1-24. *Ostrea sulcata* Born, 1778, NHMW 14106 (lectotype), NHMW 14470 (5 paralectotypes). 1-4, paralectotype [= *Pecten antillarum* Recluz, 1853], pr (H 23.6 mm, W 22.7 mm); 1, rv, exterior; 2, lv, exterior; 3, rv, interior; 4, lv, interior. 5-8, lectotype, pr (H 21.8 mm, W 22.7 mm); 5, rv, exterior; 6, lv, exterior; 7, rv, interior; 8, lv, interior. 9-12, paralectotype, pr (H 24.8 mm, W 25.2 mm); 9, lv, exterior; 10, rv, exterior; 11, lv, interior; 12, rv, interior. 13-16, paralectotype, pr (H 27.6 mm, W 28.5 mm); 13, lv, exterior; 14, rv, exterior; 15, lv, interior; 16, rv, interior. 17-20, paralectotype, pr (H 27.1 mm, W 27.9 mm); 17, lv, exterior; 18, rv, exterior; 19, lv, interior; 20, rv, interior. 21-24, paralectotype, pr (H 26.7 mm, W 27.9 mm); 21, rv, exterior; 22, lv, exterior; 23, rv, interior; 24, lv, interior.



Figs 25-32. *Ostrea cinnabarina* Born, 1778, NHMW 14107 (2 syntypes). 25-26, 31-32, syntype, pr (H 96.4 mm, W 96.5 mm); 25, rv, exterior; 26, rv, interior; 31, lv, exterior; 32, lv, interior. 27-30, syntype, pr (H 85.2 mm, W 79.8 mm); 27, lv, exterior; 28, lv, interior; 29, rv, exterior; 30, rv, interior.

Ostrea sulcata Born, 1778 (figs 1-24)

Ostrea sulcata Born, 1778: 86; 1780: 103, pl. 6 fig. 3.

References to the type series. – Megerle von Mühlfeld, 1809-1818: unpaginated [as "*O. sulcosa*"]; Dillwyn, 1817: 255; Bremser & Partsch, 1827-1835: unpaginated [as "*O. suncosa*", error for "*O. sulcosa*"]; Brauer, 1878: 21.

German vernacular name. – "Der gefurchte Mantel" (Index and Testacea).

Original diagnosis. – "Testa aequivalvi rotundata, longitudinaliter striata, radiis (12), auriculis subaequalibus. a. albo fuscoque maculata, b. tota flava. Die gleichklappige rundliche Schale ist nach der Länge gestreift, mit (12) strahligen Ribben und einigermaßen ungleichen Ohren versehen. a. Weiß und braun gefleckt, b. ganz gelb. (Index, pp. 86-87).

"Testa aequivalvi rotundata, longitudinaliter striata, radiis duodecim, auriculis subaequalibus." (Testacea, p. 103).

Original description. – "Testa subpellucida rotundata, convexa, aequivalvis, striis arcuatis longitudinalibus; Costis duodecim radiatis. Auriculae fere aequales latae. Die Schale ist rundlich, bäuchig und halb durchsichtig; die Klappen von gleicher Grösse, mit gedrängten nach der Länge laufenden Streifen besetzt. Die Ohren sind beinahe gleich und breit." (Index, pp. 86-87).

"Testa aequivalvis, subpellucida, rotundata, striis arcuatis longitudinalibus, & costis duodecim radiatis; Auriculae fere aequales, latae; Cardo praecedentium; Color vel totius testae flavus, vel albo fuscoque maculatus. Long. 10 lin. [= 21.95 mm], lat. 10 lin. [= 21.95 mm]. Patriae ignota." (Testacea, p. 103).

Additional description. – Shell up to ca. 25 mm high, usually smaller, thin, transparent to semi-transparent, nearly circular, weakly inflated; equivalve and equilateral, left and right valve equally convex, anterior auricles larger than posterior ones; umbonal top ca. 90°-100°. Both valves smooth or with regularly spaced radial plicae (up to ca. 10) and secondary radial riblets. Microsculpture of very closely spaced commarginal lirae. Colour strongly variable, creamy, reddish, orange, yellowish, uniform in colour or maculated, right valve usually paler.

Type locality. – Not indicated (Index, 1778). "Patria ignota" [locality unknown] (Testacea, 1780).

Type material. – An articulated specimen (H 21.8 mm, W 22.7 mm), NHMW 14106, probably figured by Born (1780: pl. 6 fig. 3) is here designated as lectotype. Two similar small oval labels are glued on the inside; the upper label with "O 13 β" and "Born" in Indian ink. There are some unreadable marks in red ink on the inside of the shell.

Five articulated paralectotypes, NHMW 14470, have original oval labels, marked with "O 13 α", "O 13 β", "O 13 γ", "O 13 δ" and "O 13 ε". A white specimen marked on the upper label "O 13 α" on the inside of the left valve is similar to *Bractechlamys antillarum* (Recluz, 1853). The other specimens are similar to young *Flexopecten glaber* (Linnaeus, 1758).

Remarks. – Born (1780: 103) repeated the original diagnosis (1778: 86) with some emendations. He also added the measurements "Long. 10. lin. [= 21.95 mm] lat. 10. lin." [21.95 mm] of the figured specimen "TAB. VI. fig. 3." and the type locality "Patria ignota."

