

“*Erato*” prayensis DE ROCHEBRUNE 1881 cannot be interpreted as an *Erato*

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I specifically asked with submit of my paper that our Marginellen-specialist ROLAND HOFFMANN as member of the editorial staff to check my article. There was no respond till the publication. Therefore, I assumed his fully agreement.

ROLAND wrote in his first sentence that I described *Erato africana* FEHSE 2016 as replacement for “*Erato*” *prayensis*. Already with its description it was always only supposed that *prayensis* is an *Erato*. Therefore, I did not replace *prayensis*. ROLAND reduced in his introducing words the quite accurate drawing of ROCHEBRUNE as ‘imprecise’. Why it should be ‘imprecise’? Perhaps it does not fit the commonly interpretation? ROLAND wrote in the next sentence, “... I admit that the drawing of ROCHEBRUNE shows only less accordance with the reality ...” I confirmed in my paper that the drawing is accurate in every detail. How can the missing accordance be explained? Is it not the evidence that ROCHEBRUNE and following authors misinterpreted the taxon? Seemingly everyone rely that ROCHEBRUNE made everything correct. It appears not improbable that ROCHEBRUNE examined an *Erato* together with a *Gibberula* of same color. Was the drawing prepared by memory as ROLAND explained? Both opinions are only pure speculations and they do not help to solve the problem. ROLAND continues that the description fits exactly to *Erato*. I reproduced the original description and it is not one-to-one. The only passage that could be interpreted in favor of *Erato* is, “... *labro reflexo, minutissime multi dentato* ...” Both features could also be found in Columbellidae, Marginellidae, Cystiscidae, juvenile *Trivia*, etc. Therefore, the description is useless without drawing. ROLAND argues, “What should we do with descriptions without drawings?” In this – or better ‘**IN ANY**’ – case the type material must be studied. I and Jozef made it for many questionable Triviidae and Eratoidea. Many interpretations were corrected because only few authors consider the type material. An interpretation cannot be founded on a description only. The problem of missing drawing and missing type material does not apply in the discussed case. What remains? Is it not allowed to check the common interpretation of “*E.*” *prayensis* with the original drawing? Or is it allowed to dismiss an original drawing as imprecise because everyone misinterpreted till now the identity? Fortunately an exemplary drawing is available. “*Erato*” *prayensis* would be a nomen dubium without a drawing because its identity could not be resolved anymore without type material. Which dilemma would arise when a second taxon would be discovered in the same distribution area? It seems there is indeed a second species. Therefore the identity of the first described species has to be clarified one-to-one. Please, study my paper in detail.

Also if ROCHEBRUNE would like to describe an *Erato* his illustration shows something completely different as ROLAND already admit. Two anonym reviewers presented the same arguments. I will deal with three essential ones:

The first argument “*Erato prayensis* was always interpreted as *Erato*” is scientifically untenable. It would be similar to argue “The universe rotates around the earth” or “The earth is a disc” because this was the knowledge for centuries. Scientifically proofs must correct also long-cherished ideas. It is understandable that it is difficult to give up grow fond ideas. But wrong interpretations of facts remain still wrong and have to be corrected on the basis of new knowledge.

The second argument is the mentioned shell color. This is not tenable because of two reasons: First the shell morphology comes before the shell color. The morphology defines the assignment to the family and genus. The shell color can only distinguish taxa. Second ROCHEBRUNE has only dead collected specimens in all probability and the original color was not inevitably preserved or could be falsified. How the digital reprocessing of illustrations could be used to support a viewpoint does not affect the illustrated shell morphology.

ROLAND explained the third argument, “ROCHEBRUNE described in his paper 4 species of *Volvarina* (2 as new), 2 species of *Gibberula* (1 as new) and even the species *Erato prayensis*. I assume that he [ROCHEBRUNE] has known well marginelli-like genera and was able to differentiate them.” First it is just an assumption. Second ROCHEBRUNE was not the first and also not the last who misplaced Cystiscidae – as well as Marginellidae – into Eratoidea. Another example is C.B. ADAMS (1845). He described “*Erato*” *cypraeoides* that is now assigned into the Cystiscid genus *Pachyathron*. In the same paper C.B. ADAMS (1845) described also ‘correctly’ *Marginella rubella* now assigned to *Volvarina*. EDWARD PETUCH described in his various books and papers several Eratoidea usually assigned to *Hespererato* as well as many Cystiscidae and Marginellidae assigned correctly to *Prunum*, *Gibberula*, etc. Recently, he was involved in the misplacement of “*Hespererato*” *pallida* OLEINIK, PETUCH & ALEY 2012 – the correct genus is *Eratoidea* and it seems to be a junior synonym of *Eratoidea watsoni* (DALL 1881). Therefore, this argument has no right. Nobody is perfect and nobody is beyond reproach.

