

DESCRIPTIONS OF NEW SPECIES OF MOLLUSKS FROM
THE PACIFIC COAST OF THE UNITED STATES,
WITH NOTES ON OTHER MOLLUSKS FROM THE
SAME REGION.

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The generosity and interest of correspondents on the Pacific coast, especially in Southern California, through small but continuous contributions, have greatly enriched the series of mollusks from the Pacific States in the collection of the U. S. National Museum. Not only has the wider geographical range of known species thus been made evident, but new species or varieties are constantly coming in as the fruit of their researches. It is probable that this may continue for some time to come, as experience has shown that the rarities of one season become commonplace residents during another, as was shown in the summer of 1907, when *Calliostoma supragranosum* Carpenter, previously known by half a dozen specimens collected during the last forty-five years, swarmed on the new Government breakwater at San Pedro, to the surprise and delight of collectors.

While the hoped-for manual of west coast shells is in process of preparation it becomes necessary, for the convenience of collectors, to assign names to the treasures they discover, and in order that manuscript names may not pester the bibliographer, these names must from time to time be published. The present paper is one of several by the writer which owe their existence to these conditions and record our indebtedness to the energetic amateur students of the mollusca of the region mentioned.

No region out of the Tropics appears to be richer in interesting mollusks than the Californian coast. On the Atlantic we have to proceed to the Floridian peninsula for a parallel, and even then the discrepancy in favor of California remains great. Perhaps nowhere in the world may those seeking rest or recuperation find a more congenial and comfortable opportunity, at any season of the year, for occupying themselves with what the old French conchologists called

"La belle Science," and, at the same time, of adding solid information to that already on record.

For the data accumulated in this paper I am indebted especially, among others, to Dr. R. H. Tremper, Messrs. Herbert N. Lowe and F. W. Kelsey, and the U. S. Bureau of Fisheries.

Genus CLISTAXIS Cossmann.

Some years ago Doctor Jeffreys proposed for a deep-water species the name *Cryptaxis*, which proved to be preoccupied by Lowe in land shells and for which Cossmann substituted *Clistaxis*. The shell resembles *Cylichna* (= *Bullinella* Newton), but has the spire almost concealed. Jeffreys afterwards referred to this genus a shell, *C. crebripunctatus*, from the *Triton* dredgings, which has somewhat the form of *Scaphander*, but with the spire, except the apex of the nuclear shell, concealed. Whether this form is of the same genus as the original type, *C. parvula* Jeffreys, seems doubtful, but is too complicated a question to enter upon at this time. A species related to *C. crebripunctatus*, and which appears to be undescribed, was collected by Prof. F. W. Kelsey, in 50 fathoms off the entrance to San Diego Harbor. Two specimens were obtained, showing that the animal is contained within the shell, where it had been allowed to dry. In contracting, the test was badly shattered, but showed very strong spiral rows of punctations. A much smaller specimen was better preserved and affords the following notes:

CLISTAXIS? POLYSTRIGMA, new species.

Shell small, white, barrel-shaped, with the posterior part of the outer lip extending slightly beyond the apex of the shell: form much as in *Haminea solitaria* Say; apex sunken, imperforate, the spire concealed; outer lip partly membranous and contracting in drying, the shell normally covered with a thin periostracum, which in drying splits and contracts; sculpture of close, numerous, spiral rows of emphatic punctations, covering the shell; aperture ample; outer lip thin and submembranous, its posterior extremity rounded over evenly to the suture, the anterior part not expanded; pillar lip thin, arcuate, the margin reflected, forming a gutter just outside the margin; body with little callus, only one whorl visible. Length of young shell, 2.8; maximum diameter, 2.2 mm.

Type.—Cat. No. 110649, U.S.N.M. In 50 fathoms, off entrance to San Diego Harbor, F. W. Kelsey.

The adult is at least three times the length above given. The soft parts do not envelop the shell. The dried animal shows through its translucency the bases of three white gizzard plates which it is impossible to extract owing to the fragility of the shell. It is possible, however, to see that the plates are long, narrow, straight, parallel-

sided, and very large for the size of the animal. The plates in *Haminea* are quite different, so that, notwithstanding the general similarity of the shells, the present species can not be referred to the genus *Haminea*.

