

1928

Geological Date of Western Iowa Syncline

Charles Keyes

Copyright ©1928 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Keyes, Charles (1928) "Geological Date of Western Iowa Syncline," *Proceedings of the Iowa Academy of Science*, 35(1), 223-224.

Available at: <https://scholarworks.uni.edu/pias/vol35/iss1/42>

This Research is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

GEOLOGICAL DATE OF WESTERN IOWA SYNCLINE

CHARLES KEYES

(*Abstract*)

The shallow synclinal disposition of the coal measures of south-western Iowa is a theme of much past consideration. Of these references that of Van Tuyl¹ is perhaps most categorical and assured in character. He definitely asserts the forming of this syncline while the coal measures were being laid down, and ascribes it to this alleged circumstance that the coal measures of the Western Interior basin and of the Eastern Interior basin are so different.

Recently there are made available many observations extending over a very wide field that reveal to us the general physiographic expression and tectonic conditions under which our basal coal measures were formed and the structures which they subsequently assumed, structures which are plainly secondary and acquired instead of original and primary, as is so often urged.

That the floor of our coal measures, of not only Iowa but of a broad expanse reaching from the Great Lakes and Indiana to the southern Rocky Mountains and New Mexico, is a base-leveled tract, as fine and as perfect a peneplane as is perhaps ever possible to form, there is abundant evidence. Two accounts² summarize these evidences³ better than can be done here without going too far afield.

With the argument for the original structure out of the way the date of the acquirement of the synclinal form still remains an open question. There are now strong reasons for believing that the syncline is really one of the lateral expressions of our Triassic Siouan orogeny, which brings the pre-Cambrian complex up to the level of the prairies in the northwestern corner of the State.⁴ In a paper read⁵ before this Academy, something over a decade ago, on the "Controlling Fault Systems of Iowa," it is shown that how upon the release of the compressive strains which raised the mountains a series of parallel faults trending with the axis of the range developed through the western part of the State. Now the axis of our syncline is also parallel to that of the old mountain range. This syncline is clearly one of the lateral features of the Siouan anticlinorium. The foldings involve the coal measures and the peneplane surface; it is disguised somewhat by a later Jurassic plana-

¹ Proc. Iowa Acad. Sci., Vol. XXIII, p. 166, 1917.

² Bull. Geol. Soc. America, Vol. XII, pp. 173-190, 1901.

³ Pan-American Geologist, Vol. XI, pp. 117-134, 1928.

⁴ Proc. Iowa Acad. Sci., Vol. XXI, pp. 181-187, 1914.

⁵ *Ibid.*, Vol. XXIII, pp. 103-112, 1916.

tion which levels the mountains, bevels all minor inequalities of structure, and imparts to single features the appearance of original structures.