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# “Museum Boltenianum ... pars secunda” by P.F. Röding (1798): an update on authorship and the printings, with an appendix listing additional Mollusca from the Bolten collection

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The history, authorship, and printings of the “Museum Boltenianum ... pars secunda” are discussed. It is confirmed that P. F. Röding alone was responsible for the 1798 edition. Anton August Heinrich Lichtenstein only wrote an introduction to the catalogue and, in all probability, had no role in creating the names, which was, in all probability, only done by Joachim Friedrich Bolten, the owner of the shell collection. The role of Johann Dominikus Schulze, if any, in creating the names in this catalogue remains unclear. There are two different printings of the “Museum Boltenianum ... pars secunda,” both in 1798. In addition, the 1819 Noodt edition of “Museum Boltenianum ... pars secunda” has some differences with the 1798 edition, as indicated by Petit (2013), including but not limited to the spelling of some names introduced in 1798. Both the “Museum Boltenianum ... pars prima” and the 1819 edition contain Mollusca that are not listed in the 1798 edition, which are now listed in an appendix to this paper.

Keywords: History of Malacology, Lichtenstein, Schulze, Noodt, Röding, Germany

## INTRODUCTION

Joachim Friedrich Bolten (Horst, Holstein, 11 September 1718 – Hamburg, 6 January 1796) studied medicine in Halle (Sachsen Anhalt, now Germany). After getting his doctorate in 1740, he opened a successful medical practice in Ham-

burg. In 1747 he was appointed “Subphysicus”, and relatively soon thereafter, in 1754, he was appointed “Protophysicus”, a position he held for 40 years, up to his retirement in 1794. He authored several medical works but is most famous for his large collection of shells, which after his death, was auctioned in 1819 in Hamburg. A catalogue of the shell collection was compiled by P.F. Röding in 1798 and is known as the “Museum Boltenianum ... pars secunda”. As the shell collection was not sold as a whole, a second sales catalogue was prepared by Noodt (1819) for the Bolten collection auction (Kronenberg & Wieneke 2020: 92).

The “Museum Boltenianum ... pars secunda” (Röding 1798) has been the subject of extensive debate over the decades; see Fischer (1858); Keferstein (1863); Semper (1876); Sutor (1877); Melvill, (1897); Dall (1904, 1915); Iredale (1921); Rehder (1945); Winckworth (1945); Turner (1958); Petit (2013); and Kronenberg & Wieneke (2020) and references in those works. These debates were on the availability of names, authorship, editions, and printing. These debates were resolved by the ICZN (1926, 1956), i.e., that the names introduced in the 1798 edition were available names and that authorship should be attributed to Röding, who was a “Naturalienhändler” (dealer in objects of natural history) by profession, as noted in the hand-written catalogue of Schmidt, see Kronenberg & Wieneke (2020: 93).

Apart from being the compiler of the “Museum Boltenianum ... pars secunda”, Röding was also closely involved in matters of Bolten’s heritage, e.g., he was one of the five persons mentioned in the “Kommissionen für Auswärtige übernehmen” [Taking over commissions for foreigners] in the second edition of the catalogue of Bolten’s library (Anonymous, 1796b). From the Latin introduction to the “Museum Boltenianum ... pars secunda” by Lichtenstein (in Röding 1798: III–VI), it is evident that Röding, as the compiler of the catalogue was responsible for the publication of the new taxa (genus-group and species-group) described or mentioned in this work, although in all likelihood he was

not responsible for making up these names.

We conducted further research on Röding's (1798) work, its various printings and editions, as well as the Bolten collection, in order to pursue several leads and some other matters that needed some further research. Our first results are presented below.

## AUTHORSHIP

Bolten himself published three papers on natural history (1770; 1771a, b; 1779) as far as we could reconstruct. In these papers, no new taxa were named. The first paper (Bolten, 1770), written in German, deals with the finding of a species of “Thierpflanze” (animal plant) off the coast of Greenland. Subsequently, Bolten (1771a) rewrote and revised this paper in Latin, addressing it to Linnaeus, who in his turn named this species *Vorticella bolteni* (Linnaeus 1771: 552). This species is now considered to be a junior synonym of *Vorticella ovifera* Linnaeus, 1767 and now placed in the genus *Boltenia* Savigny, 1816, now known as *Boltenia ovifera* (Linnaeus, 1767), a tunicate of the family Pyuridae.

We are aware of a translation into Dutch of the original German text that was published in Amsterdam, combined with the Latin version of Bolten's paper (Bolten, 1771b). Oddly enough, Savigny (1816) referred to this Amsterdam printing when synonymizing *Vorticella bolteni* into *Boltenia fusiformis*.

The third paper by Bolten (1779) is on ammonites and does not include any scientific names, let alone the introduction of new taxa.

Bolten expressed his awe for Linnaeus by addressing him as “Equitem auratum” (golden knight) (Bolten 1771a), and therefore we assume that Bolten was also in favour of the Linnaean binominal system of naming taxa and most likely adopted the binominal system for his own natural history collections, which is also clear from the contents of “Museum Boltenianum ... pars prima” (Anonymous, c. 1797), for some details see Kronenberg (2023). Yet, from the contents of the “Museum Boltenianum ... pars secunda”, it is also clear that he disagreed with Linnaeus's very broad concept of genera within the “Conchylia”. Today, Röding is best known for having published numerous new molluscan genera, in contrast to his predecessors (such as Gmelin) who while describing numerous new species, created relatively few new genera.

The many natural history societies throughout Europe played an important role in the study of nature in those days, and they still do. However, in those days many of these societies had a much broader scope than natural history alone. In Hamburg, where Bolten lived, the local natural history society was then called the “Hamburgischen Gesellschaft zur Beförderung der Künste und nützlichen Gewerbe”.