Genus PEDIPES Scopoli.

PEDIPES LIRATUS W. G. Binney.

This species was described from Cape St. Lucas, and many years later was collected near San Diego by C. R. Orcutt. Professor Kelsey now carries its northern limit to the village of La Jolla, on the seashore north of San Diego.

Genus TURRIS Boltén.

(*Pleurotoma* Lamarck.)

Section ANTIPLANES Dall.

TURRIS (ANTIPLANES) DIAULAX, new species.

Shell small, acute, conic, brownish, with about nine whorls; suture distinct, not appressed; surface smooth, except for incremental lines and two impressed shallow spiral channels near the periphery of the whorls; the surface just behind each channel is slightly raised, forming a flattish band about as wide and high as the channel is wide and deep; on the base and canal there are also some faint spiral threads: the sides of the spire are flattish, the periphery nearest the succeeding suture, which is laid on the anterior edge of the anterior channel, thus giving the whorls a sort of overhang in appearance; aperture short and rather narrow: outer lip sharp, simple, produced; anal sulcus narrow and rather deep, situated just behind the posterior channel; body without callus; canal short, wide, recurved; pillar lip arcuate, smooth. Height of shell, 19.0; of last whorl, 10.0; of aperture, 6.5; maximum diameter, 6.5 mm.

Type.—Cat. No. 110609, U.S.N.M. U. S. S. *Albatross* station 2931, off Los Coronados Islands, near San Diego, California, in 34 fathoms sand.

This is quite a well-marked species, and differs from most of the others in its group in its stronger spiral sculpture.

There is a group of forms on the Pacific coast which have been referred by Carpenter to *Drillia*, in which usage he has naturally been followed by the collectors and students of the fauna. This group comprises "*Drillia*" *inermis* Hinds, *D. incisa* and *D. cancellata* Carpenter, and the following species. Under *Pleurotoma*, *P. inermis* Hinds, 1844, is preoccupied by *P. inermis* Partsch, 1843; *P. cancellata* J. Sowerby, 1827, and about half a dozen others antedate *P. cancellata* Carpenter, 1863. For *inermis* Hinds, I would propose the specific name *ophioderma*, and for *cancellata* Carpenter, the

name *rhines*. All belong to the subgenus *Surcula*, though not to its typical group. The following form is close to *P. ophioderma*, and for some time was regarded as a slender variety of it. The examination of a number of specimens and their constancy in character lead to the conclusion that it is a distinct species.

TURRIS (SURCULA) HALCYONIS. new species.

Shell small, slender, very acute, of a livid purple covered with an olivaceous periostracum, with about eleven whorls; nucleus more or less eroded, but apparently smooth, acute, and including about two and a half whorls; subsequent whorls rather flat, compressed and appressed at and in front of the suture, with a rounded base and inconspicuous anal fasciole; sculpture chiefly of flattish spiral threads, one at the suture, three smaller ones in front of it, followed by a flat broader one representing the fasciole, then (on the last whorl eight) more prominent threads, undulate or segmented by incremental lines and with wider interspaces (sometimes containing an intercalary smaller thread) to the base, followed by six or seven unsegmented threads to the siphonal fasciole, which bears six or seven smaller threads; the succession of undulations or slightly swollen segments gives a slightly cancellate effect to the part of the whorl which bears them, but there are no axial ribs, the effect being produced rather by depressions between the rather coarse incremental lines; aperture narrow, acute behind, the anal sulcus narrow and distinct but not very deep, the outer lip in front of it arcuately produced, the canal contracted, short, and recurved; inner lip polished and superficially erased; the pillar twisted, with a thin layer of callosity; operculum present as in *T. ophioderma*. Height of shell 23.0; of last whorl, 12.5; of aperture and canal, 8.0; maximum diameter, 7.0 mm.

Type.—Cat. No. 110644, U.S.N.M. Off Coronado Beach, San Diego, in 10 fathoms, Professor Kelsey; San Pedro, various collectors.

Genus ACANTHINA Fischer.

(*Monoceros* Lamarck.)

