

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

NEW MARINE MOLLUSKS FROM THE WEST COAST
OF AMERICA.

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There have come to the National Museum from time to time among miscellaneous lots of mollusks sent here for determination, forms which have not been previously described. Nine of these from the northwest coast of America are named in the present communication. I should very much like to publish illustrations of these in connection with these descriptions, but lack of the necessary artist precludes doing so at the present time. I would withhold these descriptions until that deficiency could be supplied, were it not for the fact that I am urged by our correspondents to give a status to these species, since they are to figure in a larger report on the shells of the Puget Sound region, by Mrs. Oldroyd. I wil' say, however, that the shortcoming will be made up in the next communication on West American marine shells.

Turbonilla (Strioturbonilla) kincaidi, new species.

Shell rather broadly elongate conic, yellowish white. Nuclear whorls decollated. The remaining turns are moderately well rounded and somewhat overhanging, appressed at the summit, decidedly constricted at the suture, marked by rather depressed, slightly retractively slanting axial ribs, of which eighteen occur upon the first of the remaining turns, and twenty upon all the other turns. The spaces which separate the ribs are moderately impressed and terminate roundly about one-eighth of the distance between the summit and the suture, anterior to the suture. Periphery of the last whorl well rounded. Base short, inflated, well rounded, marked by the feeble continuation of the axial ribs, which become evanescent before reaching the umbilicus. In addition to the above sculpture the entire surface of the spira and base is marked by very fine closely spaced spiral striations. Aperture rather large, very broadly oval, almost subquadrate; pos-

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terior angle obtuse; outer lip thin, showing the external sculpture within; inner lip slender, somewhat sinuous, reflected over and appressed to the base for three-fourths of its length; parietal wall covered by a moderately thick callus.

The type, Cat. No. 340,844, U. S. N. M., comes from Dogfish Bay, Puget Sound; it has eight whorls remaining and measures: length, 5.5 mm.; diameter, 1.7 mm.

***Odostomia (Chrysalida) cumshewaensis*, new species.**

Shell broadly elongate conic, milk white, nuclear whorls at least two, obliquely immersed in the first of the postnuclear whorls, above which about two-thirds of the nuclear spire projects. Postnuclear whorls strongly rounded, constricted at the periphery, marked by strong, retractively slanting axial ribs, of which sixteen occur upon the first, eighteen upon the second, twenty-two upon the third and the penultimate turn. These ribs are crossed by four strong spiral cords which are a little wider than the ribs, and render the axial ribs tuberculated, the first row of tubercles at the summit being decidedly smaller than the two that succeed it. All three of these have the tubercles strongly, evenly rounded. The fourth immediately above the periphery, however, has the spiral cord stronger than the axial ribs, and appears as an almost uninterrupted cord with feebler tubercles. The pits enclosed between the ribs and spirals cords are strongly impressed and rounded. Suture strongly constricted, a part of the first basal cord showing at the suture of the last two turns. Periphery well rounded, marked by a strong spiral cord. Base moderately long, marked by five spiral cords on the anterior three-fourths, which become succeedingly narrower and feebler, the last two being indicated merely by the incised lines that separate them. The anterior fourth of the base is smooth, excepting incremental lines. The spaces between the spiral cords on the base are crossed by fine axial threads. Aperture very broadly oval; posterior angle obtuse; outer lip thin, showing the external sculpture within; inner lip strongly curved, reflected over and appressed to the base, a very narrow chink remaining behind the lip, indicating a very slight umbilicus; parietal wall covered by a thick callus.

The type, Cat. No. 340,860, U. S. N. M., was collected by Mrs. Oldroyd at Cumshewa Inlet, British Columbia. It has five postnuclear whorls and measures: length, 2.7 mm.; diameter, 1.2 mm.

This species suggests *Odostomia (Chrysalida) astricta* Dall and Bartsch from Monterey, but differs from it in being more conic, with the whorls more rounded and having the base shorter and more rounded, as well as in minor details of sculpture.

