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BALDWIN HILLS, LOS ANGELES COUNTY,
CALIFORNIA

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In 1926 Professor A. J. Tiejé (*Bull. Am. Assoc. Petr. Geol.*, Vol. 10, p. 510), in a discussion of the Pliocene and Pleistocene history of the Baldwin Hills, referred to a warm water fauna uncovered in Trench 6 of the Los Angeles Outfall Sewer, giving it the name of the Centinela Gravels. A much more extensive exposure of what is apparently the same fauna occurred a few years later during the widening of Lincoln Avenue, which crosses the outfall sewer about two miles northeast of Playa del Rey. At a point just south of the sewer, at an altitude of about fifty feet above sea level, excavations by steam shovels cut into the upper part of the fossiliferous strata, exposing large numbers of marine invertebrates.

During the summer of 1935 a number of lots of fossil shells from this section were brought to me for identification, and, after studying them, I became sufficiently interested in certain features of the collections to undertake a rather careful examination of the locality from whence they came.

The fossiliferous stratum, from eight to twelve inches thick in most places, was found to be mainly from two to four feet below the present surface. It was bordered, both above and below, by sand which sometimes contained sparsely scattered, small, water-worn stones. In some sections there was a thin stratum of echinoderms a few inches above the mollusk-bearing vein, but this was by no means constant.

During 1935 and 1936 I made many trips to this fossil locality, and excavated, screened and carefully examined several tons of material. This resulted in an accumulation in the Los Angeles Museum of more than 30,000 specimens. While the majority of these are mollusks, several other groups were well represented. No attempt was made to preserve all the specimens uncovered, in the case of the more common species only a good representation being kept, and all badly worn or broken specimens being discarded except in case of the rarer species. A million would probably be

collection. For use of *Bulla* instead of *Bullus*, see Pilsbry, *Nautilus*, 44, 1931, p. 98.

Haminoea vesicula (Gould).— 1 juvenile.

Melampus olivaceus Carpenter.— (14). These undoubtedly washed down from coastal marshes.

Williamia peltoides (Carpenter).— (26). The species represented is the one with elevated apex. Whether the above name is correctly applied here may be open to question (see Grant and Gale, 1931, p. 464).

Terebra (Strioterebrum) pedroana Dall.— Syn., *T. simplex* Cpr. (Arnold, 1903): *T. pedroana philippiana* Dall (Dall, 1921; Oldroyd, 1927).— (260). Abundant. The typical and the variant named *philippiana* both present.

Conus californicus Hinds.— Rather common. (16).

Megasurcula remondii (Gabb).— Syn., *Cryptoconus stearnsianus* Raymond (Dall, 1921; Oldroyd, 1927): *Surculites remondii* (Gabb) (Grant and Gale, 1931).— 41.

Megasurcula carpenteriana (Gabb).— Syn., *Pleurotoma carpenteriana* Gabb, *P. tryoniana* Gabb (Arnold, 1903): *Cryptoconus carpenterianus* Gabb, *C. tryonianus* Gabb, *C. tremperianus* Dall (Dall, 1921; Oldroyd, 1927): *Surculites carpenterianus* (Gabb) (Grant and Gale, 1931).— (130). A common and very variable species.

Lora fidicula (Gould).— Syn., *Bela fidicula* Gld. (Arnold, 1903, part): "*Lora viridula* Fabr." (Grant and Gale, 1931).— 1 specimen collected by Miss Edna T. Cook.

Spirotropis (Borsonella) barbarendis (Dall).— Syn., *Borsonella barbarendis* Dall (Dall, 1921; Oldroyd, 1927): "*Borsonella dalli* Arnold" (Dall, 1921, part; Oldroyd, 1927, part).— 1 specimen in Museum collection and another in collection of Mrs. E. M. Clark.

Spirotropis (Antiplanes) perversa (Gabb).— Syn., *Pleurotoma perversa* Gabb (Arnold, 1903): *Antiplanes perversa* Gabb (Dall, 1921; Oldroyd, 1927).— 8 specimens, all much worn and few entire. Evidently of an older fauna than the bulk of the deposit.

The writer cannot follow Grant and Gale in relegating such species as *rotula*, *santarosana* and *catalinae* to the synonymy of *perversa*. They appear to have not only different forms, but different ranges.

Moniliopsis incisa fancheræ (Dall).— Syn., "*Drillia inermis* Hds." (Arnold, 1903): *Clathrodrillia halcyonis* Dall (Dall, 1921; Oldroyd, 1927).— Abundant. (150).

Moniliopsis incisa ophioderma (Dall).— Syn., "*Drillia inermis penicillata* Cpr." (Arnold, 1903): "*Moniliopsis incisa* Cpr." (Dall, Proc. U. S. Nat. Mus., 56, 1919, pl. 12, fig. 7; Oldroyd, 1927, pl. 18, fig. 3).— (10). Much less common than the last.

There has been much confusion among authors regarding the names to be applied to the varieties of this well known species. It would seem that the correct application of names depends entirely upon the identity of Carpenter's type of *incisa*, which does not appear to be definitely established. The arrangement here