Oddly enough, J.F. Bolten never became a member of this society in the town where he lived and worked, but his only surviving son, Johann Joachim Bolten (1752-1835), became a member in 1791 (Anonymous, 1793). Other important members in the context of the publication of “Museum Boltenianum” were Anton August Heinrich Lichtenstein (1753-1816), who became a member in 1779 (Anonymous, 1792a: 25), and subsequently “Vorsteher” [head] in 1783 (Anonymous, 1792a: 20), and who is best known for his entomological works. Peter Friedrich Röding (author of the “Museum Boltenianum ... pars secunda”) became a member in 1790 (Anonymous, 1792b: 98) and held the post of “Vorsteher” [Head of book-, model-, drawing- and engraving collection] des Naturhistorischen Instituts of the society from 1802 onwards (Anonymous, 1807: 4). In contrast, another important person in connection to the “Museum Boltenianum ... Pars secunda”, viz. J.D. Schulze, vide infra, never became a member.

In all likelihood, Bolten jr, Lichtenstein, and possibly also Röding played a role in the acquisition of the natural history collection that was catalogued in “Museum Boltenianum ... pars prima” (Anonymous, c. 1797) by the Hamburg society, perhaps by either lobbying or serving as a conduit between the prior owner and the society.

Lichtenstein wrote a Latin preface to the “Museum Boltenianum ... pars secunda”. Before that, he was already experienced in writing sales catalogues of collections (Lichtenstein, 1793; 1794; 1796; 1797<sup>1</sup>) – see Geiger (2003; 2022) for additional details on Lichtenstein. Within the 1794 catalogue

1 The owner of these collections was a “Mitglied der Batavischen und verschiedener anderer Naturforschenden Gesellschaften” (title-page). Geiger (2022) interpreted this “Batavischen” as referring to Batavia, the then headquarters of the Vereenigde Oostindische Compagnie (after 1799, capital of the Dutch East Indies, now Djakarta, Indonesia). However, at that time, two Societies in the Netherlands could have been referred to. One of these is the “Bataafsche Genootschap der Proefondervinderlyke Wysbegeerte” (Batavian Society for Experimental Philosophy) founded in Rotterdam in 1769 and still existing, the adjective “Bataafsche” sometimes also spelled as “Bataefsch”, current spelling “Bataafs”; the other is the “Bataviaasche Genootschap der Konsten en Wetenschappen” (Batavian Society of Arts and Sciences), founded in Batavia in 1778. This latter society received the predicate “Royal” in 1910, was renamed “Lembaga Kebudajaan Indonesia” after the Indonesian independence, and ceased to exist in 1962. Both the adjectives “Bataafsche” and “Bataviaasche” (after Batavia) refer to the German tribe of the “Bataven” also known as “Batavieren” that once lived in what is now part of the Netherlands between the rivers Meuse and Rhine, and is best known for the insurrection under Gaius Julius Civilis (25 AD - ??) against the Roman empire in 69 AD. “Bataviaasche Genootschap ...” however, would rather translate into “Batavianer Gesellschaft ...” in German (Gerwin Jansen, pers. comm. 6 July 2023), so the Bataafsche Genootschap from Rotterdam is the more likely candidate. Which of the two Societies was intended is beyond the scope of this paper.

devoted to Mollusca (facsimile reproduced in Geiger, 2022), Lichtenstein described some new species-group taxa, but as far as genus-group names are concerned, he maintained the traditional Linnaean genera sensu Linnaeus (1767; 1771).

Lichtenstein had a connection with Bolten and/or his heirs, as is evident from the fact that he wrote the Latin preface (1798: III-VI, translation into English in Dall, 1915: 7-8). He was also mentioned as the author of a proposed second edition of the “Museum Boltenianum ... pars prima” (Meyer, 1801 footnote), with the supposed title “Catalogus rerum naturalium ex collectione B. J. F. Bolten, M. D. continens Animalia in spiritu vini adservata e classibus cunctis item Siccata quaedam integra & fragmenta zoologica” that would have been published in Hamburg by the Hamburgischen Gesellschaft zur Beförderung der Künste und Nützlichen Gewerbe, or as indicated by Meyer (1801) as the “Musei Societatis Hamburgensis pro atrium utilium, studiis, excistandis partem facientes” in 1798, when Meyer held his address to the Hamburg society. In itself, this also raises some questions.

- 1 It is unlikely that the footnote in the written text from 1801 was part of the actual address held by Meyer for the Society in 1798, so the reference to a paper in preparation by Lichtenstein in the footnote is likely to have been added in 1800 or more likely in 1801. At that time, Lichtenstein had already taken a position as professor in theology (1798-1810), and subsequently a professorship in Greek (1804-1810), at the University of Helmstedt (misspelled by Geiger (2022) as Helmstädt). Although he may have maintained contact with the Hamburg Society, one wonders whether he would still have the time to write a catalogue.
- 2 The original catalogue of the “Museum Boltenianum ... pars prima” was published – in all likelihood – in either 1797 or early 1798, i.e., before the “Museum Boltenianum ... pars secunda” that was published in September or later 1798. Publishing some sort of second edition of a sales catalogue after the collection had been sold seems very unlikely unless one was dissatisfied with the sometimes erroneous references in the “Museum Boltenianum ... pars prima”. An example is # 75 (*Lacerta chamaeleon*, [Linn.[aeus] sp. 20] described as “varietas alba, pileo carinata, gulae abdominisque crista nulla Seb. Thes. Tom. I. tab. 83. fig. 3.”). *Lacerta* was in those days a “catch-all” genus for all quadruped reptiles with exception of turtles and tortoises. It included lizards, geckos, monitors, and crocodiles. The reference to Seba, however, is a snake with a white underside and very broad red bands. Another reason may be the lack of references in especially the sections on Coleoptera and Lepidoptera, and the Society wanted a (more) reliable catalogue for the collection.

