

## What's in a name – the Florida Horse Conch

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**ABSTRACT** The proper name for the Florida Horse Conch is shown to be *Triplofusus papillosa* (Sowerby, 1825) as it has priority over *Triplofusus gigantea* (Kiener, 1840) under International Code of Zoological Nomenclature, Article 23.1 and has been repeatedly used in publications to identify the species since 1899.

**KEYWORDS** Fasciolariidae, *Triplofusus papillosa*, *Triplofusus gigantea*, Florida Horse Conch.

### INTRODUCTION

The Western Atlantic fasciolarid commonly known as the “Florida Horse Conch,” which is arguably the second largest gastropod in the world, is well known today. However to the malacological world in the 19<sup>th</sup> century, it was considered “new” to science. Like many mollusks named in the early “Golden Years” of malacology it was named more than once. The International Code of Zoological Nomenclature (“ICZN”) contains rules governing the naming of taxa and sets forth “the principle of priority” in Article 23.1.

The International Code of Zoological Nomenclature, Article 23.1 states: “The valid name of a taxon is the oldest available name applied to it, unless that name has been invalidated or another name is given precedence by any provision of the Code or by any ruling of the Commission. For this reason priority applies to the validity of synonyms [Art.23.3], to the relative precedence of homonyms [Arts. 53-60], the correctness or otherwise of spellings [Arts. 24, 32], and to the validity of nomenclatural acts (such as acts taken under the Principle of the First Reviser [Art. 24.2] and the fixation of name-bearing types [Arts. 68, 69, 74.1.3, 74.5]).”

The “principle of priority” as set forth in the ICZN Code is a modern incarnation of the “law of priority” first codified by the British Science Association in 1842, known as the Strickland Code of Zoological Nomenclature. The law of priority as set forth in the Strickland Code states: “The name originally given by the founder of a group or the describer of a species should be permanently retained, to the exclusion of all subsequent synonyms.” The stated purpose of the law of priority was to be a guiding principal to preserve the stability of biological nomenclature.

What follows is a brief history of the names by which the Florida Horse Conch, and some of its various forms, have been called. It should be noted that the specific name *papillosa* has been used by various authors from 1825 to present date.

### DISCUSSION

The Florida Horse Conch was first named as a new taxa, *Fasciolaria papillosa*, by G.B. Sowerby in 1825, in his work entitled: A catalogue of the shells contained in the collection of the late Earl of Tankerville: arranged according to the Lamarckian

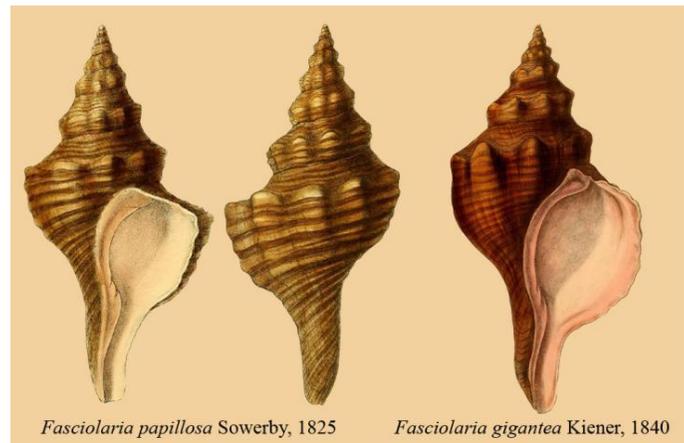
conchological system; together with an appendix, containing descriptions of many new species. G.B. Sowerby, later known as G.B. Sowerby I because his son and grandson of the same name followed in his footsteps, named many new taxa during his lifetime and is recognized today as one of the most prolific conchologists of his day. Together the Sowerby family, G.B. Sowerby I, G.B. Sowerby II, and G.B. Sowerby III were among the most accomplished naturalists of their era and named well over four thousand five hundred taxa. (Petit, 2009) Unfortunately, G.B. Sowerby chose not to illustrate *F. papillosa* at that time in his manuscript; although it was later illustrated in 1847 by L.A. Reeve in his well known *Conchologia Iconica* series, in volume IV.



