

Notes on type material of the family Pectinidae (Mollusca: Bivalvia)
3. On the identity of *Pecten solidulus* Reeve, 1853,
and *Pecten commutatus* Monterosato, 1875

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The identity of *Pecten solidulus* Reeve, 1853, a species from an unknown locality, has always been subject to debate. As type species of *Argopecten* Monterosato, 1889, by subsequent designation by Monterosato himself (1899: 193), the identity of the genus is connected with the identity of the species. Initially Monterosato (1889: 20) relegated his *Pecten commutatus*, which he described in 1875, to the synonymy of *P. solidulus*. This synonymy was regarded as erroneous by Dautzenberg & Fischer (1906: 59).

Grau (1959: 93) has regarded *P. commutatus* as type species for the genus *Argopecten*, because in his opinion *P. solidulus* was unidentifiable. Keen (1960: 101) has pointed out that he did so incorrectly.

Clarke (1965: 174) has used the name *Plagioctenium* Dall, 1898 (type species by original designation: *Pecten ventricosus* Sowerby, 1842 = *Pecten circularis* Sowerby, 1835), instead of *Argopecten*, for a group of American Pectinidae, maintaining that the type species of *Argopecten* is not identifiable.

Waller (1969: 33) has considered *P. solidulus* more likely to be *Argopecten circularis* rather than *A. gibbus* (L., 1758), these last two species being most similar to *P. solidulus*. He based his conclusion on measurements taken from photographs of the holotype of *P. solidulus*, comparing them with equally sized *A. circularis* and *A. gibbus*. Hertlein (1969: N356) supported Waller's opinion, meanwhile treating *Argopecten* as a subgenus of *Chlamys*. Waller (1969) considered *Argopecten* a separate genus and also doubted whether any of the non-American species referred to the genus in the past actually do belong there, with the sole exception of the species nowadays classified with the genus *Haumea* Dall, Bartsch & Rehder, 1938.

While visiting the Muséum National d'Histoire Naturelle, Paris (MP) and the British Museum (Natural History), London (BMNH), I was able to study the type specimens of (1) *Pecten solidulus* Reeve, 1853 (BMNH, holotype), (2) *Pecten philippii* Récluz, 1853 (non Michelotti, 1839) (MP, syntypes), (3) *Pecten commutatus* Monterosato, 1875 (MP, syntypes), and (4) *Pecten atlanticus* Smith, 1890 (BMNH, syntypes). As already remarked by Dautzenberg & Fischer (1906: 59), Grau (1959: 93), Waller (1969: 32), and Hertlein (1969: N356) *P. solidulus* is not the same as *P. commutatus*, but one of the American species of *Argopecten*. The holotype is juvenile: length 18.0 mm, width 17.4 mm and height 8.5 mm. For the genus *Argopecten* the ratios between length (l), width (w) and height (h) are very important specific characters. When working with absolute ratios the species mutually have a larger overlap than when relative ratios are used. This can be done by using the height as a divider in respect to the length and the width respectively. Visually the differences between the species become more clearly on a logarithmic scale (see figs. 1 and 2). When *P. solidulus* is compared with the other known American species it only fits in the range of *A. cir-*