Nomenclature. – *Ostrea sulcosa* Megerle von Mühlfeld in the "Catalogue 1809-1818",

followed by Bremser & Partsch (1827-1835), is only a manuscript name.

Taxonomic position. – The diagnoses of *O. sulcata* are closest to *Flexopecten hyalinus* (Poli, 1795), but the lectotype and four of the paralectotypes belong to *Flexopecten glaber* (Linnaeus, 1758). Similarly sized (ca. 20 mm high) young specimens of *F. glaber* are opaque, whereas shells of *F. hyalinus* are translucent or semi-translucent (“subpellucida” in the additional diagnosis). The current species is a junior subjective synonym of *Ostrea glabra* Linnaeus, 1758.

Distribution. – *Flexopecten glaber* occurs in the Mediterranean Sea.

Ostrea cinnabarina Born, 1778 (figs 25-32)

Ostrea cinnabarina Born, 1778: 87; 1780: 103.

References cited by Born. – Gualtieri, 1742: pl. 73 fig. C [= *Ostrea oblitterata* Linnaeus, 1758]; Regenfuss, 1758: part 1, pl. 3 fig. 36 [= *Ostrea opercularis* Linnaeus, 1758], pl. 4 fig. 38 [= *Ostrea nodosa* Linnaeus, 1758]; Knorr, 1771: part 5, pl. 15 fig. 1.

References to the type series. – Mergele von Mühlfeld, 1809-1818: unpaginated [as “*Pecten islandica* var. b *cinnabarina*”]; Dillwyn, 1817: 256; Bremser & Partsch, 1827-1835: unpaginated [as “*Pecten islandica* var. b *cinnabarina*”]; Brauer, 1878: 21.

German vernacular name. – “Der bandirte Mantel” (Index and Testacea).

Dutch vernacular name. – “Gebanderde Mantel” (Index and Testacea).

French vernacular name. – “Manteau bandé” (Index).

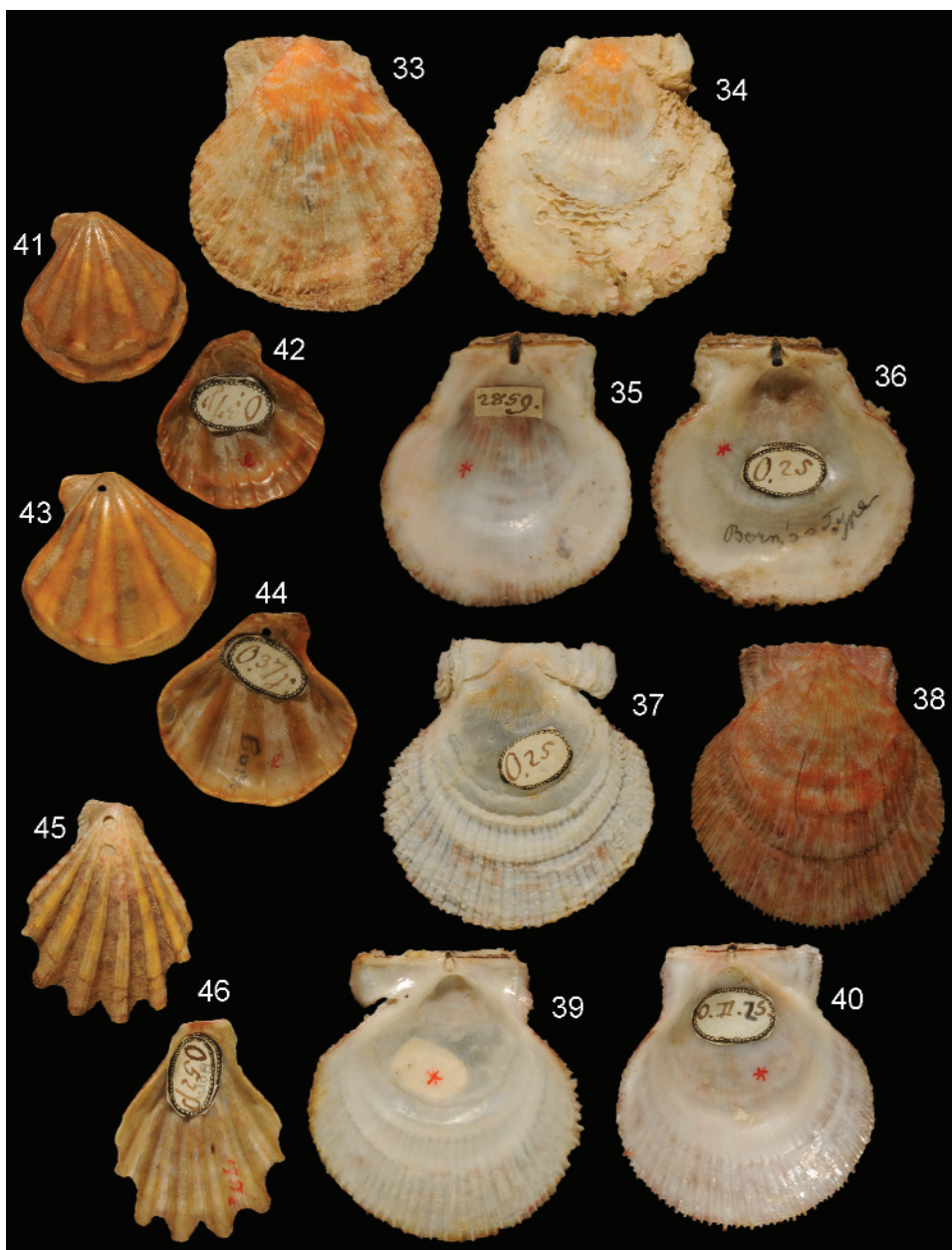
Original diagnosis. – “Testa aequivalvi, radiis numerosis inaequalibus, transversim rugulosis. Die gleichklappige Schale ist mit sehr vielen ungleichen, und in die Quere gestreiften Strahlen versehen.” (Index, p. 87).