**Figure 1.** *Fasciolaria gigantea* Kiener, 1840, reprinted from *Iconographie des Coquilles Vivantes*

In 1840, across the English Channel in Paris, France, L.C. Kiener described the Florida Horse Conch as a fasciolarid new to science naming it *Fasciolaria gigantea* in his treatise *Iconographie des Coquilles Vivantes*, and citing

its habitat as “the Ocean Pacific”. Apparently, Kiener was either unaware of G.B. Sowerby’s work or he had not considered that the specimen he had in his possession may have been the same species as *F. papillosa* because he believed that his specimen was from the Pacific Ocean rather than the Western Atlantic coast of America. Kiener included a beautiful hand colored illustration of his specimen, which he named *F. gigantea*, in *Iconographie des Coquilles Vivantes* (See Figure 1).



**Figure 2.** *Fasciolaria papillosa* Sowerby, 1825 and *F. gigantea* Kiener, 1840, reprinted from *Conchologia Iconica*

In 1847, L.A. Reeve illustrated both *F. papillosa* Sowerby, 1825 and *F. gigantea* Kiener, 1840 in his treatise *Conchologia Iconica* in volume IV. As was typical of Reeve, the illustrations of both *F. papillosa* and *gigantea* were beautiful, detailed and hand colored drawings by the Sowerby family. Reeve illustrated and redescribed *F. papillosa* in both Latin and English. (See Figure 2) Reeve’s specimen of *F. papillosa*, illustrated and deposited in the British Museum, is hereby considered to be the neotype by subsequent designation. Even a cursory review of the illustrations of both *F. papillosa* and *F. gigantea* in Reeve’s 1847 manuscript shows that they appear to be the same species, with the

only difference being that the specimen labeled as *F. papillosa* is a younger or subadult specimen. Once again Kiener's locality data may likely have been to blame.

Subsequently in 1850, I.H. Jonas described *Fasciolaria reevei* as new to science in a publication by R.A. Philippi. *F. reevei* was later made a subspecies of *F. papillosa* by Hermann Strebel in 1911.

The first notable attempt to suppress the specific name *papillosa* in favor of *gigantea* occurred in 1881 when George W. Tryon, Jr. wrote in his Manual of Conchology volume III, the following:

“*F. gigantea*, Kiener. Pl. 60, figs. 14-16. Shell yellowish-white, covered with a chestnut-brown epidermis; flesh-color or yellowish within the aperture; tubercles distant, large. Length, 1 to 2 feet. South Carolina; West Indies, Brazil. This is the largest known species of univalve shells. *F. papillosa*, Sowb. (figs. 15, 16), appears to be the young: **it has priority, but Kiener's name is so well known that I let it stand.**” (Emphasis added)

Therefore, even though Tryon recognized that *F. papillosa* was the earlier used name and had priority under the Strickland Code of Zoological Nomenclature of 1842 (a precursor to the ICZN), he personally chose to ignore the law of priority and suppress the senior specific name in favor of the junior name *F. gigantea* which he felt was more well known.

In 1911, a German malacologist Hermann Strebel reviewed and revised the prior works on fasciolarid gastropods to that date. In his manuscript, Strebel painstakingly compared and analyzed specimens of *Fasciolaria papillosa*, *F. gigantea*, *F. reevei*, *F. crocata*, *F. princeps*, and others. Strebel concluded that Kiener's name

*gigantea* was a junior synonym to *papillosa* and that *reevei* was a subspecies of *papillosa*. With typical German attention to detail, Strebel carefully illustrated the specific morphological details of the various forms of *F. papillosa* and the other species that he discussed in his manuscript, and named another subspecies, *F. papillosa elongata*. Further, Strebel illustrated what he believed to be the future growth of a juvenile specimen of *papillosa* to the full adult morphology by superimposing a full detailed image over a fine line drawing.