ACANTHINA LAPILLOIDES Conrad, new variety AURANTIA Dall.

The usual color of *A. lapilloides* is grayish, with a bluish or purplish tone and small brown maculations, but Dr. R. H. Tremper has collected an orange-yellow color variety on rocks at San Pedro which almost exactly mimics the yellow form of *Purpura* (= *Thais* Bolten) *decemcostata*. It is slightly smaller on the average than the ordinary *lapilloides*, with the interspaces of the spiral threads prettily lamellose axially and more or less articulated with blackish

brown small spots. Adults measure about 18 mm. in length and have the interior of the outer lip thickened and with six or seven well-marked denticulations.

Type.—Cat. No. 199893, U.S.N.M.

Genus TRITONOFUSUS Beck.

TRITONOFUSUS (PLICIFUSUS) KELSEYI, new species.

Shell elongate, slender, acute, the spire much longer than the aperture; white, covered by an olivaceous periostracum; having ten whorls exclusive of the (eroded) nucleus of about two whorls; suture appressed and the whorls slightly constricted in front of it; axial sculpture of (on the seventh whorl about 12) concavely arcuate, slightly protractive, low narrow ribs, crossing the whorls, on the later whorls becoming obsolete and finally absent from the last whorl altogether; the interspaces are wider than the ribs; these are crossed by fine sharp spiral striae, somewhat irregularly spaced, of which there are about a dozen on the seventh whorl, a narrow space before the suture being less sharply or not at all striate; aperture narrow, outer lip arcuate, somewhat excavated near the suture and produced anteriorly, slightly thickened, simple, and internally smooth; inner lip smooth, with the sculpture erased, passing gradually into the long straight pillar, which is attenuated in front; canal long, narrow, straight; length of shell 34.0; of last whorl 18.5; of aperture 14.5; maximum diameter 8 mm.

Fossil in the Pleistocene of San Pedro, California, Eshnaur.

Type.—Cat. No. 110631, U.S.N.M. Dredged by the U. S. Fisheries steamer *Albatross* off San Diego in 124 to 359 fathoms, bottom temperature 49° F. (young specimens); dredged in 50 fathoms off San Diego, Prof. F. W. Kelsey (adult).

This species is closely related to *T. rectirostris* Carpenter, which is less slender, with more numerous and persistent ribs, and spiral threading instead of striae. The latter is also a larger shell when full grown.

Genus BOREOTROPHON Fischer.

(*Neptunca* Bolten.)

BOREOTROPHON BENTLEYI, new species.

Shell small, slender, acute, ash white, with about seven whorls: nucleus with the surface eroded; suture distinct, the whorl in front of it somewhat tabulated by an obscure angle from which the spines arise; axial sculpture, besides incremental lines, only of about (on the last whorl) ten sharp depressed lamellar varices, prominent only behind the periphery and feeble on the base; at the shoulder these are produced into high, usually recurved, guttered spines,

which in some cases are nearly straight, in others curved toward the preceding whorl until they may even touch it; aperture ovate, canal long, slender, slightly recurved. Height, 19.5; of last whorl (without the spines), 14.5; of aperture and canal, 11.5; maximum diameter, 6.5 mm.

Type.—Cat. No. 110648, U.S.N.M. Dredged by Professor Kelsey off the entrance to San Diego Harbor in 20 fathoms mud, and at his request named in honor of Dr. Charles S. Bentley, resident naturalist of the San Diego Biological Station.

This is nearest to *B. ardonensis* Dall, but is more slender, with one or two more varices to the whorl, and is a more elegant shell. There are faint indications of spiral lineation, coarser toward the periphery and finer near the angle of the shoulder. From the variation in other species of *Boreotrophon* I conclude that the curvature of the spines is only an individual character, though the extremes are strongly contrasted.

Genus COLUMBELLA Lamarck.

Subgenus ANACHIS Adams.

ANACHIS PETRAVIS, new species.

