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NOTE ON THE CARBONIFEROUS FAUNAS OF MIS-SISSIPPI VALLEY IN THE ROCKY MOUNTAIN REGION.

BY CHARLES R. KEYES.

Recent critical and extensive comparative studies of the Carboniferous faunas of the Rocky mountain region have disclosed some facts that are of great interest to those who have become familiar with the Paleozoic fossils of the Mississippi valley. The Carboniferous faunas of the Continental Interior have now been well understood for over half a century. The faunas of the same geological age from the vast region west of the great central valley of the continent have also been well made out, but for the most part by a group of paleontologists entirely different from that group which was most familiar with the fossils of the Mississippi valley. On this account, chiefly, the faunas of the two regions have been treated largely independently and few exact correlative comparisons made.

Only in a very general way, in the past, have careful correlations been attempted. The results of the recent work are therefore of great significance.

The Rocky mountains abruptly terminate southward soon after crossing the Colorado line. Beyond begins the Mexican tableland with its characteristic basin-range structure. In this part of the southwest the Carboniferous is composed chiefly of a lower calcareous portion and an upper clayey part. The first-named consists of a number of limestone members which attain a thickness of more than 2,000 feet; and represent the Lower Carboniferous limestone, such as is found at Burlington, Iowa, and the limestones of the Upper Coal Measures. No shales of importance nor any beds corresponding to the Lower Coal

Measures of Iowa are known. The second part mentioned is the "Red Beds," which are developed to a thickness of 1,500 feet, clearly of Carboniferous age, and are followed by very similar "Red Beds" which are of Triassic age.

During the past two years I have collected and examined a large variety of fossils from the Carboniferous rocks of New Mexico. My previous acquaintance with the forms of a like age in the Mississippi valley has enabled me to institute some critical comparisons between the faunas of the two regions. The close identity of the two has made a great impression upon me. Forms from the New Mexico region which have been described under strange names have proved to be in reality very old friends. There are relatively a few species that are not common to the two regions.

The conclusions reached in these studies have lately received remarkable corroboration in the results of Girty's studies of the Carboniferous fossils of Colorado.* In this memoir a large synonomy is given. Species after species are identified with Mississippi valley forms. In a very large majority of the forms treated of and discussed the species from Missouri are considered until it would seem that the Missouri reports† could easily have been made the basis of the description of the Colorado species.

The same is true of the New Mexican forms as disclosed by the recent work in this district.

^{*}U. S. Geol. Sur., Professional Papers No. 16, 1903. †Keyes: Missouri Geol. Sur., Vols. IV and V, 1895.