***Cerithiopsis fraseri*, new species.**

Shell elongate conic, chestnut brown. Nuclear whorls decollated. Postnuclear whorls almost flattened, marked by moderately strong, rounded, slightly retractively slanting axial ribs, of which eighteen occur upon the first, sixteen upon the second to fourth, eighteen upon the fifth, twenty

upon the sixth and seventh, twenty-six upon the eighth and the last whorl. Intercostal spaces about half as wide as the ribs. The spiral sculpture consists of three strong cords, of which the first, at the summit, is a little less strong on the early whorls than the other two, but on the last two whorls it equals the other two cords. The intersection of the axial ribs and spiral cords forms strong tubercles rounded on the first cord, slightly truncated posteriorly on the median cord, and strongly rounded anteriorly and strongly truncated on the third cord posteriorly, and gently sloping anteriorly. The spaces enclosed between the axial ribs and spiral cords are well rounded pits. Suture strongly impressed, the extreme appressed portion of the summit appearing as a slender sinuous spiral thread. Periphery of the last whorl marked by a sulcus about half as wide as that separating the median from the third cord. Base short, well rounded, marked by the feeble continuations of the axial ribs which extend more or less threadlike over the base, and two strongly impressed spiral lines on the posterior fourth of the base. The space separating the first from the second of these spiral lines is about as wide as that separating the first from the peripheral sulcus. There is no spiral cord at the insertion of the columella. Aperture decidedly channeled anteriorly; posterior angle obtuse; outer lip thin, rendered wavy at the edge by the external sculpture which is visible through the substance of the shell; inner lip decidedly sinuous, reflected over and appressed to the columella; parietal wall provided with a thin callus.

The type, Cat. No. 340,858, U. S. N. M., was collected by Mrs. Oldroyd at Clayoquot, British Columbia. It has nine and a half postnuclear whorls and measures: length, 6.5 mm.; diameter, 2.3 mm.

I take pleasure in naming this species for Dr. C. M. Fraser, Director of the Biological Station, Nanaimo, British Columbia.

Cat. No. 340,856, U. S. N. M., was collected by Mrs. Oldroyd. It comes from Victoria, British Columbia, and Cat. No. 340,857, U. S. N. M., two specimens, were likewise collected by Mrs. Oldroyd at Nanaimo, British Columbia. Additional specimens of this species are in Mrs. Oldroyd's collection.

***Cerithiopsis onealensis*, new species.**

Shell elongate conic, pale chestnut brown. Nuclear whorls decollated. Postnuclear whorls moderately rounded, slightly overhanging, crossed by very strong, broad, rounded, slightly protractively slanting axial ribs, of which sixteen occur upon the first four turns, eighteen upon the fifth and twenty-six upon the last. Intercostal spaces about half as wide as the ribs. In addition to the axial ribs the whorls are crossed by three strong spiral cords, of which the one at the summit is a little less strong than the other two. The junction of the axial ribs and spiral cords forms very prominent tubercles. Those on the cord near the summit are well rounded. Those on the median cord are truncated posteriorly, and almost truncated anteriorly, while those on the cord above the suture are abruptly truncated posteriorly and slope moderately, gently anteriorly. On the last whorl, where the ribs are much more crowded, the tubercles have an oblong outline, and are about equal on all three cords, their long axis coinciding with the axis

of the shell. The pits enclosed by the spiral cords and axial ribs are well rounded on all the whorls. Suture strongly impressed. Periphery of the last whorl marked by a sulcus about as broad as that separating the median from the supersutural cord on the spire. Base short, well rounded, marked by feeble continuation of the axial ribs, which lend it a roughened aspect, and a single slender spiral thread, which encircles the base at the insertion of the columella. Aperture decidedly channeled anteriorly; posterior angle obtuse; outer lip thin, showing the external sculpture within, sinuous at the edge; inner lip sigmoid, reflected over and appressed to the columella.

The type, Cat. No. 340,827, U. S. N. M., was collected by Mrs. Oldroyd in 20 fathoms, off O'Neal Island, Puget Sound. It has almost seven post-nuclear whorls and measures: length, 5.1 mm.; diameter, 1.9 mm.