In 1940, an American malacologist, Burnett Smith, published a manuscript about the various phases, forms, and subspecies of *F. papillosa*. Burnett cited Strebel for the synonymy of *F. gigantea*, and noted that Strebel wrote a critical discussion of the nomenclatural history of the species. Smith followed Strebel and concluded that *F. papillosa* had seniority and was the proper specific name for the Florida Horse Conch, which he noted was “well known as a prominent member of the Recent marine fauna of the southeastern United States.” Smith discussed the various subspecies of *F. papillosa* including *reevei*, *elongata*, and determined that the Florida Miocene subspecies *F. gigantea havveyensis* Mansfield, 1930 should in fact be called *F. papillosa harveyensis* (Mansfield, 1930). Smith also cited Charles W. Johnson (1919) and Louise Perry (1940) for the use of the name *papillosa* in the literature. Smith then named two fossil subspecies, *F. papillosa duplinensis* and *F. papillosa acmensis*.

The next attempt to suppress the senior specific name *papillosa* in favor of the junior name *gigantea* was in 1954, when R. Tucker Abbott published American Seashells. In his widely popular book, Abbott used the specific name *gigantea* Kiener, 1840 in discussing the Florida Horse Conch. Regarding his choice to ignore the senior name *papillosa* Abbott merely stated

that “*P. papillosa* Sowerby, 1825 is insufficiently described to apply with any certainty to this species” and simply ignored the prior works of Strebel, Perry, and Smith. Abbott provided no analysis whatsoever as to why he felt that the rule of priority should be ignored in this instance. As a side note, Abbott placed the Florida Horse Conch in the genus *Pleuroploca* P. Fischer, 1884, and called it “*Pleuroploca gigantea* Kiener.” There was no discussion whatsoever of the change to the genus *Pleuroploca*.

Subsequent use of the name *F. papillosa* in the literature includes a popular publication entitled *Marine Shells of the Western Coast of Florida* by Louise Perry and Jeanne Schwengel, 1955 (Paleontological Research Institute), which discussed the occurrence of *F. papillosa* and *F. papillosa reevei* in Florida, and clearly stated that *F. gigantea* is a synonym. Perry and Schwengel acknowledge Harald A. Rehder, Joseph P.E. Morrison, R. Tucker Abbott, Ruth Turner, Henry A. Pilsbry and William J. Clench for reviewing their manuscript and providing suggestions and corrections to classification and nomenclature. Perry and Schwengel further stated in the introduction that they followed the taxonomic classification scheme of Charles W. Johnson.

In 2003, Martin Snyder published the *Catalogue of the Marine Gastropod Family Fascioliidae*. In this monograph, Snyder noted that *Fasciolaria papillosa* Sowerby, 1825 was placed in synonymy with *F. gigantea* Kiener, 1840 by Tryon in 1881 and that it is the type species of the genus *Triplofusus* Olsson & Harbison, 1953 (when the species was removed to its own genus from *Fasciolaria*). Unfortunately, Snyder did not elaborate on how Tryon was able to make the senior specific name a synonym to the junior name under the Strickland Code by merely stating his

preference for Kiener’s name. Additionally, the holotype of *F. gigantea* has not been located in modern times, accordingly a specimen from what may have been the type lot was recently designated as the lectotype (erroneously called a “syntype”), as the species is type of the genus *Triplofusus*. (Snyder, Vermeij & Lyons, 2012)

In recent books on the fauna of the Florida Keys (2012) and on biodiversity of Western Atlantic mollusks (2013), Edward Petuch in discussing the Florida Horse Conch used the senior specific name *papillosa*, listing it as *Triplofusus papillosa* (Sowerby, 1825), in line with the principle of priority and following the revision of Strebel and the prior works of Smith, Perry, and Perry and Schwengel. A growth series of specimens of *T. papillosa* (Sowerby, 1825) is shown in Figure 3 for illustration. The shell shown in image C is a young adult specimen and is similar to *F. papillosa* Sowerby, 1825 as figured by Reeve in 1847, whereas the shell shown in Image D has a fully matured flaring outer lip and is similar to *F. gigantea* as figured by Kiener in 1840 and Reeve in 1847. Figures A and B are juvenile specimens.

