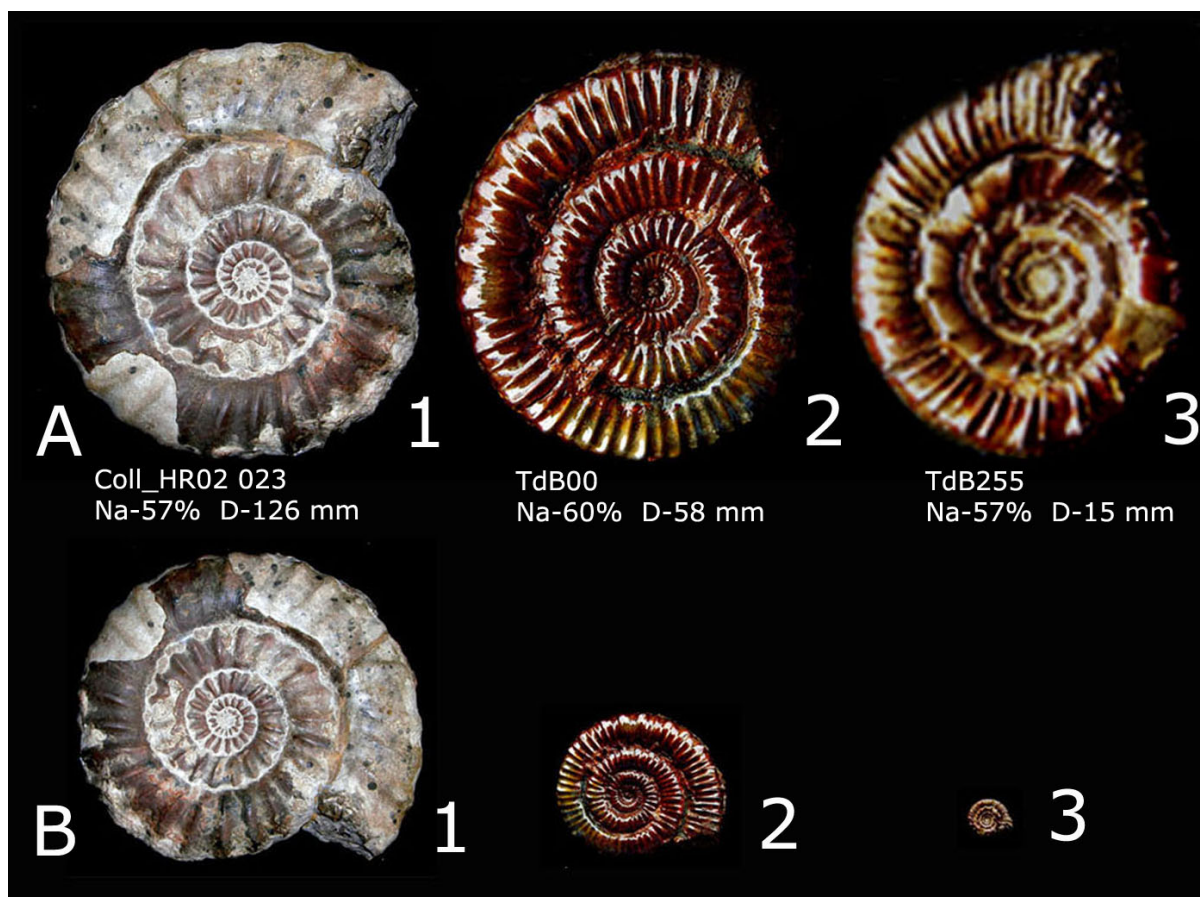


On the other hand it means that a finding without body chamber or sudden close up of the suturline can't be identified as micro-conch. For me it seems very unlikely that dimorph partners should have different sized embryonic cells. Only then one would get different sizes of shells with the identical logarithmical spiral and the same number of windings.

Different sized embryonic cells do exist with different genera of ammonites, but within a dimorph pair for me it is more than unlikely or at least I never have seen or heard / read of it.



Same parameter like Na%D and number of windings but different diameter.

Examples of the top row are approximately enlarged to the same size. All shown examples have about 6 whorls and practically the same width of their umbilcus as % of the shell diameter. Only the sculptur of the shells look different. (and for sure they are belonging to different species).

If one shows the same findings according to their natural size, then the diameter looks extraordinary different (from left to right: 126 - 58 – 15 mm).

If one accepts that the normal enrolled ammonite build its shell exactly according to a logarithmical spiral, then the only explanation (at least for me) for a different size: The embryonic cell as starting point for the logarithmical spiral is different in size (see page 34) or the finding has different number of windings.

And within a dimorph pair (see also *Creniceras renggeri*) the macro-conch must have about more whorls and the more complicated sutur line, because this is the consequence for older (more windings) shell (see O.H.Schindewolf). Theoretically micro- and macro-conches could have different sized protoconches (embryonic cell) which for me is more than unlikely.

Whether the Macro conch with about 1 winding more is growing with a faster / different speed to reach its full size at the same time like the micro conch with one winding less of the mature micro conch for me is questionable.

That a protoconch of different species might have different size of embryonic cells should be shown as the following examples:

Protoconch



MAR_Ta029a1 14mm



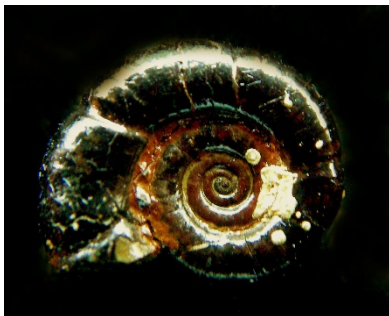
MAR_Ta029a2



Quenst_M01 142 mm



Quenst_M01a



TdB230a1 10mm



TdB230b1



F20_TdB928 Truc de Balduc / Mende – F
D= 132 mm Toarcien, gegraben

Size of pyritized ammonites

It takes much longer for big pyritized ammonites to be set free out of the marl by weathering. Therefore they more frequently are broken to pieces before someone is finding them.

The weight of the biggest, digged finding of a pyritized ammonite at the Truc de Balduc was 3.2 kg without attached marl



F30_TdB020 Truc de Balduc / Mende– F,
Toarcien, 'in situ' D= 108 mm



F60_TdB659 Truc de Balduc / Mende– F,
Toarcien, 'in situ' D= 91 mm

These examples from Truc de Balduc show absolute unusual pyritized diameters of 91-132 mm.

To define the fauna of the Renggeri marl as dwarf fauna or badly nourished (see Prof. Marchand and his club) for me personally is illogical, because I have difficulties to imagine a reason, why the fauna of the 'Renggeri Marl', which last approximately 1 million years (time range of 1.5 ammonite zones and on top of is showing a variety of species) should have such bad living conditions. The three examples above out of the same type of marl are only unusual in size because taken in situ and proof that the so-called dwarf fauna in reality is much bigger (three times and more.)

And if comparing findings of Truc de Balduc (= marl), FES (= limestone), **Lyon (iron containing lime stone)** (all Toarcian), the size of different species are more or less the same. For the Renggeri Marl I don't have the above shown examples as similar comparisons.

A micro-conch is supposed to be a male and a macro-conch the female. According to G. Schweigert ammonite can change their sex during ontogeny. This must be a misunderstanding because sex is a question of genes which can't be changed willingly. And different size of shells means different ontogenetic stages. And besides all, how can a female/macro-conch change its size (to smaller) to become a male/micro-conch.