Total (living and dead) foraminifera in 194 sediment samples from the Atlantic inner shelf, between the Georgia-Florida border and Cape Canaveral, were studied to determine the distribution of principal assemblages. North of 29°10′N (vicinity of Daytona Beach), the inshore zone contains a typical assemblage with relatively low species diversity, dominated by *Elphidium* and *Ammonia*. Seaward of this zone, to the limit of sample coverage (23 km offshore), there are two interspersed assemblages, both more diverse than the inshore assemblage. One assemblage, dominated by *Elphidium* and *Quinqueloculina*, is found mostly on medium to coarse sand; the other, an *Elphidium/Quinqueloculina/Cibicides* assemblage, predominates on fine sand substrates. From 29°10′N south to Cape Canaveral, few samples contain assemblages characteristic of the northern sector. The inshore assemblage contains increasing numbers of *Quinqueloculina* while the offshore zone contains mainly a *Elphidium/Quinqueloculina/Hanzawaia* assemblage. In the inshore zone, several species more characteristic of the fauna farther seaward appear in the samples. Available evidence suggests that this occurrence is primarily the result of onshore transport of tests rather than changes in inshore environmental factors.

Because of the irregular shelf topography of the study region, depth and distance seaward are not as directly related as on flatter shelves, making it possible to compare the relative importance of these factors to assemblage composition. This comparison shows that in both sectors there is a significantly greater correspondence to distance offshore than to water depth.

MEYER, H. JACK, Northwest Geothermal Corp., Portland, OR, and JOHN W. HOOK, John W. Hook and Assoc., Inc., Salem, OR

Overview of Geothermal Exploration on Western Slopes of Mt. Hood, Oregon

Since 1977, Northwest Geothermal Corp., the U.S. Geological Survey, the Oregon Dept. of Geology and Mineral Industries, and the U.S. Dept. of Energy have cooperatively explored the western slopes of Mt. Hood, Oregon, for geothermal water suitable for direct utilization. The high regional heat flow of the Cascade Mountains provided the impetus for the exploration. A possible magma chamber associated with Mt. Hoodenhanced the prospect. The anticipated resource is deep circulating meteoric waters.

The stratigraphic history of the western Mt. Hood area is one of andesitic volcanism from late Oligocene to Holocene. The Miocene basalts of the Columbia River Group interrupt and locally interfinger with this sequence. A large quartz diorite stock of questionable age is exposed immediately southwest of Mt. Hood.

The regional structural setting has been interpreted to be a right lateral wrench tectonic system resulting from north-south compression. Major northwest-trending right lateral faults with some vertical component, and northeast-trending antithetic faults were mapped. Low amplitude en-echelon west-northwest-trending folds are present in the younger rocks. An older northeast-trending fold pattern, coupled with thrusting, was mapped in the basalts of the Columbia River Group.

The exploratory drilling program was designed to develop stratigraphic, structural, and hydrologic information, as well as to establish the geothermal gradient. The initial 564-m observation well in the Old Maid Flat area of Mt. Hood yielded a conductive gradient of 67°C/km. Gradients on the western side range from 20 to 83°C/km. Two deep tests (1,220 m and 1,837 m), funded by DOE, have been drilled. Both wells, while finding no fluids, have conductive gradients to total depth.

MEYERS, PHILIP A., Univ. Michigan, Ann Arbor, MI, SIMON C. BRASSELL, Univ. Bristol, Bristol, England, WILLIAM W. HAY, Joint Ocean Inst., Washington, D.C., et al

Cretaceous Black Shales in Angola Basin of South Atlantic Ocean

Conditions favorable to deposition of black shales in the deep ocean occurred several times during the Cretaceous. Anoxic sediments were laid down in the South Atlantic during two distinct periods, the Aptian-early Albian and the late Albian-Coniacian. At site 530 of DSDP Leg 75 in the Angola Basin, black shales averaging 5.1% and containing up to 16.5% organic carbon were found in a late Albian-Coniacian turbidite sequence. Shipboard analysis shows most of the organic matter to be of marine origin, although several layers contain some terrigenous material. Based upon Rock Eval pyrolysis and the absence of significant amounts of light hydrocarbons, all of this organic matter is classified as immature. Thicknesses of the black shale layers are generally several centimeters or less, and they are separated by fine-grained turbidites containing less than 0.3% organic carbon. These Aptian-Coniacian shales seem to be the result of downslope density flows of shelf-edge sediments rich in organic matter. Preservation of organic matter was a result of rapid burial, not by stagnant basin waters. Furthermore, this mode of preservation appears to be responsible for the Cretaceous black shales throughout the South Atlantic.

MILLER, KENNETH G., and G. P. LOHMANN, Woods Hole Oceanog. Inst., Woods Hole, MA

Recent Benthic Foraminiferal Biofacies from Northeast United States Continental Slope and Rise

Several bathymetrically consistent Recent benthic foraminiferal biofacies have been recognized from the continental slope and rise between Cape Cod and Cape Hatteras. Faunal assemblages are dominated by *Globobulimina/Bulimina* (upper slope), *Uvigerina peregrina* (lower slope), *Hoeglundina elegans* (middle rise), and *Nuttalides umbonifera* (lower rise). These biofacies are associated with various hydrographic and substrate conditions.

Uvigerina peregrina dominates the benthic foraminiferal fauna in water depths between 1,000 and 2,500 m. This species has been used as an indicator of bathyal water depths, deep-water paleotemperatures between 3 to 4°C, or water of low oxygen content. However, interregional correlations between *U. peregrina* and water depth or temperature are not always maintained. On the continental slope and rise, the species is not associated with low oxygen in the water column. The highest abundances of *U. peregrina* closely coincide with maxima of organic carbon and silt within the slope sediments. This suggests that its distribution may be influenced by low oxygen in the sediments or adjacent bottom waters, rather than by low oxygen water masses.

MILLING, MARCUS E., SR., Exxon Co., New Orleans, LA, and JOHN R. DUNCAN, Exxon Production Research Co., Houston, TX