

PROCEEDINGS
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DIAGNOSES OF NEW SPECIES OF MOLLUSKS FROM
THE SANTA BARBARA CHANNEL, CALIFORNIA.

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During the past summer Mr. Herbert N. Lowe and Mr. John H. Paine, with the aid of a gasoline launch, did some dredging in the Santa Barbara Channel near Avalon, Catalina Island. The depth of water was from 40 to 60 fathoms.

The result of this work, by two enthusiastic young collectors, has been very interesting, two genera not before known to inhabit the coast having been discovered, represented by two species, both new, one of which, *Metzgeria californica*, has already been described elsewhere by the writer.

The following species, from among those sent to the writer for identification, appear to be new, and diagnoses of them are now provided. The presence of so many novelties gives some idea of the richness of the molluscan fauna of this region, and indicates that many more forms probably remain to be discovered in the same vicinity. When not otherwise stated the locality is as above mentioned, and all except *Mitra dolorosa*, are represented in the collection of the gentlemen named.

Mrs. Lydia Emerson Fancher and Mrs. Lillie J. Sawin assisted in the search for mollusks and at the request of Mr. Paine two of the species have been named in honor of these ladies.

Actæon (Rictaxis) painei sp. nov.

Shell with one smooth, polished nuclear and three or more subsequent strongly sculptured whorls; apex sinistral, immersed; spire very short and blunt; body stout, ovate, slightly peripherally flattened; sculpture of strong, subequal, spiral riblets, covering the whole shell, separated by slightly narrower, coarsely punctate channels; outer lip sharp; pillar obliquely subtruncate in front, twisted, vertical, with a prominent plait-like edge, and a moderately prominent plait about midway of the exposed portion; body with a very thin wash of callus; color of the shell yellowish subtranslucent white. Length of shell, 8.0; of aperture, 7.25; max. breadth of shell, 5.0 mm.

This is immediately distinguishable from *A. punctocoelata* Cpr., by its short spire, stouter form, and absence of the blackish color bands. The specimen described seems not quite mature. It is No. 109,301, U. S. National Museum.

Clathurella fowei sp. nov.

Shell translucent white, with a brownish-pink flash on the spire and base; nucleus smooth, polished, rounded, and rather inflated, of one whorl; subsequent whorls, five (or more), sculptured with (on the penultimate whorl 12) short axial riblets, slightly oblique with narrower interspaces, the riblets confined to the peripheral part of the whorl and separated from the suture behind by the spirally striated anal fasciole; spiral sculpture covering the whorl, of slender flattish threads with wider interspaces, one thread at the shoulder more prominent than the rest, forming a wavy keel over the riblets; suture inconspicuous, closely appressed; aperture narrow, canal short, anal sulcus shallow, close to the suture; outer lip prominent, thickened, the edge sharp and incurved; canal short, slightly recurved, pillar lip smooth. Length of shell, 7.7; of last whorl, 5.0; max. diameter of shell, 3.3 mm. Another specimen is 9 mm. long.

This species resembles *Glyphostoma* but has, in the specimens seen, no sculptured callus on the pillar lip. It is not closely like any of the species hitherto known from the coast. It is possible that still older specimens might show some granulation on the inner lip. The type is No. 109,302, U. S. National Museum.

Mangilia fancleræ sp. nov.

Shell slender, elongate, of a dark reddish-brown when fresh; nucleus somewhat swollen, smooth, of about two whorls; subsequent whorls about six or seven, similarly sculptured: axial sculpture of numerous low slender flexuous riblets with wider interspaces, extending from the suture to the periphery and obsolete on the base of the shell; these are crossed

(between the sutures) by from four to six spiral subequal threads, of which those on the periphery are somewhat more prominent, and all are slightly nodulous where they over-ride the ribs; on the base there are about 15 of these threads with somewhat wider interspaces; aperture rather narrow, outer lip sharp, flexuous, the anal sulcus wide and shallow, half way between the suture and the periphery; pillar lip smooth, canal rather long, straight, and open. Length of shell, 10.5; of last whorl, 6.0; max. diameter of shell, 3.0 mm.

