

sharply oblique, the last one strongest, forming a prominent ridge parallel to the canal. The upper outlines of the mouth meet in a sharp angle, but the base has a well defined bifurcation. The whole of the aperture and the edge of the outer lip are heavily coated with enamel of a yellowish tint, and rust stained. Size 3½ inches long, and 1½ inches wide. Animal without operculum.

Dredged in Monterey Bay, California.

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MORE ABOUT UNIO LUTEOLUS AND U. RADIATUS.

BY GEO. W. DEAN, KENT, OHIO.

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I must admit after reading Mr. Simpson's notes in the December NAUTILUS that *Unio radiatus* is too erratic for my abilities. A species that takes on every possible form I apprehend would baffle any expert.

A specimen exactly like *luteolus* and wholly unlike *radiatus* as I know it, although in the Lea collection labelled *radiatus* with the locality Newton Creek, N. J., would, I fear, get into my collection in the tray with *luteolus*.

Locality is certainly important but with me does not overshadow everything else, and labels have told me so many lies that I have not the respect for them that I otherwise should have. With me the shell is the central idea, not the locality or the label. These are usually aids in determining species—not always.

Mr. Lea named a shell, now found in the Mahoning, *Unio subovatus*, though from what locality his types came I do not know. It is now known to be the mature male of *U. occidentalis* Lea. The following are, I think, all *occidentalis*: *U. ventricosus* Barnes, *U. ovatus* Say and *U. cariosus* Say.

Another Mahoning River shell Mr. Lea named *U. kirtlandianus*. This is probably a variety of that protean species *U. subrotundus*, Lea.

It is a beautiful shell when young and may very properly retain the name as a variety.

I am in favor of weeding out the surplus names as fast as possible, but I apprehend that both *luteolus* and *radiatus* will remain good

and well defined species, all attempts to connect them proving failures.

I recognize the existence of abnormal sports and possibly hybrids and albinos, etc. These I did not contemplate, nor did I consider very young or old and eroded or decayed specimens. Barring these I still think I could find a dividing line sufficiently distinct.

I have not seen the dark colored *U. borealis* Mr. Simpson mentions but the types were furnished to Mr. Gray by Mr. Latchford of Ottawa, Canada and were taken from the Ottawa river. Mr. Latchford has given me a good suite of like specimens. They seem distinct enough for a good species but it is a close relative of *luteolus*, so close indeed that very young specimens are not easily separated. The glass, however, shows the lines of growth a little coarser and the shell consequently a little rougher.

My mind still dwells on the wonderful vagaries of the *Unio radiatus* as described by Mr. Simpson. I should have some dread of looking over the Lea collection with him for fear of getting so confused that I should not know my wife unless I had her labeled and was sure of her locality.

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ADDITIONAL U. S. FISSURELLIDÆ.

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We are informed by Mr. T. H. Aldrich that two species were omitted from the Catalogue of this family published in the last NAUTILUS, viz:

GLYPHIS ALTIOR Meyer and Aldrich.—Eocene, Ala. Jour. Cin. Soc. N. H. 1886, p. 41, pl. 2, figs. 16, 16a, 16b. Described under the genus *Fissurella*.

PUNCTURELLA JACKSONENSIS Meyer.—Eocene, Jackson, Miss. Bericht der Senckenbergischen naturforschenden Gesellschaft zu Frankfort a. M., 1887, p. 6, pl. 1, fig. 15.

The types of both of these species are in the collection of Mr. Aldrich.—H. A. P. & C. W. J.