THE QUESTION OF THE SHOAL CREEK AND CARLINVILLE LIMESTONES*

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INTRODUCTION

A Pennsylvanian limestone which crops out extensively along Shoal Creek was first designated as the Shoal Creek limestone by Engleman[1] in his report on Washington and Clinton counties in 1868. This limestone as exposed in outcrops about two miles southwest of Carlyle in Clinton County and again at Carlinville in Macoupin County had been previously correlated with the Curlew limestone of Kentucky by Professor Leo

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[1] Engelmann, Henry, Geology of Washington County and Clinton County, Geological Survey of Illinois, vol. III, pp. 148, 159-164, 175, 177-183, 1868.

Lesquereux in 1860[2], but in 1907 Udden[3] pointed out that this correlation was erroneous, believing this particular limestone to be the equivalent of the Carthage limestone of Kentucky. Worthen in his report on Macoupin County in 1873[4] called this limestone the Carlinville limestone because of its outcrops at several points in the vicinity of Carlinville.

Broadhead referred to it as the Shoal Creek limestone in his report on Bond County in 1875[5]. Udden and Shaw followed this terminology in their report on the Belleville-Breese quadrangles in 1915[6] and Shaw followed it again in his report on the Carlyle-Centralia quadrangles in 1923[7]. In his report on the Gillespie-Mt. Olive quadrangles in 1926, Lee[8] noted the occurrence of two limestones — the upper he correlated with the Shoal Creek and the lower he designated as the Carlinville limestone because of its exposures near the town of that name, thus repeating Worthen's nomenclature.

RECENT STUDIES

Reconnaissance investigations in the southwestern part of Illinois during the summer of 1931 disclosed the following composite stratigraphic section between two major Pennsylvanian limestones in Macoupin and Montgomery counties:

	Thickness Feet	Inches
LaSalle (?) cylothem		
LaSalle (?) limestone		
Limestone, fossiliferous, hard, gray, with nodules of darker limestone		10-18
Limestone, very fine-grained, gray; weathers gray to pink and becomes slabby on exposure	4	6
Clay, calcareous, gray tinged with green, contains microfauna		5
Limestone, fossiliferous, light gray, also tinged with blue, more regularly bedded than that above	2	2
Clay, calcareous, yellow		5
Limestone, fossiliferous, very fine grained, very hard, gray speckled with blue		9
Shale, calcareous, gray to gray tinged with green, poorly bedded	2	2
Shale, black, hard, thin-bedded		5
Shale, dark gray tinged with green, poorly bedded		7
Shale, black, hard, platy, fossiliferous		5
Shale, olive gray, light to dark, with a 2-inch band of dark limestone concretions 6 inches above the base	2	8
Shale, gray, fossiliferous, with gray fossiliferous bands of limestone up to ½ inch thick	2	
Shale, gray, tinged with green and dark gray	1+	
Clay, calcareous, light gray to olive, ctontains small calcareous concretions	3	4

[2] Lesquereux, Prof. Leo, Report on the Coal Fields of Illinois: Geol. Survey of Illinois, vol. I, pp. 222, 227, 1866.

[3] Udden, J. A., Notes on the Shoal Creek Limestone: Ill. State Geol. Survey, Bull. No. 8, p. 119, 1907.

[4] Worthen, A. H., Geology of Macoupin County: Geol. Survey of Illinois, vol. V, p. 290, 1873.

[5] Broadhead, G. C., Geology of Bond County: Geol. Survey of Illinois, vol. VI, pp. 129, 131-134, 1875.

[6] Udden, J. A., and Shaw, E. W., Description of the Belleville and Breese Quadrangles: Geologic Atlas of the U. S. No. 195, p. 6, 1915.

[7] Shaw, E. W., Description of the Carlyle and Centralia Quadrangles: Geologic Atlas of the U. S., No. 216, p. 5, 1923.

[8] Lee, Wallace, Description of the Gillespie and Mt. Olive Quadrangles: Geologic Atlas of the U. S., No. 220, p. 5, 1926.

Shale, sandy, calcareous, with beds of calcareous sandstone having trails of invertebrates	7	2
Macoupin cyclothem		
Limestone, silty, light gray tinged with blue		6
Shale, silty, olive gray, with calcareous concretions	4	
Limestone, gray tinged with blue, crinoidal, with some thin lenses of calcareous shale	2	6
Shale, calcareous, gray tinged with green, fossiliferous		11
Shale, dark gray	1	2
Shale, black, hard, platy, fossiliferous	2	9
Coal (No. 9 of Worthen section)		8
Clay, gray	4	8
Shale, calcareous, olive	1	
Sandstone, calcareous, buff with sandy shales and limestones, carrying mudcracks, marine fossils, ripple marks and trails	6	
Centralia cyclothem		
Limestone, gray spotted blue, fossiliferous	3	
Shoal Creek cyclothem		
Shale, sandy, partly calcareous, gray to olive	0-14	
Shoal Creek Limestone		
Limestone, gray, fine-grained, compact, fossiliferous; fractures into rectangular blocks	6+	
Clay, calcareous, olive		3
Limestone, gray tinged with brown, compact, fossiliferous, massive	1	8
Clay, calcareous, olive, soft		5
Shale, olive, noncalcareous, sandy		10
Shale, black, hard, platy		9
Shale, coaly (coal at some localities)		2+
Clay, silty, noncalcareous in upper part, light gray	2	4
Sandstone, calcareous, buff to gray	10+	

This succession varies somewhat as it continues to the south through Bond, Clinton, Washington, Jefferson, and Marion counties, especially in regard to the upper limestone horizon which is represented in Jefferson and Marion counties by a massive calcareous sandstone, the lower portion of which is fossiliferous.

The lower limestone crops out extensively along Shoal Creek in Bond and Clinton counties and is therefore unquestionably the one originally named Shoal Creek. As the described section was traced northward it was discovered that Worthen's local Carlinville limestone was identical with the Shoal Creek limestone and that Lee's correlation was erroneous in that he applied the name Carlinville to the lower limestone and the name Shoal Creek to the upper limestone which actually lies about 50 feet above the true Shoal Creek limestone.

CONCLUSION

Consequently it becomes necessary to correct Worthen's and Lee's terminology and correlation by applying the name Shoal Creek to the lower limestone. Inasmuch as confusion would arise by attempting now to apply the name Carlinville to the upper limestone, it seems eminently desirable to abandon the name Carlinville. Further as the upper limestone appears to occupy the same stratigraphic position as the LaSalle limestone, it seems that the name *LaSalle* may well be applied to it.