The sculpture of this shell recalls "*Drillia*" *cancellata* Carpenter of the northern fauna, but this species is smaller, more slender and more delicately ornamented and there seems to be no operculum. The type is No. 109,303, U. S. National Museum.

Mitra lowei sp. nov.

Shell of a warm yellow-brown with a whitish apex; nucleus subtrochiform, smooth, solid, of about three conical whorls; subsequent whorls (in the type specimen) about four, rapidly increasing in diameter; those which immediately succeed the nucleus margined in front of the suture by two or three fine spiral grooves, the interspaces of which stand up like threads, but these gradually become less pronounced and hardly noticeable on the fourth whorl where the sculpture becomes on the periphery fine, very inconspicuous, and widely separated grooves, only noticeable under a lens, but minutely punctate; they become somewhat stronger on the base and canal; aperture rather wide and semi-lunate; pillar with three nearly horizontal plaits; the canal very short and wide. Length of shell, 5.5; of last whorl, 4.5; diameter 2.5 mm.

This species is of the type of *M. fulgurita* Reeve, but of markedly different proportions, the nucleus is very distinct from that of the type of *M. barbadensis*, etc. The only specimen seen is clearly immature, but it is not the young of any of the species known to inhabit the coast and is sufficiently characteristic to be easily recognized. The type is No. 109,305, U. S. National Museum.

Mitra dolorosa sp. nov.

Shell smooth, slender, solid, acute; whorls six without the nucleus (which has been lost); the apical whorls show a few (5-7) punctate spiral grooves, which diminish with growth to two or one, and become obsolete on the last whorl; the surface is covered with an olivaceous periostracum; there is in front of the suture a broad ill-defined white band, which does not reach to the periphery; the anterior part of the whorl is dark olivaceous brown; aperture long and wide, canal hardly differentiated, outer lip thin, not lirate; inner lip smooth, with a mere glaze on the body, the pillar solid, with three rather oblique plaits, diminishing forward, the

most anterior quite feeble. Length, 20; last whorl, 14; max. diameter, 7 mm.

Dredged on the west side of the Gulf of California in latitude 31° 05', in 12 fathoms, muddy bottom.

This species has the gloomy color of *Strigatella tristis* but not the shell characters. The type is No. 109,069, U. S. National Museum.

Murex (Ocinebra?) painei sp. nov.

Shell small, rotund, whitish with five or six whorls; nucleus small, smooth, polished; subsequent whorls strongly sculptured; axial sculpture of numerous (on the penultimate whorl 15) sharp longitudinally wrinkled varices extending from the suture to the canal with wider interspaces and somewhat angular or spinose at the shoulder of the whorl; these varices are usually confluent at the suture with those of the preceding and following whorl; spiral sculpture of strong elevated rounded threads, with a smaller thread in the interspace, somewhat crenulating but not overriding the varices; aperture ovate, the peristome thin, simple, continuous, projecting; there are no lirations in the aperture, the siphonal fasciole is well marked, the canal short and closed over in front of the aperture, with no discarded canal-spines. Length, 15; length of last whorl, 11; max. diameter 8 mm.

This pretty little species resembles one of the Austral Trochons in miniature. It cannot be confounded with any other species of the coast. The type is No. 109,306, U. S. National Museum.

Lunatia draconis sp. nov.

Shell depressed, solid, cream color, sometimes with a ferruginous or livid tinge, with six whorls; nuclear whorls very small, smooth; later ones with an obscure, nearly obsolete spiral sculpture like flattened-out threads, over which run microscopic, close-set, spiral striae; suture with the whorl in front of it feebly channelled and the excavation bounded by an obsolete thread; top of the whorls flattened, part of the base bordering the umbilicus also flattish, the remainder of the whorl rounded, turgid; umbilicus wide and deep, its walls excavated and closely spirally striated; aperture oblique, semi-lunate, outer lip thin, base rounded; the angle where the lip meets the body filled with a smooth white callus, the anterior angle of the pillar lip also thickened. Height of shell, 51.0; of last whorls 49.0; of aperture, 44.0; max. width of shell, 50.0 mm.