Shell minute, blunt, solid, varicolored, chiefly purplish or flesh color, but distributed much like the colors on *Amphissa versicolor*, either solid or in pattern; whorls about six, the nucleus including two of these which are smooth, polished, swollen, and apically blunt; suture distinct, appressed, the whorl in front of it (the last whorl) slightly constricted; sculpture of (on the last whorl about 16) small, subequal, rounded, slightly flexuous ribs, distally protractive, and with narrower, microscopically faintly spirally striated interspaces; the last whorl terminates in a pale-colored thickening, or indistinct varix; aperture and canal very short and wide; outer lip internally with a few indistinct liræ; pillar smooth, obliquely attenuated in front. Height, 4.5; last whorl, 2.0; aperture, 1.4; maximum diameter, 1.7 mm.

Type.—Cat. No. 110645, U.S.N.M. Under stones at Bird Rock, off San Diego, California. F. W. Kelsey.

This species, in miniature, is extremely similar to *C. (Anachis) minima* Arnold, from the Pleistocene of San Pedro, California. Arnold's name being several times preoccupied, I would substitute for it *C. (A.) arnoldi*.

Genus OPALIA Adams.

OPALIA (DENTISCALA) MAZATLANICA, new species.

Shell small, slender, white, the porcellanous layer subtranslucent, the surface layer very thin opaque white; nucleus smooth, of about a whorl and a half, blunt, and followed by five or six sculptured

whorls which become more and more rounded and constricted in front of the suture; suture distinct, with (on the last whorl 20) small milk-white points coronating it and separated by small pits corresponding to the interspaces between the ribs; whorls smooth, or with obsolete indications of arcuate ribs which show by their more opaque whiteness faintly against the translucent under layer; basal disk hardly perceptible, not angulating the whorl, but traceable by the row of faint indentations which bound the obsolete margin; surface originally covered with a microscopic reticulation of revolving and vertical lines impressed on a very thin chalky layer; base produced; aperture simple, surrounded by a thick white callous margin, the opening obovate. Height of shell, 12; of last whorl, 6; of peritreme, 3.5; maximum diameter, 4.0 mm.

Type.—Cat. No. 168669, U.S.N.M. Mazatlan, Mexico.

The type-specimen is somewhat worn and polished, but shows the minute sculpture in sheltered places.

OPALIA (DENTISCALA) MEXICANA, new species.

Shell small, slender, white, opaque, with two nuclear smooth whorls and seven subsequent whorls; nucleus very small, blunt; subsequent whorls moderately rounded; suture distinct, with nine coronating points separated by deep and conspicuous pits; the ribs corresponding to the points are wide and thick but obsolete on the periphery, appearing again near the margin of the basal disk, where they are separated by shallow but distinct depressions; surface microscopically sculptured by sharp revolving lines reticulated by somewhat fainter incremental lines; basal disk slightly flattened, its periphery slightly angulating the whorl; aperture nearly circular, surrounded by a thick, slightly reflected peritreme. Height of shell, 11; of last whorl, 5; of peritreme, 2.7; maximum diameter, 4.0 mm.

Type.—Cat. No. 59336, U.S.N.M. Acapulco, Mexico; W. H. Dall.

This is easily distinguished from the preceding by the smaller number and greater strength of the ribs. *O. mazatlanica* is more like *O. hotessieriana* Orbigny, of the West Indies than any other west American species known to me.

Genus EPITONIUM Bolten.

(*Scalaria* Lamarck.)

EPITONIUM (CRISPOSCALA) ACROSTEPHANUS, new species.

Shell slender, acute, turritid, with two nuclear and nine or more subsequent whorls which are in contact, though separated by a deep suture across which the varices are continuous; axial sculpture of (on the last whorl 14) nearly vertical, thin, sharp, slightly reflected varices, which are expanded near the suture into a small

lamella of which the posterior corner, when intact, bears a small sharp spine, behind which the varix is much attenuated and turns into the suture, which it crosses and becomes connected with one of the varices of the preceding whorl; the anterior face of the varices is concentrically sharply striate, and the portion which approaches the center of the base is slightly flattened, although there is no basal disk or perforation: the space between the varices is smooth and polished, but under a lens shows traces of faint spiral striation, more or less irregular; the aperture is rounded-ovate, the peritreme thin and like the preceding varices; the operculum is thin, of about three whorls, concave and centrifugally striated, of a pale horn color. Height of shell, 20; of last whorl, 8.5; of peritreme, 4.5; maximum diameter, 6.5 mm.

