

Proceedings of the Iowa Academy of Science

Volume 1 | Part 1, 1887-1889; (1887) -

Article 25

1888

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Recommended Citation

Call, R. Ellsworth (1888) "The Geology of Crowley's Ridge, Arkansas," *Proceedings of the Iowa Academy of Science*, 1(Pt. 1), 52-53.

Available at: <https://scholarworks.uni.edu/pias/vol1/iss1/25>

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THE GEOLOGY OF CROWLEY'S RIDGE, ARKANSAS.

BY PROF. R. ELLSWORTH CALL.

(Abstract.)

Crowley's Ridge is a low range of hills forming the only conspicuous feature in the topography of Northeastern Arkansas, and extends in a general north and south direction from the Missouri state line to the city of Helena, where it ends abruptly. The total length is therefore about 145 miles. It is a range of hills of varying width, its average being about four to six miles. The elevation is, on the average, from 175 to 250 feet above the surrounding country. The general surface is very irregular and presents a fine example of quaquaversal erosion, the heads of the numerous ravines often departing from the same point.

The age of the ridge is a matter of some question for it is largely made up of deposits that are believed to be of the age of the Orange Sand deposits. That the age of these sands is yet in dispute results from the fact that their mode of origin is not well understood, and besides they differ so widely at many points of their distribution. It has, however, been assumed in these notes that they are properly to be classed with the quaternary, and that has been the constant reference made; whether this treatment is a proper one must be determined by additional work in the field.

In general, the ridge may be said to be composed of tertiary strata of Eocene age representing the Claiborne beds of Alabama. These beds contain many Claibornian fossils, though the *Ostreidae* occur in the greatest abundance. The localities in which these forms occur most numerous are few and widely scattered, but are of the same age and of the same value petrographically. The ridge is capped with deposits of l ess that are the same in all essential features as are the deposits in the regions farther north. These l ess beds lie directly upon the gravels of the Orange Sand, and are some-

times, though not always, separated therefrom by beds of sand apparently derived from the tertiary deposits of the circumjacent region. The characteristic loess-kindchen are present, but different from those of the north in being solid and never hollow. The ridge represents a mass of quaternary and tertiary sands and clays that have escaped, thus far, the great erosion to which the whole region has been subjected since tertiary times. It represents, therefore, the plateau of tertiary beds which resulted from the retirement of the Gulf in the early quaternary. There is little of economic value in these deposits, although the shell marl of one or two localities promises to have some local value. No mineral deposits of any moment are to be found in the ridge, and its top is of little agricultural value because of the difficulty of tilling. The paper was to be considered as tentative only as an additional season of field work was needed to settle some facts connected with the genesis of certain sands thought to be tertiary in age. The final results will appear in the annual reports of the Arkansas Geologic Survey, under the auspices of which organization the work was done.

CYNIPIDS AND CYNIPIDOUS GALLS ON OAKS COMMON TO IOWA.

BY PROF. C. P. GILLETTE.

(Abstract.)

For full scientific descriptions of the species herein mentioned see the Report of the Michigan Agricultural Society for 1888.

Andricus foliaformis, n. sp. The galls of this species occur on the under side of the leaves of the white oak (*Q. alba*). They consist of small wart-like projections which spread out in a leafy expanse on all sides so as to remind one of the corolla of a rotate flower. Rare. The fly measures about