“Testa aequivalvi, radiis numerosis inaequalibus, transversim rugulosis.” (Testacea, p. 103).

Original description. – “Testa rotundata, magna, convexiuscula, aequivalvis, longitudinaliter multisulcata; Radii numerosi inaequales [should be inaequales], striis transversis undulatis decussati; Auricula altera latior, antice excisa, margine ciliato. Color testae cinnabarinus, cingulis aliquot pallidis. Die rundliche große, etwas bäuchige und gleichklappige Schale ist der Länge nach gefurchet. Die bäuchigen Strahlen sind ungleich, und mit wellenförmigen Querstreichen durchkreuzet. Ein Ohr ist breiter, vorne ausgeschnitten, und am Rande rauch. Die ganze Schale ist auswendig zinnberroth mith blassen Querreifen.” (Index, p. 88).

“Testa rotundata, magna, convexiuscula, aequivalvis, longitudinaliter multisulcata; Radii numerosi inaequales, striis transversis undulatis decussati; Auricula altera latior, antice excisa, margine ciliato; Color testae cinnabarinus, cingulis aliquot pallidis. Long. 3 poll. 5 lin. [= 90.00 mm], lat. 3 poll. 5 lin. [= 90.00 mm]. Patriae ignota.” (Testacea, p. 104).

Additional description. – Shell up to ca. 125 mm high but generally smaller than 80 mm, solid, elongate to nearly circular, weakly inflated and slightly equiconvex, somewhat equivalve and equilateral, auricles unequal in shape and size, umbonal angle ca. 82-90°. Both valves sculptured with numerous irregularly spaced, small squamous radial riblets of different prominence, of which usually 5 distinctly more pronounced, commencing with ca. 20 at 1 mm shell height, and extending to the ventral margin, increasing with intercostal riblets to ca. 140, right valve with 10-15 riblets less than left valve.



Figs 33-40. *Ostrea miniata* Born, 1778, NHMW 14095 (2 syntypes). 33-36, syntype, pr (H 36.8 mm, W 33.5 mm); 33, lv, exterior; 34, rv, exterior; 35, lv, interior; 36, rv, interior. 37-40, syntype, pr (H 37.7 mm, W 35.2 mm); 37, rv, exterior; 38, lv, exterior; 39, rv, interior; 40, lv, interior. 41-44. *Ostrea coarctata* Born, 1778, NHMW 14108 (2 syntypes). 41-42, syntype, rv (H 22.5 mm, W 21.6 mm); 41, exterior; 42, interior. 43-44, syntype, rv (H 24.9 mm, W 25.8 mm); 43, exterior; 44, interior. 45-46. *Ostrea elongata* Born, 1778, NHMW 14105 (syntype); lv (H 29.1 mm, W 21.6 mm); 45, exterior; 46, interior.



Figs 47-50. *Ostrea pyxidata* Born, 1778, NHMW 14110 (syntype); pr (H 37.1 mm, W 39.9 mm). 47, rv, exterior; 48, lv, exterior; 49, rv, interior; 50, lv, interior. 51-58. *Ostrea undata* Born, 1778, NHMW 14112 (2 syntypes). 51-54, syntype, pr (H 32.9 mm, W 31.4 mm); 51, lv, exterior; 52, lv, interior; 53, rv, exterior; 54, rv, interior. 55-58, syntype, pr (H 34.5 mm, W 33.2 mm); 55, lv, exterior; 56, lv, interior; 57, rv, exterior; 58, rv, interior.

Microsculpture granular in pre-radial stage, more irregularly radially grooved interstitially in early radial stage and developed into a more intercostal reticular or shagreen microsculpture in late growth stage. Anterior auricles larger in shape and size than posterior, with ca. 12 squamous radial riblets on left valve, weaker and less in number (4-6) on right valve. Posterior auricles with ca. 12 weak radial riblets on left valve, ca. 10 on right valve. Colour strongly variable, gradually orange-red (usual), pink, yellow, purple, brown or white (rare) with colour pattern of concentric coloured bands, often with 3 or 5 light radiating streaks.

Type locality. – Not indicated (Index, 1778). “*Patria ignota*” [locality unknown] (Testacea, 1780).

Type material. – Two specimens can be recognized as syntypes, NHMW 14107. These are reported by Megerle von Mühlfeld in the “Catalog” as “*Islandica β cinnabarina*” (H 96.4 mm, W 96.5 mm, closest to Born’s diagnosis) and “*Islandica ε alba, cingulis flaveolis*” (H 85.2 mm, W 79.8 mm, closest to Born’s measurements). Inside both specimens are similar, small, oval labels with “O.26β” in one and “O.26.ε” in the other specimen, and the number “1799” both in red ink.

