structure (Columbiana County), solution-collapse structure (Ashtabula County), and drape over preexisting structure (Summit and Stark Counties). Explorationists should be aware of these effects to prospect profitably for deep pays in the Appalachian area.

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CENTRAL APPALACHIAN TECTONICS AS INDICATED BY STRUCTURAL FEATURES IN CARBONIFEROUS ROCKS

Regional structural features, including the hinge line on the west flank of the Appalachian basin, are reinterpreted on the basis of data assembled from recent geologic mapping and subsurface studies of Carboniferous rocks in eastern Kentucky and adjacent areas of West Virginia, Virginia, and Tennessee. The easterly trending Irvine-Paint Creek fault system has been recognized as a major feature affecting late Paleozoic sedimentation in this part of the basin. Except for slight stratigraphic thinning across a few of the associated anticlines, there is little evidence of hinge-line thickening at or near the fault system, or of growth-fault development during the deposition of Carboniferous strata. Structural and stratigraphic features suggest that the Irvine-Paint Creek fault system is largely postdepositional and that hinge-line development actually occurred along the intersecting Waverly arch. This flexure was identified by Woodward in 1961 in lower Paleozoic rocks of Ohio and northeastern Kentucky, but the extent and thickness trends of Mississippian formations beneath the basal Pennsylvanian unconformity show that the flexure was also positive in late Paleozoic time. Distribution patterns of these formations indicate that the Waverly arch is more extensive than previously indicated, extends southwestward across eastern Kentucky into northern Tennessee, and approximately parallels the Cincinnati arch 50-60 mi toward the west.

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INFLUENCE OF SALINA SALT ON STRUCTURE IN NEW YORK-PENNSYLVANIA PORTION OF APPALACHIAN PLATEAU

The Silurian salt serves as a *décollement* zone above which the younger sedimentary section is involved in a series of folds. The southeastern limb of each of these folds is generally oversteepened. Beds older than the Salina salt are apparently not involved in the folding, as evidenced by seismic data. A comparison of the folds in this area is made with those in other areas underlain by bedded salt. Factors controlling salt-influenced structures include (1) thickness of salt layer, (2) manner of deposition of overburden, and (3) angle of slope of salt-sediment surface during deposition of overburden.

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STRUCTURE IN NORTHERN APPALACHIANS FROM AEROMAGNETIC AND GRAVITY DATA

No abstract available.

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RECENT EXPLORATORY ACTIVITIES AND FUTURE POTENTIAL—NORTHEASTERN AREA

No abstract available.

JACKSON, J. R., JR., Humble Oil and Refining Company, Houston, Tex.

IMPACT OF ENVIRONMENTAL IMPACT STATEMENTS

No abstract available.

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STRATIGRAPHY AND ECONOMIC POTENTIAL OF CAMBRIAN AND LOWER ORDOVICIAN ROCKS IN OHIO

Fine-grained to conglomeratic basal Mt. Simon Sandstone (0-350 ft) is overlain in western Ohio by fine-grained glauconitic Eau Claire Sandstone (200-600 ft) and in eastern Ohio by Rome dolomite and poorly sorted sandstone (190-750 ft). The Rome is overlain by the Conasauga Formation (40-400 ft), consisting of siltstone, sandstone, limestone, dolomite, and southward-thickening prodelta shale. Eau Claire and Conasauga are overlain by a deltaic sandstone (0-170 ft) derived from the north; in northeastern Ohio the equivalent rocks are dolomite and discontinuous sandstone. The Knox Dolomite (0-1,200 ft) overlies these beds and in eastern Ohio includes the Rose Run sandstone (100−120 ft). Both Rose Run and deltaic sandstone subcrop below the Knox unconformity as potential traps.

Only one show (gas) has been recorded from the Mt. Simon. Younger sandstones (Rome, Conasauga, deltaic, Rose Run, and unnamed sandstone in the Knox) are potential reservoirs where they have structure or form stratigraphic traps (porosity pinchouts, facies boundaries, erosional highs below the Knox unconformity). Gas and oil have been produced from the Knox from both structural and stratigraphic traps.

Prime exploration areas are north-central Ohio, where sediments were deposited close to the shoreline, and eastern Ohio, currently active, where secondary porosity below the Knox unconformity has created gas reservoirs.

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REMOTE SENSING AS TOOL FOR INTERPRETING STRUCTURAL GEOLOGY IN APPALACHIANS

The science of remote sensing of the earth's surface with special cameras and other instruments that measure reflectance and/or emission of energy in the electromagnetic spectrum has had nearly exponential growth since the early 1940s. Since the mid-1950s scientists and engineers gradually have become aware of and interested in utilizing remote sensor technology in the natural sciences. This technology, developed principally from classified military projects, has been used only in unclassified civilian projects in natural sciences and earth resource fields during the past decade. Applications of remote sensing that have been advanced and tested include geologic use of Gemini and Apollo satellite photography, Nimbus AVCS (advanced vidicon camera system) and thermal infrared scanner data, as well as data from a number of aerial systems.

Remote sensor systems which have received attention in geology and allied disciplines are: (1) black and white (B/W) photography (panchromatic and infrared), (2) color and color infrared (IR) photography, (3) multiband (MB) photography, (4) thermal infrared (TIR) scanner images, (5) multispectral scanner (MSS) images (from near-ultraviolet to far-thermal infrared), (6) side-looking radar (SLAR or SLR) images, and (7) passive microwave scanner (PMS) images. Several of these systems have been tested from aircraft and spacecraft over parts of the Appalachians and adjacent regions. Remote sensing image data (ground observations, *etc.*) have provided useful information related to regional structures such as joint patterns, drainage patterns, fault traces, and rock types.

The application of geologic remote sensing is in its infancy, however, and these tests are not meant to imply that remote sensing is or will be a panacea for all the problems of Appalachian structural geology, but surely a combination of selected sensing systems can provide additional information for a well-balanced scientific approach to the problems of the Appalachians. Remote sensors provide synoptic views of large areas and of conditions that cannot be perceived either by the unaided eye or by field observations. These include surface distributions of heat, moisture, open water, and vegatative vigor differences, all of which are useful to the geologist.