THE WEST AMERICAN MOLLUSKS OF THE GENUS EUMETA.

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Three species only of the genus *Eumeta* are known from the west coast of America. They are all southern. *E. intercalaris* Carpenter comes from the Mazatlanic area; *E. bimarginata* C. B. Adams has been seen from the Gulf of California and Panama; while the third, *E. eucosmia* Bartsch, comes from the Galapagos Islands.[a]

The drawings accompanying this paper were made by Miss Evelyn G. Mitchell.

EUMETA INTERCALARIS Carpenter.

Cerithiopsis intercalaris Carpenter Proc. Zool. Soc. London, 1865, p. 281.

Shell regularly conic, wax-yellow, with the posterior line of tubercles on each whorl light brown. (Nuclear whorls decollated.) Postnuclear whorls concave in the middle, marked by a double spiral series of tubercles. The posterior of these two rows is a little below the summit, leaving a very narrow, plain cord at the summit; the anterior row being immediately above the suture. These tubercles are joined spirally and axially by slender riblets, which inclose well-impressed, squarish pits. On the last two turns a third slender spiral cord occurs between the other two, a little nearer to the posterior

[a] In the preparation of the present diagnoses the following terminology is used:
"Axial sculpture," the markings which extend from the summit of the whorls toward the umbilicus.
The axial sculpture may be—
"Vertical," when the markings are in general parallelism with the axis of the shell.
"Protractive," when the markings slant forward from the preceding suture.
"Retractive," when the markings slant backward from the suture.
"Spiral sculpture," the markings following the directions of the coils of the whorls.

than its fellow, forming weak nodules at its junctions with the axial ribs. Suture strongly impressed. Periphery of the last whorl marked by a slender, plain cord, which is covered by the summit of the succeeding turn. The groove between this cord and the anterior series of tubercles is crossed by the extensions of the axial riblets. Base very short, marked by a slender, shallow, spiral groove, which bounds the peripheral cord anteriorly. The space between the groove and the insertion of the columella is slightly concave, marked only by lines of growth. Aperture rhomboidal, decidedly channeled anteriorly; posterior angle obtuse; outer lip sinuous; columella strong, short, twisted and provided with a strong, oblique fold at its anterior margin; parietal wall covered with a thin callus.

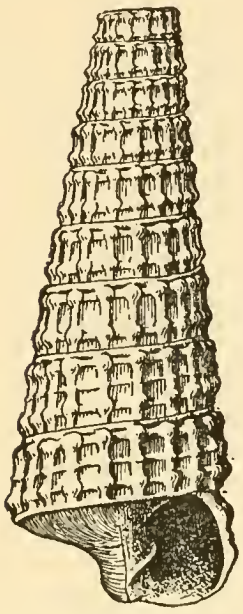

FIG. 1.—EUMETA INTERCALARIS CARPENTER.

The type (Cat. No. 15342, U.S.N.M.) has ten post-nuclear whorls and measures: Length, 5.7 mm., diameter 2 mm. It comes from Guacomayo, Mexico. Another specimen (Cat. No. 32286, U.S.N.M.) comes from the Gulf of California.

EUMETA BIMARGINATA C. B. Adams.

Cerithium bimarginatum C. B. ADAMS, Ann. Lyc. Nat. Hist. New York, 1852, pp. 375–376.

Shell elongate-conic, wax-yellow, except the posterior row of tubercles, which are light brown. Nuclear whorls four and one-half; the first half turn smooth; the remainder well rounded, separated by a constricted suture, marked by curved, quite regular, slender, distantly spaced, axial riblets, of which 16 occur upon the second, 18 upon the third, and 20 upon the last turn. Post-nuclear whorls concave in the middle, marked by two spiral cords, the first of which is at some little distance anterior to the summit, leaving a narrow, plain band at the summit, while the other is equally remote from the suture, the space between the two being about double the width of the spiral cord and the plain space at the summit. In addition to the spiral cords, the whorls are marked by well-rounded axial ribs which are very feeble posterior to the spiral cord at the summit. Of these ribs, 18 occur upon the first to third, 20 upon the fourth and fifth, 22 upon the sixth and seventh, and 24 upon the penultimate turn. These ribs are expanded where they meet the spiral cords, forming well developed tubercles at their junction. The spaces inclosed between the spiral

FIG. 2.—EUMETA BIMARGINATA C. B. ADAMS.

cords and the axial ribs are elongated pits, having their long axes parallel with the spiral sculpture. Suture strongly constricted. Periphery of the last whorl marked by a sulcus about half as wide as that which separates the two spiral cords on the spire, and, like these, crossed by the continuations of the axial ribs, which terminate at the posterior border of the basal cord. Base very short, concave between the columella and the periphery, marked by strong lines of growth and two slender, spiral cords which are near the periphery. Aperture subquadrate, very strongly channeled anteriorly; posterior angle obtuse; outer lip rendered decidedly sinuous by the external sculpture; columella very stout, light brown, curved and twisted, provided with a moderately strong fold at its anterior border; parietal wall glazed with a thin callus.