We have not been able to locate any publication by Lichtenstein on the Bolten collection that the Hamburg Society acquired, and we think that such a paper was never published.

Although not entirely impossible, it is hard to imagine that Lichtenstein was responsible for the (large number of) introductions of the new taxa in “Museum Boltenianum ... pars secunda”, especially in the genus group, as this would have been a complete change of mind between 1794 and 1798. Moreover, Lichtenstein even made a disclaimer, simultaneously providing insight into what happened before the publication of the “Museum Boltenianum ... pars secunda”, as he wrote (translation into English adapted from Dall, 1915: 7):

“(…) *systematic catalogue of this collection which had been prepared with greatest accuracy and care by its late possessor; and revised and enlarged by the addition of synonymy by Peter Friedrich Roeding, a man devoted to natural history and especially conchology. (...) although I cannot make any claim to be a conchologist.*

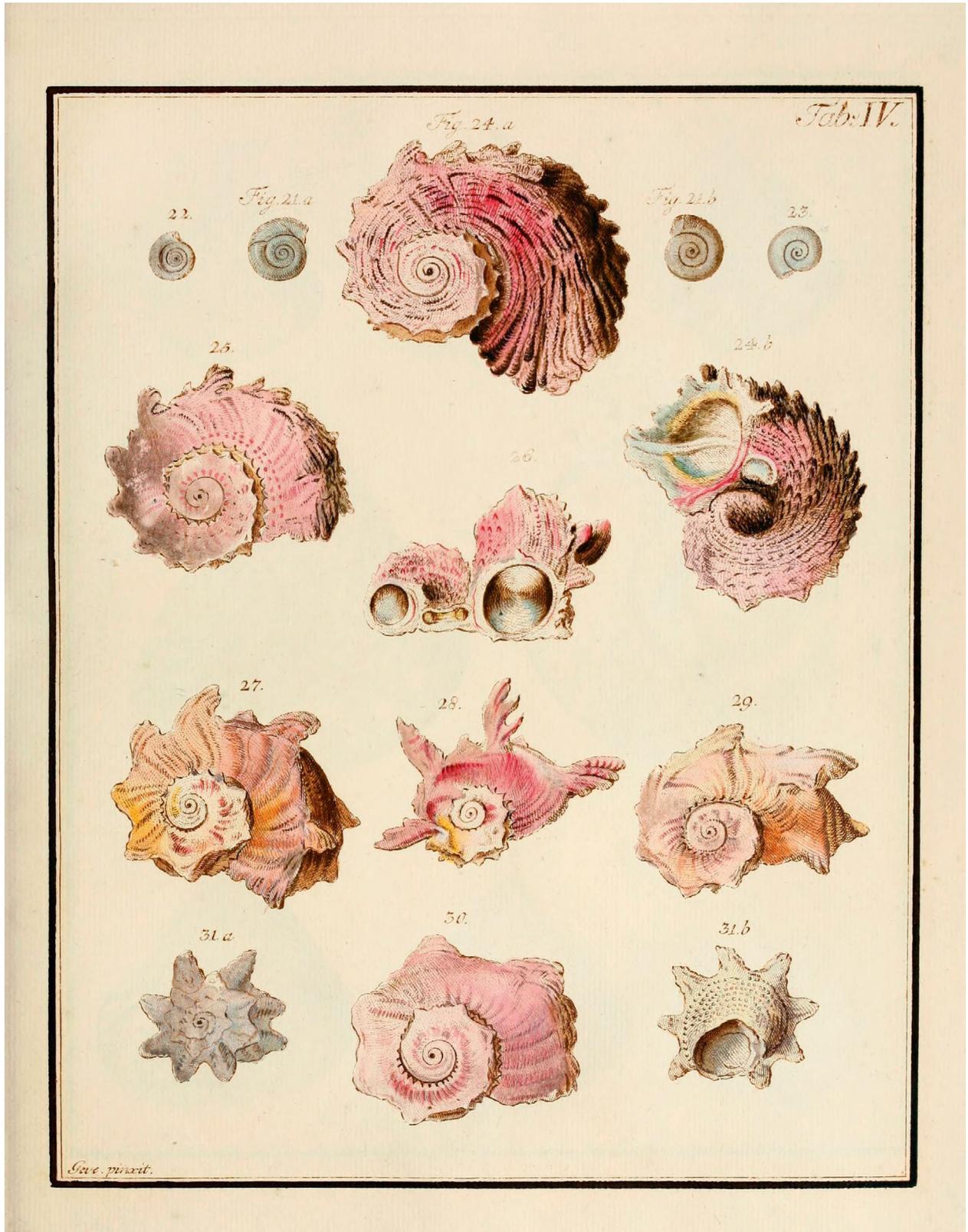
*At first sight, perhaps those who are both judges and friends of conchology will be disturbed at the great number of new and unheard of names, especially generic names, met in the catalogue.*

*They must, therefore, be informed from what source arose this unique nomenclature destitute of current authority.*

*The celebrated Boltenius had indeed worked out a new and peculiar natural system of conchology quite different from all other systems of previous writers, and this system thus carefully worked out he had brought into real scientific form, prepared and constructed according to the special rules of conchological knowledge, so that, once this method of his studying the history of shells was published, he bid fair to become an authority on this subject like a dictator or a second Linnaeus. There were together with the specimens several sheets of outlines drawn under the personal direction of the late Boltenius by an experienced and learned Dominican, Doctor Schulze, a keen investigator of nature and truth. But the complete work was interrupted, alas! by the sad death of Schulze, after which the cares and infirmities of old age prevented Boltenius from finishing it himself (...).*

Perhaps Lichtenstein’s statement “(…) although I cannot make any claim to be a conchologist” is an example of false modesty, as Lichtenstein (1794) compiled a sales catalogue for a large shell collection. In his following sentences, he immediately rejected all possible responsibility for introducing all these new taxa and mentioned another person, Doctor Schulze, although leaving the responsibility to Bolten.

