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Cover Picture

Ogallala Ash Outcrop in Ellis County

Volcanic-ash deposits in western Oklahoma can be divided into two age groups. The older ash, in the Ogallala Formation, forms accumulations up to 18 feet thick and usually grades downward to bentonitic clay at the base. The age of the Ogallala in the Great Plains region ranges from about 16–17 m.y. to about 5 m.y. The photograph shows an outcrop of fresh Ogallala ash south of Lake Lloyd Vincent in Ellis County (sec. 23, T. 18 N., R. 26 W.).

The younger volcanic-ash beds of the Pearlette family belong to three different zones ranging in age from 0.6 m.y. to 1.9 m.y. The Pearlette ash, unlike the Ogallala, is characterized by lack of any distinct alteration trends. The inset shows a scanning electron micrograph of glassy shards from an outcrop in Custer County (sec. 27, T. 15 N., R. 16 W.). The sources of ash have most likely been volcanoes in the Valle Grande region of the Jemez Mountains in New Mexico, the Yellowstone National Park region, and the Crater Lake region in Oregon.

Volcanic ash is mined for use in swimming-pool filters, polishing materials, soil conditioning compounds, scouring soaps, oil-well drilling muds, fire-proofing and water-proofing materials, fire-clay applications; rubber products, water softening, insulation, and crop dusting. The material is valued for its ability to absorb grease and wastes and is also used in the paint industry.

—*Salman Bloch*

(SEM micrograph by Rhesa Bloodworth, Hazen Research, Inc.)

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Short articles on aspects of Oklahoma geology are welcome from contributors. A set of guidelines will be forwarded on request.

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Compiled by Elizabeth A. Ham²

Bibliography—pages 123–150

Index—pages 150–169

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INDEX

(Numbers refer to entries in bibliography)

- age dating: Rb-Sr, Beavers Bend illite, 42; U-Pb, basement rocks, 23
- ANADARKO BASIN:
- Hunton Group, 28
 - Marchand sands, 13
 - Morrowan fan-delta deposits, 239
 - Morrow sands, 137, 138, 262, 263
 - petroleum and natural gas, 13, 14, 41, 52, 61, 62, 69, 70, 106, 114, 125, 128, 137, 138, 145, 175, 193, 203, 218, 239, 243, 262, 268, 272
 - sedimentology, 13, 14, 20, 28, 61, 62, 92, 137, 262, 263, 272
 - Simpson Group, 28
 - structure and tectonics, 51, 52, 61, 69, 70, 80, 105, 106, 114, 128, 194, 268, 294
 - Upper Permian rocks, 130
 - waste-disposal reservoirs, 132
- annual reports: Oklahoma Department of Mines, 70th, 212; Oklahoma Geological Survey, July 1, 1978-June 30, 1979, 185
- ARBUCKLE MOUNTAINS:
- Arbuckle Anticline, 38
 - Dougherty Anticline, 93
 - Lake Anticline, 93
 - Mill Creek, Fault, Graben, and Syncline, 29, 38, 93
 - Northwest Butterly Field, 29
 - organic buildups, 270
 - petroleum and natural gas, 29, 38, 302, 303
 - pyroclastic biomere, 213
 - Reagan Fault, 38, 93, 303
 - sedimentology, 37, 134, 163, 270, 294
 - source of Vanoss sediments, 37
 - Southwest Davis Field, 38, 302, 303

- structure, 29, 37, 38, 93, 294, 302, 303
- Sycamore Creek Anticline, 38
- Tishomingo Anticline, 38: Prices Falls limb, 38
- Washita Valley Fault, 38, 294, 302, 303
- Ardmore Basin: structure and tectonics, 105, 194, 268, 294
- Ardmore Geological Society, history, 229
- ARKOMA BASIN:
 - Atoka Formation, 6, 7
 - Backbone Anticline, 123
 - Cavanal Syncline, 123
 - Clarita Fault, 6
 - coal, 31, 39, 57, 60, 83, 84, 111, 122, 123, 139, 280, 281, 297
 - Cowlington Syncline, 123
 - Jack Hills Fault, 6
 - Kinta Anticline, 123
 - Milton Anticline, 123
 - paleogeography, 255
 - Panther Mountain Syncline, 123
 - petroleum, 6, 7, 105, 218, 255, 279
 - San Bois Syncline, 123
 - sedimentology, 6, 7, 19, 20, 249, 252, 256, 279, 283, 284
 - Simpson Group rocks, 255
 - source of Missouri lead-zinc ore fluids, 159
 - structure, 6, 7, 105, 123, 159, 194, 225, 226, 279, 283, 284
 - waste-disposal reservoirs, 132
 - Whitefield Uplift, 123
- BIBLIOGRAPHIES:
 - ground water, New Mexico, 30
 - oil shales and tar sands, 275
 - Oklahoma Geological Survey publications, 1902-1978, 102
 - Oklahoma geology, 1978, 100
 - Oklahoma University theses in geology, 140
- CAMBRIAN:
 - Arbuckle Group, 132, 147, 213, 236: Butterfly Dolomite, 147; Fort Sill Formation, 236; Royer Dolomite, 213
 - biotite gabbros, Wichita Province, 222
 - Colbert Porphyry, 37
 - Glen Mountain Layered Complex, 94: Iron Mountain troctolites, 94
 - Timbered Hills Group, 37, 213: Honey Creek Formation, 213; Reagan Sandstone, 37
 - Wichita Granite Group, 2, 142: Lugert Granite, 142; Mount Scott Granite, 2; Quanah Granite, 2
- CARBONIFEROUS:
 - ammonoids, 181, 237
 - Carboniferous-Permian boundary, 235
 - composition of sandstones, Ouachita area, 59
 - limestone analyses, 287
 - mesothems, Ozark Shelf, 182, 237
 - Ouachita Mountains, 163, 249, 250, 251, 252, 253, 256, 257, 258, 259, 284, 293
 - Ozark Mountains, 182, 237, 258, 259, 287
 - spores, 219
- catalog, Oklahoma Geological Survey well cores, 206
- Cherokee Basin, Cherokee Platform, 106, 108, 194: petroleum and natural gas, 106; structure, 106, 108, 194
- Clinton NTMS Quadrangle, NURE survey, 15, 274
- COAL:

