

THE FOSSILS OF THE RED WALL COMPARED WITH THOSE OF THE  
KANSAS COAL MEASURES.

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For the purpose of definitely determining the age of the upper half of the Red Wall limestone of the Rocky Mountains the writer has prepared the following tabulated comparison of the fossils of that series of rocks with those of the Kansas Coal Measures. The Kansas fossils were taken from Dr. J. W. Beede's Carboniferous Invertebrates of Kansas (Univ. Geol. Surv. of Kansas, vol. VI, pp. 1-187, plates 1-22). Some of the Upper Red Wall fossils were identified by Prof. Meek (see Gilbert's Report, U. S. Geog. Surv. w. of the 100th meridian, vol. III, p. 178); some by Prof. White (see White's Report in vol. IV, U. S. Geog. Surv. w. of the 100th meridian); the others by the writer, under the direction of Dr. Beede of the University of Indiana. The fossils identified by Meek are marked (1), those by White (2).

RED WALL FOSSILS.

KANSAS FOSSILS.

*Fusulina secalica*.

*Fusulina secalica*.

*Camphophyllum torquum*.

*Anolopra anna*.

*Camphophyllum torquum*.

*Limopteria alata*.

*Archæocidaris* ?

*Trachypora austini*.

*Archæocidaris agassiz*.

*Archæocidaris tudifer*.<sup>1</sup>

*Archæocidaris tudifer*.

*Derbya* ?

*Derbya bennetti*.

*Derbya crassa*.

*Derbya crassa*.

*Derbya cymbula*.

*Derbya Kuokuk*.

*Derbya biloba*.

*Derbya Kuokuk*.

*Derbya affinis*.

*Chonetes granulifer*.

*Chonetes mesolobus*.<sup>1</sup>

*Chonetes mesolobus*.

*Chonetes glaber*.

*Chonetes vernemlianus*.

*Productus pertenius*.

*Productus symmetricus*.

Productus nebrascensis.  
 Productus costatus.<sup>1 2</sup>  
  
 Productus semi-reticulatus.<sup>2</sup>  
 Productus prattenianus.<sup>1</sup>  
 Productus. ?  
 Productus, like *P. portlockienus*.  
 Reticularia perplexa.  
 Ambocœlia planoconvexa.  
 Spirifera kentuckensis.  
 Hemipronites crinistria.  
 Hemipronites crassus.<sup>2</sup>  
 Spirifer cameratus.  
  
 Pugnax uta.  
  
 Meekella striatacostata.  
  
  
 Aviculopecten interlineatus.<sup>1 2</sup>  
 Aviculopecten occidentalis.  
  
  
 Aviculopecten ?  
 Monoteria mariam.<sup>1</sup>  
 Myalina sp.  
 Myalina (?) swallowi.<sup>1</sup>  
 Nuculana (?).  
 Schizodus (?)<sup>1</sup> sp.  
  
 Rhombopora sp.  
 Fenestella shumardi.<sup>1</sup>  
 Fenestella sp.  
 Polypora stragulata.<sup>1</sup>  
 Glauconome nereides.  
 Synocladia biserialis.

Productus nebrascensis.  
 Productus costatus.  
 Productus longispinus.  
 Productus semi-reticulatus.  
 Productus cora.  
 Productus sp.\*  
  
 Reticularia perplexa.  
 Ambocœlia planoconvexa.  
 Spiriferina kentuckyensis.\*  
  
  
 Spirifer cameratus.  
 Enteletes hemiplicata.  
 Pugnax uta.  
 Pugnax rockymoutana  
 Meekella striatacostata.  
 Aviculopecten hertzeri.  
 Aviculopecten providencensis.  
 Aviculopecten sculptilis.  
 Aviculopecten interlineatus.  
 Aviculopecten occidentalis.  
 Aviculopecten carboniferus.  
 Aviculopecten McCoyi.  
 Aviculopecten germanus.  
 Aviculopecten sp.\*  
 Limopteria mariam.  
 Myalina sp.  
 Myalina swallowi.  
 Nuculana bellistriata.  
 Schizodus wheeleri.  
 Schizodus hari.  
 Rhombopora lepidodendroides.  
 Fenestella shumardi.  
 Fenestella sp.  
 Polypora sp.  
 Pimatopora tenuilineata.

Fistulipora nodulifera.	Fistulipora nodulifera.
Modiola (?) ?	Modiola subbelliptica.
Murchisonia sp.	Murchisonia sp.
Platysomus <sup>2</sup> sp.	
Phillipsia <sup>2</sup> sp.	Phillipsia sp.*
Nautilus occidentalis.	Nautilus planovolvis.
Enomphalus (like E. nodosus). <sup>2</sup>	Enomphalus sp.*
Enomphalus pernodosus.	Enomphalus pernodosus.*
Macrocheilus <sup>2</sup> sp.	
Pleurotomeria <sup>2</sup> sp.	Pleurotomeria tabulata.
	Pleurotomeria sp.
Bellerophon crassus.	Bellerophon crassus.
Dielasma bovidines.	Dielasma bovidines.
Seminula argentia.	Seminula argentia.

Of the 36 genera of the Upper Red Wall tabulated above, 32 are represented in the fossils of the Kansas Coal Measures, and of the 32 species identified 26 are identical. The tabulated comparison, therefore, determines the age of the Upper Red Wall of Arizona to be practically the same as that of the Kansas Coal Measures.

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NOTE.—The species and genera marked (\*) were taken from Bulletin 211 of the U. S. Geological Survey. Some of the other Kansas species (not marked) were taken from Dr. Beede's Report, Kansas University Science Bulletin, Vol. I. No. 7. September, 1902.