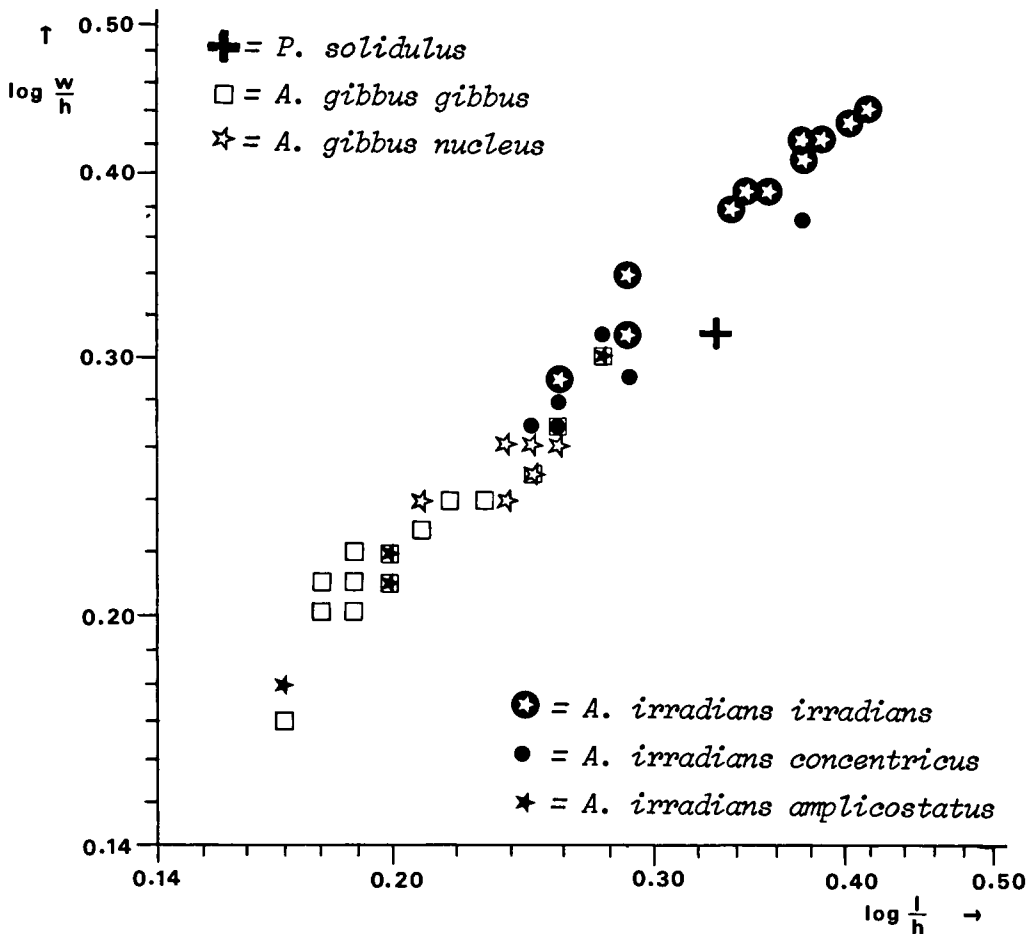


Fig. 1. Relative ratios of *Pecten solidulus* Reeve, 1853, and the Atlantic American *Argopecten* species.

cularis, a species it resembles more closely than *A. gibbus*. The form of the auricles, the ribs and the pattern are all the same as in *A. circularis* and not as in *A. gibbus*. I therefore support Waller and Hertlein in their opinion that *P. solidulus* is identical to *A. circularis*, without any doubt. The genus *Plagiostenium* then becomes an objective synonym of *Argopecten*. The genus comprises the following recent taxa and becomes thereby restricted only to America: *A. gibbus gibbus* (L., 1758), *A. gibbus nucleus* (Born, 1778), *A. irradians irradians* (Lamarck, 1819), *A. irradians concentricus* (Say, 1822), *A. irradians amplicostatus* Dall, 1898, *A. purpuratus* (Lamarck, 1819), *A. circularis* (Sowerby, 1835).

For Monterosato's European species, previously considered a representative of *Argopecten*, *P. commutatus* is the correct name. The following are synonyms: *P. gibbus* Philippi, 1836 (non Linnaeus, 1758, nec Lamarck, 1819), *P. philippii* Récluz, 1853 (non Michelotti, 1839), *P. atlanticus* Smith, 1890.