Johann Dominikus Schulze (1752-1790) was also a medical doctor and worked at the “Werk- Zucht- und Armenhaus” [Workhouse, penitentiary, and poorhouse] in Hamburg.



**Fig. 1.** Plate 4 from Gevens & Schulze (1790) depicts mainly Angariidae (figs 24-30). Figure 24a [top row, middle] is referred to by Röding (1798: 71, # 909) as *Angaria squamata* and therefore is an illustration of a syntype of this taxon. *Angaria squamata* is a junior subjective synonym of *A. delphinus* (Linnaeus, 1758). Formerly Laurent-Guillaume de Koninck library. Digitised by Harvard University, Museum of Comparative Zoology. Public domain: <https://doi.org/10.5962/bhl.title.14883>, accessed 30 July 2023. [See the bookplate inside the cover; “Ernst Mayr” is the name of the mcZ Library, not the prior owner of the book]

Besides being a doctor, he was, just like Bolten, a naturalist and had already published on natural history, notably on insects (Schulze, 1775; 1776a; 1776b). Among malacologists, he is best known as the person who prepared the text for the first part of a series on a shell collection (Gevens & Schultze, 1790). This work is non-binominal and was published with 18 plates, most of them depicting Trochoidea. Figure 1 is an example of a plate from this work; fig. 24a on that plate is referred to by Röding (1798: 71, #909) as *Angaria squamata*, a junior subjective synonym of *A. delphinus* (Linnaeus, 1758). This reference to Gevens & Schultze was not mentioned by Dekker (2020) in his monograph of *Angaria*. A listing of the taxa according to the Linnaean system would have been published in the second volume. This second volume was never published, and this listing, according to the Linnaean system, was published only by Bachmann (1830). In this edition six plates were added. These mainly depict Trochoidea (pls 19-21) and Neritoidea (pls 22-25). These plates are in the same style as pls 1-18 from the original work (1790) and would in all probability have been part of the never published second volume. The untimely death of Schulze had severe consequences. The series of which the first part was published, and that could have reached the same fame as, e.g., the works by Martini and Chemnitz was discontinued, and, as Friedrich Schlichtegroll (1791) noted in a necrology on Schulze:

“Aber es wurde auch noch in einer andern gelehrten Unternehmung durch den Tod unterbrochen. Es war dies die Beschreibung des Boltenschen Naturalien-Cabinets, dessen Wichtigkeit keinem Kenner der Natur im deutschen Vaterlande unbekannt ist. Er war durch seine Kenntnisse und eine vieljährige Bekanntschaft mit jener Sammlung, dieser Arbeit ganz vorzüglich gewachsen, und hatte auch schon mehrere Jahre in seinen freyen Stunden sich damit beschäftigt, ohne indess überall schon die letzte Hand an dieses Werk gelegt zu haben, das doch vielleicht für das Publicum noch nicht ganz verloren ist.” [But it was also interrupted by death in another learned activity. This was the description of Bolten’s Natural History Cabinet, the importance of which is not unknown to any connoisseur of nature in the German homeland. Thanks to his knowledge and many years of acquaintance with that collection, he was perfectly suited to this work and had also been busy with it for several years in his free hours without having put the final touches to this work, which perhaps is not entirely lost to the public.]

From this it seems that nothing was published by Schulze.

This is however in contrast to Kordes (1798: 27) who noted: “Hat eine der vollständigsten Sammlungen von Konchylien und Seegewächsen, welche *Joh. Dominicus Schulze*, D. der Medicin in Hamburg (...) heftweise zu beschreiben öffentlich versprochen hatte, allein durch den Tod verhindert nur einen Bogen lieferte.” [Has one of the most complete col-

lections of shells and sea creatures, which *Joh. Dominicus Schulze*, D[occtor] of Medicine in Hamburg, (...) had publicly promised to describe in issues. [He] only delivered, prevented by [his] death, one sheet.].

Schröder (1851: 330) however wrote: “B[olten] besasz ein Conchyliencabinet einzig in seiner Art, wovon der Dr. med. J. Dominikus Schulze in Hamburg unter dem Titel Museum Boltenianum eine beschreibung heftweise herauszugeben öffentlich ankündigte, von welcher aber nur wenige Bogen erschienen sind“. [B[olten] owned a shell collection unique in its kind, of which Dr. med. J. Dominikus Schulze in Hamburg publicly announced that under the title Museum Boltenianum a description would be published in batches, but of which only a few schemes appeared.“. and Keferstein (1863: 166-167) noted: “Von diesem System erschienen aber durch die Bemühungen des Dr. med. J. Dominikus Schulze nur einige Bogen, indem der Herausgeber und bald auch Bolten selbst starb.“ [Of this system appeared through the efforts of Dr. med. J. Dominikus Schulze, only in a few sheets, as the editor, and soon Bolten himself died.]

Note the difference between “einen Bogen” [one sheet] in Kordes (1798); and “wenige Bogen” or “einige Bogen” [few sheets] in Schröder (1851) and Keferstein (1863). We haven’t been able to find any of these “Bogen”, it is even unclear whether these were printed or only refer to personal notes, as Keferstein continued (1863: 167):

“Von Bolten’s System \*) war aber nichts hinterlassen als die lateinischen und deutsche Namen mit denen Bolten seine Conchylien bezeugnet hatte, und Röding liess deshalb dieselben in der Ordnung abdrucken, wie die Conchylien in der Sammlung aufgestellt waren, (...)” [But nothing was left of Bolten’s system \*) other than the Latin and German names with which Bolten had labelled his shells, and Röding, therefore, had them printed in the order in which the shells were arranged in the collection, (...)]. The asterisk the quote above refers to a footnote with a quotation of the Latin introduction by Lichtenstein.]

