

REFLECTIONS UPON THE SCHILDERS' LAST WORK

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Abstract: A conchological study based on recently received shells of *Pustularia bistrinotata sublaevis* from French Polynesia confirms the subspecific level of this taxon, which should be excluded from the list of rejected taxa published in Heiman (2011).

Possible reasons for treating this and other taxa as synonyms in Schilders' last work are briefly discussed.

Key words: Mollusca, Gastropoda, Cypraeidae, *Pustularia bistrinotata sublaevis*, taxonomy, diagnostic characters.

In Schilder & Schilder (1938)-the Prodrôme-the authors organized the modern system of all living populations of Cypraeidae then known and described diagnostic characters of species and subspecies. These descriptions are short but precise and are now part of the modern diagnosing manuals of cowry taxa. This was one of the first works of this kind in malacology, pioneering then and mostly valid now. Unfortunately, the definitions and criteria of species and subspecies suitable for practice are not given in the Prodrôme and the details such as numbers of studied specimens of each taxon and peculiarities of methodology are also absent. The conchological practice shows that the taxonomic identity of many living cowry populations including those described in the Prodrôme is still rather vague and should be checked by a selective test or studied over again. This is the aim of the project "Intraspecific variation in living cowries"-the Project-initiated about twelve years ago. The main task of the Project is to check batches of shells representing cowry populations in question and to learn based on such a selective test, whether the diagnostic characteristics given in their original descriptions and in the Prodrôme are adequate. Those taxa, of which shells were not yet available for study, were a priori treated as synonyms especially if they were listed as such in the work by Schilder & Schilder (1971), the last work by these authors.

This important work is in fact a summary of the result of almost 50 years of studying Cypraeidae and consists of three parts: 1. Systematic list of taxa. 2. Alphabetical list. 3. Bibliography. The first part is of interest in our case.

According to this work many taxa of living cowries should be treated as synonyms. An important factor for such decisions was the authors' opinion i.e. how they themselves treated such taxa (the majority of which they described). A list of these taxa is published in Heiman (2011). Several examples below are puzzling.

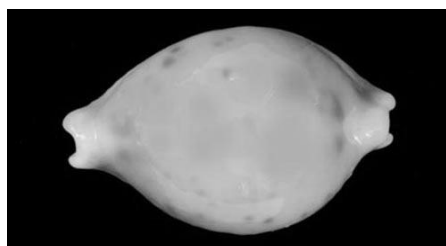
The taxonomic identity of *Pustularia bistrinotata sublaevis* Schilder & Schilder, 1938.

This subspecies was described in the Prodrôme as follows:

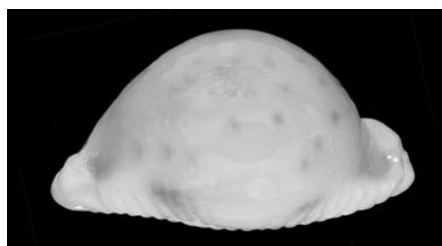
"The Malayan *bistrinotata* (18.64.31.21) is large, very globular, with short extremities; it is connected in size, shape and texture by *mediocris* (16.64.31.21) of the Western Pacific with the small, subovate, and more rostrate Eastern *sublaevis* (15.63.33.21), which is characterized by its rather this shell with the dorsal granulations, sulcus, and the central pair of blotches becoming obsolete and the teeth less produced.

It was impossible to verify the accuracy of the description of *bistrinotata sublaevis* using several beached specimens in my collection, especially the presence or absence of the dorsal granulations. Hence the Schilders' opinion was decisive for rejecting this taxon and treating it as a synonym.

This question arose again after receiving new batches of *bistrinotata sublaevis* from French Polynesia, which included six probably freshly dead collected shells-Figs. 1-3-in a very good condition. Checking of these shells revealed their conformity to the description in the Prodrôme: all the diagnostic shell characteristics mentioned by the Schilders are present. Hence this taxon should be excluded from the list given in Heiman (2011).



1. Dorsal view



2. Side view



3. Base view

It is not clear and even mysterious why the Schilders treated *bistrinotata sublaevis* as a synonym in their last

work. Its description is short but accurate and allows diagnosing this taxon almost without problems. However there is a problem analogous to such problem connected with *Pustularia cicercula avrillae*: the nominotypical subspecies in both cases are by definition distinctly granulated. But in the subspecies from Polynesia shells are mostly not granulated (smooth), in other words they do not share one of the main diagnostic shell characters of the species. This is confusing indeed and shell collectors treat sometime *P. bistrinotata sublaevis* as *Pustularia globulus* and *P. cicercula avrillae* as *P. margarita*.

The case of *Pustularia globulus sphaeridium*. It also was described in the Prodrôme as a subspecies from Melanesia to Polynesia and also rejected in the Schilders' last work. Its description reads:

“The Eastern *sphaeridium* (15.61.34.23) is smaller than the common Malayan *globulus* (18.63.34.23), with the dorsum slightly humped instead of globular to subcylindrical, the posterior extremity more produced, and the central columellar teeth still shorter; in both races the short anterior columellar teeth rise carinately above the level of the inner lip... Central Melanesia to Samoa, Eitapé and Caroline Is; to Tuamotu?

In Schilder & Schilder (1952) the authors concluded that *globulus sphaeridium* is not found in Tuamotu and in their last work they treated it as synonym. But this subspecies inhabits a vast area not including Tuamotu.

Taxa with unusually large ('leviathan'-like) shells

Lyncina leviathan Schilder & Schilder, 1937 was described as a species from the Hawaiian Islands to Polynesia.

It was treated as a species in the Prodrôme and in Schilder & Schilder (1952) but in the Schilders' last work is treated as a subspecies *L. carneola leviathan*.

Lyncina titan Schilder & Schilder (1952) was described after the authors received and studied a large batch of 447 shells from East Africa. 157 (33%) of these were larger than usual in *carneola* populations of this area.

A range of the shells length in a batch of 300 other shells of *L. carneola* was according to the Schilders 23-34 mm whereas a range of the 147 larger shells was 39-59 mm. This difference was interpreted as a conchological gap and the authors wrote: “when two groups of cowries are found in the same area, with the same environmental conditions, and are encountered in rather large numbers, and differ from each other by constant characteristics, without intermediate forms, they must be treated as separate species, even if the mentioned difference seem to be unessential. They cannot be treated as subspecies because there is no geographical or ecological isolation between such groups, nor are there any intermediate forms on their joint border.” Soft parts were also studied in the shells.

But in the last work the authors treated large shells of *L. carneola* from East Africa as a subspecies *L. carneola titan* although these populations of the species were already named in the Prodrôme *L. carneola sowerbyi* and these populations still exist.

In the last work they replaced the subspecific name *L. carneola sowerbyi* by the name *L. carneola titan*. This replacement is not acceptable: the first name was given to a subspecies the majority of shells in which differ by the shell form (not the shell size) from other populations of the species. The second name implies that the majority of shells in the East African populations of *carneola* are larger than usual (as *titan*). This is also not correct: only 157 (1/3) of the studied shells of East Africa were larger than usual and 2/3 or 67% (the majority) were small.

The reasons why the Schilders treated *bistrinotata sublaevis* as a synonym in their last work remain mysterious as the other examples given above. They treated in the same way (or changed a taxonomic level) 216 taxa mentioned in the malacological literature before 1968-1969. The majority of these taxa (even those described in the Prodrôme) should be considered synonyms indeed as follows from the selective test conducted already in the Project. But a status of other taxa deserves attention and checking on large authentic batches of shells.

What a pity that the Schilders did not motivate the reasons for so categorical nomenclatural actions.

Literature

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