DESCRIPTIONS OF NEW MOLLUSKS OF THE FAMILY VITRINELLIDÆ FROM THE WEST COAST OF AMERICA.

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Since publishing the paper on New Mollusks of the Family Vitrinellidæ from the west coast of America,[a] which contained descriptions and figures of *Vitrinella oldroydi*, *eshnauri*, and *alaskensis; Vitrinella* (*Docomphala*) *stearnsi* and *berryi; Cyclostrema xantusi* and *diegensis; Circulus cosmius* and *cerrosensis; Cyclostremella californica*, and *Scissilabra dalli*, a number of additional forms have come to hand. One of these, *Leptogyra alaskana*, from Port Graham, Alaska, was described by the writer in 1910,[b] and six additional species from the west coast are considered in the present paper.

The drawings for the two plates were made by Miss Evelyn G. Mitchell.

CYCLOSTREMA BALDRIDGEI, new species.

Plate 39, figs. 7–9.

Shell rather large, bluish-white, subdiaphanous. Nuclear whorls two and a third, smooth, forming a decidedly depressed spire. Postnuclear whorls with a strong, broad, rounded keel at the periphery and another almost as strong about one-third of the distance between the periphery and the summit, where it forms a decided shoulder. The space between the appressed summit and the shoulder is marked by twelve subequal and subequally spaced, spiral cords, the spaces between which are crossed by very slender, retractive, axial threads; the latter are about one-fourth as wide as the spaces which separate them, while the spaces between them are only about one-half the width of the spiral cords. The space between the peripheral keel and the strong shoulder is crossed by nine subequal and subequally spaced spiral cords, and the continuations of the axial threads. Here the spiral sculpture is not quite as strong as on the upper surface, and the spaces inclosed between the axial riblets and the spiral threads are more or less quadrangular pits. Base well rounded,

[a] Proc. U. S. Nat. Mus., vol. 32, no. 1520, pp 167–176.

[b] Nautilus, vol. 23, 1910, pp. 136–137, pl. 11, figs. 4–6.

marked like the upper surface, with the sculpture a little less pronounced. Umbilicus open; parietal wall showing ten equal and equally spaced spiral cords, which are as wide as the spaces that separate them, the latter being crossed by feeble continuations of the axial riblets. Aperture subcircular; outer lip rendered somewhat angular by the two keels; columella evenly curved.

The type (Cat. No. 214100, U.S.N.M.) comes from the Gulf of California. It has one and a third post-nuclear whorls and measures: greater diameter 4.5 mm. It was collected by Mrs. E. E. Johnson and at her request is named for Mrs. Maria Baldridge, of Los Angeles, California.

CYCLOSTREMA MIRANDA, new species.

Plate 39, figs. 1–3.

Shell small, subdiaphanous, depressed. Nuclear whorls two, depressed helicoid, smooth. Post-nuclear turns one and a third, appressed at the summit, marked above with three strong, spiral cords, one of which is at the periphery, while the other two divide the space between the periphery and the summit into three equal areas. The space between the summit and the first spiral cord is decidedly concave, while the space between the first spiral cord and the median one is very slightly concave, that between the median and the peripheral cord being well rounded. Axially, the upper surface of the shell is marked by about sixty-two slender, well-developed, equally-spaced riblets, which are about half as wide as the spaces that separate them. These riblets are decidedly retractively curved between the summit and the first keel, less so between the first and the median keel, while between the median and the peripheral one they are practically vertical. The junctions of riblets and keels are not nodulose. Periphery of the last whorl strongly angulated; base marked by two spiral cords, one of which bounds the broad, open, funnel-shaped umbilicus and is a little weaker than the other, which appears as a very strong cord half-way between it and the periphery. In addition to these spiral cords, the base is marked by the undiminished continuations of the axial riblets, which become bifurcated here and extend deep within the umbilicus. Aperture very large, ovate, very oblique, the columellar border being considerably behind the outer lip; the posterior and anterior angles are acutely angulated; outer lip thin, showing the external sculpture within; columella slender, decidedly curved, the free edge continuing to the posterior angle of the aperture, rendering the peritreme complete.

The type (Cat. No. 211108, U.S.N.M.) measures: greater diameter, 2.1 mm. It and two other specimens, in Mrs. Oldroyd's collection, were collected by Mrs. Oldroyd at San Pedro, California.

CYCLOSTREMA ADAMSI, new species.

Plate 39, figs. 4–6.