The specimen described (Cat. No. 195212, U.S.N.M.) was dredged at U. S. Bureau of Fisheries station 2799 in 29.5 fathoms, in the Bay of Panama. It has 8 post-nuclear whorls and measures: Length, 4.3 mm., diameter, 1.3 mm. Another specimen (Cat. No. 96409, U.S.N.M.) was dredged at U. S. Bureau of Fisheries station 2823 in 26 fathoms, on sandy bottom, off La Paz, in the Gulf of California. Prof. C. B. Adams's type came from Panama.

EUMETA EUCOSMIA, new species.

Shell elongate-conic, white. Nuclear whorls two and one-half, large, projecting beyond the outline of the first post-nuclear turn. The first half nuclear turn is smooth, the next turn is marked by sixteen strong, somewhat retractive, axial ribs, while the last turn has twenty axial ribs which are almost vertical and about twice as wide as the intercostal spaces. The middle of the intercostal spaces on the latter half of this whorl, also the ribs, are crossed by a broad, incised, spiral line which separates this whorl into an upper and lower half. This incised line develops into a broad sulcus, that separates the posterior from the anterior row of tubercles on the post-nuclear turns. The first one and one-half nuclear whorls are well rounded, the last inflated, separated by a well-impressed suture. Post-nuclear whorls somewhat flattened, the early ones marked by two nodulose, spiral cords, the first of which is at some little distance anterior to the summit, while the second is at even a greater distance posterior to the suture. Beginning with the fourth post-nuclear turn, the summit of the whorls develops into a slender, spiral cord which grows stronger on the succeeding turns. Beginning with the sixth post-nuclear whorl, a slender, spiral cord makes its appearance halfway between the two strong spiral cords; this also increases steadily in size, but at no time attains the strength of the stronger cords. In addition to the spiral sculpture, the whorls are marked by broad, low, slightly

protractive, axial ribs, which extend from the summit of the whorls to the suture. Of these ribs, about twenty occur upon each of the whorls. The junctions of these ribs with the strong, spiral cords form tubercles, while their junctions with the two slender cords appear as mere deflections of these cords. The tubercles on the posterior of the two strong cords are elongate-oval, having their long axes parallel with the spiral sculpture, while those on the supra-sutural cord are truncated posteriorly and slope gently anteriorly. Suture strongly impressed, showing the posterior edge of the first basal cord on all the turns. Periphery of the last whorl marked by a rather broad channel, which is crossed by the continuations of the axial ribs. Base short, smooth, excepting the single, spiral cord which bounds the peripheral sulcus. Aperture irregular, strongly channeled anteriorly; posterior angle obtuse; outer lip thin, rendered wavy at the edge by the external sculpture, which is apparent within the aperture; columella stout, curved and strongly twisted; parietal wall glazed with a thin callus.

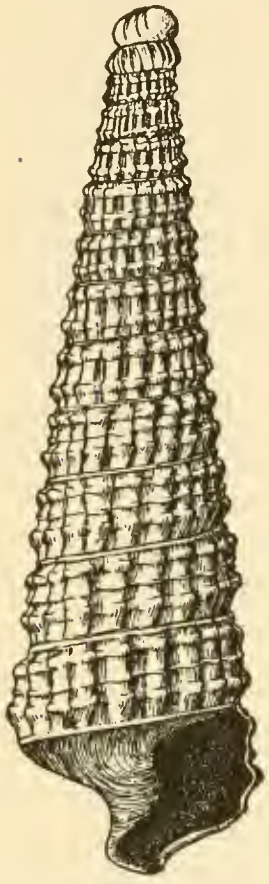

FIG. 3.—EUMETA EUCOSMIA BARTSCH.

The type (Cat. No. 195213, U.S.N.M.) has eleven post-nuclear whorls and measures: Length 8.3 mm., diameter 2.1 mm. It was dredged at the U. S. Bureau of Fisheries station 2808 in 634 fathoms, on coral sand bottom, bottom temperature 39.9°, near the Galapagos Islands.