

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** McFarland.

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.



Jordan, Eric Knight. 1920. "Notes on a collection of shells from Trinidad, California." *Proceedings of the United States National Museum* 58(2325), 1–5.
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