

NOTES ON A COLLECTION OF SHELLS FROM TRINIDAD,  
CALIFORNIA.

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Trinidad Head, a lava promontory, lies about 28 miles north of the city of Eureka, California. It projects into the sea in a southwesterly direction, sheltering an area full of small volcanic knobs or intrusions from between which the sea has washed away the intervening strata. Conditions on the whole are decidedly ill adapted to the growth of mollusks, even the small rocks scattered among the larger knobs being, as a general rule, firmly embedded in fine, black, dirty, lava sand. The situation is therefore very unfavorable to the growth of mussels, abalones and other clear water species which abound elsewhere among granite rocks along the whole coast of California.

Directly in front of the village of Trinidad, however, there is exposed at low tide a mass of rocks most of which may be overturned, revealing many kinds of small shells. I took advantage of five low tides during the past summer to collect in the above-mentioned area, finding in the material taken two new species of *Odostomia* and one of *Turbonilla*. The following is a list of the species obtained by me. I am greatly indebted to Dr. Paul Bartsch of the United States National Museum for the determination of the minute forms.

PELECYPODA.

**MYTILUS CALIFORNIANUS** Conrad.

Not found in the immediate vicinity of Trinidad; common on the outer rocks.

**MODIOLUS FORNICATUS** Gould.

Fairly common.

**PECTEN GIGANTEUS** Gray.

Abundant, young specimens especially so.

**PODODESMUS MACROCHISMA** Deshayes.

One upper valve.

**KELLIA LAPEROUSEI** Deshayes.

**CARDIUM CORBIS** Martyn.

Broken valves only.

**SAXIDOMUS GIGANTEUS** Deshayes.

**PAPHIA STAMINEA** Conrad.

Very abundant in the sand about rocks.

**PETRICOLA**, species.

Fry, too young to determine.

**MACOMA INQUINATA** Deshayes.**SCHIZOTHAERUS NUTTALLI** Conrad.**PHACOIDES CALIFORNICUS** Conrad.

Young and dead specimens not rare.

**ENTODESMA SAXICOLA** Baird.

Relatively frequent.

**GASTROPODA.****ANISODORIS NOBILIS** McFlarand.

Several young specimens found under shelving rocks.

**DIAULULA SANDIEGENSIS** Cooper.

Abundant.

**OLIVELLA BIPLICATA** Sowerby.

Only one or two specimens.

**CLATHROMANGILIA LEVIDENSIS** Carpenter.

One young specimen.

**CLASIA PYRIFORMIS** Carpenter.

Common among corallines at lowest tide mark.

**COLUMBELLA (ALIA) CARINATA** Hinds

Common.

**AMPHISSA CORRUGATA** Reeve.

Very common.

**PURPURA FOLIATA** Martyn.

Frequent but in bad condition; among the larger rocks.

**TRITONALIA LURIDA** Middendorff.

Fairly common.

**TRITONALIA INTERFOSSA** Carpenter.**THAIS LAMELLOSA** Gmelin.

Plentiful.

**OPALIA WROBLEWSKII** Mörch.**EPITONIUM INDIANORUM** Carpenter.**MELANELLA MONTEREYENSIS** Bartsch.**TURBONILLA**, species.

New; to be described shortly by Doctor Bartsch.

**ODOSTOMIA (CHRYSALLIDA) EUGLYPTA**, new species.

Plate 1, fig. 1.

Shell minute, thin but fairly solid, rather broad; nuclear whorls large, inflated, somewhat eroded, evidently with quite strong spiral sculpture; postnuclear whorls 4, well rounded; sutures quite prominent; spiral ridges between the sutures 4, the lower one the strongest, crossed by numerous, fairly strong axial ribs which become weaker as they approach the outer lip; junction of transverse ribs and spiral ridges marked by prominent, blunt, rounded nodules; base moderate, with 7 flattish spiral bands, the upper ones the strongest, without any

transverse ribs; aperture ovate, slightly produced below; columella with a fairly sharp fold; margin of outer lip scalloped, showing the external sculpture within. Color gray. Length 2.1 mm.; breadth 1.2 mm. Trinidad, California; among corallines, etc., under stones at lower water mark.

The type and two other specimens of this minute shell were obtained.

The type is Cat. No. 334780 United States National Museum, the cotypes in the collection of Stanford University. The specimens were pronounced new by Doctor Bartsch.

**ODOSTOMIA (EVALEA) EDMONDI, new species.**

Plate 1, fig. 2.

Shell small, fairly solid, conic; surface more or less eroded, the sculpture, if ever present, no longer in evidence; nuclear whorls prominent, hardly immersed; postnuclear whorls nearly but not quite flat; sutures not very prominent, hardly channeled; base moderately long, evenly rounded; umbilicus very minute, closed; aperture egg-shaped; peristome almost complete; columella and inner lip with considerable callus and one oblique plait. Color gray. Length 3.1 mm.; breadth 1.8 mm. Trinidad, California.

One specimen, the type, was found, which is entered as Cat. No. 334787, United States National Museum. Named in honor of Mr. George W. Edmond, of Santa Monica, who first interested the author in the study of mollusca. The specimen was pronounced new by Doctor Bartsch.