Other material. – Three more specimens reported by Megerle von Mühlfeld in the “Catalog” are not accepted as syntypes, viz. “*α. alba, cingulis rubris*. Ex. 1; *γ. purpurea cingulis flavis*. Ex. 1; *δ. rubro fusca*. Ex. 1”., because labels with the typical handwriting in ink are lacking.

Remarks. – Born’s reference to Gualtieri (1742: pl. 73 fig. C [= *Ostrea oblitterata* Linnaeus, 1757]) does not correspond with the original diagnosis. The specimens figured by Gualtieri, Regenfuß and Knorr (see above) belong to the type series of *O. cinnabarina* (see Dijkstra, in prep).

Taxonomic position. – The species is indistinguishable from *Pecten islandicus* Müller, 1776, currently placed in *Chlamys* Röding, 1798.

Distribution. – *Chlamys islandicus* is a circumpolar species, which is not known, however, from the Beaufort Sea, Chukchi Sea and the entrance of the Bering Strait. In the northern Atlantic it occurs southwards to ca. 69°N in Norway, the Faeroes, Iceland and Greenland. In the western Atlantic it reaches Massachusetts (USA).

Ostrea miniata Born, 1778 (figs 33-40)

Ostrea miniata Born, 1778: 88; 1780: 104, pl. 7 fig. 1.

References to the type series. – Megerle von Mühlfeld, 1809-1818: unpaginated [as “*Pecten miniata*”]; Dillwyn, 1817: 262; Bremser & Partsch, 1827-1835: unpaginated [as “*Pecten miniata*”]; Brauer, 1878: 21.

German vernacular name. – “Der menningrothe Mantel” (Index and Testacea).

Original diagnosis. – “*Testa inaequalivalvi multistriata scabra, auriculis subaequalibus*. Die ungleichklappige Schale hat sehr viele rauhe Streife, und beinahe gleiche Ohren.” (Index, p. 88).

“*Testa inaequalivalvi multistriata, scabra, auriculis subaequalibus*.” (Testacea, p. 104).

Original description. – “*Testa rotundata, striis longitudinalibus numerosis muricatis*. Valvae inaequales, altera plana, altera convexa, excrescentiis transversis lamelloso [should be lamelloso] laceris. Auriculae subaequales, altera excisa margine ciliato. Color altus maculis confluentibus miniatis. Die rundliche Schale ist der Länge nach mit rauhen Streifen versehen. Die Klappen sind ungleich, deren eine flach, die andere erhoben, und in die Quere mit traufen Blättern besetzt ist. Die Ohren sind beinahe gleich, eines ausser-

schnitten, und am Rande rauh. Die Farbe ist weiß mit zusammenfließenden menningfarbigen Flecken." (Index, p. 88).

"Testa rotundata, striis longitudinalibus, numerosis, muricatis; Valvae inaequales, altera plana, altera convexa, excrescentiis transversis lamellosolaceris; Auriculae subaequales, altera excisa, margine ciliato; Color albus, maculis confluentibus miniatis. Long. 1 poll. 6 lin. [= 39.51 mm], lat. 1 poll. 4 lin. [= 35.12 mm]. Patria ignota." (Testacea, p. 104).

Additional description. – Shell up to ca. 60 mm in height, solid, juvenile valves nearly equally convex, adult valves distorted with right valve cemented to substrates, inequivalve and inequilateral, auricles subequal in size, umbonal angle ca. 80°. Both valves with 60-80 irregularly and closely spaced spinous radial riblets. Microsculpture of intercostal commarginal lamellae in early growth stage and antimarginal striae. Colour variable, creamy, yellowish, orange or brown, usually mottled.

Type locality. – Not indicated (Index, 1778). "Patria ignota" [locality unknown] (Testacea, 1780).

Type material. – An articulated syntype (H 36.8 mm, W 33.5 mm), NHMW 14095, is figured by Born (1780: pl. 7 fig. 1). On the inside of the left valve there is a label with "2859" and inside the right valve there are two small oval labels on the top of each other with "O. 25", both in Indian ink. Below the oval labels "Born's type" is indicated, with also an asterisk in red ink, an indication for the original specimen. This could be the handwriting of Brauer.

Another articulated syntype (H 37.7 mm, W 35.2 mm), NHMW 14095, has not been figured by Born. On the outside of the right valve there is a small, oval label, with "O. 25" and on the inside of the left valve a similar label with "O.II.25.", both in Indian ink. An asterisk in red ink is added on the inside of both valves.

Remarks. – Born (1780: 104) repeated the original diagnosis (1778: 88). He also added the measurements "Long. 1 poll. 6 lin. [= 39.51 mm] lat. 1 poll. 4 lin." [35.12 mm] of the figured type specimen "TAB. VI. fig. 3.", which more or less agree with the isolated syntypes. He also added as locality "Patria ignota."

Taxonomic position. – Brauer (1878: 21) determined both isolated syntypes as "*Pecten pusio* : forma *irregularis* Weinkauff", which is *Ostrea pusio* Linnaeus, 1758, placed by Dijkstra & Goud (2002: 69) in *Talochlamys* Iredale, 1929.

Distribution. – *Talochlamys pusio* is a boreal to tropical eastern Atlantic species, occurring from Norway southwards to the Ivory Coast. It is common throughout the British Isles, Channels Islands and Azores, and occurs more rarely in the western Mediterranean Sea and southern Macaronesian Archipelago.

Ostrea maculata Born, 1778

Ostrea maculata Born, 1778: 90; 1780: 105.

