

A certain amount of confusion in the nomenclature and in the correlation of certain formations encountered in deep wells in the Gulf Coastal areas which are now being exploited by oil development has necessarily occurred, perhaps primarily due to the fact that the more detailed stratigraphic and paleontological features of a number of the standard Tertiary sections of Mississippi and Alabama have not been known in greater comparative detail.

The exact demarcation of the upper and lower limits of the Oligocene is still a subject of controversy among paleontologists and geologists, particularly within the Gulf Coastal areas of Louisiana and Texas which are now undergoing exploitation by oil-field developments. It is particularly interesting that we may go to Mississippi for what appears to be the proper elucidation of the relationships of the standard Oligocene section of the Gulf Coastal Plains and the lowermost Miocene of Mississippi.

A marine formation lying between the Catahoula and the Byram marl of the Upper Vicksburg will be described. The evidence for the age of this formation and its position with respect to the *Heterostegina* zone will be discussed.

3. W. ARMSTRONG PRICE, The Corpus Christi Structural Basin as Mapped by Salinity Data (abstract).

Water wells completed in the Lissie and Beaumont show artesian conditions to exist in spite of supposed lenticularity. Analyses of 1,400 water sands yield a salinity map based on regional, smoothed-out lines of equal chlorine concentration (iso-salinity lines) ranging up to 4,000 parts per million.

Inability to correlate individual sands requires that the Lissie-Beaumont be treated as a single water sand. Sands sampled lie beneath a shallow zone of highly saline ground-water which is invaded under sandy soil by fresh water. The strongest Lissie-Beaumont water analyzed has 6,200 parts and immediately beneath the Lissie is water with more than 22,000 parts of chlorine.

After analogy with the Woodbine artesian sand of the East Texas basin, where iso-salinity lines and structural contours are parallel, a wide swing of the lines around the head of Nueces-Corpus Christi Bay is taken to establish a Corpus Christi structural basin, provided the hypothesis of the down-dip flow of surface waters mixing with original oceanic brine is accepted as the explanation of the observed distribution of salinity in both regions.

Adjustment of the ancient, high-level delta of the Atascosa-Nueces rivers of the Pleistocene to the postulated structural basin, and entrenchment in it of the present Nueces River with its drowned-valley bays, support the structural interpretation of the salinity map. Outside the "basin" the lines are parallel with the gulf shore line. Barton's top-of-salt contours for salt domes indicate the other bays of Texas to be probably in structural basins.

Opposing interpretations are briefly discussed. The probably varied nature of the connate waters of the Pleistocene may require a combination of methods to explain the observed salinity gradients with their numerous local chlorine "highs." Two of the "highs" cover producing oil and gas fields. Others are believed to do so. Some are probably due to lenses of impervious sediments obstructing down-dip flow in the water sands. Their pattern does not seem to be that of shore-line features such as lagoon and bay basins, but superposition of many water sands which probably have varying salinities may have influenced the result. The structural interpretation of the local "highs" is not studied in detail.