

tains, Ashland, and several places in Jackson county, indicate about the same horizon as that of the bed at Horsetown.

Original Localities of Chico Fossils.—In the second volume of the Paleontology of California there is a "Synopsis of the Cretaceous invertebrate fossils of California," giving a complete list of the species then known, with the localities at which they had been obtained. For convenience in making comparisons I have made a list of the species reported from each locality there mentioned. Leaving out of consideration the localities from which only from one to three species are reported, there are sixteen localities from which Chico fossils were obtained. An examination of the faunal lists from these places show that eleven of them may be referred without question to the Shasta-Chico fauna as represented at Horsetown and in the neighborhood of Cottonwood creek. These localities are: Benicia, Cottonwood creek, Crooked creek of the Des Chutes (Oregon), Curry's, Jacksonville (Oregon), Martinez, mount Diablo, Orestimba, Pacheco pass, Siskiyou mountains and Tuscan springs. The other five localities, viz, Chico creek, Cow creek, Folsom, Pence's and Texas Flat, yielded a greater proportion of species not contained in Mr Diller's collections from Shasta county, but there are several well marked Horsetown species reported from each of these localities; and they are all so intimately related to the other Chico localities by means of species held in common with one or more of them that they cannot be regarded as belonging to another fauna.

The Martinez group of Gabb has long since been abandoned as inseparable from the Chico; and, as Mr Diller has shown in his paper on the Cretaceous and early Tertiary deposits of this region,* the Wallala formation probably also belongs in the same series.

FAUNAS OF QUEEN CHARLOTTE AND NANAIMO FORMATIONS.

Correlation of Queen Charlotte Formation with the Shasta.—The correlation of the Queen Charlotte formation (divisions C, D and E of Dr Dawson's section) with the Shasta has already been mentioned in speaking of Mr Whiteaves' work. The additions now made to the Horsetown fauna materially increase the number of species that occur in both the Shasta and Queen Charlotte formations. It should be stated, however, that several genera of ammonites found on Queen Charlotte islands and not yet seen in the Shasta suggest a somewhat earlier period for the bed in which they occur. It would simplify the matter if it could be proved that these ammonites came from a lower horizon. It is worthy of note

* Ante, pp. 205-221.