References cited by Born. – Regenfuss, 1758: part 1, pl. 3 figs 30, 31 [= *Ostrea glabra* Linnaeus, 1758]; Knorr, 1764: part 2, pl. 18 fig. 5 [= *Ostrea glabra* Linnaeus, 1758].

Reference to the type series. – Brauer, 1878: 22.

German vernacular name. – "Der gefleckte Mantel" (Index and Testacea).

Original diagnosis. – "Testa aequivalvi, longitudinaliter striata, radiis (10) convexis. Die gleichklappige Schale ist nach der Länge gestreift, und mit (10) erhabenen Strahlen

versehen." (Index, p. 90).

"Testa aequivalvi, longitudinaliter striata, radiis decem convexis." (Testacea, p. 105).

Original description. – "Testa aequivalvis convexa glabra, longitudinaliter striata; Costae (10) convexae. Auriculae subaequales. Color supra ex albo fuscoque nebulosus. Die gleichklappige bäuchige glatte Schale ist der Länge nach gestreift. Die (10) Strahlrippen sind erhaben. Die Ohren fast gleich. Die Farbe ist weiß, und braun wolkicht." (Index, p. 90).

"Testa aequivalvis, convexa, glabra, longitudinaliter striata; Radii decem elevati; Auriculae subaequales; Color ex albo fuscoque nebulosus. Long. 2 poll. 1 lin. [= 54.88 mm], lat. 2 poll. [= 52.68 mm]. Habitat in mari adriatico, Knorr." (Testacea, p. 105).

Additional description. – Shell up to ca. 70 mm in height, usually smaller, (sub)circular, inequivalve and nearly equilateral, left valve slightly more convex than right valve. Both valves with 9 to 12 (ir)regularly arranged plicae, delicate interstitial radial riblets and commarginal lamellae on surface. Auricles subequal in size and proportion. Uniformly or maculated of colour, extremely polychrome.

Type locality. – Not indicated (Index, 1778). "Habitat in mari adriatico, Knorr" (Testacea, 1780).

Type material. – Not found. Brauer (1878: 22) suggested, that the original specimen is similar to *Ostrea glabra* Linnaeus, 1758, because of its size [height nearly 55 mm] and locality [Adriatic Sea] mentioned in Testacea. The specimen figured by Knorr (1764: pl. 18 fig. 5), referred to by Born and recognizable as *Flexopecten glabra*, is here designated as lectotype.

Other material. – For unclear reasons, Megerle von Mühlfeld (1809-1818) and Bremser & Partsch (1827-1835) did not report on *O. maculata* in their catalogues.

Remarks. – Born (1780: 105-6) repeated the original diagnosis (1778: 90) with some minor emendations. He also added the measurements "Long. 2 poll. 1 lin. [= 54.88 mm], lat. 2 poll. [= 52.68 mm] and referred to the locality mentioned by Knorr (1764: 35). The synopsis of the German description of this species in the Index (1778) is omitted in the Testacea (1780).

Taxonomic position. – The designation of the specimen figured by Knorr as the lectotype makes *O. maculata* a junior synonym of *O. glabra* Linnaeus, 1758, which is currently placed in *Flexopecten* Sacco, 1897.

Distribution. – *Flexopecten glabra* is restricted to the Mediterranean Sea.

Ostrea coarctata Born, 1778 (figs 41-44)

Ostrea coarctata Born, 1778: 90-91; 1780: 106.

Reference cited by Born. – Knorr, 1764: part 2, pl. 21 fig. 5 [= *Ostrea plica* Linnaeus, 1758].

References to the type series. – Megerle von Mühlfeld, 1809-1818: unpagged; Bremser & Partsch, 1827-1835: unpagged [as "*Ostrea Pes Lutrae*"; Brauer, 1878: 22.

German vernacular name. – "Das Schüsselchen" (Index and Testacea).

Original diagnosis. – "Testa convexa glabra, radiis (6) convexis, margine coarctato. Valva solitaria. Die bäuchige glatte Schale hat (6) erhabene Strahlen und einen eingefassten Rand. Eine einzelne Klappe." (Index, p. 90-1).

"Testa convexa, glabra, radiis sex convexis, margine coarctato." (Testacea, p. 106).

Original description. – “Testa convexa tenuis glabra, longitudinaliter obsolete striata. Radii (6) convexi crassi. Margo deorsum flexus undique coarctatus; Limbus crenulatus. Auriculae inaequales; hinc distincta ab O. Plica. Die bäuchige dünne glatte Schale ist der Länge nach mit matten Streifen versehen. Die (6) Strahlen sind erhaben und dick. Der Rand ist mit einer Stulpe eingefasst und innwändig gekerbet. Die Ohren sind ungleich, wodurch sich diese Art von dem gewölkten Mantel unterscheidet.” (Index, p. 91).

“Testa convexa, tenuis, glabra, longitudinaliter obsolete striata; Radii sex, convexi, crassi; Margo introrsum flexus, undique coarctatus, limbo crenulato; Auriculae inaequales, quibus ab *Ostrea Plica* distinguuntur; Color in aliis albus, in aliis fulvus. Long. 11 lin. [= 24.15 mm], lat. 1 poll. [= 26.34 mm]. Valva solitaria. Patria ignota.” (Testacea, p. 106).

