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The University of Western Australia

Department of Geology

Nedlands

YOUR REFERENCE.....

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(IN REPLY PLEASE QUOTE)

28th June, 1961

Dr. H.B. Stenzel,
Shell Development Company,
Box 481,
Houston,
Texas,
U.S.A.

Dear Dr. Stenzel,

We have had a request from Dr. Curt Teichert that we send you specimens of and information on an unusual oyster which was the subject of a conversation he had with you a short time ago.

Dr. Teichert probably collected more specimens than we can find. We have three specimens, two of which we are sending you on loan; one of these is a composite of 7 individuals. The locality for these specimens is: rock platform about 40 miles north of Carnarvon township, about 600 miles north of the capital city, Perth.

Since Dr. Teichert's discovery, a good deal has been learned of this queer beast. Most of my information comes from Mr. Barry Wilson, Graduate Assistant in the Zoology Department here, who is a keen marine zoologist. He tells me that it is an oyster commonly growing in crowded communities on rock platforms, boulders, and mangrove roots, at intertidal levels, at many points along the coast of Western Australia from north of Carnarvon at least as far as Broome in the far north. It is exposed during the times of low tides, which, in many areas, means that it may be many feet above the mud bottom. The "rudistid" shape is not always followed. In a few weeks, Wilson is making a working-trip to Sharks Bay, north of Carnarvon, and if he has the time he will make more detailed on-the-spot observations, collect specimens, and take a few photographs. He is quite happy to do this as he says they make fine eating!

Wilson also drew my attention to a publication by J.M. Thompson, a graduate of this University, who is in the Division of Fisheries,

C.S.I.R.O., Cronulla, New South Wales. The article is:

Thompson, J.M. (1954). - The Genera of Oysters and the Australian Species, Aust. Jour. Marine and Freshwater Research, vol. 5, no. 1, pp. 132-168; 11 plates.

Wilson claims that our specimens belong to the species described by Thompson as Crassostrea tuberculata Lamarck. This article should interest you generally, but as you may take a while to get a copy, I enclose the description of C. tuberculata. The last paragraph is significant; in this connection it can be said that Iredale has the reputation of a pronounced "splitter".

When you have received the specimens (our financial state forces us to send them by sea mail) would you sign and return a copy of our loan form? If Wilson obtains more specimens you can keep the ones we send and if you want more specimens we can send them to you.

With kind regards,

Yours sincerely,

P.J. Coleman

(Dr.) P.J. Coleman
Senior Lecturer in Palaeontology

Crassostrea Tuberculata Lamarck

Plate 8, Fig. 3

Ostrea tuberculata Lamarck, 1819, p. 202; Lamy, 1929, p. 76.

Ostrea cucullata Lamarck, 1819, p. 200; Hornell, 1917, p. 15, fig. 3; Awati and Rai, 1931; Hirase, 1930, p. 25, fig. 39 (non Born, 1780).

Vernacular name: north-west rock oyster.

A recumbent species, the lower valve being closely adherent; with a large recess under the hinge, distinctly fluted, the folds being definite and sharply ridged, ending in a distinctly crenulated lip. The upper valve opercular, flat dorso-ventrally but arched from hinge to lip; surface without definite sculpture except for the marginal crenulations which fit the lower valve almost horizontally; the hinge line wide, the hinge plate often very prolonged; the ligament brown. Externally the shell is pinkish purple, often bleached almost white; the muscle scars are displaced away from the hinge, being less than their own width from the lip. The scar is variably white flecked with purplish black or entirely the latter colour. The scar in the lower valve is flattened or even excavate on the side nearest the hinge; scar in the upper valve is often rather rounded or even pointed on the hinge side. Numerous denticles.

The mantle, gill bars, and extremities of the gills are pigmented in black. The tentacles of the inner fold are $2\frac{1}{2}$–3 times their basal width in length, and black-pigmented; the inner row of the mid fold long, about 6 times the basal width, heavily pigmented with black, with about 4–7 outer row tentacles between each pair of inner ones; outer row tentacles short, about $2\frac{1}{2}$ times basal width in length and the basal width apart, suffused with black. The edges of the mid and inner folds black-pigmented, becoming less intense laterally and anteriorly.

Range

Extends from the Abrolhos Is. and along the main Western Australian coastline from the mouth of the Murchison R. northwards. The northern limit is unknown but the species extends at least to the vicinity of Broome. It is taken as a subfossil in the Swan R. and at Albany further south along the Western Australian coast.

Discussion

The north-western Australian specimens agree very well with the oysters known as Ostrea cucullata in India. Hirase's (1930) description and photo are not precise enough to make certain of the identity but the Japanese species is very similar. Despite the widespread use of this

name for cucullated species in the Indo-Pacific, it is doubtful, according to Roughley (1928) and Iredale and Roughley (1933), whether this name is correctly applied, as Born's specimens came from Ascension I. in the Atlantic. The descriptions of O. cucullata by Born (1780), Lamarck (1819), and by Hanley (1856) do not distinguish the species from several other cucullated types. The name cucullata has been applied to one Japanese species by Lischke (1871), Dunker (1882), and Hirase (1930); Morse (1879), Mitsukuri (1906), and Iwakawa (1919) have used it for another (actually Crassostrea gigas); Krauss (1848) has used the name for a South African oyster; Macandrew (1870) applied it to an oyster from the Gulf of Suez; Hedley (1909), Roughley (1926), and Boone (1938) have all called the Australian commercial oyster (Crassostrea commercialis) by this name.

Crassostrea scyphophylla (Peron) may be an ecomorphic form of this species, although Iredale (1949) has recently regarded it as valid. The peculiar chambering of the tube-like lower valve may be simply a result of the animal's desperate attempts to keep its rim above that of its fellows, and, being unable to prolong its body and organs indefinitely, it has resorted to chambering. If it is the same species then name scyphophylla takes precedence.