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NOTES ON CALIFORNIA SHELLS (II).

BY WILLIAM H. DALL.

Private collections at San Diego are numerous and interesting. Those of Dr. Fred Baker, Prof. Kelsey, Miss Cooke, Mr. Gripp, Mrs. Stephens and C. R. Orcutt may be especially noted.

The Biological Station formerly at La Jolla is now removed several miles northward to escape the effects of sewage, etc., from such a rapidly-growing suburb, upon the fauna. The molluscan collections are unimportant, the energies of the staff of the station, under the supervision of Dr. Ritter, being at present chiefly devoted to problems of physical hydrology. Being the nearest United States port to Lower California and the Gulf, the collectors of San Diego have unusual opportunities for obtaining specimens from these localities through small coast traders and collectors of guano and salt.

Mr. Hemphill, so long a resident of San Diego, has removed his collection to Oakland, where it is still packed up, so there was no opportunity for studying the rich collections of this veteran field naturalist. It is to be hoped they will be acquired by one of the public institutions of California, none of which at present has a truly representative series of the California shells.

BATHYTOMA TREMPERIANA, new species?

Among the various collections studied, a form of *Bathytoma* was frequently noted which is differentiated from the *B. carpenteriana* by what seem to be very constant characters. Of these Dr. Tremper has a particularly large series. It is possible that these differences

may be sexual, but, if not, it seems that it is specifically distinct. The shell is small, in the adult stage averaging about 62 mm. in length, against 90 to 110 mm. for the fully adult *carpenteriana*. It is proportionately much heavier, the anal fasciole is more strongly constricted, and the appressed margin of the whorl does not approach as closely to the periphery of the preceding whorl as in that species. The periphery is often marked by a minutely beaded or undulate thread, and is more nearly midway between the sutures on the spire than in *carpenteriana*. The aperture is shorter than the spire in nearly every case, while the reverse is true of *carpenteriana*. The average proportions of the new form, which I propose to call *B. tremperiana*, and of *B. carpenteriana*, from measurements of 8 and 25 specimens respectively, are as follows:

B. tremperiana: aperture 32.1, spire 32.2, diam. 20.7 mm.

B. carpenteriana: aperture 34.6, spire 29.4, diam. 22.6 mm.

B. stearnsiana: aperture 26.2, spire 23.2, diam. 17.8 mm.

Dr. Tremper writes me that his examination of his series of 33 specimens of *tremperiana* confirms the above distinctions.

B. tryoniana Gabb seems (after an examination of nearly all the extant specimens) to be merely a variety of *carpenteriana*, with an unusual development of tubercles or nodes on the periphery or shoulder of the whorls.

The range of *B. carpenteriana* extends from Tomales Bay, north of San Francisco, to San Diego, in 20 to 158 fathoms, and to Cerros Island. *B. tremperiana* is known from off Santa Cruz, California, south to Cerros Island, and has been dredged living in from 29 to 822 fathoms by the U. S. S. Albatross, a remarkable bathymetric range.

MODIOLUS DIEGENSIS, new species.

In Mr. Gripp's collection, which is notable for the taste and care with which the specimens are displayed, I found a small species of *Modiolus* or *Myrina* from San Diego, which seems to be undescribed.

Shell small, zoned with dark blue, the unbones usually white, covered with an olivaceous brown periostracum; anterior end very short, rounded, with two or three radial grooves externally; unbones moderately prominent; dorsal profile ascending, nearly straight, subangulate behind, the margin carried with a broad sweep to the base where it meets the posterior end of an obscure ridge radiating

from the unbones, in front of which the valves are more or less constricted, and, on the base, flattened, giving a slightly arcuate aspect to the shell; valves with a very slight rather anterior gape; interior polished, dark blue, much as in *Mytilus edulis*, the ligament long, the anterior margin with three or four crenulations corresponding to the external radial grooves. Length 19; max. height 6.5; diameter 5.5; unbones behind the anterior end of shell 1.0 mm.

This shell recalls *Adula* of Carpenter but seems not to be a borer, and is without the peculiar fine transverse sculpture of the two Californian species of *Adula*. It may possibly be referable to the genns *Myrina*.

In Miss Cooke's collection, which is notable for the Gulf of California shells collected by the late Capt. Porter, one of the things most striking to the visitor is her fine series of polished specimens of the rare red variety of *Haliotis cracherodii*. Her best specimen, of a glowing vermilion, is resplendant. Among the specimens interesting as extending the known range, in her collection, are *Mitra belcheri* Swainson, from Magdalena Bay, Lower California; *Cymatium wiegmanni*, from the same locality; *Strombus peruvianus* from the Tres Marias Islands, and *Pachypoma inæquale* without waves and with a finer type of sculpture, from San Diego. A form of *Pachypoma*, which appears to be new, is from the Gulf of California. It is somewhat smaller than the average *inæquale*, has much the same color and sculpture, but is proportionately much higher and narrower, having much the form of '*Chlorostoma*' *brunneum*. It might be called for the present *P. inæquale* var. *spiratum*.

One of the most interesting and surprising facts is conclusively proven by material in this collection. Specimens of the "*Uvanilla*" *regina*, Stearns, with the dried animal having the operculum still attached to it, show that the species is a *Tegula*,* notwithstanding the remarkable resemblance of the shell to the true *Uvanillas* of the Gulf, which possess a heavy calcareous operculum. In the *regina* the operculum is horny and moderately multispiral. This fact had indeed been previously mentioned to me, but it was not until I saw the operculum actually attached to the animal, that I was relieved of a lingering doubt as to whether some mistake had not been made.

* More commonly called by the name *Chlorostoma*.

Another interesting shell is a specimen of *Voluta deshayesii* from Clipperton Island. The vessel which brought it was a small coaster which was sent direct to the uninhabited Clipperton Island from San Diego for a load of guano, and returned to San Diego without touching at any other point. So Miss Cooke warrantably concludes that the shell could not have been obtained elsewhere; and, as it is a rather dull and battered specimen, was not likely to have been carried there, especially as there is no trade between Clipperton Island and the Australian seas.

Miss Cooke has *Fusinus luteopictus* Dall, from the Gulf of California, and *Mitra lens* from Scammon's Lagoon at the western elbow of the Lower Californian peninsula.

Several of the collectors have found *Pteria sterna* on the San Diego breakwater, and *Melina chemnitziana* at the Coronado islands, southwest of San Diego.

Mrs. Stephens has received *Rangia lecontei* Conrad from the locality known as 'Flowing Wells' in the Colorado desert.

Dr. Baker's collection contains (from 40 fathoms off San Clemente island) *Lucina edentuloides* Verrill, *Calliostoma variegatum* Carpenter, and a *Natica* not yet identified.

A NOTE ON ISAPIS OBTUSA CPR.

BY A. W. HANHAM.

Among some local species submitted to the Rev. G. W. Taylor, of the Marine Biological Station at Departure Bay, Vancouver Island, in June of 1909, was an *Isapis* which he did not recognize at the time, but all the shells were dead specimens, having been taken under stones, at low tides, inhabited by hermit crabs. Even these had not been abundant, and the small "lot" was the catch of several seasons. The species proves to be *Isapis obtusa* Cpr., and it was kindly named for me this fall by Dr. Paul Bartsch, of the United States National Museum.

It is mentioned in Keep's "West American Shells," as is also *Isapis fenestratus* Cpr., but no particular locality is given for either. The latter species is included in the Rev. G. W. Taylor's "Preliminary Catalogue of the Marine Mollusca of the Pacific Coast of Canada," but only as a great rarity. *Isapis obtusa* Cpr. is not mentioned.