Shell very small, depressed helicoid, white. Nuclear whorls two and a third, smooth, well rounded. Post-nuclear whorls one and a third, very strongly sculptured, having a slender, spiral, nodulose keel at the summit, an exceedingly strong one at the periphery, and two others almost as strong as the peripheral keel in the space between the summit and the periphery. The space between the peripheral and the supraperipheral is a little wider than the space between the cord at the summit and the keel anterior to it, while the space between the second and third keels is about twice as wide as that between the cord at the summit and the second keel. In addition to these nodulose keels, the whorls are marked by strong, retractive, axial ribs, of which twenty occur upon the last turn. The junctions of the ribs and keels form prominent tubercles, while the spaces inclosed by them are deep, rhomboidal pits. Those occurring between the peripheral and the first supraperipheral keel are about as long as broad, while those between the next two keels, posteriorly, are much longer in their axial diameter than their spiral, and those occurring between the summit and the first keel below it, are a little longer in the axial diameter than the spiral. Base of the shell openly umbilicated, marked by two strong, nodulose keels, the weaker of which bounds the umbilicus, while the stronger is half-way between this and the peripheral keel. The axial ribs extend prominently over the base to the umbilical keel, rendering the middle keel strongly tuberculate. The spaces inclosed between the keels and ribs are quadrangular immediately below the periphery, and wedge-shaped between the median and the umbilical keel. Umbilicus narrowly funnel-shaped. Aperture subcircular; peritreme complete, stout, thinning to a slender edge.

The type (Cat. No. 211563, U.S.N.M.) comes from Panama and measures: greater diameter, 1.3 mm.

It is named for C. B. Adams.

CIRCULUS LIRIOPE, new species.

Plate 40, figs. 7–9.

Shell small, depressed, helicoid, creamy-white. Nuclear whorls two and a third, smooth, well rounded, separated by a well-marked suture. Post-nuclear whorls well rounded, appressed at the summit, with a strong keel at the periphery and a less strong one on either side of the periphery, these two appearing as if joined to the peripheral keel by a smooth band, the whole having the effect of a thick ribbon drawn over the peripheral keel, with the two edges rolled up to form the other two keels. The entire upper surface is marked by

numerous, exceedingly fine, retractive lines of growth, and very many, exceedingly fine, closely-spaced, spiral striations. Under surface broadly, openly umbilicated, moderately rounded, the umbilical edge being bounded by a slender thread; entire surface marked like the upper surface. Aperture subcircular; outer lip rendered }-shaped by the peripheral keel; columella short, strongly curved, with a strong cord in the middle of the umbilical side.

Two specimens of this species (Cat. No. 211800, U.S.N.M.) were dredged at U. S. Bureau of Fisheries station 2822, in 21 fathoms, on gray sand and broken shell bottom, off La Paz, Gulf of California. The larger of these, the type, has one and a third post-nuclear whorls and measures: greater diameter, 1.6 mm.

CIRCULUS DIOMEDEÆ, new species.

Plate 40, figs. 1–3

Shell small, planorboid, creamy-white. Nuclear whorls two and a half, regularly coiled, forming a depressed spire, with the whorls well rounded and smooth, separated by a well-impressed suture. Post-nuclear whorls appressed at the summit, the appressed portion forming a slender, spiral thread, with a slender, acute keel at the periphery, the space between the peripheral keel and the thread at the summit being evenly curved and smooth, except for the decidedly retractively curved, faint, incremental lines. Under surface very broadly, openly umbilicated, and evenly curved from the peripheral keel to within the umbilicus; marked by incremental lines only. Within the umbilicus all of the preceding whorls are visible to the very apex. Aperture decidedly oblique, subcircular; posterior angle acute; outer lip thin, rendered }-shaped by the peripheral keel; columella slender, decidedly curved; parietal wall covered with a thick callus, which renders the peritreme complete.

The type and three additional specimens of this species were dredged by the U. S. Bureau of Fisheries' steamer *Albatross* at station 2794, in 62 fathoms, on gray sand and broken shell bottom; bottom temperature 59.6°; in the Bay of Panama. The type measures: greater diameter, 2.2 mm.

CYCLOSTREMELLA DALLI, new species.

Plate 40, figs. 10–12.

Shell very small, depressed, helicoid, subdiaphanous. Nuclear whorls two and a half, well rounded, separated by a well-impressed suture, smooth. Post-nuclear whorls one and an eighth, evenly rounded from the impressed suture to the periphery; marked by numerous, irregular, wavy, incised, spiral lines, which lend the entire surface a ripple-marked aspect. On the upper surface the preceding

whorl can be plainly seen through the substance of the last turn. Periphery of the last whorl evenly rounded. Under surface broadly, openly umbilicated to the very apex, well rounded from the periphery to the umbilical margin. There is no limiting umbilical keel, but the parietal wall bends inward with about the same curvature that it is bent outside of the umbilicus. The entire under surface, including that seen within the umbilicus, is marked by incised, wavy lines like those on the upper surface, the whole having the same ripple-marked aspect. Aperture decidedly oblique, subcircular; posterior angle acute; outer lip very thin, showing the external markings within; columella slender, decidedly curved; parietal wall covered with a thick callus, which renders the peritreme continuous.