## CONCLUSION

It has been over a century since Hermann Strebel published his revision of the *Fasciolaria* species in 1911 and declared that *F. papillosa*, Sowerby, 1825 is the senior name and that *F. gigantea* Kiener, 1840 is a junior name and thus a synonym. In 1940, Smith reiterated the fact that the proper name for the species in question was *papillosa*, citing Strebel. Unfortunately, Strebel’s and Smith’s work have been all but ignored since Abbott published *American Seashells* in 1954. Perry and Schwengel’s subsequent use of the name *F. papillosa* in their popular work *Marine Shells of the Western Coast of Florida* has also been overlooked. This does not mean, however, that the senior specific

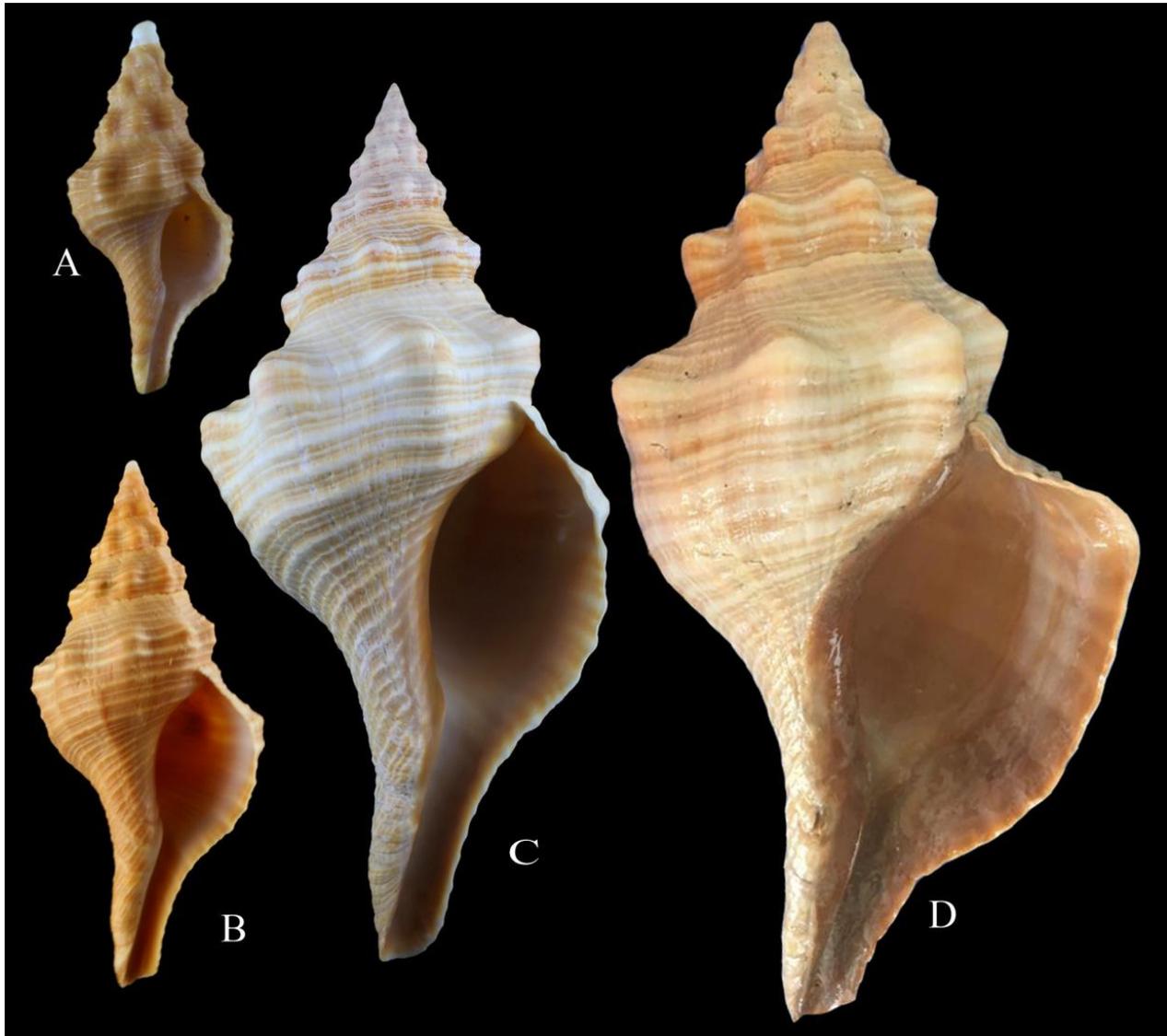
name should continue to be suppressed by modern malacologists in favor of the junior name based upon unsubstantiated personal opinions, or popularity of the junior name.