This species has no close resemblance to any of the other species of the region. The pillar lip is somewhat thickened with a small purplish-brown callus in the perfect shell. The sculpture and the depressed form seem characteristic. From *L. lewisi* Gould, it is easily separated by its

smaller size, depressed form and wide umbilicus pervious almost to the apex of the shell.

Specimens have been obtained from Drake's Bay in 20 fathoms, Monterey in 15 fathoms, off the Farallones Islands in 37 fathoms, and off Avalon, Catalina Island, in about 50 fathoms. As Drake was long known to the Spaniards as "El Draco," I have named the species *draconis* in his honor. The type is No. 172,859, U. S. National Museum.

Macromphalina californica sp. nov.

Shell small, elevated, with a wide umbilicus and whitish color; whorls two and a half, the last much the largest, rounded above with a prominent suture, below with a wide funicular umbilicus bordered externally by an obtuse carina; surface sculptured axially with numerous coarse oblique threads separated by narrower interspaces and crossed by fine partially obsolete spiral striation; aperture semi-lunate, entire, very oblique; the pillar lip straight, but the whole peristome simple and thin. Height, 5.5; of aperture, 3.5; max. diameter, 5.5 mm.

The single specimen is not in the best condition, but sufficiently good to show the specific characteristics. The Atlantic species *M. depressa* Seguenza, is much more delicately sculptured and the shell is of a smaller size. *M. californica* is more like *M. duplinensis* Dall, from the miocene of North Carolina, but the latter is less elevated. The type is No. 109,307, U. S. National Museum.

Scala sawinæ sp. nov.

Shell small, elongate, sub-acute, with ten or more whorls; nucleus of three smooth polished whorls; subsequent whorls smooth, with about 19 low, sharp, slightly reflected varices which entirely cross the whorl; at the shoulder these are slightly spinose; aperture rounded ovate, entire, with a small spine at the shoulder angle and a less conspicuous one at the inner base of the aperture; there is no trace of a basal cord or disk, and no spiral sculpture. Length, 10.5; diameter of aperture, 2.5; max. diameter of last whorl 4.0 mm. A broken specimen with three more whorls seems to have measured 24 mm. in total length when perfect, and 8 mm. in diameter.

This species has been found off the Coronado Islands in 34 fathoms and near Avalon in about 50 fathoms. The type is from 16 fathoms off the isthmus harbor on the south side of Catalina Island, where it was dredged by W. H. Dall, in 1873. It is No. 109,309, U. S. National Museum.

Ischnochiton biarcuatus sp. nov.

Animal about 18 mm. long and 7 mm. wide (in the dry state); girdle narrow, with very small, close-set, more or less imbricating, brownish scales; valves rounded evenly above, only the lateral areas distinct; anterior valve with 7 or 8, median with 1, posterior valve with 11 slits; interior of valves rose-pink; exterior ashy, marbled with lilac and brown, an obscure lilac median line on the medial valves; sculpture of undivided central areas formed by two sets of arcuate radiations crossing each other obliquely and with the inter-reticulations impressed or punctate, so that an irregularly zigzag effect is produced by the arrangement of the punctations; lateral areas irregularly concentrically vermiculate, the spaces between the elevated ridges deeply minutely punctate, with somewhat of a zigzag effect here also; the sculpture of the anterior valve resembles that of the lateral areas; of the posterior valve the mucro is low, sub-central and inconspicuous, the central area sculptured like that of the medial valves, the posterior area like the anterior valve; the sutural plates are quite short and the sinus smooth and wide. There is no noticeable mucro to the medial valves.

The peculiar sculpture of this species separates it from those already described from this region. In a general way it recalls the very young of *I. magdalenensis* Hinds. The type is No. 109,308, U. S. National Museum.