STRATIGRAPHIC NOTES

THE CLAYTON FORMATION (PALEOCENE) OF ALABAMA

I. ON THE CLAYTON FORMATION LITHOSTRATOTYPE

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ABSTRACT

A recently published measured section of the lithostratotype of the Paleocene Clayton Formation at Clayton, Barbour County, Alabama, interpreted the Clayton Formation as consisting primarily of crystalline limestone. A measured section interpreting the type Clayton as a section of calcareous sands with a prominent black clay bed is presented here. It is suggested that the carbonate section may actually have been to the southeast of the lithostratotype, where a carbonate facies does predominate.

A recent paper by Reimers (1986) describing the calcareous nannoplankton of the Paleocene Midway Group of Alabama is the first comprehensive treatment of the Paleocene calcareous nannoplankton in the eastern Gulf Coastal Plain. This, plus the detailed taxonomic descriptions and excellent illustrations of the flora, marks this study as an important milestone in the biostratigraphy of the eastern Gulf Coast Paleocene.

Upon examination of the description of the twelve sections studied by Reimers, an inconsistency is apparent in the description and illustration of the Clayton Formation lithostratotype (Reimers, 1986, p. 6, fig. 8). The described section is shown as consisting of approximately 23 feet (7 meters) of limestone with basal sand and clay units. This description is very different from that described by Reinhardt and Gibson (1980) and that presented by Fluegeman (1986). The Clayton Formation type section did not produce calcareous nannofossils for Reimers and, thus, it did not play a critical role in that investigation. As it is the most recent published description of the Clayton lithostratotype, however, the discrepancy in published descriptions of the type section is potentially confusing. Furthermore, the Clayton Formation is one of the most widely recognized units in the Gulf Coastal Plain, occurring from southern Illinois to western Georgia. If consistency in application of the name Clayton to Paleocene lithofacies is to be obtained, a firm idea of what the Clayton Formation is like at its lithostratotype is essential. It is the intent of this paper to present a revised interpretation of the Clayton Formation type section of Reimers.

The Clayton Formation lithostratotype is located in a cut of the Central of Georgia Railroad, 1.6 km east of the town of Clayton, Barbour County, Alabama and immediately north of the intersection of County Road 28 and the railroad (Clayton North 7-1/2' Quadrangle, section 34, T11N, R36E). The measured section is illustrated in Figure 1.

The Clayton Formation lithostratotype consists of 7.1 meters of sand, local limestones, and a unit of dark gray to black clay in the middle part of the section. The measured section described here is similar to that of Reinhardt and Gibson (1980). The section was sampled for microfossils producing several assemblages of benthic foraminifera (Fluegeman, 1986).

The difference between the measured section of the Clayton Formation lithostratotype presented here and the section of Reimers is striking. Reimers describes and illustrates a section that is primarily limestone and the section presented here is mostly sand with local limestone and clay beds.

Lithologically, the Clayton Formation measured and described by Reimers resembles the Clayton lithology at Town Creek in Fort Gaines, Clay County, Georgia (Marsalis and Friddell, 1975). This section is within 50 km of the Clayton type section but represents a greatly different lithofacies. The transition between the clastic and carbonate facies is far from clear cut. A question arises: As the precise location of the transition between carbonate and clastic facies is unknown, might the section of Reimers be a local development or extension of the carbonate facies into the area around Clayton? This seems unlikely, as the location of his measured

section is very specific and matches that of other workers.

A second possibility for the difference in measured sections could simply be due to field interpretation. The calcareous sands with local limestones identified in this paper and by Reinhardt and Gibson could have been interpreted as sandy limestones in the field and the proportion of local limestone beds in the section could have been overestimated. Were this true, the measured section of Reimers would still have contained the one meter thick dark gray to black clay bed, the conspicuous "leaf clay."

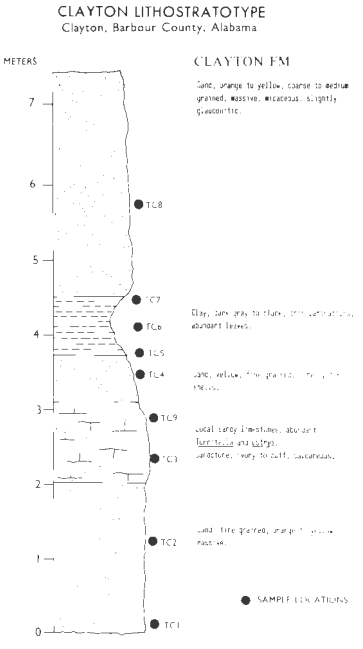

Figure 1. Measured section of the Clayton Formation lithostratotype. Sample locations are those used by Fluegeman (1986). Section measured by R. H. Fluegeman and K. Brabender.

It is suggested here that the section illustrated and described by Reimers is not the Clayton Formation lithostratotype but is a section from within the carbonate facies of the Clayton east of the type area. The precise location of such a section would prove valuable to studies of lithofacies relationships within the Clayton Formation, as it may extend the carbonate facies of the Clayton farther to the west than presently recognized.

Furthermore, since the Clayton Formation lithostratotype was not sampled for calcareous nannofossils by Reimers, an examination of this section may provide valuable information. Although Bybell (1980) reported no calcareous nannofossils from this section, the recovery of benthic foraminifera by Fluegeman demonstrates that the Clayton Formation lithostratotype does contain calcareous microfossils and should be re-examined for calcareous nannofossils.

LITERATURE CITED

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