

there took place after the Triassic. In the Sierra Nevada an unconformity occurs, according to Diller, between the Lias and Upper Trias of the Taylorville region, but the succession of deposits shows that no emergence in that portion of the Sierra Nevada accompanied the disturbance. In the Island belt of British Columbia, along Vancouver and the Queen Charlotte Islands, an emergence occurred after the Triassic period; for no Jurassic beds exist between the Triassic formation of the region and the Cretaceous; moreover, at some time between the Triassic period and the Cretaceous, according to G. M. Dawson, an extensive upturning of the Triassic beds took place; but whether at the close of the Triassic or of the Jurassic is left uncertain (1886, 1887).

The close of the Jurassic period was the time of the making of the Sierra Nevada Range, as announced by J. D. Whitney in 1864 (*Am. Jour. Sc.*, xxxviii., 1864; *Rep. Geol.*, 1865), after the discovery of Triassic and Jurassic fossils in Plumas County, and of Jurassic in the Auriferous slates of Mariposa County and other regions. This conclusion has been questioned and the event referred to the Middle Cretaceous, on the ground chiefly of resemblance between the Aucellæ of the Jurassic Sierra slates and those of the Lower Cretaceous; but it has been fully confirmed by the study of the Mariposa and other fossils by Hyatt and others, and by the fact of the unconformability of the Lower Cretaceous with the rocks of the Sierra in many places west of the Sacramento River.

It is also sustained by the fact of the conformability of the Lower and Upper Cretaceous, or the Shasta and Chico series, as observed by Diller; who has, moreover, traced the unconformability, not only along the west side of the Sacramento, from Pit River southward by Redding, Horsetown, and Ono, into Tehama County, but also northward by Yreka and Ashland, far into Oregon. Moreover, other ranges to the west and north participated in the upturning; for the Coast Range and the Klamath Mountains were parts of the result, according to Diller and Fairbanks; and it may be that still others in the Sierra line, to the north or south, were then formed.

The black slates and siliceous rocks of the auriferous belt of the Sierra are associated with hydromica schist, hornblende schist, serpentine, crystalline limestone, along with some sandstone, and with limestone which is semi-crystalline. From the Mariposa region northward they commonly have a dip eastward of 60° to 80° or 90°. The relative positions of the rocks of the belt are finely exhibited on the colored geological maps of parts of the Sierra region published by the United States Geological Survey, prepared chiefly by Lindgren and Turner. They show by colors the positions of the areas of outcrop of the granite or diorite, which makes the core of the Sierra, and also of the various eruptive rocks of the region as well as the belts which make up the Auriferous series.

In the Taylorville region, Plumas County, the beds, ranging from Upper Jurassic to the Silurian, are partly in overthrust flexures, the thrust being to the eastward (landward) as described and figured by Diller (*G. Soc. Am.*,