We checked the publications of the “Hamburgischen Gesellschaft zur Beförderung der Künste und nützlichen Gewerbe“, as Bolten worked and lived in Hamburg, as well as the “Gesellschaft der naturforschender Freunde zu Berlin“, founded by Friedrich Heinrich Wilhelm Martini (1727-1778) in 1773, of which J. F. Bolten became a member as this society was established (Anonymous, 1775: XLIV) and still was in 1790 (Anonymous, 1792c: XXVIII), up to roughly 1800, but found no trace of such “Kleinbogen“ in these publications.

Based upon the foregoing, it is clear that the names as published in “Museum Boltenianum ... pars secunda” were created by Bolten, possibly with some help by Schulze, but that the publication should indeed be attributed to Röding, as determined by the ICZN.

It is important to note that new taxa introduced as new

binomen in “Museum Boltenianum ... pars secunda” were not followed by “nobis”. This is in sharp contrast with “Museum Boltenianum ... pars prima“, where names, believed to be a new name according to the Linnaean system were explicitly followed by “nobis”, see Kronenberg (2023: 417-421). Röding added references to the “Museum Boltenianum ... pars secunda“, but probably did not actually “invent” the new taxa. Therefore it is unlikely that Röding authored the “Museum Boltenianum ... pars prima”.

## PRINTINGS OF THE FIRST EDITION

As early as 1906, Sherborn & Sykes (1906: introductory note) lamented the poor quality of the printing of the “Museum Boltenianum ... pars secunda”: “Owing to the poor quality of the original paper and the grey nature of the ink, which latter has in some cases failed to print in the original (...)”.

Based on some minor differences and the difference in the spelling of the epithet of the *Terebellum* species (Röding 1798: 135, # 1692), Kronenberg & Wieneke (2020: 87) argued there were two different printings of the “Museum Boltenianum ... pars secunda”. They referred to these copies as “Crosse copy” and “Pfeiffer copy”, the first one once in possession of J.C.H. Crosse, a French malacologist, and now being present in the Geology department of Natural History Museum, London, UK. This copy was also used as the basis for a facsimile reprint by Sherborn & Sykes published in 1906, and a microfiche copy of that reprint was subsequently used as the reprint by the American Malacological Union in 1986. The “Pfeiffer copy”, once part of the library of W.H. Dall, is present in the Smithsonian Institution, U.S.A.. Subsequently, Kronenberg & Wieneke (2020: 88) also concluded that, based on the difference in the spelling of the epithet *punctulorum* / *punctulatum*, for the species of *Terebellum*, that the Noodt edition (1819) was based on yet another copy, similar to the so-called “Pfeiffer copy”, as it originated from the library of C.G.L. Pfeiffer. From the data present at that time, it was impossible to say which of the two copies was printed first. Therefore, it would also be impossible to say which of the two names would take priority if recognized as a species-group name. As the “Crosse copy” and reprints of it were relatively widely available (see above), while the “Pfeiffer copy” was only available to those who visited the Smithsonian, and did not become widely available until after its digitization in 2009 on the website of the Biodiversity Heritage Library, the epithet *punctulorum* was used by the majority of subsequent authors, with only one exception. A discussion on this is beyond the topic of this paper and will be the subject of another publication (Kronenberg & Wieneke in progress).

And indeed, the differences, as indicated by Kronenberg & Wieneke, may be well related to the printing quality, the

wear and tear of the typesetting, i.e., the block letters from it, or more or less silting up of the letters, something that also can happen with typewriters.

However, when comparing page 199, the very last page of the publication (Figs 2-5), it becomes evident that there are two different printings of the 1798 edition of the Museum Boltenianum. Therefore and also because of its rarity, we tried to locate more copies of the 1798 publication by Röding.

We, e.g., learned that there is no copy available in Statens Naturhistoriske Museum Bibliotek og Naturvidenskabshistorisk Samling, Copenhagen, Denmark (Hanne Espersen, email to GCK 22 June 2020). Dr. Bernhard Hausdorf, Hamburg University, Germany, informed us of the existence of two more copies in Germany (email to GCK 8 July 2020), and one of us (UW) located these copies, i.e., 1) a copy present in Universitäts- und Landesbibliothek Darmstadt, Germany, once part of the “Grossherzogliche Hessische Hof-Bibliothek” (library of the court of the Grand Duke of Hessen); and 2) a copy present in the Deutsche Nationalbibliothek, Leipzig branch, Leipzig, Germany.

Bettina Rüdiger from the latter library informed us:

“I checked the provenance of the catalogue in the museum accession book and found that it was acquired in 1980 from the stock of the “Zentralstelle für Wissenschaftliche Altbestände (zwa)”, a state-run book distribution agency for libraries. The zwa was involved in the typical redistribution processes of the GDR era [German Democratic Republic; see e.g., also Kronenberg & Reise, 2023 on the redistribution of natural history collections]. The former owner is not known because the zwa received books from private and dissolved libraries all over the territory of the GDR. The only indication of a previous owner is a note on the title page: “390. Culturgesch.” (ink, probably early 19th century), which could be a signature mark of the library of a former owner. In our holdings, I found another catalogue (Bibliotheca Bolteniana, Hamburg, Trapp 1796) with the very similar note “389 Culturgesch” on the title page, which also bears the autograph of an “A.C. Thiele” in almost the same handwriting. Possibly the “A.C. Thiele” was also the former owner of the “Museum Boltenianum sive Catalogus cimeliorum.” (email to GCK 25 July 2023).

The reference to the Bibliotheca Bolteniana, Hamburg, Trapp 1796 is to the first edition of the sales catalogue of the Bolten library (Anonymous, 1796a). The A.C. Thiele mentioned could very well refer to Abraham Christoph Thiele (1729-1805), who was Bücherkommissionär [book agent] in Leipzig and also secretary to the House of Schönberg-Börnichen. Ms. Rüdiger also noted, “As a bibliographer, he could have had catalogues in his collection. But it is not proven that this person was the owner of the copy [of the “Museum Boltenianum ... pars secunda”] at all.”

