

October 17, 1968

Professor Ruth D. Turner
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Cambridge, Massachusetts 02138

Dear Ruth:

It is good to get a letter from you and to see that you are busily active.

The "porous or bubbly" structure, which is called vesicular shell structure, is one of the most important features in classification and phylogeny. All those oysters that possess it belong to the subfamily Pycnodontinae Stenzel, 1959. There are other features that always go with it, for example, an orbicular muscle imprint, a rather high position of the muscle imprint, i.e., rather close to the hinges, and a tilted or buttressed muscle insertion. The Pycnodontinae are nowadays greatly reduced in number of species and genera. I recognise two living genera, both as yet undescribed nomina nuda: (1) Hyotissa of which H. hyotis Linne, 1758, is to be the type species and (2) Neopycnodonte which is to have O. cochlear Poli, 1795, as its typespecies. Pycnodonte is extinct, in my opinion.

Hyotissa hyotis (Linne, 1758), as I intend to call it as soon as I can publish this new generic name, has plicate valve margins just like Lopha has. That is parallel evolution or convergence if you prefer that term. The two, i.e., Lopha and Hyotissa, are not closely related. Lopha has no vesicular shell structure and no orbicular muscle imprint ; Hyotissa has both.

Do the little oysters from Maizuru, Japan, have vesicular shell structure? That would be definitive. Hyotissa hyotis (Linne) or its local growth forms reach southern Japan. One of the Japanese growth forms is O. radiata Lamarck, common around Japan.

I follow Thomson, 1954, (on Australian oysters) in regarding O. cristagalli Linne, O. folium Linne, 1758, and O. bresia Iredale, 1939, as ecomorphs of one and the same species, for which

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I use cristagalli as the preferred species name following Thomson who is the first reviser of the mess. Very probably the cause of this polymorphism is the amount of exposure to sunlight during the duration of low tides. It so happens that these three nominal species listed above are the type species of three genera, namely, Lopha, Dendostrea Swainson (1835, p. 39), and Pretostrea Iredale (1939, p. 397). The latter two names thus become objective junior synonyms of Lopha Roding, 1798. While I believe Thomson is correct, I recognise that one should investigate the polymorphism of Lopha cristagalli in nature.

Ostrea thomasi is not the same species as hyotis. They are morphologically and geographically separate.

I have seen O. hiranoi, if I remember correctly, I saw the types at San Francisco. It is a deep-water oyster, whereas hyotis is a shallow-water oyster. I believe hiranoi is the same circumglobal species as Neopycnodonte cochlear (Poli), a fragile, thin-shelled, and elongate species. I have made a list of all the localities at which these deep-water oysters have been found and the result is a confluent circumglobal area without gaps.

If the Japanese specimens you have look like O. radiata they should be called Pycnodonte hyotis (Linne) forma radiata (Lamarck) for the present until I have a chance to publish the new generic names. On the other hand, if they are elongate and look like O. hiranoi, they are best called Pycnodonte hiranoi (Baker and Spicer, 1930) for the time being.

I do not have available the old books needed to settle the point you mention that Roding referred among other species to the same figure in Chemnitz that Linne did for hyotis. However, Dall clearly designated O. crista-galli Linne as the type species of Lopha. Therefore it is perhaps immaterial what the figure in Chemnitz really represents.

As to the type species of Pycnodonte Fischer de Waldheim, 1835, it is P. radiata Fischer, 1835, which some authors, notably Cossmann 1887, have mistaken for the same species as P. vesicularis Lamarck, 1806.

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You might want to consult the following article: Stenzel, H. B., 1947, Nomenclatural synopsis of supra specific groups of the family Ostreidae: Jour. Paleontology, v. 21, p. 165-185. I am also sending you the article in which I introduced the subfamily Pycnodonteinae and showed the differences between the various subfamilies of the Ostreidae.

If you want me to look at the Japanese oysters, I shall be glad to help you.

I am still terribly busy with the oysters for the Treatise on Invertebrate Paleontology. The text, consisting of about 360 typed pages, is finished except for minor corrections. The illustrations must now be assembled, which is an enormous task. I hope to be through this year. Then I must write a separate paper in order to introduce formally the new generic names.

Please give my best wishes to Dr. Clench.

Sincerely yours,

H. B. Stenzel
Visiting Professor
Geology

HBS:cap

Encl: 1 separate of Stenzel, 1959

Please note my new permanent address.

cc: Dr. John de Palma

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