

FOSSILS OF THE KANSAS CITY GROUP

By: Dennis Whitney

The sedimentary rocks within the general Kansas City area were deposited in environments alternating between the deep-sea marine and the near shore terrestrial. This was the result of the ebb and flow of the seas, due to global environmental changes known as cyclotherms. The cyclotherms caused the seas to rise and recede, resulting in the deposition of alternating layers of limestone, shale, black slate, and coal seams. Over a period of approximately ten million years a series of beds formed, now known as the Kansas City Group. Because the resulting formations vary from the deep marine to the terrestrial, the paleo-environment has left us with a unique fossil fauna from the Upper Pennsylvanian Age.

In this series of short articles I will attempt to describe what has been written concerning the Kansas City Group, with a short, and probably incomplete synopsis of the fossil faunas which a searcher might expect to find. Hopefully this guide will prompt more discoveries which will further complete the fossil record.

I will use as a convention the Stratigraphy of the Kansas City Group as published by Parizek (1), after Howe (2). A web-site version of the Stratigraphy of the Kansas City Group from the Kansas Geological Survey can be viewed at: http://www.kgs.ukans.edu/General/Geology/Johnson/05_outcr.html

The Kansas City group is divided into three sub-groups, the Bronson, the Linn, and the Zarah. We will start with a discussion of the Bronson sub-group, which is composed of five formations, with eleven members.

The HERTHA Formation: with three members.

Critzer Limestone: The Critzer Limestone is not well represented in the Kansas City area. Parizek describes it as being generally nonfossiliferous, but Moore (3) contends that outcrops in Kansas contain large Bellerophonid Gastropods, he also implies that in other locations, the member contains algae, brachiopods and corals.

Cocke and Mussler (4) have identified the following corals to be present in the Hertha Formation of Kansas:

Geyerophyllum rude

Caninia, sp.

Neokoninckophyllum, 4 species

Dibunophyllum, 2 species

Mound City Shale (& Ovid coal): The Mound City Shale is also not well exposed in the Kansas City Area. North at Mound City, and west into Kansas, the shale has a thin coal seam, and Parizek(1) reports plant fragments to be present. Moore (3) contends that in Kansas the member contains bryozoans, crinoid fragments, horn corals, and the brachiopods: *Chonetes, Orbiculoidea, and Lingula.*

Sinabar Limestone: The Sinabar Limestone is exposed in the vicinity of Sinabar Creek, and fossils are abundant. Parizek (1) presents the following faunal list for the Sinabar:

The Fauna of the Sinabar Limestone after Parizek (1):

Coelenterata (corals):

Lophophyllum sp.

See also: Cocke & Mussler (4)

Arthropodia (Trilobites):

Phillipsia, sp

Brachiopoda (Brachiopods):

Composita subtilita

Chonetes granulifer

Derbyia sp.

Kozlowskia splendens

Chonetina flemingi

Hustedia mormoni

Punctospirifer kentuckiensis

Neospirifer latus

Antiquatonia portiockiana

Echinodermata (Echoderms):

Echinoid spines, and Crinoid ossicles.

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Bryozoa:

Fenestella sp.

Fistulipora sp.

Rhombopora sp.

Protozoa:

Fusulinids

Plants: An unidentified algae.

The LADORE Formation : with one member (the Ladore).

Parizek(1) simply states “ Fossils are scarce in the Ladore”. However Strimple and Heckel (5) have reported a site in Kansas where the brachiopods *Derbia*, *Neospirifer*, and *Linoproducts* occur in clumps. In one such clump of linoproductid brachiopods, a completely articulated specimen of the rare Acrocrinid (Crinoidea: Camerata): *Planacrocrinum klapperi* n. sp. was discovered, and described.

References:

- (1) Parizek, E. J., 1965, Stratigraphy of the Kansas City Group: Missouri Geological Survey and Water Resources, Report of Investigations No. 31, pp. 32 – 49
- (2) Howe, W. B., 1961, Pennsylvanian System in the Stratigraphic Succession in Missouri: Missouri Geological Survey and Water Resources, 2nd sedr., vol, 40, pp. 95-102.
- (3) Moore, 1949, Divisions of the Pennsylvanian System in Kansas: Kansas Geological Survey, Bulletin 21, 203 pp.
- (4) Cocks and Mussler, 1974, Upper Pennsylvanian Missourian Corals of Iowa: Proceedings of the Iowa Academy of Science, 81, pp.43 -50
- (5) Strimple, H. L. and Heckel, P. H., 1978, A significant Acrocrinid from the Ladore Shale in Eastern Kansas: Kansas Geological Survey, Bulletin 211, pt. 4, pp. 5-9