Above the beds of Austin age the Cretaceous sequence in the eastern Gulf region may be divided most naturally into two sequences: the lower correlated with Taylor marl and the lower part of the Navarro group and the upper correlated with the upper part of the Navarro.

The lower of these two sequences consists of the Demopolis chalk, its sandy northern partial equivalent of the Coffee sand, and its eastern equivalent, the Cusseta sand, and the Ripley formation, which overlies all three units. This stratigraphic sequence extends from southern Illinois to west-central Georgia.

The upper beds of the Cretaceous include the Prairie Bluff chalk and its two sandy equivalents, the Owl Creek formation on the north and the Providence sand on the east. These formations extend from southern Tennessee as far at least as central Georgia, broken in west-central Alabama by overlap by the overlying Midway beds.

Near the ends of the crescentic belt the sequence of deposition is broken by extensive overlaps. As may be expected, internal, progressive overlap is common in all the formations, but extensive overlap indicating crustal warping is especially notable at the base of each of the larger groups discussed.

4. SUBSURFACE OCCURRENCE OF CRETACEOUS SEDIMENTS OF MISSISSIPPI, C. W. Alexander, Dixie Geological Service, and R. M. Harris, Harris and Payne, Jackson, Mississippi.

The Gulf Cretaceous sediments comprise the most significant group of beds as related to the search for and production of petroleum in Mississippi. As a result, natural emphasis has been placed on their study.

This paper, and the sections which accompany it, represent a composite of available knowledge of the beds and the consensus on the, as yet, uncertain features of the stratigraphy of the Gulf Cretaceous.

5. CENOZOIC DEPOSITS OF MISSISSIPPI AND ADJACENT AREAS, Grover E. Murray, Jr., Magnolia Petroleum Company, Jackson, Mississippi.

20,000 feet or more of Tertiary and Quaternary sediments are present in the central Gulf region of southern United States. They comprise a large, seaward-thickening, wedge-shaped sedimentary complex (Gulf Coast geosyncline) composed predominantly of deltaic deposits. Thin, relatively uniform and widespread, marine strata are present between the thick deltaic deposits and on the seaward edges of the deltaic masses. These thin, generally distinctive, marine strata are adaptable on the surface to detailed structural mapping; they also serve as key strata in core-drilling, in tracing surface units into the subsurface, and in the preparation of subsurface structural maps. Fossils present in the marine units determine their position in the standard geological time scale and assist in determining the relative geographic position at the time of deposition. The thick, ladle-shaped, deltaic deposits are normally unadaptable to structural mapping; however, they are readily used in the construction of areal, facies, and isopachous maps. Landward, both marine and deltaic deposits are progressively of a deeper-water environment, the deltaic deposits are progressively more marine.

The Tertiary is represented by four, perhaps five, epochs of deposition, which are, in ascending order, Paleocene, Eocene, Oligocene, Miocene, and Pliocene (?). Each successively younger series of rocks occupies an outcrop position progressively nearer the present coastline. Similarly, each younger rock series has been downwarped less by the thick, geosynclinal sedimentary load and, therefore, has less southwest regional dip. The Midway (Paleocene), Claiborne (middle Eocene), Jackson (upper Eocene), and Vicksburg (Oligocene) groups each contain important marine units. The Wilcox (lower Eocene), Miocene, and Pliocene (?) are primarily deltaic deposits; they constitute the thickest Cenozoic sedimentary accumulations in the eastern Gulf region.