Type.—Cat. No. 110638, U.S.N.M. Range from Monterey, California, south to the Coronado Islands near San Diego. It has been dredged in depths from 16 to 34 fathoms. The type-specimen was collected by Mr. H. N. Lowe, who dredged it at Newport, California.

This is a not uncommon species in the dredgings, though usually smaller than the dimensions given above. It may be distinguished from *E. subcoronatum* Carpenter by its more crowded, higher and minutely lamellose or striated varices which from the posterior expansion give the whorls a tabulate appearance.

EPITONIUM (CRISPOSCALA) CATALINÆ, new species.

Shell slender, white, turritid, imperforate, with more than seven adherent whorls; nucleus (lost); suture distinct, closed; varices (on the last whorl 14) continuous, making nearly one revolution around the axis in ascending the spire; they are flatly reflected, axially striate, subspinose at the shoulder, giving a tabulate aspect to the rounded whorls. There is no basal disk on the whorl, but on the basal part of each reflection of the varices there is a smooth area over which the suture travels, and which, taken collectively, gives the effect of segments of a disk imposed on the varices but not on the whorl; below the shoulder the varices are widely reflected, extending for a space to the angle of reflection of the preceding varix, where it would seem these extensions are normally attached, covering a hollow space between them and the whorl, but in the type-specimen most of these extensions are broken away; aperture subcircular. Height of (decolate) six whorls, 12.0; of last whorl, 6.0; of aperture, 2.7; maximum diameter, 4.5 mm.

Type.—Cat. No. 198628, U.S.N.M. Off the south side of Catalina Island, California, in 16 fathoms, mud, near the entrance to the small harbor: W. H. Dall.

This is a very interesting species, which if perfect might have, from the fusion of the varices, much the aspect of a *Cirsotrema*.

Genus EULIMA Risso.

? EULIMA LOMANA, new species.

Shell slender, acute, flat-sided or nearly so: chalky white, with an extremely thin yellowish external coating; nucleus eroded; subsequent whorls very slightly convex, with an obscure peripheral angle on the last whorl, upon which the suture of the advancing whorl is closely appressed; surface smooth and polished except for very obscure and minute spiral lines only visible in good light with a lens; base convexly rounded, imperforate; aperture ovate-quadrate, the outer lip simple, thin, gently arcuate; the body bare, the pillar almost straight, twisted and with a very obscure prominence like an obsolete plait; an examination of the interior of the upper whorls, however, shows no plication; anterior of aperture gently rounded; there are no indications of varices or resting stages on the spire. Height of shell, 20.0; of last whorl, 10.0; of aperture, 6.5; maximum diameter, 7.0 mm.

Type.—Cat. No. 110652, U.S.N.M. U. S. Bureau of Fisheries Station 4354, sixteen miles off Point Loma, San Diego, California, in about 650 fathoms, mud; bottom temperature about 39° F.

This is a very peculiar shell, which so combines the aspect of a Pyramidellid and a *Eulima* that I feel uncertain as to its permanent place in the system. The nucleus is eroded, but seems to have been dextral. The surface recalls that of *Amaura* rather than *Eulima*, as does the texture of the shell, but this may be due to incipient decay. There is no plait on the pillar, but it has an obsolete twist unlike anything I have noted in typical *Eulima*. Nevertheless it has the external form and general characters of the latter genus, to which for the present it is provisionally referred. It may eventually prove to be a giant *Aclis*, though all the certainly identified Aclides from deep water I have examined have much more rounded whorls and constricted sutures. A shell called by Locard *Mesalia flammifera*, from the *Talisman* expedition, has a similar outline, but has a pronounced basal keel and pattern of coloration.

Genus ODOSTOMIA Fleming.

ODOSTOMIA (EVALEA) ATOSSA, new species.