**ODOSTOMIA ANGULARIS** Carpenter.

**ODOSTOMIA DELICIOSA** Dall and Bartsch.

**ODOSTOMIA SKIDEGATENSIS** Dall and Bartsch.

A number of specimens.

**CERITHIOPSIS MONTEREYENSIS** Bartsch.

Several.

**BITTIUM ESCHRICHTII** Middendorff.

Exceedingly abundant everywhere.

**ALVANIA COMPACTA** Carpenter.

Very common under stones; the smallest species found.

**LACUNA COMPACTA** Carpenter.

Very abundant on seaweed.

**LACUNA PORRECTA** Carpenter.

Even more abundant than the above.

**LACUNA SOLIDULA** Loven.

A few specimens of this unusually large species.

**CREPIDULA NIVEA** Broderip.

In the aperture of dead *Tegulas*.

**CREPIDULA EXPLANATA** Gould.

A few specimens on the under side of stones.

**POLINICES LEWISII** Gould.

One much worn example.

**ACMAEA PELTA** Eschscholtz.

Not overabundant.

**ACMAEA PERSONA** Eschscholtz.

Common.

**ACMAEA MITRA** Eschscholtz.

Common dead, living specimens not rare.

**ACMAEA INSESSA** Hinds.

A few from seaweeds.

**ACMAEA INSTABILIS** Gould.

Dead on beach, but no living specimens found.

**ACMAEA PALEACEA** Gould.

One specimen from corallines.

**CALLIOSTOMA CANALICULATUM** Martyn.

Dead juveniles.

**CALLIOSTOMA COSTATUM** Martyn.

Fairly common.

**MARGARITES PUPILLA** Gould.

Common under stones and among corallines.

**MARGARITES LIRULATA** Carpenter.

Common.

**TEGULA FUNEBRALIS** A. Adams.

Not rare but not nearly as common as further to the south.

**HALIOTIS RUFESCENS**, (probably subspecies **WALLALENSIS** Stearns.)

Not found at Trinidad, but said to be common at Patrick Point some miles to the north, where the lava rock gives way to granite.

**FISSURIDEA ASPERA** Eschscholtz.

Quite common under shelving rocks; large specimens much more frequently found here than further south.

**TONICELLA LINEATA** Wood.

Young specimens not rare but no large ones found.

## POLYPLACOPHORA.

**ISCHNOCHITON MERTENSI** Middendorff.

A few about the base of eel-grass.

**ISCHNOCHITON COOPERI** Carpenter.

Frequent.

**ISCHNOCHITON**, species.Too young to determine (*I. marmoratus*. Dall?).**ISCHNOCHITON**, species.

Too young to determine.

**MOPALIA LIGNOSA** Gould.

On the under side of rocks embedded in sand.

**MOPALIA CILIATA** Sowerby.

Not very common.

**MOPALIA HINDSI** Sowerby.

Common on sides of rock grottoes.

**MOPALIA**, species.

Too young to determine.

**PLACIPHORELLA VELATA** Carpenter.

A few specimens.

**KATHERINA TUNICATA** Sowerby.

Common; on the upper side of rocks at about half tide.

**CRYPTOCHITON STELLERI** Middendorff.

Comparatively very common; around extreme low water mark.

So far as I know, the only other collector who has worked at Trinidad is Mr. C. N. Drake who several years ago (while principal of the Trinidad schools) made in this region a considerable collection, which he presented to the city library of Eureka. The Librarian, Mr. H. A. Kendal, kindly furnished me with a list of Mr. Drake's collection. It contains the following species in addition to those given above.

## GASTROPODA.

**GADINIA RETICULATA** Sowerby.**OLIVELLA PEDROANA** Conrad.**SEARLESIA DIRA** Reeve.**COLUMBELLA (ALIA) GAUSAPATA** Gould.**TRITONALIA CIRCUMTEXTA** Stearns.**THAIS EMARGINATA** Deshayes.**LITTORINA SCUTULATA** Gould.**CRUCIBULUM SPINOSUM** Sowerby.**CREPIDULA ADUNCA** Sowerby.**NATICA CLAUSA** Broderip and Sowerby.**ACMAEA PATINA** Eschscholtz.**ACMAEA SPECTRUM** Nuttall.**ACMAEA ASMI** Middendorff.**ACMAEA SCABRA** Nuttall.**TEGULA BRUNNEA** Philippi.

## SCAPHOPODA.

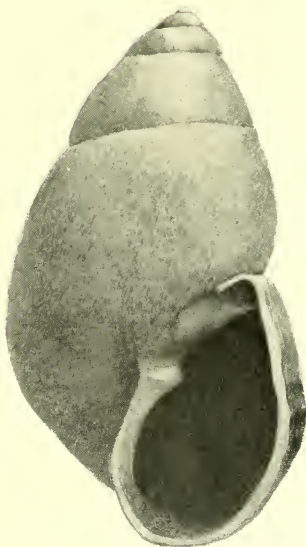
**DENTALIUM PRECIOSUM** Nuttall.

Once used as money by the Trinidad Indians.





1



2

NEW MOLLUSKS FROM TRINIDAD, CALIFORNIA.

FOR EXPLANATION OF PLATE SEE PAGES 2 AND 3.