Additional description. – Shell up to ca. 35 mm high, usually smaller, nearly equivalve and equilateral, left valve slightly more convex than right valve, anterior auricles larger than posterior. Both valves flattened to strongly globose, with 5 or 6 regularly or irregularly arranged radial plicae, with delicate radial striae. Commarginal microsculpture. Colour polychrome.

Type locality. – Not indicated (Index, 1778). “Patria ignota” [locality unknown] (Testacea, 1780).

Type material. – Two old right valves have formerly been isolated as syntypes. The larger specimen (H 24.9 mm, W 25.8 mm), NHMW 14108, is closest to the measurements of the Testacea “Long. 11 lin. [= 24.15 mm] and lat. 1 poll. [= 26.34 mm]. Two similar small oval labels are glued on the inside, marked on the upper label “O.37 γ” in Indian ink and “Born” in pencil. The smaller syntype (H 22.5 mm, W 21.6 mm), NHMW 14108, has similar labels on the inside. Both specimens are also marked with “c” in red ink on the inside.

Brauer (1787: 22) incorrectly stated that Knorr’s figure is similar to Born’s original specimen. In fact it is a specimen of *Decatopecten plica* (Linnaeus, 1758) (Dijkstra, in prep.).

Other material. – Megerle von Mühlfeld (1809-1818) mentioned three variations of *O. coarctata*, i. e. “*rosea*” (1 specimen), “*cinnabarina*” (1 specimen), and “*flava*” (no number indicated; in Bremser & Partsch, 2 valves). Both valves (“Valva solitaria”) are selected as original specimens.

Nomenclature. – Although *O. coarctata* is a senior subjective synonym of *Ostrea flexuosa* Poli, 1795, the latter name is generally used in the literature. According to ICZN Art. 23.2 & Art. 23.9.1 *O. coarctata* Born has to be considered a nomen oblitum and *O. flexuosa* a nomen protectum.

Taxonomic position. – *Ostrea flexuosa* is currently placed in *Flexopecten* Sacco, 1897.

Distribution. – *Flexopecten flexuosa* occurs in the Mediterranean Sea and adjacent eastern Atlantic, to the Azores and southwards to the Cape Verde Islands.

Ostrea solaris Born, 1778

Ostrea solaris Born, 1778: 91; 1780: 106, pl. 6 fig. 4.

References to the type series. – Dillwyn, 1817: 264; Brauer, 1878: 22.

German vernacular names. – “Der goldgelbe Mantel” (Index) and “Der goldne Mantel” (Testacea).

Original diagnosis. – “Testa rotundata glabra, radiis (20) convexis, sulcis longitudinaliter striatis. Valva solitaria. Die rundliche glatte Schale hat (20) erhabene Strahlen, und nach der Länge gestreifte Zwischenfurchen. Eine einzelne Klappe.” (Index, p. 91).

“Testa rotundata, glabra, radiis viginti convexis, sulcis longitudinaliter striatis.”

(Testacea, p. 106).

Original description. – “Valva complanata rotundata, radiis (20) convexis laevibus, sulcis intermediis obsolete striatis. Auriculae subaequales? Color vividissimus aurantiacus. Die Klappe ist rund und flach gedrückt, die (20) Strahlen sind erhaben und glatt. Die Zwischenfurchen matt gestreift. Die Ohren etwas ungleich. Die Farbe ist ein labhaftes goldgelb.” (Index, p. 91).

“Testa complanata, rotundata; Radii viginti convexi laeves, sulcis intermediis obsolete striatis; Auriculae, ut e valva solitaria conjici potest, subaequales; Color aurantius. Long 1 poll. 6 lin. [= 39.51 mm], lat. 1 poll. 2 lin. [= 30.73 mm]. Patria ignota.” (Testacea, p. 106).

Type locality. – Not indicated (Index, 1788). “Patria ignota” (Testacea, 1780).

Type material. – Not traced (see also Brauer, 1878: 22).

Remarks. – According to the original description, measurements and figure 4 on plate 6 in Testacea, this yellowish left valve is closest to *Ostrea flabellum* Gmelin, 1791, known from tropical western Africa. Authors also refer to *Ostrea gibba* Linnaeus, 1758 (see Reeve, 1853: species 37, pl. 9 fig. 37a) for similar specimens from that region. There are two West-African specimens in the collection (see Bremser & Partsch, 1827-1835) as “*Ostrea gibba*”, but both do not belong to Born’s original specimens. Therefore these specimens cannot be accepted as syntypes. *Ostrea solaris* is best treated as a nomen inquirendum.

Ostrea nucleus Born, 1778

Ostrea nucleus Born, 1778: 92; 1780: 107, pl. 7 fig. 2.

References to the type series. – Megerle von Mühlfeld, 1809-1818: unpaged [as “*Ostrea turgida* var. *nucleus*”]; Dillwyn, 1817: 267; Bremser & Partsch, 1827-1835: unpaged [as “*Ostrea turgida* var. *nucleus*”].

German vernacular name. – “Der Steinkern” (Index and Testacea).

Original diagnosis. – “Testa aequivalvi, radiis (20) convexis glabris, valva utraque convexa. Die gleichklappige, beiderseits bäuchige Schale hat (20) erhabene glatte Ribben.” (Index, p. 92).

“Testa aequivalvi, radiis viginti convexis glabris, valva utraque convexa.” (Testacea, p. 107).