analyses, 82, 83, 123, 189, 295
 Chelsea area, 139
 coal beds: Bluejacket coal, 139; Cavanal coals, 82, 83; Checkerboard coal, 19, 299, 300; Croweburg coal, 19, 82, 83, 139, 297, 300; Dawson coals, 19, 83, 299, 300; Drywood coal, 139; Eram coal, 82; Hartshorne coals, 19, 39, 57, 82, 83, 122, 123, 295; Henryetta coal, 280, 281, 297; Iron Post coal, 60, 83, 139; McAlester (Stigler) coals, 82, 83, 84; Mineral coal, 83, 139; Morris coal, 19, 82; Riverton coal, 108, 139, 301; Rowe coal, 139; Secor coals, 82, 83; Seminole (Tulsa) coal, 19, 299, 300; Tebo coal, 139; Weir-Pittsburg coal, 83, 139; Witteville (Rowe) coal, 82
 coal forum, 115
 exploration and development, 82, 83, 139
 natural gas from coals, 57, 122, 123
 Oklahoma Geological Survey programs, 185
 producers, 9, 83, 189, 212
 production, 9, 83, 115, 212
 reserves and resources, 39, 82, 83, 139, 189, 295
 spoil-bank study, Henryetta, 95
 statistics, 8, 9, 82, 83, 212
 technology, 83, 212
 vitrinite reflectance of coals in Arkoma Basin, 31
 zinc and cadmium distribution in coals, 111
 copper mineralization, 50
COUNTIES:
 all counties: clays in soils, 234; ground-water levels, 88; mineral production, 8, 9; petroleum and natural gas, 9, 125, 218, 223; surface-water quality, 149
 Adair: Carboniferous rocks, 259
 Alfalfa: lacustrine delta, 162; petroleum exploration, 264
 Atoka: paleontological survey, 232; soil survey, 240
 Beaver: hydrology, Palo Duro Creek basin, 228; Missourian and Virgilian rocks, 154
 Beckham: Blaine Formation, 271; petroleum and natural gas, 128, 264; uranium, 25
 Blaine: Blaine Formation, 271; cobalt, 72
 Bryan: Arkansas Novaculite, petroleum reserves, 197; soil survey, 47
 Caddo: Binger fields, 13; Cement Field, 61, 62; Clinton Quadrangle, uranium study, 274; Kindblade Formation, 270; Marchand sands, 13, 14; oil fields, 13, 43
 Carter: carbonate cements in surface rocks, 117; Kindblade Formation, 270; petroleum and natural gas, 264; soil survey, 190; Woodford Shale, pyrolyzates, 161
 Cherokee: algal-bryozoan bioherms, 27; Carboniferous rocks, 259; Chesterian rocks, 208; Morrowan rocks, 209
 Choctaw: paleontological survey, 232; soil survey, 261
 Cimarron: cobalt, 72; Keyes Field, 43; Morrow sands, 137, 138; uranium, 1
 Cleveland: Garber-Wellington aquifer, 292; Golden Trend, 43
 Coal: Atoka Formation, 6, 7; coal, 83; paleontological survey, 232; Northeast Olney Field, 175
 Comanche: alluvial deposits, 96; floods, 49; petroleum and natural gas, 264; vertebrate fossils, 244
 Cotton: cobalt, 72; vertebrate fossils, 244
 Craig: Cherokee sandstones, 65; coal, 83, 139; heavy oil, 108, 109
 Creek: Glen Pool, 43
 Custer: petroleum and natural gas, 128, 175; South Thomas Field, 175
 Dewey: Lenora Gas Field, 278