On the second page of this Leipzig copy there is a stamp

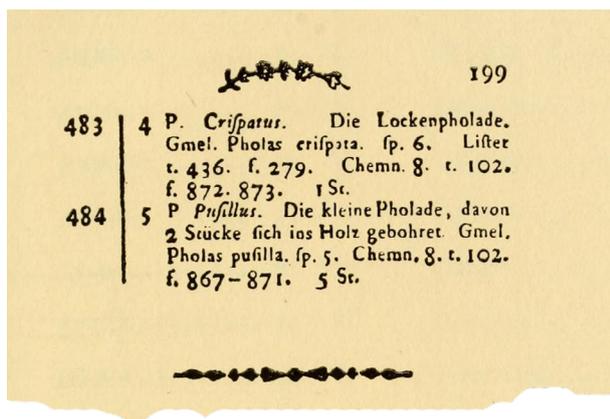


Fig. 2. Museum Boltenianum Page 199 “Crosse copy”, formerly library of S.S. Berry. Digitised by Smithsonian Libraries. Public domain: <https://doi.org/10.5962/bhl.title.10588>, accessed 30 July 2023.

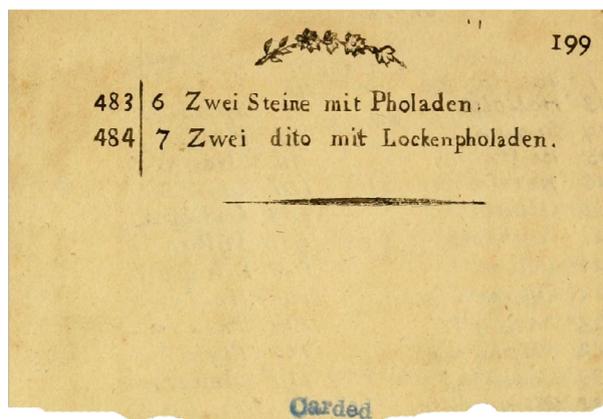


Fig. 3. Museum Boltenianum Page 199 “Pfeiffer copy”, formerly library of W.H. Dall. Digitised by Smithsonian Libraries. Public domain: <https://doi.org/10.5962/bhl.title.16250>, accessed 30 July 2023.

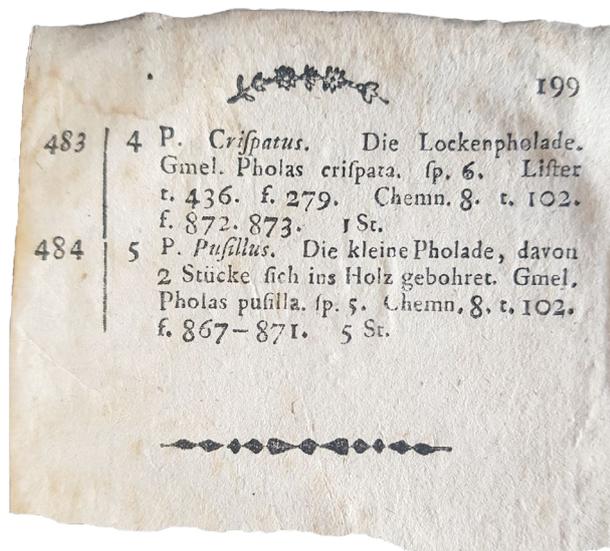


Fig. 4. Museum Boltenianum Page 199 “Darmstadt copy”, formerly Grossherzogliche Hessische Hof-Bibliothek. Digitised by Universitäts- und Landesbibliothek Darmstadt. Reproduced with permission.

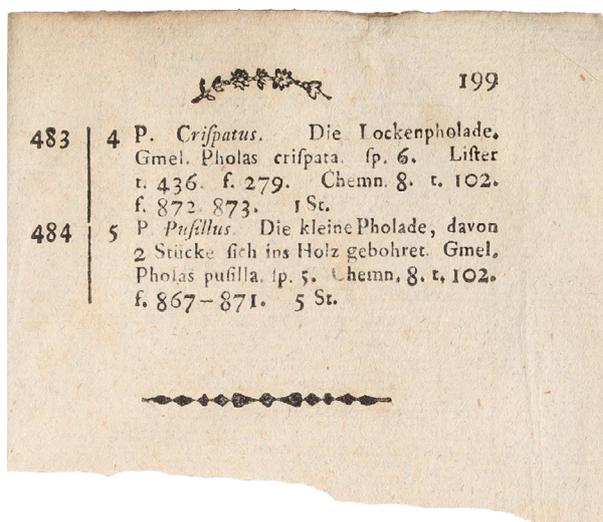


Fig. 5. Museum Boltenianum Page 199 “Leipzig copy”, formerly Heinrich Klemm collection. Digitised by Deutsche Nationalbibliothek, Leipzig. Reproduced with permission.

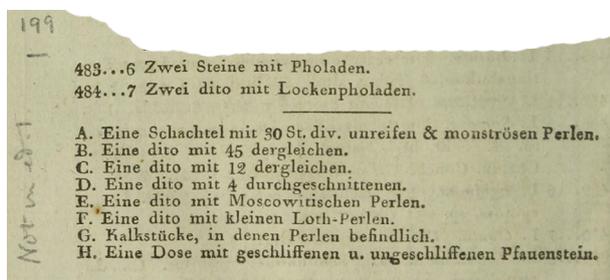


Fig. 6. Noodt edition (1819), part of Page 138. Digitised by Natural History Museum, London. Public domain: <https://doi.org/10.5962/bhl.title.166198>, accessed 30 July 2023.

that reads “Deutsche Buch- u. Schriftmuseum Klemm-Sammlung”. This museum was founded in 1884 as “Deutsche Buchgewerbe-Museum”, and “Klemm-Sammlung” refers to the collection of Heinrich Klemm (1819-1886), who was a tailor by profession, who started a publishing house in 1850. On his death in 1886 his book collection was acquired by the state of Saxony, see [https://www.dnb.de/DE/Sammlungen/DBSM/MusealeBuchsammlungen/musealeBuchsammlungen\\_node.html](https://www.dnb.de/DE/Sammlungen/DBSM/MusealeBuchsammlungen/musealeBuchsammlungen_node.html) [accessed 18 August 2023].