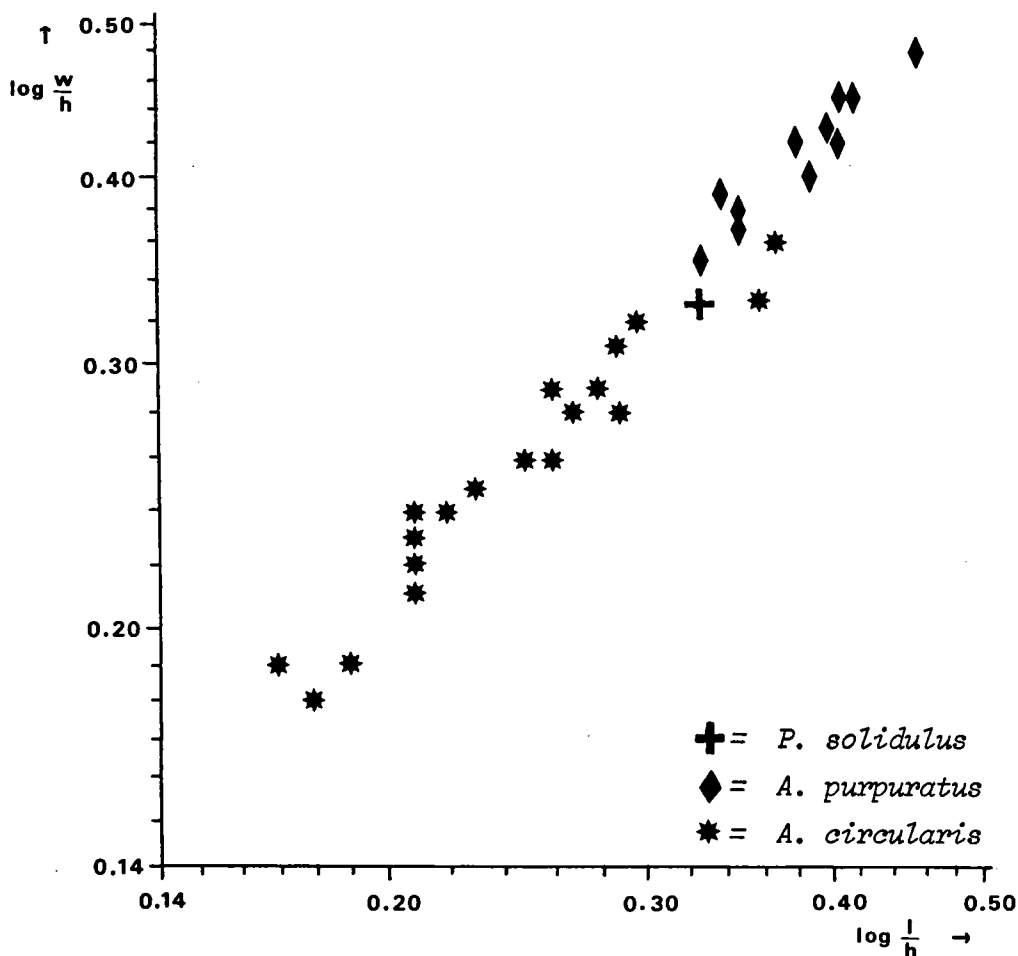


Fig. 2. Relative ratios of *Pecten solidulus* Reeve, 1853, and the Pacific American *Argopecten* species.

As Waller (1969: 33) has pointed out, this species differs from all *Argopecten* in the following characters: (1) the auricles are distinctly unequal in length, the posterior margin of the posterior auricle forming an oblique angle with the dorsal margin, (2) the microsculpture of the valves is different, and (3) the flanks of the valves have fine but distinct riblets.

P. flabellum (Gmelin, 1791) from the West African coast may be distinguished from *Argopecten* species by the same characters. In these characters both *P. commutatus* and *P. flabellum* closely resemble *Aequipecten* Fischer, 1886. The microsculpture initially consists of concentric lamellae in the interspaces of the ribs which distally are replaced by radiating riblets covered with lamellae. Riblets covered with lamellae are also present on the ribs. A similar type of microsculpture is observed in *Aequipecten*. The form of the

auricles of both *P. commutatus* and *P. flabellum* is nearly the same as in *Aequipecten*. Nevertheless, these two species are so different in other respects that I hereby propose a new subgenus of *Aequipecten*.

Perapecten subgen. nov.

Diagnosis. — Shell globose and somewhat wider than long. Length of posterior auricle about two thirds of that of the anterior one, the posterior margin forming an oblique angle with the dorsal margin. The right valve is more convex than or nearly as convex as the left valve. The valves are hardly gaping at the anterior and posterior flanks. The microsculpture is as in *Aequipecten* s.s.

Type species. — *Pecten commutatus* Monterosato, 1875.

Other species. — *Ostrea flabellum* Gmelin, 1791.

Distribution. — The type species *Aequipecten (Perapecten) commutatus* (Monterosato, 1875) is found in the Mediterranean and in the Atlantic Ocean along the coasts of Portugal southward to Senegal. *Aequipecten (Perapecten) flabellum* (Gmelin, 1791) is found along the western coasts of Africa from Mauritania to Angola.

Etymology. — *Pera-pecten* means the pouch- or wallet-pecten, because the shells are so globose that they remind me of a filled wallet that has the same globose appearance.

Remarks. — In contrast to *Perapecten*, *Aequipecten* s.s. is very flat and distinctly wider than long (except in the juveniles). Posterior and anterior auricles are of about the same length, the angle of the posterior margin with the dorsal margin of the posterior auricle is less oblique. The left valve is always distinctly more convex than the right one, the latter being nearly flat. The valves gape widely at both the anterior and posterior flanks.

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