Shell small, bulimiform, bluish white, polished, with four gently convex whorls beside a very minute (and somewhat eroded) nucleus of about one whorl; suture distinct, not appressed; surface with two or three faint spiral threads on the second, four or more on the third, becoming obsolete on the last whorl, subequally distributed between the sutures; beside these there are numerous extremely fine spiral striae only visible under a lens, and which also become obsolete toward

the aperture: aperture subovate, acute behind; outer lip simple, sharp; anterior margin gently rounding into the arcuate pillar lip, which has a single strong plait close to the body; a thin wash of transparent enamel on the body; axis imperforate; operculum thin, paucispiral, pale yellowish. Height of shell, 6.25; of last whorl, 5.0; of aperture, 3.25; maximum diameter, 3.7 mm.

Type.—Cat. No. 110637, U.S.N.M. San Pedro, California, on *Haliotis*, collected by Mr. H. N. Lowe.

This is one of a group of closely related species occurring in Southern California: it differs in detail from any of the others, but most obviously in its form, which, in miniature, recalls *Bulinus ovatus* Brug.

Genus TRICHOTROPIS Broderip.

TRICHOTROPIS ? KELSEYI, new species.

Shell small, whitish, with a velvety pale-olive periostracum and three and a half whorls; spire very short; suture very deep, not channeled, but with the whorl in front of it elevated so as to make a shallow V-shaped trough; nucleus large for the size of the shell, turgid, not distinctly marked off from the rest of the shell; sculpture of fine, even, rounded, closely adjacent, spiral threads, a little more distant on the base, absent from the trough of the suture, with about 22 between the suture and the rim of the umbilical funnel; axial sculpture only of incremental lines; last whorl much the largest, rounded, produced basally, with a deep narrow funicular umbilicus, bounded by a rounded ridge corresponding to a siphonal fasciole; aperture semilunate, rather narrow, produced and almost channeled in front; outer lip thin, arcuate, simple, sharp, not reflected; pillar lip thin, straight, sharp, elevated, connected across the body by a thin layer of callus with the outer lip; pillar absolutely smooth and simple, without any trace of plaits; operculum wanting? Height of shell, 6.2; of last whorl, 5.5; of aperture, 3.5; maximum diameter, 4.0 mm.

Type.—Cat. No. 110653, U.S.N.M. U. S. S. *Albatross* Station 2936, off San Diego, California, in 359 fathoms, mud, bottom temperature 49° F. Also off the entrance to San Diego Harbor, in 80 fathoms; Prof. F. W. Kelsey.

This curious little shell would have been referred to the genus *Cancellaria* were it not for the total absence of columellar plaits. The type-specimen contains what seem to be the dry remains of the animal, but there is no indication of an operculum, which possibly might have sealed off in drying, but probably was never present. I find the Arctic species of *Iphinoë* have an operculum like other

Trichotropis. On the other hand, the species of *Cancellaria* most like the present shell, such as *C. cumingiana* Petit, have strong plaits and hardly any umbilicus in the very young stages, while their nucleus is of entirely different construction, the initial whorls being very minute, glassy and rather numerous, while the corresponding part of the present shell is chalky, swollen, and completes barely a single turn. I have not seen the unfigured *Nora* Adams, of which the type has an elevated spire, cancellated and lamellose whorls and small umbilicus with the pillar lip anteriorly somewhat reflected, but the diagnosis does not sound as if the present shell belonged to it.

Genus PHASIANELLA Lamarck.

Subgenus EULITHIDIUM Pilsbry.

Eucosmia CARPENTER, Ann. Mag. N. Hist., 3d ser., XIII, June, 1864, p. 475; 1st. sp. *E. variegata* Cpr.

Eulithidium PILSBRY, Man. Conch. (Tryon), XVII, index, 1898, p. 319; Nautilus, XII, Sept., 1898, p. 60. New name for *Eucosmia* Carpenter, 1864, not of Stephens, *Lepidoptera*, 1829.

This little group of depressed turbinate species extends farther north in America than the *Tricolia* group, and is represented in North Carolina on the east and Vancouver Island on the west coast of America, extending south to San Sebastian Island, Brazil, and to Peru, respectively.

The East American species are *E. breve* Orbigny, *E. brevissimum* Pilsbry (= *brevis* C. B. Adams, not Orbigny), *E. concolor* C. B. Adams, and perhaps *E. minutissimum* C. B. Adams.