Even if someone wants still recognize *prayensis* as an *Erato* and labels for it the quality of the original illustration as inaccurate may take note, please, the following fundamental differences in the shell morphology between Cystiscidae and Eratoidae (pictures copied from ROLAND's discussion):

1. Connection of the labrum with the teleoconch



prayensis

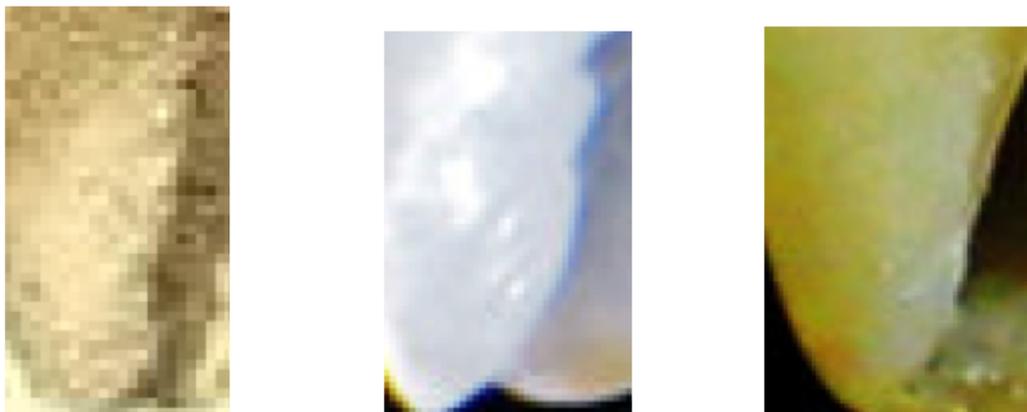
rolani

africana

Gibberula: Labrum is joined with the last whorl

Erato: Labrum is always joined with the spire

2. Anterior ventral portion



prayensis

rolani

africana

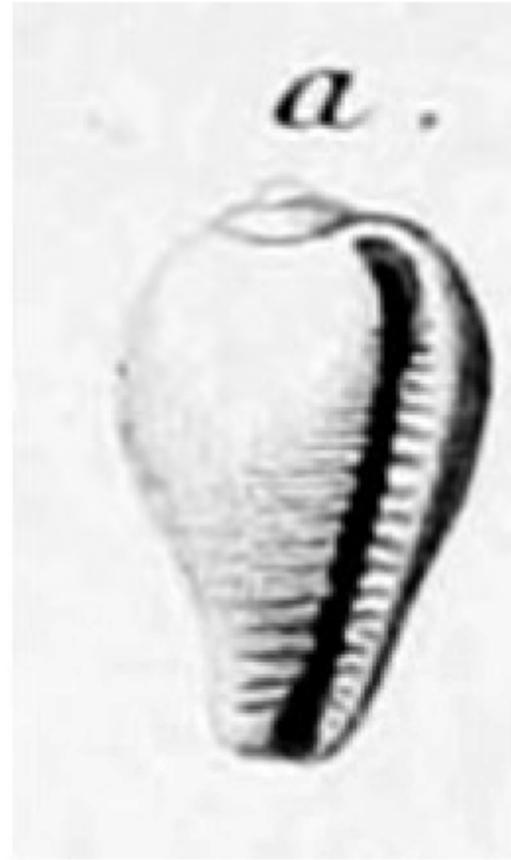
Gibberula: development of a callus (usually white in color), the anterior most columellar folds run out, no parietal lip, no columellar teeth, no fossula, no inner longitudinal carinal ridge

Erato: no callus, development of an edged parietal lip, columellar teeth always developed, ventral folds only developed at few species, existence of a smooth fossula, usually an inner longitudinal ridge available

ROLAND showed BROCCHI's original drawing of *Erato cypraeola* in comparison – called “ancestral-*Erato*”, why remains unclear to me:



