

Triassic and Jurassic rocks in the West-Humboldt and Pah-Ute ridges is stated to be 20,000 feet or more.

The Sierra and Wasatch ranges have reverse positions with reference to the Great Basin. Each stands with its steepest side and its high shoulders toward the basin; and in each, if the views above stated with reference to the Sierra Nevada are correct, this bold side is made up in part of an Archæan range, which was really the protaxis and backbone of the mountains.

In the Vancouver and "Coast Ranges" of British Columbia the underlying rocks are gray granitoid kinds, containing much hornblende. The granite of the latter is associated with mica schist and hornblende schist. In the former, according to Dawson, the granite underneath the stratified beds of the Vancouver Island series is charged with innumerable darker fragments from these overlying rocks for a distance inward from the surface of the granite in some places of a few hundred feet to *half a mile*. How such a penetration of fragments from the non-metamorphic beds could have been produced, whether the granite were of later eruptive origin, or of earlier production, is unexplained. If the granite were metamorphic eruptive, and thereby simultaneous with the upturning in its eruption, the Vancouver strata would have been distinctly metamorphic.

In Europe, through the Triassic and Jurassic periods, great preparations in rock deposition were in progress over deepening troughs, for the making of the Alps, Pyrenees, Carpathians, Apennines; but the crisis in all these cases was delayed until the Tertiary.

2. CRETACEOUS PERIOD.

The Cretaceous period, the closing part of the "Age of Reptiles," is remarkable, like the earlier Mesozoic, for the number of Ammonites and Belemnites among its marine species; for the diversity and size of the Reptiles populating the seas, land, and air; for Birds that had teeth like the Reptiles; and for Marsupial and Oviparous Mammals. Unlike the earlier Mesozoic, it is not less remarkable for the existence in the seas, along with Ganoids and Cestraciont and other Sharks, of Teleost Fishes, related to the Perch, Mackerel, and Salmon, and for the addition to the forest trees of Angiosperms of kinds related to the Sassafras, Magnolia, Tulip Tree, Plantain, Fig, Beech, and the like, together with Endogens of the tribe of Palms.

GENERAL SUBDIVISIONS.

Only the grander subdivisions of the Cretaceous series, the Lower Cretaceous and the UPPER, or the EARLIER and LATER, are adopted alike in Europe and America. But it is not yet established that the limits between these two divisions as recognized on the two continents are the same.

NORTH AMERICAN.

1. *General Geographical Features of North America.*

The map here introduced presents a general idea of the distribution of land and salt water over the continent of North America during the period