X. OOLITIC HORIZONS IN THE ARBUCKLE FORMATION

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There is a series of oolitic cherty beds in the Arbuckle formation of the Arbuckle Mountains varying in number from place to place, eleven of which were studied in some detail by the writer while he was with a party making a detailed study of the Simpson and Arbuckle formations.

The measurements which will be used in this paper are taken from the detailed measurements made by the party, and are quite accurate. As the measurements were made from the top of the formation, stratigraphically, the order of the beds to be tabulated will be from younger to older. The following is a list of beds:

Bed No. 1	3409	feet	below	top	of	Arbuckles
Bed No. 2	3695	"	"	"	"	286 feet below bed No. 1
Bed No. 3	3703	"	"	"	"	8 feet below bed No. 2
Bed No. 4	3769	"	"	"	"	66 feet below bed No. 3
Bed No. 4	3777	"	"	"	"	8 feet below bed No. 4
Bed No. 6	3803	"	"	"	"	26 feet below bed No. 5
Bed No. 7	3821	"	"	"	"	18 feet below bed No. 6
Bed No. 8	3882	"	"	"	"	61 feet below bed No. 7
Bed No. 9	4027	"	"	"	"	145 feet below bed No. 8
Bed No. 10	4045	"	"	"	"	18 feet below bed No. 9
Bed No. 11	4609	"	"	"	"	564 feet below bed No. 10

Physical Characteristics:

Most of the oolite is calcareous and stained with iron, and is usually found in chert members. The texture is variable, from very fine to quite coarse, though none was coarse enough to be called pisolitic, and the greater part being quite fine.

The figures given in the chart were taken from measurements made east of the state highway across the Arbuckle Mountains, in sec. 18 and 19, T. 2 S., R. 2 E., where the beds were studied in greatest detail.

The writer walked the oolitic beds in sec. 11, 12, 13, 14, T. 2 S., R. 1 E., south of the East imbered Hills, and also in secs. 4 &9, T. 2 S., R. 1 W., southwest of the West Timbered Hills. In the area south of the East Timbered Hills, the first oolitic bed was found at 4040 feet below the top, and a succession of oolite and chert beds were found down to 4400 feet. Many of those beds contained Cryptozoon *proliferum*. The texture was about the same as of the oolitic rocks east of the road.

In the region near the West Timbered Hills the first oolitic bed was found at 5,120 feet below the top, wit hthe succession of chert-oolite through a vertical distance of more than 2200 feet. The oolites were of about the same texture as in the other places, but were white, not being stained with iron.

There is an area northeast of Woodford, called the Plateau Anticline, where only one bed of oolite could be found. It is a very white, calcareous oolite of varying texture. It is only about 2000 feet

feet below the top of the Arbuckle, therefore much higher up, stratigraphically, than the oolitic beds found in other regions. I doubt very seriously if it were laid down at the same time the other beds mentioned were laid down. The writer did not study that horizon in person but got the information from Dr. C. E. Decker.

One thing of interest was the occurrence of algal formation, Cryptozoan pro'iferum, in connection with several of the beds. The occurrence of the algae with the oolites and chert leads to the theory that algae may be an agent in the deposition of silica and calcium carbonate from solution in sea water. That theory can not be discussed in this paper. The thickness of these beds varied from 4 inches to about a foot, including both the chert and the oolites.

In most cases it was not difficult to follow the chert-oolite beds because of the fragments on the surface, between beds of more resistent limestones.