***Cerithiopsis (Cerithiopsina) signa*, new species.**

Shell elongate conic, pale brown. First half postnuclear whorl smooth, the next one and a half well rounded and marked by rather distantly spaced, almost vertical axial ribs. Postnuclear whorls appressed at the summit, marked by strong, rounded almost vertical axial ribs, of which eighteen occur upon the first, fourteen upon the second to sixth, sixteen upon the seventh, and eighteen upon the last turn. The spiral sculpture consists of three strong, equally spaced cords, which are crossed by strong axial ribs. The intersection of the axial ribs and the spiral cords form strong tubercles, which are truncated on their posterior margin, and slope gently anteriorly in all three groups. The spaces enclosed between the cords and the ribs are elongated pits which have their long axis coinciding with the spiral sculpture. In addition to this, the entire surface of the spire is marked by fine axial lines of growth and closely spaced spiral striations. Suture strongly impressed. Periphery of the last whorl rendered angulated by a keel. Base short, slightly concave at the insertion of the columella, marked by fine lines of growth and very fine spiral striations, and a slender spiral thread at the insertion of the columella. Aperture subquadrate; decidedly channeled anteriorly; posterior angle obtuse; outer lip rendered sinuous by the spiral cords; inner lip sigmoid, reflected over and appressed to the columella.

The type, Cat. No. 340,826, U. S. N. M., was collected off O'Neal Island, Puget Sound. It has 10.5 whorls and measures: length, 5.5 mm.; diameter, 2.7 mm.

The following additional specimens have been examined: 3 specimens, Nanaimo, British Columbia, Cat. No. 340,841, U. S. N. M. 4 specimens, Port Orchard, Puget Sound, Cat. No. 133,233, U. S. N. M. 7 specimens, San Juan Island, Puget Sound, Cat. No. 340,934, U. S. N. M.

***Cerithiopsis (Cerithiopsina) willetti*, new species.**

Shell large, robust, elongate conic, pale brown. All but the last nuclear whorl decollated. This shows, however, that the species belongs to the subgenus *Cerithiopsina*. Postnuclear whorls crossed by very strong, almost sublamellar, rather coarse, rounded, protractively slanting axial ribs, of which sixteen occur upon the first to fifth, eighteen upon the sixth, twenty

upon the seventh, and twenty-four upon the last turn. Intercostal spaces about two thirds as wide as the ribs. In addition to the axial ribs there are three strong spiral cords, of which the first is about as far anterior to the summit of the whorls as it is distant from its median neighbor. The first of these spiral cords is a little less strongly developed on the earlier whorls than on the succeeding turns, where it almost equals the other two. The junction of the axial ribs and the spiral cords forms strong tubercles, of which those on the cord at the summit are well rounded, while those on the median cord are truncated posteriorly and slope gently anteriorly. The same is true of the supra-sutural cord. On the last whorl, however, the tubercles are more elongated and the truncation at the anterior margin is less pronounced, the long axis of the tubercles coinciding with the axis of the shell. The spaces enclosed between the axial ribs and spiral cords are well rounded pits. The summit of the whorls falls a little anterior to the peripheral cord, and lets this appear as a narrow, smooth, sinuous thread in the somewhat constricted suture. Periphery of the last whorl marked by a strong cord, which constitutes the termination of the axial ribs. Base short and rounded, but concave at the junction with the columella. The junction of the columella and the base is marked by a slender spiral cord. Aperture broadly oval, decidedly channeled anteriorly; posterior angle obtuse; outer lip thin, rendered sinuous by the external sculpture, which is also seen within the aperture by transmitted light; inner lip reflected over and appressed to the columella.

The type and two specimens of this species, Cat. No. 268,746, U. S. N. M., were collected by Mr. George Willett at Forrester Island, Alaska. The type has nine postnuclear whorls and measures: length, 7.5 mm.; diameter, 2.5 mm. Four additional specimens from the same station are in Mr. Willett's collection. Another specimen, Cat. No. 340,936, U. S. N. M., was collected by Mrs. Oldroyd at San Juan Islands.

This species suggests *Cerithiopsis* (*Cerithiopsina*) *signa*, but has much larger nuclear whorls and is in every way more robust than that species.

