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Tentative Correlation of the Topeka Limestone

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Introduction

As part of the required work in Mid-Continent Stratigraphy, Spring semester of 1939-1940, a study of the Topeka Limestone formation was undertaken in the field. As a result of this investigation, the following correlations have been made. The author is not entirely satisfied with some parts of the correlation, but to clarify these parts, additional field work is necessary and this is not possible at the present time.

Hartford limestone member.

The Hartford limestone ranges in thickness from 5 feet in southern Chautauqua County to more than 20 feet in northern Doniphan County. In the south, the Hartford is composed of two beds. The lower one is about $2\frac{1}{2}$ feet in thickness, is dark brown in color, and contains fusilines in the top, and crinoid fragments in the lower part. This bed is the Red limestone of Oklahoma.

The upper limestone is separated from the Red Limestone by a few inches of shale. It is a dense blue crystalline limestone with numerous brachiopods, and abundant fusilines in the top. It is about 2 feet thick.

To the north, the Hartford increases in thickness, and with this increase in thickness, the number of beds increases to 6 or 7. The 2 beds found to the south seem to correlate fairly well with the two lowest limestone beds of the north, except the cherty upper part of the second limestone is absent.

The Hartford, both north and south, contains predominately fusilines and algae, however, there are a few mollusks toward the top, and in one of the shales near the top, there is a persistent zone of echinoderm spines.

Turner Cr. Shale member

The Turner Creek Shale member is about 3 feet in thickness in the north, and is not recognized in the south as is none of the higher Topeka members. It is commonly a light gray shale, not very fossiliferous. It is overlain by the Du Bois limestone member.

Du. Bois limestone member

The Du Bois limestone consists of one or two thin dark blue limestones. It ranges in thickness from about 6 inches up to 2 feet. It has prominent vertical joints, and is massive rather than platy in character. The fauna everywhere observed, consisted either of mollusks or brachiopods. The limestone was not seen south of central Shawnee County, Kansas.

Holt shale member.

The Holt shale member lies next above the Du Bois limestone and is commonly two to three feet thick. The lower part is a black fissile shale, and the upper part is a blue-gray clayey shale. No fauna was observed.

Coal Creek Limestone member.

The Coal Creek member is the highest member of the Topeka limestone. It is composed of thin wavy beds separated by thin shale partings, but with a total thickness of around six feet. The beds become more solid lime to the north, and here is dark blue, and contains fusilines. In the south there are some fusilines, but there are also many brachiopods, bryozoans, and a few gastropods.

Summary

South of Geffey County the Calhoun (as correlated by the author) develops several thin limestone beds which might represent Topeka beds, causing the Calhoun Shale to become very thin, and the Topeka to be much thicker than in the north. To correlate these thin limes with the lower Topeka, additional information is needed between the sections in the north and those in the south. The author feels that in the light of the information available to him that it is better to consider these thin limes as in the Calhoun shale, and to limit the Topeka to the more massive bed, the "Red lime", which he correlates with the Hartford limestone of the north.