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THE SHELLS OF THE TRES MARIAS AND OTHER LOCALITIES ALONG THE SHORES OF LOWER CALIFORNIA AND THE GULF OF CALIFORNIA.

By ROBERT E. C. STEARNS, PH. D.,
Adjunct Curator of the Department of Mollusks.

IN THE spring of 1876, Mr. W. J. Fisher, of San Francisco, who had previously, in 1873, been connected as Naturalist with the U. S. S. *Tuscarora* Telegraph Sounding Expedition, under Commander George E. Belknap, conceived the idea of chartering or purchasing a small vessel and making an investigation of the shores and islands of Lower California and the Gulf of California in the interest of natural history. Through the generosity of Mr. Fisher, the greater part of the mollusks collected by him were given to me, and became a part of the Stearns Collection, now incorporated into the greater collection of the U. S. National Museum.

Mr. Fisher's collection, though made, as it will be seen, many years ago, has not heretofore been brought to notice. Notwithstanding this lapse of time, its value, through the importance of the information it furnishes on the geographical distribution of most of the species enumerated, has not been impaired by delay in publication, as no subsequent collector has touched at or visited so many localities around the shores of the Gulf and of Lower California, or if any such collection has been made it has not been made known. Many of the localities have not previously been mentioned, either by collectors or authors. The importance of Mr. Fisher's collection, in its bearing upon the Mollusca of the Tres Marias, is worthy of special mention; it would of itself justify the publication of the list, for it exhibits more fully the mollusk-fauna of this interesting and little-known group of islands, and includes a greater number of species than any and all previous publications. Aside from the few new species that he collected, much light was obtained as to others that may be regarded as rare or little known, and again, the detection of so many familiar forms, heretofore associated in our minds with Indo-Pacific or rather Polynesian waters, is almost a revelation and of exceeding interest. There are no currents setting eastward from

the variety *palmata*,* of which six examples now before me display from 24 coarse ribs in the largest specimen 1.03 inch in length to only 12 ribs in the smallest which measures only .47 of an inch in length; the exceeding prominence of the ribs in this specimen, projecting greatly beyond the margin, give the edge a digitated appearance, suggesting in miniature some of the Indo-Pacific limpets; for illustration *Patella saccharina* Linnaeus.

The various aspects presented by *lecanium* in its numerous varieties and intermediate forms are such, that to quote Carpenter,† “I have found it impossible to separate them,” hence my inclusion of his *aquilirata* in the synonymy herein given.

If, as Carpenter says,‡ “*S. maura* Sby., is one of the varieties of this species,” and “*S. ferruginea* Rve., is probably described from the intermediate forms” between *S. maura* and *S. palmata*, then these should be added to the synonymy. Carpenter regarded the form *aquilirata* as a Lower Californian rather than a Gulf species.§ He credits it to the northerly stations of Cerros Island (Ayres and Veatch’s collections), also to Margarita Bay (Pease shells) where he gives “*leviuscula* Sby., teste Cuming,” as a synonym of it, and he also reports it as from Cape St. Lucas in the Xantus collection.

The Ayres, Veatch, Pease shells may be regarded as inhabiting exterior or ocean stations, being the outer or western coast of the peninsula, while the latter place, Cape St. Lucas as well as the Tres Marias, where both the typical *lecanium* and *aquilirata* variety are found, may be regarded geographically as well as biologically as intermediate middle or common ground, hence the occurrence or presence of both of these forms; or, again, if the *aquilirata* form should be by some persons viewed as an extra limital aspect of *lecanium*, then perhaps we should include in the group as varieties and therefore synonyms of the southern *S. costata*, a rather small, delicate, closely ribbed *aquilirata* shell, the ribs fine rather than coarse; this form is reported from Guacomayo (Cuming) Sowerby, and Panama (C. B. Adams); also in the Stearns collection from Panama (Bridges), and Valparaiso (Brannan); Dr. Jones obtained specimens at Payta. Some of the examples of *costata*, the more coarsely ribbed specimens, are so close to the selected delicate examples of *aquilirata* from the Tres Marias as to make it difficult if not impossible to satisfactorily segregate the two, were they mingled together. The southern *S. costata* is, aside from its inferior size and more delicate sculpture and structure, more helicoid-shaped, with the apex more or less recurved and nearer the margin.

* *S. lecanium*, with variety *palmata*, was plentiful at Cape St. Lucas. (Xantus Collection.) B. A. Report 1863, p. 621.

† Maz. Cat., p. 182.

‡ Brit. Assn. Rept., 1863, p. 515.

§ B. A. Report, 1863, p. 626. *Id.* 664, 666, and 676.

In connection with the foregoing on the relations and variations of the west American forms of *Siphonaria*, it will be found on examination that the species or forms of other faunal regions, more or less remote, exhibit the same characters of variation, if not as extreme, nevertheless in a greater or less degree. For this purpose among numbers of specimens compare *S. brunnea* Hanley from Bermuda, etc. (Jones); make a similar comparison with *S. leucopleura* Gmelin from the Viti Islands.

Family TEREBRIDÆ.

TEREBRA (MYURELLA) VARIEGATA, Gray.

Many examples. San Jose Island (No. 56297, U. S. N. M.), La Paz (No. 101719, U. S. N. M.).

The specimens from the first locality are all young shells. Capt. Forrer also reported the above species from La Paz, where Fisher collected a varietal form (No. 101720, U. S. N. M.).

TEREBRA (SUBULA) STRIGATA, Sowerby.

= *Buccinum elongatum*, Wood. + *T. zebra*, Kiener. + *T. flammea*, Lesson.

One specimen, beach; Tres Marias.

Rarely known to occur so far to the north; “common at Panama.”* Dr. Jones collected two examples at Payta, Peru, and Cuming collected it at the Galapagos.

Family CONIDÆ.

CONUS DALLI, Stearns.

Seven examples.

Tres Marias, Maria Madre (Nos. 37417, 37418, U. S. N. M.). Since describing this form in April, 1873,† numerous specimens have passed under my examination, and confirm the conviction which led me at the time to regard this embroidered cone of the Mazatlan province as a new species. I see no necessity for modifying the diagnosis or the comments published at that time other than to add what is herein written.

In the collection of Mr. Fred. L. Button, of Oakland, Cal., is a remarkably fine series of young shells which are even more characteristic and distinct from any other of the embroidered cones than are the average adults of *C. Dalli* from *C. textile*, etc., which it occasionally somewhat resembles in pattern and color of markings. Mr. Fisher collected two living and several beach examples at the island of Maria Madre, the principal of the Tres Marias group. The largest, though somewhat rubbed and worn at each extremity, measures long. 2.35, lat. 1.29 inches; if perfect the length would be not less 2.65 inches.

Prof. Verrill refers, probably, to this shell in his “Contributions to

* Hinds, in Proc. Zool. Soc., 1813, p. 160.