Original description. – “Testa rotunda aequivalvis costis elevatis (20), sulcis intermediis latis transverse sulcatis. Auriculae subaequales. Valva utraque umbonata, albo fuscoque nebuloza. Die rundliche gleichklappige Schale hat (20) erhabene Strahlribben und breite nach der Quere gestreifte Zwischenfurchen. Die Ohren sind beinahe gleich. Beide Klappen bäuchig, von weiß und braun gewölkter Farbe.” (Index, p. 92).

“Testa rotunda aequivalvis, radiis elevatis viginti, sulcis intermediis transversim sulcatis; Auriculae subaequales; Valva utraque umbonata; Color albo fuscoque maculatus. Long. 1 poll. 4 lin. [= 35.12 mm], lat. 1 poll. 3 lin. [= 32.93 mm]. Patria ignota.” (Testacea, p. 107).

Additional description. – Shell up to ca. 35 mm high, solid, inflated, subequivalve, equilateral, both valves nearly equally convex, auricles slightly equal in size and shape. Both valves with 18-20 radial lirae, interstices with commarginal sculpture. Colour left valve greyish or greyish brown, right valve whitish.

Type locality. – Not indicated (Index, 1778). “Patria ignota” (Testacea, 1780).

Type material. – According to Brauer (1878: 23), the specimen referred to in Megerle

von Mühlfeld's catalogue is somewhat larger and does not belong to the type series.

Taxonomic position. – *O. nucleus* Born, 1778 is currently placed in *Argopecten* Monterosato, 1889.

Distribution. – *Argopecten nucleus* occurs in the tropical western Atlantic from Florida southwards to northern Brazil, and eastwards to the West Indies.

Ostrea pyxidata Born, 1778 (figs 47-50)

Ostrea pyxidata Born, 1778: 93; 1780: 108, pl. 6 figs 5-6.

References to the type series. – Megerle von Mühlfeld, 1809-1818: unpaginated [as "*Ostrea sulcata*"]; Dillwyn, 1817: 268-269; Bremser & Partsch, 1827-1835: unpaginated [as "*Ostrea sulcata*"].

German vernacular name. – "Die gefurchte Dose" (Index and Testacea).

Original diagnosis. – "Testa inaequali, radiis (32) convexis laevibus. Valva altera plana. Die Schale, welche aus einer bäuchigen, und einer flachen Klappe bestehet, hat (32) erhabene glatte Strahlen." (Index, p. 93).

"Testa inaequali, valva altera plana, radiis triginta duobus convexis laevibus." (Testacea, p. 108).

Original description. – "Testa rotundata, radiis (32) convexis laevibus. Valva una plana, altera convexa, prope auriculam excisam ciliata. Color albus, fusco carneoque variegatus. Die rundliche Schale hat (32) erhabene glatte Strahlen. Eine Klappe ist flach, die andere bäuchig und nächst dem ausgeschnittenen Ohre raub. Weiß mit fleischrothen Flecken." (Index, p. 93).

"Testa rotundata, radiis triginta duobus convexis laevibus; Valva una plana, altera convexa, prope auriculam fornicis albo carneoque varius. Long. 1 poll. 5 lin. [=37.32 mm], lat. 1 poll. 6 lin. [=39.51 mm]. Patria ignota." (Testacea, p. 108).

Additional description. – Shell up to ca. 50 mm high, circular, inequivalve, equilateral, left valve flattened to slightly concave, right valve strongly convex, auricles left valve subequal, right valve unequal in size and shape, with delicate radial striae, left valve with 20-24 radial ribs, interstices broader than ribs, right valve with smooth plicae (20-24) and narrow interstices. Colour left valve brownish with pale spots, right valve pale brown or whitish.

Type locality. – Not indicated (Index, 1778). "Patria ignota" (Testacea, 1780).

Type material. – There is an articulated syntype (H 37.1 mm, W 39.9 mm), NHMW 14110, figured in Testacea (1780: pl. 6 figs 5-6). A small rectangular label with the number "2685." in Indian ink is glued on the inside of the right valve. This high number is an original number used in Born's time. Also a small oval label with "O.I.7" in Indian ink is glued at this side. The mark on the label corresponds with the numbers in the catalogues of Megerle von Mühlfeld (1809-1818) and Bremser & Partsch (1827-1835). A large rectangular label with "Gen. 15 Sp. 7. *Ostrea sulcata*" in Indian ink is a showcase label, used after Born's time. On this label is also a 'new' catalogue number "1822" in red ink, which is additionally marked on the inside of both valves, and on two 'newer' labels, probable added when Bremser & Partsch worked on the collection. The handwritings in pencil on one of the labels and in the catalogue of Bremser & Partsch are clearly corresponding.

Taxonomic position. – *Ostrea pyxidata* is currently placed in *Minnivola* Iredale, 1939.

Distribution. – *Minnivola pyxidata* occurs in the tropical Indo-West Pacific from the South China Sea southwards to Queensland (Australia).

***Ostrea undata* Born, 1778 (figs 51-58)**

Ostrea undata Born, 1778: 94; 1780: 108.

References cited by Born. – Knorr, 1764: part 2, pl. 4 figs 2, 3.

References to the type series. – Megerle von Mühlfeld, 1809-1818: unpaginated [as *Ostrea tranquebarica* [sic] Gmelin]; Bremser & Partsch, 1827-1835: unpaginated [as *Ostrea tranquebaria*]; Brauer, 1878: 23.

German vernacular name. – “Die wellenförmige Tasche” (Index and Testacea).