The “Crosse copy” has the same way of notation for samples throughout all pages, including p. 199. This is the same in the Darmstadt copy and the Leipzig copy, while in the “Pfeiffer copy” p. 199, this is very different and appears to be a replacement page at first. The entries are very short and in German alone. All in all, they seem to refer to different objects altogether. Note that in the second edition (Noodt, 1819: 135) (Fig. 6), the notation is the same as in the “Pfeiffer copy”. From the evidence at hand, we conclude that Noodt saw the collection before compiling this second edition (vide infra). So, what happened with the two lots # 483 and 484, as noted in the “Crosse copy”, is a complete mystery, but it seems those two lots were never auctioned.

## THE 1819 SECOND EDITION

As the collection was left unsold as a whole in 1798, a second version was published, compiled by Johannes Noodt (see Petit 2013 and references therein), a “Makler”. The German word “Makler” is a profession that could be translated as “broker”, but in this context, actually means “auctioneer”. An auctioneer is not necessarily the compiler of the catalogue; see, e.g., the three catalogues that A.A.H. Lichtenstein compiled (see Geiger, 2022: 4) with two different auctioneers, but in this case, it is clear that Noodt is indeed the compiler, as is evident from the two page –unnumbered– introduction.

Petit (2013) addressed 17 species names that were unavailable from the Röding (1798) catalogue by illustrating them; hence these names should be attributed to Noodt, with 1819 as the year of description. Petit (2013: 2) also noted that there were some changes in the spelling of species’ epithets (e.g., *Nassa ligata* in 1798 [in all copies seen spelled as *lgata* (!)] became *Nassa legata* in 1819).

Although some of the changes in spelling of names seem deliberate, e.g., the example referred to by Petit (2013: 3) of “*taitensis*” into “*otaisensis*”, i.e., by adding an “o” and replacement of the second “t” by “s”, in other cases, this appears to be accidental, possibly as a result of the poor printing quality of the 1798 edition, e.g., the change of the spelling “*annulus*” into “*annulas*” (Petit, 2013: 3), or the spelling of the epithet “*aurisiacus*” (Röding, 1798: 47, species

# 598) into “*aurifiacus*” (Noodt 1819: 33, species # 598), see also Kronenberg & Wieneke (2020: 88, 89) where it is also noted that Noodt (1819) occasionally added some remarks which he thought to be appropriate.

Both Röding (1798) and Noodt (1819) saw the Bolten shell collection, which is evident from the fact that Noodt did not simply copy the contents of the Röding catalogue but made some –albeit minor– additions in the text and also provided the number of specimens in a sample in cases where Röding did not do so (compare, e.g., # 190 | 4 *N[erita]*. *Lati-linea* and # 191 | 4 *N[erita]*. *Paralella* in Röding (1798: 16) and Noodt (1819: 11-12). A further comparison shows another difference which is that occasionally the number of specimens in a sample differs, e.g., # 278 | 13 *C[ypraea]*. *Stellata*. In Röding (1798: 23), the number of specimens is indicated as “18”, in Noodt (1819: 16), the number of specimens is indicated as “14”.

The fact that when the number of specimens differs in a sample, the number in Noodt is always lower than the number in Röding makes us suspect that between 1798 and 1819, a few specimens from the Bolten collection went missing. These might have been stolen, but this is unlikely as all real “top specimens”, i.e., specimens considered to be rare in those days, remained in the collection. It is more likely that the missing specimens were either discarded because of poor quality or given away to fellow collectors.

A complete comparison of the 1798 and 1819 editions is in preparation (Wieneke & Kronenberg in progress).

## DISCUSSION

We cannot draw definite conclusions from all the research we carried out. Yet, some conclusions, even if only tentative, can be drawn.

Although the new names introduced were conceived by J.F. Bolten, P.F. Röding is indeed the only person responsible for the publication of the “Museum Boltenianum ... pars secunda” and should therefore be considered the author of these new taxa, as the ICZN concluded.

It is very unlikely that A.A.H. Lichtenstein was (even partly) responsible for creating these new taxon names. His Latin preface is more likely to have been a kind gesture to the Bolten heirs, who wanted to dispose of the collections gathered by J.F. Bolten. The catalogue announced in Meyer (1801) for some sort of second edition of the anonymously published “Museum Boltenianum ... pars prima” by Lichtenstein was probably never published. Neither Geiger, who did extensive research on Lichtenstein (see Geiger 2022), nor we have found any trace of such a publication. Yet, Lichtenstein may have produced a manuscript for internal use in the “Hamburgischen Gesellschaft”, not intended for publication.

Whether Schulze played a role is uncertain; we haven't been able to find any sheet ("Bogen") as stated by Kordes (1798); Schröder (1851) or Keferstein (1863). Yet, these authors seemed quite sure about this, although Keferstein may have uncritically copied the remarks by Schröder. In particular, the remark by Kordes, who was a contemporary of Bolten, Schulze, and Lichtenstein, cannot be ignored, and needs further examination, although we have not been able to locate any such publication. Instead, this may refer to an unpublished manuscript.

