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Age of Certain Sandstones near Iowa City

Charles R. Keyes

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than the phylogenetic history of the group. The correct determinations of the phylogeny of animals from paleontological evidence is attended with many difficulties. For, as repeatedly shown by Darwin and others, new variations tend to be transferred backward in the ontogenetic history of a species, and may dispose older characters. This taken in connection with the fact that variant changes may occur in one part of an organism without materially affecting other parts, calls for extreme conservatism in passing judgment on phylogenetic problems from evidence afforded by fossils.

AGE OF CERTAIN SANDSTONES NEAR IOWA CITY.

BY CHARLES R. KEYES.

The sandstones under consideration lie in old gorges in Devonian limestone a short distance north of Iowa City. On account of the presence of plant remains, which, however, were too fragmentary for identification, Hall regarded the arenaceous deposits as belonging to the upper coal measures. Others visiting the places, since the announcement of the discovery in 1858, have adopted the same view as to the age of the rock, without attempting to question the correctness of the assumption, or to obtain further evidence.

Lately some molluscan remains have been found in the sandstones. Comparisons show that they are very closely related to Kinderhook species occurring abundantly in the yellow sandstone at Burlington. More perfect specimens however are necessary before final judgment can be passed. Careful research will, no doubt, reveal soon large numbers of good fossils in the beds in question.

The Kinderhook is well exposed south of Iowa City at Burlington, and north-westward at Le Grand, in Marshall county. It is probable that exposures are accessible at numerous intermediate places. The Burlington limestone—the stratum superimposed immediately upon the Kinderhook in Iowa, is said to be well exposed northward from the city of Burlington to within 9 miles of Iowa City. Hitherto the shore deposits of the Kinderhook have not been recognized in Iowa except near Burlington. The Iowa City locality fills up the gap. However, some additional information is required before the question can be regarded as definitely settled. And the present note is merely suggestive.

NOTES ON THE REDROCK SANDSTONE.

BY CHARLES R. KEYES.

The sandstone of Redrock, in Marion county, Iowa, has long attracted popular attention. The bright vermilion cliffs rise to a height of one hundred to one hundred and fifty feet above the water surface of the Des Moines river. The red coloration of the rock, however, is local. The formation has a known geographic