structed in three dimensions by illuminating the plate with white light or light rich in the wavelength to which the hologram is tuned.

BROWN, LEWIS R., Mississippi State Univ., Mississippi State, Miss.

Microbiological Prospecting for Hydrocarbons

No abstract available.

BROWN, R. H., Shell Oil Co., Houston, Tex., and F. B. VAN HOUTEN, Princeton Univ., Princeton, N.J.

Early Mesozoic Tectonic Framework and Sedimentation, Northwest Africa

In northwest Africa, Triassic and Early Jurassic deposits accumulated in two different tectonic provinces, the African platform and the Variscan (Hercynian) orogene.

In southern Algeria and Tunisia, Lower, Middle, and Upper Triassic sediments, essentially devoid of volcanic materials, were deposited on the stable African platform south of the Saharan flexure (South Atlas fault zone). Here the basal Triassic beds lie on a post-Variscan unconformity which marks a progressively longer hiatus northward toward the orogene. The sequence consists mainly of nonmarine arenaceous and argillaceous evaporite facies, with intercalations of marine limestone and dolomite increasing toward the northeast. These deposits resemble correlative ones in western Europe. On the unstable eastern cratonic margin and adjacent southwestern corner of the Pelagian block (Djeffara Plains) Lower Triassic detrital paralic sedimentary rocks conformably overlie a thick succession of Permian marine strata.

Most of the Variscan province apparently was stable and emergent during Early and Middle Triassic times. Nevertheless, the mid-Triassic Tethyan transgression that spread a carbonate-evaporite mantle across central and northern Tunisia did encroach westward onto the eastern part of the orogene. Early Mesozoic extensional deformation of the Variscan domain produced differential vertical displacement along the Saharan flexure between the orogene and the African platform, as well as on the orogene along the central Altantic, Middle Atlas, and Gibraltar fracture zones. In the west, this deformation outlined the Moroccan and Oranian mesetas which remained relatively stable and were extensively eroded during early Mesozoic time. Red beds, evaporites, and basaltic flows filled the basins. Although poorly dated by fossils, their linear pattern and discordant boundaries, and radiometric ages of the volcanic rocks, indicate that the basins were formed during the Late Triassic extensional phase that disrupted eastern North America.

BROWN, ROGER E., and BRUCE H. WILKINSON, Univ. Michigan, Ann Arbor, Mich.

Draney Limestone—Early Cretaceous Lacustrine Carbonate Deposition in Western Wyoming and Southeastern Idaho

The Lower Cretaceous Draney Limestone, a lenticular carbonate sequence well exposed throughout the Overthrust belt in western Wyoming and southeastern Idaho, records deposition in an extensive, shallow, low-salinity lacustrine system that minimally covered 30,000 sq km. The predominant lithologies of calcareous mudstone, micrite, intramicrite, and biomicrite contain a lacustrine biota composed predominantly of ostracods and the calcareous alga *Chara*, with less common bivalves and gastropods. The continuity of the Draney throughout the area indicates that this lake was a more or less continuous body of water throughout deposition. Individual units within the Draney, however, cannot be correlated over large distances; this fact suggests significant local chemical and/or physical variations within the lake basin during carbonate deposition.

The lake appears to have been relatively shallow throughout its extent, as evidenced by the presence of winnowed sandy biomicrite and the ubiquitous *Chara*, which in modern systems is restricted to shallow photic zones. Limonitic calcareous mudstones which exhibit well-developed calcite boxwork fabrics and vugs filled with calcite spar indicate infrequent subaerial exposure and alteration of lake sediments. Modern playa systems do not serve as a satisfactory analog to the Draney lake because features indicative of (1) frequent subaerial exposure, (2) deposition in exceedingly shallow water, or (3) coprecipitation of more evaporitic minerals have not been observed in the Cretaceous sections. On the contrary, lithologic, faunal, and floral features of Draney strata are more nearly identical to those of marl deposits in modern, temperate-region, hardwater lakes. Therefore, Cretaceous carbonate deposition under somewhat similar conditions is suggested.

BROWN, STEPHEN W., PAUL J. CERNOCK, and JOSEPH A. HAYKUS, GeoChem Laboratories, Inc., Houston, Tex.

Regional Hydrocarbon Source-Rock Evaluation of Atlantic Coastal Plain Adjacent to Georgia Embayment

In January 1978, GeoChem Laboratories completed a regional hydrocarbon source-rock study involving 13 wells in the Atlantic coastal plain adjacent to the GE-1 COST well. The purpose of this study was to characterize the geochemical zones within the stratigraphic section of the individual wells, to establish their onshore hydrocarbon generating potential, and to assist in the evaluation of the Georgia embayment by projection of the geochemical data into the offshore region.

Although the analyses were performed on the Tertiary through Lower Cretaceous sediments, only the Upper Cretaceous section exhibited source-generating potential. Evaluation of the sediments as to total organic content (richness), organic-matter type (prone to be gas-, condensate-, or oil-productive), and state of thermal maturity, showed that both the Selma Group of the Upper Cretaceous (Navarro, Taylor, and Austin Formations) and the Tuscaloosa exhibit good to very good source-generating potential. This favorable potential appears to extend into the offshore region to the northern part of the blocks involved in OCS Sale 43, held in March 1978. Unfortunately, the Upper Cretaceous ap-