It is clear that there are two printings of the "Museum Boltenianum ... pars secunda". The so-called "Pfeiffer copy" has on p. 199 a very different type set for the only two items listed compared to the other known copies. We hypothesize that this "Pfeiffer copy" was printed later than the other three copies known to us. We can only speculate as to the reasons for this change, but most likely, there were not enough copies of page 199, and a new version of page 199 was printed. This, however, does not explain why this page is substantially different from the original.

What is clear is the fact that Noodt was indeed the author of the second edition (1819). Not only did he add four plates to the Museum Boltenianum, he also saw the Bolten collection prior to the second auction, taking into account that he occasionally added one or two words, and he also did a recount of the number of specimens. The differences in number of specimens – when noted by Noodt – cannot be explained only by the poor printing quality of the 1798 original "Museum Boltenianum ... pars secunda". Noodt, however, did copy the names from the 1798 edition and made a few changes (Petit 2013, Wieneke & Kronenberg in progress), some deliberately, but some that can be very well explained from this poor printing quality. It is also clear that the copy used by Noodt is from the same printing as the "Pfeiffer copy", and moreover, that in 1819 these were the two items that were present in the Bolten collection and not the two items as listed in the other copies known to us.

#### ACKNOWLEDGEMENTS

We thank Gerwin Jansen, Geldrop, the Netherlands, for some help in the translation of "Bataafsch" and "Bataviaasch" into German; Dr. Bernard Hausdorf, University of Hamburg, made us aware of two more copies of "Museum Bolteanum ... pars secunda" in Germany; Bettina Rüdiger, Deutsche Nationalbibliothek, Leipzig, provided important information on the copy of Museum Boltenianum ... pars secunda present in that institute; Han Stoutjesdijk, Numansdorp, the Netherlands, made the digitalized version of the copy in Leipzig available, with thanks to Verena Henning, Deutsch Nationalbibliothek; he also tried to locate the publication by A.A.H. Lichtenstein on the sup-

posed second edition of the "Museum Boltenianum ... pars prima".

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## APPENDIX

**1. Molluscan names in “Museum Boltenianum ... pars prima”.**

Note that under the heading “Mollusca”, many non-Mollusca are headed. True Mollusca are:

Page 17, under genus 296. *Sepia*.

193 *Sepia officinalis*; Linn. Sp. 2. junior [= juvenile *Sepia officinalis* Linnaeus, 1758]

194 *Sepia officinalis*; Linn. Sp. 2. adulta [= adult *Sepia officinalis* Linnaeus, 1758]

195 *Sepia Loligo*; Linn. Sp. 5 [= *Loligo vulgaris* (Linnaeus, 1758)]

Page 18, under genus 302. *Pholas*.

200 *Pholas Dactylus*; Gmel. Sp. 1. [= *Pholas dactylus* Linnaeus, 1758]

As the whereabouts of the specimens listed in “Museum Boltenianum ... pars prima” are unknown, the identity of the above could not be verified.

**2. Replacement page 199 in “Museum Boltenianum ... pars secunda”.**

483 | 6 Zwei Steine mit Pholaden

484 | 7 Zwei dito mit Lockenpholaden

**3. Mollusca listed in the 1819 Noodt edition, not present in “Museum Boltenianum ... pars secunda”**

These are all referring to either pearls as some kind of appendix to the mollusc collection, numbered A through H, and fossils. This part of the catalogue is written in German, with only one scientific name provided.

Page 138, see also Fig. :

A Eine Schachtel mit 30 St. div. unreifen & monströsen Perlen.

B Eine dito mit 45 dergleichen.

C Eine dito mit 12 dergleichen.

D Eine dito mit 4 durchgeschnittenen.

E Eine dito mit Moscovitischen Perlen.

F Eine dito mit kleinen Loth Perlen.

G Kalkstücke, in denen Perlen befindlich.

H Eine Dose mit geschliffenen u. ungeschliffenen Pfauenstein

In the “Zweite Abtheilung.” (second section) Mineralien, page 144:

193. 1 Venus Islandica mit Kalkspath schön ausgefüllt.

194. 2 dergleichen.

And under 2. Metalle (!) (metals), page 152:

489. 1 Schubfach mit Versteinerungen, worunter ein sehr grosser Glossptera (Hayfischzahn.) Trilobiten, Amoniten, Enkriniten, Ostraziten (Hahnkämme.) Eine Wallnuss und eine Kastanie — schön.

490. 1 dito mit Glossptera, Trilobiten, Amoniten, Ostraziten, Enkriniten, Echiniten. Ein schöner Orthozeratit.

491. 1 dito Amoniten und Echiniten, diverse.

492. 1 dito mit Echiniten, Ostraziten und Belemniten..

493. 1 dito dito, worunter Hysterolyth, Sandalit, Ostrazit, Griphiten.

494. 1 Schublade verschiedener versteinerter Conchylien.

495. 1 dito versteinerter Krebse, Knochen und Glossopterae.

496. 1 Schubfach verschiedener Versteinerungen, mehrtheils Ostraziten.

497. 1 dito verschiedener petrificirter Korallen und Conchylien.

498. 1 dito verschiedener versteinerter Conchylien, meisten Terebratulit und Ostrazit.

499. 1 dito verschiedener Amoniten.

500. 1 dito versteinerter Conchylien.

501. 1 dito dito, worunter Turbinithen, Orthozeratiten und Entrochiten.

502. 1 dito Amoniten.

503. 1 dito verschiedener, sehr schooner, versteinerter Conchylien, als Herz-Muscheln &c.

504. 1 dito Versteinerungen

The “Dritte Abtheilung, Kunstsachen aller Art von Stein, Elfenbein, Holz, Wachs und andren Massen.” has one object with a malacological connection (page 153):

89. 1 aus Muscheln zusammengesetztes Instrument, dessen sich die Bewohner des Süd-Meeres beym Schwimmen bedienen.