Original diagnosis. – “Testa aequivalvi ovata, radiis (18) convexis, sulcis transversim striatis. Die gleichklappige Schale hat (18) erhabene Strahlen, mit nach der Quere gestreiften Zwischenfurchen.” (Index, p. 94).

“Testa aequivalvi ovata, radiis octodecim convexis, sulcis transversim striatis.” (Testacea, p. 108).

Original description. – “Valvae solitariae ovatae, radiis (18-20) convexis glabris, striis transversis intercostalibus. Color albus, maculis transversis undatis fuscis. Die einzelnen Klappen haben (18-20) erhabene Strahlen, und in die Quere gestreifte Zwischenfurchen. Die Farbe ist weiß mit wellenförmigen braunen Querflecken.” (Index, p. 94).

“Valvae solitariae tantum in Muso adsunt; Radii octodecim vel viginti convexi glabri exarati, striis transversis intercostalibus; Color albus, maculis transversis undatis fuscis. Long. 1 poll. 9 lin. [= 46.10 mm], lat. 1 poll. 2 lin. [= 30.73 mm]. Patria ignota.” (Testacea, p. 108).

Additional description. – Shell up to ca. 40 mm high, solid, higher than wide, nearly equivalve and equilateral, left valve slightly more convex than right valve, auricles unequal in size and shape, umbonal angle ca. 90°. Both valves with 18-20 smooth radial lirae, ribs broader than interstices. Colour of left valve extremely variable, black, brown, reddish brown, orange or tan irregular bands or patches, right valve paler or whitish.

Type locality. – Not indicated (1778). “Patria ignota” (1780).

Type material. – There are two articulated syntypes (O.34 α , H 32.9 mm, W 31.4 mm) and (O.34 β , H 34.5 mm, W 33.2 mm), NHMW 14112. Two small oval labels on top of each other are glued on the inside of each right valve, with “O.34 α ” and “O.34 β ” in Indian ink. Additionally, a catalogue number, “1762” in red ink, is written on the inside of each valve.

Remarks. – Brauer (1878: 23) suggested that the two syntypes (NHMW 14112) are not original. Born mentioned in the Testacea (1780: 108) of “Valvae solitariae tantum in Museo adsunt” [single valves]. Two right valves were indicated as types [on red rectangular label “Typus”], but I found the misplaced left valves elsewhere in the collection. As Brauer (1878: 23) stated, the measurement of “Long. 1 poll. 9 lin.” in Testacea (1780: 108) is a typographical error and should be perhaps Long. 1 poll. 3 lin. [= 32.925 mm] according to one of the syntypes (O.34 α).

Nomenclatural status. – *Ostrea undata* is a senior subjective synonym of *Ostrea tranquebaria* Gmelin, 1791. Born’s taxon is a valid nominal species, but *O. tranquebaria* is more generally accepted as the name for the species. See ICZN Art. 23.2 and Art. 23.9.1.

Taxonomic position. – *Ostrea tranquebaria* is currently placed in *Volachlamys* Iredale, 1939.

Distribution. – *Volachlamys tranquebaria* occurs in the northern and north-eastern Indian Ocean.

DISCUSSION

In his Index, Born (1778) described 22 Pectinidae species, repeated in the Testacea (1780), 10 of which are described as new to science. Five species are junior synonyms, two are senior synonyms (not generally recognized), two are valid nominal taxa (generally accepted) and one species should be considered a nomen inquirendum (see Table 1).

In Born’s time it was not usual to designate type material in the original description or to select type specimens in the collection. Moreover, the original descriptions are often rather inaccurate and localities may not be indicated. Born only reported of “valva solitaria” [a single valve] or “valvae solitariae” [single valves] in the original descriptions and the numbers of specimens are not mentioned. Fortunately in the Testacea measurements are given in Austrian pollex and linie, and six of the ten newly described species are very well illustrated. The syntypes of three nominal species could not be traced and type material of one species is uncertain (see also Brauer, 1878).

Species	Valid taxa	Nomenclature	Current genera
<i>O. elongata</i>	<i>Ostrea pesfelis</i> Linnaeus, 1758	junior synonym	<i>Manupecten</i>
<i>O. sulcata</i>	<i>Ostrea glabra</i> Linnaeus, 1758	junior synonym	<i>Flexopecten</i>
<i>O. cinnabarina</i>	<i>Pecten islandicus</i> Müller, 1775	junior synonym	<i>Chlamys</i>
<i>O. miniata</i>	<i>Ostrea pusio</i> Linnaeus, 1758	junior synonym	<i>Talochlamys</i>
<i>O. maculata</i>	<i>Ostrea glabra</i> Linnaeus, 1758	junior synonym	<i>Flexopecten</i>
<i>O. coarctata</i>	<i>Ostrea flexuosa</i> Poli, 1795	senior synonym	<i>Flexopecten</i>
<i>O. solaris</i>	-	nom. inquirendum	-
<i>O. nucleus</i>	<i>Ostrea nucleus</i> Born, 1778	valid taxon	<i>Argopecten</i>
<i>O. pyxidata</i>	<i>Ostrea pyxidata</i> Born, 1778	valid taxon	<i>Minnivola</i>
<i>O. undata</i>	<i>Ostrea tranquebaria</i> Gmelin, 1791	senior synonym	<i>Volachlamys</i>

Table 1. New Pectinidae species described by Born (1778)

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