



## IMPORTANT MICRO-FOSSILS FROM AN EAST TEXAS OIL WELL

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This paper is based upon a study of excellently preserved fossils. Foraminifera and Ostracoda, and the chart showing their stratigraphic appearance, as they occurred in cuttings recovered from an East Texas Oil Well, namely, Thompson No. 1. The section examined ranged in depth from 970 to 2,045 ft., the average interval of cuttings being 20 ft. The section represents 300 ft. of Upper Cretaceous, or Navarro; and 900 ft. of Lower Eocene, or Midway. Upon the basis of Micro-fauna the writers established two zones in the Cretaceous section, one at the Cretaceous-Eocene contact, and two in the Eocene section.

In the compilation of the chart the fauna names were placed in a vertical position, and the depth of cuttings in a horizontal position across the top of the page. The symbols, A (abundant), P (present), and R (rare), were used to indicate the relative abundance of the individual forms. The fossils are listed on the chart according to their first appearance and abundance in the drilling section. Accordingly, fossils on the upper part of the chart represent younger strata, and fossils on the lower part represent older strata. A chart devised after this fashion actually indicates the stratigraphic position wherein a given form disappeared, rather than indicating the position of its stratigraphic introduction. This type of chart is considered advantageous over one whose fossil list is arranged alphabetically or generically in that it shows at a glance the definite relationship existing between the different fossils and the depth of their first occurrence. This arrangement also indicates "first occurrence" zones as lower depths are encountered.

The outstanding zone indicated by the chart is that zone at 1,680-1,700 ft., shown by the abrupt appearance of numerous micro-fossils characteristic of the Cretaceous formation, and thus indicating the Cretaceous-Eocene contact. These fossils include the first appearance of: *Globigerina rugosa*, *Lenticulina navarroensis*, *Polymorphina cushmani*, *Brachycythere rhomboidalis*, *Cytherella navarroensis*, *Gumbelina globulifera* and *G. striata*. The first appearance of *Inoceramus* prisms in abundance also characterizes this zone. (Those fossils which are shown first appearing in the Eocene section of the chart and occasionally also in the Cretaceous frequently represent cavings in the well or otherwise contamination in recovery of cuttings).

Zoning is not limited to the interval represented by one cutting, but may include two or three intervals, covering from 20 to 40 ft. in this particular well. Thus, the zone from 1,130-1,160 includes three samples and the following fossils: *Cibicides alleni*, *Gyroldina soldanii*, *Globigerina compressa*, *G. pseudobulloides*, *Anomalina welleri*, *Cytherella* sp., *Trochammina diagonis*, and *Bathysiphon arenaria*. The zone from 1,380-1,420 includes four cuttings and the fossils: *Haplophragmoides calcula*, *H. diagonis*, *Epistomina elegans*, *Cibicides midwayensis*, *Nodosaria granti*, *Bullimina*

*aculeata*, *Pulvulinella exigua*, and *Ammodiscus incertus*. The zone from 1,720-1,780 includes two cuttings and the fossils: *Gaurdryina pupoides*, *Clavulina parisensis*, *Vaginulina gracilis*, var. *cretacea*, *Cyclammina*, n. sp., *Glandulina radícula*, var. *cretacea*, *Lagena hispida*, *Nonion rugosa*, n. sp., *Siphogeneroides plummeri*, *Bulimina pupoides*, and *Loxostomum, platium*. The last zone, 1,870-1,900, includes two cuttings and the fossils: *Globigerinella aequilateralis*, *Reophax saratogensis*, *Trochammina excavata*, and *Triloculina laevigata*.

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