***Alvania sanjuanensis*, new species.**

Shell moderately large, chestnut brown excepting the tip which is a little paler and the extreme base which is also lighter. Nuclear whorls one and a half, well rounded (the sculpture of the nuclear whorls eroded in all the shells seen except in a very small fraction of the last turn in the type, which presents a finely, somewhat wavy, spirally lirate surface. I am not quite certain whether axial threads are present or not). Nuclear whorls strongly shouldered at the summit, strongly rounded, marked on the first turn by three strong spiral cords, which occupy the anterior half of the turn; on the second turn a fourth cord occurs a little anterior to the median line between the summit and the first strong cord, while on the next turn a fifth slender thread makes its appearance between the summit and this cord. This last cord at the summit never attains a strength as great as the third anterior to it, while the second one is fully as strong on the penultimate turn. In addition to these spiral cords the shell is marked by rather weak axial ribs,

of which twenty-four occur upon the second, twenty-six upon the third, and about thirty-two upon the last turn; on this they are decidedly enfeebled. The junction of the axial ribs and spiral cords forms feeble nodules. The entire surface of the spire between ribs and interspaces is crossed by fine spiral and axial threads, which lend it a fine clothlike texture. Suture strongly constricted. Periphery of the last whorl well rounded. Base moderately long, well rounded, marked by seven equally spaced spiral threads, of which the seventh immediately behind the inner lip is very feeble. The rest are almost as wide as the spaces that separate them. The axial ribs do not extend over the base, but the fine sculpture described for the spire is also present here. Aperture ovate; posterior angle obtuse; outer lip thin at the edge, strongly curved; inner lip strongly curved, reflected and appressed to the base except at the extreme tip; parietal wall covered by a thick callus, which renders the peritreme complete.

The type and three additional specimens, Cat. No. 334,487, U. S. N. M., were collected by Dr. C. C. Engberg at San Juan Island, Gulf of Georgia. The type has 5 whorls and measures: altitude, 3 mm.; diameter, 1.5 mm. Eight additional specimens from the same station are in Dr. Engberg's collections.

This species is nearest related to *Alvania montereyensis* Bartsch, but can at once be distinguished from it by its much larger size, as well as other detail characters.

Alvania burrardensis, new species.

Shell very broadly ovate, pale yellow. Nuclear whorls decollated in all our specimens. Postnuclear whorls strongly inflated, marked by strong, rather distantly spaced curved and slightly protractively slanting axial ribs, of which twenty-four occur upon the next to the last and twenty-two upon the last turn. In addition to the axial ribs the whorls are crossed by six equal and equally spaced, broad spiral cords, which render the axial ribs obscurely nodulose at their junction. The spaces separating the spiral cords are a little less wide than the cords. Periphery of the last whorl marked by a sulcus, which is crossed by the continuation of the axial ribs, which extend partly over the base, but evanesce soon after passing the periphery. Base short, strongly rounded, marked by nine equal and equally spaced prominent spiral cords, which are a little wider than the spaces that separate them. Aperture subcircular; posterior angle obtuse; outer lip reinforced by a callus at the edge; inner lip curved and appressed to the base; parietal wall covered by a moderately thick callus.

The type and two specimens, Cat. No. 340,938, U. S. N. M., were collected by Mrs. Oldroyd at Burrard Inlet, British Columbia. The type has four whorls remaining and measures: length, 2.2 mm.; diameter, 2 mm. Five additional specimens from the same station are in the Oldroyd collection.

This species is nearest related to *Alvania rosana* from off Santa Rosa Island. It differs from this by its less acute outline, by having the whorls more rounded, and also in other details of sculpture.

Vitrinella (Docomphala) columbiana, new species.

Shell moderately large, depressed helicoid, semitranslucent, bluish-white. Nuclear whorls decollated. Postnuclear whorls gently rounded, almost appressed at the summit, marked by rather strong incremental lines which extend over both the upper and lower surface; the lower surface is a little more convex than the upper; the umbilical wall is marked by strong notches. Aperture decidedly oblique, almost circular; parietal wall marked by a thin callus, which renders the peristome almost complete.

The type, Cat. No. 340,848, U. S. N. M., was collected by Mrs. Oldroyd at Departure Bay. It has two and a half whorls remaining and measures: altitude, 1.5 mm.; greater diameter, 3.1 mm.

The present species is nearest related to *Vitrinella (Docomphala) stearnsi* Bartsch, but differs from it in being a little more depressed, almost lacking the sculpture of the upper surface of that species, and in having the umbilicus decidedly narrower and the notchings of the umbilical wall in the umbilicus much less pronounced.