On the Pacific Coast we have *E. variegatum* Carpenter (not *Phasianella variegata* Lamarck), which may take the name of *E. typicum*, as the specific name is preoccupied, as already noted by Pilsbry; *E. substriatum* Carpenter, originally described as a variety of the preceding species, but shown by more and better specimens to be quite distinct; *E. cyclostoma* Carpenter; *E. striulatum* Carpenter; *E. minimum* Philippi, and *E. luridum* Dall. *Phasianella perforata* Reeve, not Philippi, *P. petiti* Craven, *P. muniteri* Vélain, and *P. tessellata* Potiez and Michaud, so far as may be judged from figures, also belong to *Eulithidium*. *Phasianella punctata* Carpenter, not Risso, appears to be a *Tricolia* and may take the specific name of *Carpenteri*. Apparently Carpenter referred it to *Eucosmia* because it is umbilicate, like *P. pulchella* Adams, of the West Indies, but the species of *Eulithidium* are by no means all umbilicate. I have not seen *P. phasianella* C. B. Adams and *P. striulata* Carpenter, which are referred to *Eucosmia* in Tryon's Manual.

PHASIANELLA (TRICOLIA) COMPTA Gould, new variety PRODUCTA Dall.

Phasianella compta GOULD, var., in Tryon, Man. Conch., X, 1888, p. 173, pl. XXXIX, fig. 69.

This is distinctly more elevated and slender than the typical form of the species, and, while the color pattern is very similar, the color is, in all the specimens seen, decidedly darker and more olivaceous.

Genus TEINOSTOMA A. Adams.

Teinostoma A. ADAMS, Proc. Zool Soc., 1853, p. 183; sole ex. *T. politum* ADAMS; H. and ADAMS, Gen. Rec. Moll., 1, 1853, p. 122, pl. XII, fig. 9.

TEINOSTOMA POLITUM Adams.

St. Elena, Costa Rica, in 8 fathoms, Cuming; La Paz, Gulf of California, on the beach with hermit crabs, L. Belding.

This new locality extends the range of the type species a long distance to the northward.

Genus FISSURELLA Bruguière.

FISSURELLA VOLCANO Reeve, new variety CRUCIFERA Dall.

Fissurella volcano REEVE, Conch. Icon. *Fissurella*, fig. 2, 1849.—PILSBRY, Man. Conch., XII, 1890, pl. LXII, figs. 16, 17, 18.

A peculiar color-variety of this species has been sent to me from the Pacific coast a number of times in the hope that it was something new, and it seems worthy of a varietal name. The shell is as usual, except in color, the ground color being a brownish gray, with darker maculae, while from the apex start four broad white rays at right angles to each other, the posterior ray rapidly becoming V-shaped, the others remaining entire, each ray reaching four or five millimeters in length, and the anterior and posterior rays being in the longer axis of the shell.

Type.—Cat. No. 199171, U.S.N.M.

A specimen from San Pedro, U. S. National Museum, 199171, may serve as a type of the variety, which also occurs at San Diego and on the Lower California peninsula.

Genus YOLDIA Möller.

Section SCISSULA Dall.

YOLDIA ENSIFERA, new variety PLENA Dall.

This species in its typical form is abundantly distinguished from the *Y. scissurata* Dall (which is the common Arctic species usually named *Y. lanceolata* in collections), especially by its form and the prominent blades upon the posterior dorsal margin, which are three times the size of the same parts in the Arctic species. The peculiar

grooving of the valves in *ensifera* is comparatively feeble, toward the ends especially, compared with that of *scissurata*, which is not only stronger but covers the whole valve except a small portion near the posterior end, while in *ensifera* both ends are usually free from grooves; but Professor Kelsey has dredged in 80 fathoms, off the entrance to San Diego Harbor, a variety which, while agreeing in form and hinge characters with *ensifera*, has the grooving extended to within 6 millimeters of the posterior extremity and over the whole anterior end in specimens 28 millimeters long, all of the specimens showing similar extension of the sculpture, while a large series from San Pedro to the Aleutian Islands does not afford a single instance of such extension. It seems, therefore, that the difference is marked enough to constitute a namable variety which may take the name of *plena*.