The type and four other specimens of this species (Cat. No. 198904, U.S.N.M.) come from the head of the Gulf of California. The type measures: greater diameter, 1.3 mm.

The species is named for Dr. William H. Dall, the honorary curator of the Division of Mollusks.

LEPTOGYRA ALASKANA Bartsch.

Plate 40, figs. 4–6.

Leptogyra alaskana BARTSCH, Nautilus, vol. 23, 1910, pp. 136–7, pl. 11, figs. 4–6.

Shell minute, depressed helicoid. Nuclear whorls one and one-half, light yellow horn color, marked by faint incremental lines. A single post-nuclear turn follows which is bluish-white, rather broad and gently, almost evenly curved from the well-impressed suture to the periphery. This whorl is marked by about twelve, fine, incised spiral lines between the suture and the periphery which are stronger toward the periphery than at the suture. Periphery of the last whorl rounded. Base broadly and deeply umbilicated, strongly arched, with a slender cord at the junction of the basal and parietal wall, surface of the base marked by incised lines which are equal in strength and number to those occurring upon the upper surface. Wall of the umbilicus almost flat, marked by faint spiral lines. Aperture very large, subcircular, posterior angle obtuse; outer lip thin; columella curved, somewhat expanded and thickened basally; parietal wall covered with a thin callus. Operculum thin, horny.

Twelve specimens of this species were collected by Dr. Fred. Baker at Port Graham, Alaska, four of which are in the U. S. National Museum, Cat. No. 208433. One of these, the type, measures: greater diameter, 0.85 mm., lesser diameter 0.7 mm., altitude 0.4 mm. The remaining eight specimens are in Doctor Baker's collection.

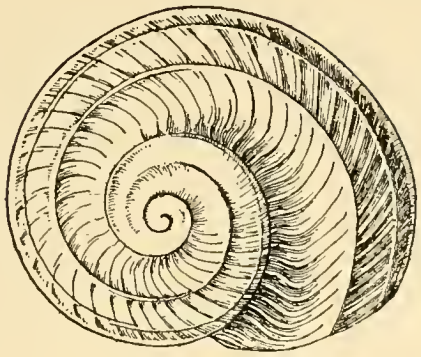
EXPLANATION OF PLATES.

PLATE 39.

Figs. 1–3. *Cyclostrema miranda*, greater diameter, 2.1 mm.
4–6. *Cyclostrema adamsi*, greater diameter, 1.3 mm.
7–9. *Cyclostrema baldridgei*, greater diameter, 4.5 mm.

PLATE 40.

Figs. 1–3. *Circulus diomedeæ*, greater diameter, 2.2 mm.
4–6. *Leptogyra alaskana*, greater diameter, 0.85 mm.
7–9. *Circulus liriope*, greater diameter, 1.6 mm.
10–12. *Cyclostremella dalli*, greater diameter, 1.3 mm.



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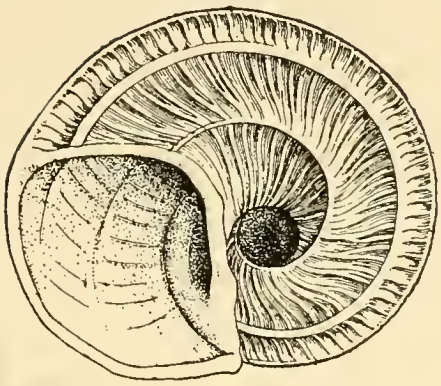

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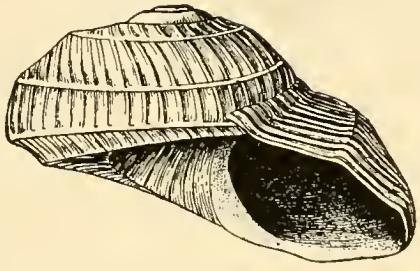

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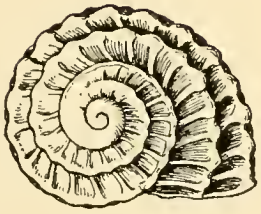

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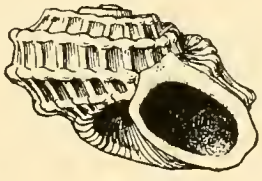

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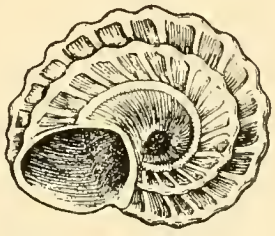

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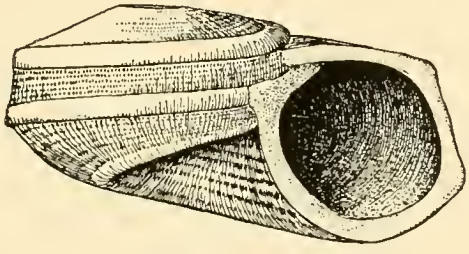