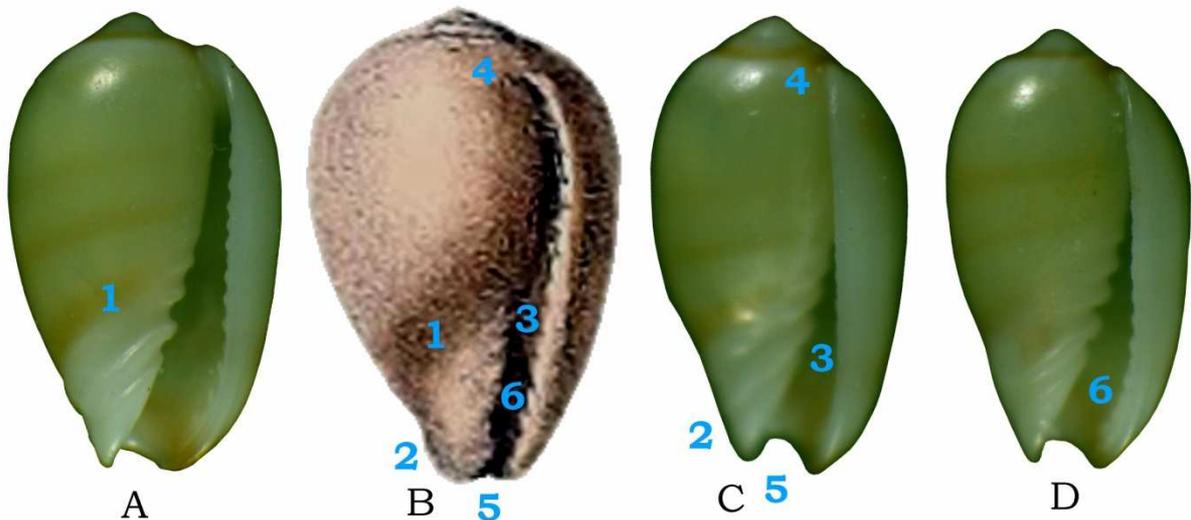
prayensis



cypraeola

But also BROCCHI's drawing depicts clearly the linking of the labrum with the spire. Also it is nicely shown how the labral teeth are continued as folds onto the labrum – a feature not seen in ROCHEBRUNE's drawing and description – and the ventral folds as continuation of the anterior columellar denticles – ROCHEBRUNE's drawing does not show columellar denticles, he also did not mention such denticles in his description as well.

By the way the Pliocene *Erato cypraeola* BROCCHI 1814 has nothing in common with the misinterpretation by RISSO 1826 (compare ROLAND's article). The latter shows the recent *Erato voluta*. RISSO's drawing is extremely inaccurate, shows furthermore a subadult specimen and clarifies even more the precision of BROCCHI's and ROCHEBRUNE's drawing.



- A, C *Gibberula cf. rolandi* COSSIGNANI & CECALUPO, 2005. A banded, cylindrical variation? Type specimens (especially paratype 15) fit much better to *prayensis*. A = correct ventral view; C = same shell but left turned similar to original drawing of *Gibberula prayensis*. Collection ROLAND HOFFMANN, No. 2253-0.
- B *Gibberula prayensis* (DE ROCHEBRUNE, 1881). Holotype. Subadult, left turned view.
- D *Gibberula cf. rolandi* COSSIGNANI & CECALUPO, 2005. A banded, cylindrical variation? Slightly subadult, left turned similar to original drawing of *Gibberula prayensis*. Collection ROLAND HOFFMANN, No. 2253-0.

Many thanks to ROLAND HOFFMANN for the loan of the two specimens.

- 1 brown transverse band
- 2 anterior callused portion with run out columellar folds
- 3 columellar folds
- 4 labrum posteriorly joined with the teleoconch (not spire!)
- 5 incised siphonal canal
- 6 coarse 'labral denticles' inside of the labrum

The photos C and D are similarly left turned as in the original drawing of *prayensis*. The 'denticles' of the inner aperture become visible, the aperture is now narrow, the labrum seems to be 'thickened' and both – *rolandi* and *prayensis* – are quite similar.

ROLAND illustrates nicely in his picture sequence “‘artistically evolution’ from *Volvarina cessaci* JOUSSEAUME 1881 to *Gibberula jousseaumi* to *Erato prayensis*” how *prayensis* fits well the drawing of *G. jousseaumi*. The shell morphology is incredibly similar. Who still will get the idea that *prayensis* is an *Erato*?

Incidentally, *Erato prayensis* was always **interpreted** as an *Erato* but **no one confirmed it** since its description.

It is now up to the specialists of the Cystiscidae and Marginellidae to identify the real *prayensis*. It is essential to study juvenile stages of all *Gibberula* from east Atlantic. *Gibberula rolandi* could also be quite inflated with less developed columellar folds (compare COSSIGNANI's book p. 88, middle row, right specimen = paratype 2) or pyriform (compare COSSIGNANI's book p. 88, last row, left specimen = paratype 15). The specialists may decide to reduce *prayensis* as nomen dubium.

Indeed a real revision based on type material of the Cystiscidae and Marginellidae – fossil and recent – is really needed. COSSIGNANI's book was only the first step.