This is not the first time, nor will it be the last time, that a widely used and popular name has been unseated based upon the principle of priority. In fact, in 1957, S.C. Hollister reviewed and revised the “banded tulip shells” and the widely popular name *Fasciolaria distans* Lamarck, 1822 for the common Florida banded tulip was changed to *F. hunteria* (Perry, 1811). This involved a set of circumstances slightly more confusing as it also included *F. lilium* Fischer von Waldheim, 1807, a species originally known from Campeche, Mexico which had priority over *F. distans*, as well as the species properly known as *F. hunteria* (Perry, 1811) had been inappropriately called *F. distans* for many decades.

The reason given, if any, by authors for suppressing the senior name *F. papillosa*, Sowerby, 1825 in favor of the junior name *F. gigantea* Kiener, 1840 is the purported adequacy of the description of the species by G.B. Sowerby in the Earl of Tankerville manuscript. It should be noted that the vast majority of taxonomic descriptions in the early to mid 1800s were rather short by modern standards, including most of the earlier Sowerby descriptions (Petit, 2009). A side by side comparison between G.B. Sowerby’s description in the Earl of Tankerville manuscript of *F. papillosa* and *F. princeps* is a useful comparison here as the description of *F. princeps* has stood the test of time. Sowerby’s description of *F. papillosa* discusses six morphological characters whereas his description of *F. princeps* discusses eight characters - one of which is color. Sowerby’s

description of *F. papillosa* appropriately describes the general shape of the shell, the microsculpture of apex, the cords on the body whorl, the shoulder knobs, the aperture texture, as well as the length of the siphonal canal, all of which taken together provides a sufficient description of the species compared to other species that had previously been described in the genus. The fact that subsequent workers have routinely written their own descriptions (of this and other species), some of which may arguably contain more detail, does not change the fact that Sowerby in fact described *F. papillosa* in writing and published that description in 1825, fifteen years before Kiener’s work. Sowerby’s name for the species should have been given priority over Kiener’s name even under the proto-principle of priority that existed before the Strickland Code was published codifying the rule.

Under the principle of priority there is no doubt that the name *Triplofusus papillosa* (Sowerby, 1825) takes precedence over *T. gigantea* (Kiener, 1840) and that the suppression of the senior specific name by Tryon and Abbott was in error. The alternative to using the senior name *T. papillosa* (Sowerby, 1825) would require petitioning the ICZN to suppress Sowerby’s senior specific name in favor of Kiener’s junior name, however such a reversal is not allowable under ICZN Article 23.9.1.1 as the specific name *papillosa* has been used in numerous publications since 1899. It is clear under the Code that the senior specific name *papillosa* has been used in publications after 1899 to delineate the Florida Horse Conch, therefore under ICZN Article 23.9.1.1 there is no justification to ignore the principle of priority in this matter and G.B. Sowerby’s name for the species should be used.