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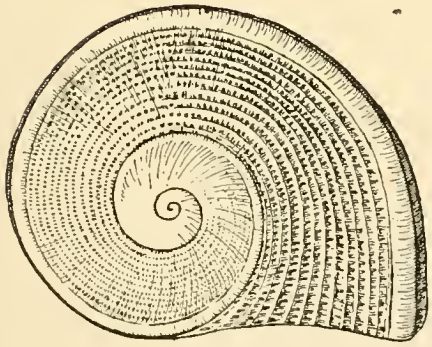

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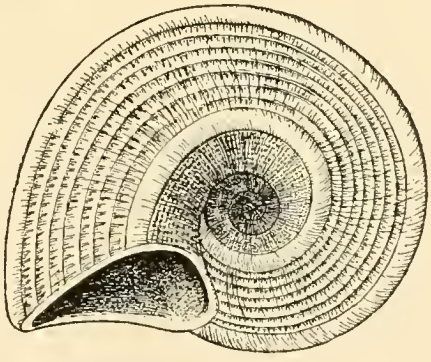

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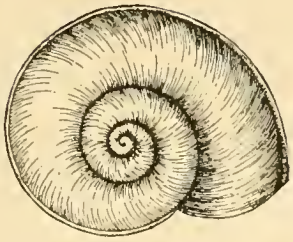
WEST AMERICAN VITRINELLIDS.

FOR EXPLANATION OF PLATE SEE PAGE 234.



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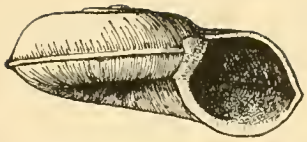

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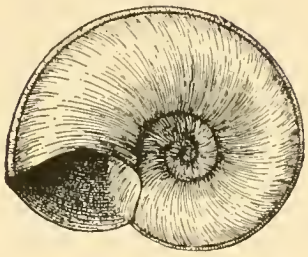

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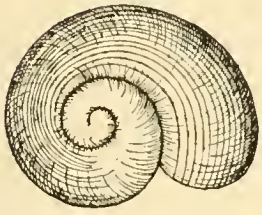

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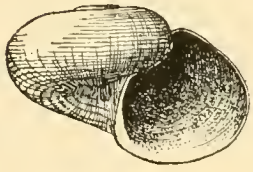

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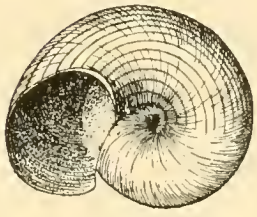

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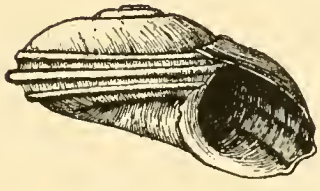

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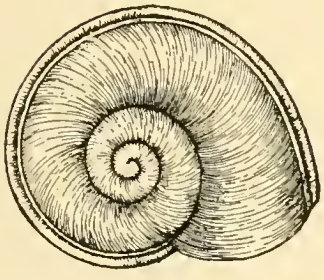

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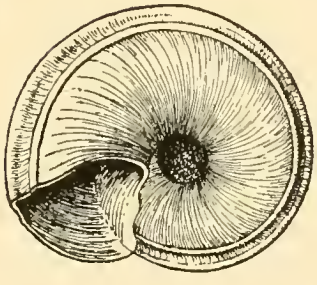

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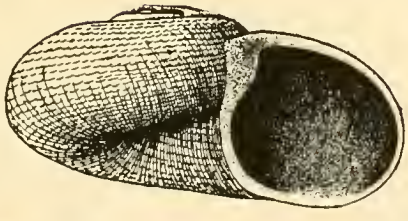

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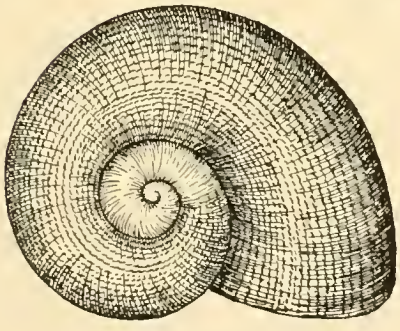

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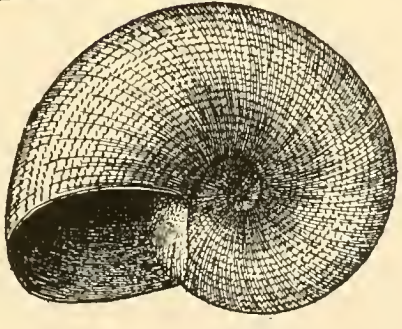

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WEST AMERICAN VITRINELLIDS.

FOR EXPLANATION OF PLATE SEE PAGE 234.