**Figure 3.** A growth series of specimens of *Triplofusus papillosa* (Sowerby, 1825). A = 34.1 mm, B = 73.3 mm, C = 208 mm, D = 358 mm (photo courtesy of Peter Brimlow)

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### REFERENCES

**Abbott, R.T., 1954.** American Seashells. D. Van Nostrand Company, Inc., New York, New York. 541 pp.

- Hollister, S.C., 1957.** On the Status of *Fasciolaria distans* Lamarck. *The Nautilus* 70(3):73-85.
- Johnson, C.W., 1919.** Notes on the Species of *Fasciolaria* of the Southeastern United States. *The Nautilus* 33(2):44-48.
- Johnson, C.W., 1934.** List of Marine Mollusks of the Atlantic Coast from Labrador to Texas. *Proceedings of the Boston Society of Natural History* 40(1):1-104.
- Jonas, I.H., in R.A. Philippi, 1850.** *Fasciolaria*. Abbildungen und Beschreibungen neuer oder wenig gekannter Conchylien 3:121-122, pl. 3.
- Kiener, L.C., 1840.** Genre *Fasciolaire*. (*Fasciolaria*, Lam.). *Spécies Général et Iconographie des Coquilles Vivantes* 6:19 pp., 13 pls.
- Mansfield, W.C. 1930.** Miocene gastropods and scaphopods of the Choctawhatchee Formation of Florida, Florida State Geological Survey Bulletin 3. 189 pp., 21 pls.
- Olsson, A.A. & A. Harbison, 1953.** Pliocene Mollusca of Southern Florida. The Academy of Natural Sciences of Philadelphia, Philadelphia, Pennsylvania. 457 pp., 65 plates.
- Perry, L. 1940.** Marine Shells of the Southwest Coast of Florida. *Bulletins of American Paleontology* 26(95):1-260, plates 1-38.
- Perry, L. & J. Schwengel, 1955.** Marine Shells of the Western Coast of Florida. Paleontological Research Institution. Ithaca, New York. 318 pp.
- Petit, R.E., 2009.** George Brettingham Sowerby, I, II, & III” their conchological publications and Molluscan taxa. *Zootaxa* 2189:1-218.
- Petuch, E.J., 2012.** Molluscan Communities of the Florida Keys and Adjacent Areas – their Ecology and Biodiversity. CRC Press, Boca Raton, Florida. 299 pp.
- Petuch, E.J., 2013.** Biogeography and Biodiversity of Western Atlantic Mollusks. CRC Press, Boca Raton, Florida. 234 pp.
- Reeve, L.A., 1847.** *Conchologia Iconica: Illustrations of the Shells of Molluscos Animals*. London, England. Vol. IV. *Fasciolaria*. 682 pp.
- Smith, B., 1940.** Notes on Giant Fasciolarias. *Palaeontographica Americana* 2(11):463-470.
- Snyder, M., 2003.** Catalogue of the Marine Gastropod Family Fascioliidae. Academy of Natural Sciences of Philadelphia, Special Publication No. 21. 431 pp.
- Snyder, M.A., Vermeij, G.J., and W.G. Lyons, 2012.** The genera and biogeography of Fascioliinae (Gastropoda, Neogastropoda, Fascioliidae). *Basteria* 76(1-3):31-70.
- Sowerby, G.B., 1825.** A catalogue of the shells contained in the collection of the late Earl of Tankerville. [v] + 92 + xxxiv. G. B. Sowerby: London.
- Strebel, H., 1911.** Zur Gattung *Fasciolaria* Lam. 2. Beiheft zum Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten, XXVIII.
- Tryon, G.W., Jr., 1881.** Manual of Conchology, structural and systematic: with illustrations of the species. Vol. III. Academy of Natural Sciences, Philadelphia, Pennsylvania.