Ellis: Southeast Arnett Field, 175
 Garvin: Eola Field, 75; Northwest Butterly Field, 29; Vanoss Group, 37; vertebrate fossils, 244; West Civit Field, 33
 Grady: Blaine Formation, 271; petroleum and natural gas, 43, 61, 62, 75, 264
 Grant: cobalt, 72
 Greer: copper, 129
 Harmon: Blaine Formation, 271
 Harper: iodine, 167; Mocane-Laverne Field, 43
 Haskell: coal, 82, 83, 84, 122, 123; Kinta Gas Field, 43; paleontological survey, 232; petroleum and natural gas, 43, 264; soil survey, 35
 Jackson: Altus Oil Field, 75; copper, 129
 Jefferson: vertebrate fossils, 244
 Johnston: granite quarry, 165; Kindblade Formation, 270; silica-sand quarry, 166
 Kay: Wreford Megacyclothem, 164
 Kiowa: Kindblade Formation, 270; Lugert Granite, 142; soil survey, 151
 Latimer: Carboniferous rocks, 259; coal, 83; paleontological survey, 232; Red Oak Field, 43
 Le Flore: Carboniferous rocks, 259; coal, 82, 83, 122, 123; Poteau Gas Field, 43; paleontological survey, 232
 Lincoln: areal geology, 199; Cherokee sands, 280, 281, 282
 Logan: fossil amphibian, 207
 Love: petroleum and natural gas, 264
 McClain: soil survey, 191
 McCurtain: Choctaw Anticlinorium, 64; cobalt, 72; paleontological survey, 232
 McIntosh: coal, 82
 Marshall: Arkansas Novaculite, petroleum reserves, 197; general, 34; petroleum and natural gas, 264
 Mayes: coal, 139; Morrowan rocks, 209
 Murray: Butterly Dolomite, 147; Carboniferous rocks, 259; cobalt, 72; Kindblade Formation, 270; Reagan Fault Zone, 93; Southwest Davis Field, 302, 303; Vanoss Group, 37
 Muskogee: algal-bryozoan bioherms, 27; Chesterian rocks, 208; coal, 82, 83
 Noble: Perry gas sand, 55; sand and gravel plant, 168; vertebrate fossils, 244; Wreford Megacyclothem, 164
 Nowata: algal-sponge community, 269; coal, 83, 139; soil survey, 220
 Oklahoma: Garber-Wellington aquifer, 292; Oklahoma City Field, 247; vertebrate fossils, 244
 Okmulgee: coal, 82, 83, 297; Henryetta coal spores, 297; spoil-bank study, 95
 Osage: Avant Limestone, 55; cherts, 116; paleoclimate, Quaternary, 97; petroleum exploration, 233; pollens, 116; rotational fault, 44; Wreford Megacyclothem, 164
 Ottawa: Cherokee sandstones, 65; heavy oil, 108, 109
 Pawnee: cobalt, 72; Wreford Megacyclothem, 164
 Payne: areal geology, 199; cobalt, 72; Yale Southwest Quadrangle, 230
 Pittsburg: Carboniferous rocks, 259; coal, 83; paleontological survey, 232
 Pontotoc: Atoka Formation, 6, 7; fossil fern, 186; Pennsylvanian molluscs, 11; Vanoss Group, 37
 Pottawatomie: Cherokee Group, Cherokee sands, 225, 226, 280, 281, 282; Garber-Wellington aquifer, 292
 Pushmataha: paleontological survey, 232; petroleum and natural gas, 264; soil survey, 12
 Roger Mills: uranium, 25
 Rogers: coal, 83, 139
 Seminole: Cherokee sands, 280, 281, 282; cobalt, 72; Cromwell Field, 43; soil survey, 188; Vanoss Group, 37

Sequoyah: algal-bryozoan bioherms, 27; Carboniferous rocks, 259; magnetic and subsurface study, 290
Stephens: carbonate cements in surface rocks, 117; Velma Field, 74
Texas: hydrology, Palo Duro Creek basin, 228; Morrow sands, 262
Tillman: Tillman alluvium, ground water, 3; vertebrate fossils, 244
Tulsa: coal, 83, 299; first Red Fork well, 231; plant fossils, 299; Pleistocene molluscs, 54
Wagoner: Chesterian rocks, 208; coal, 83; Morrowan rocks, 209
Washita: soil survey, 192; uranium, 25
Woodward: iodine plant, 58, 124, 167

CRETACEOUS:

Comanchean Series:

Fredericksburg Group, 34: Goodland Limestone, 34; Kiamichi Formation, 34

Trinity Group, 34, 48, 110: Antlers Sandstone, 34, 110; Baum Limestone, 48

Washita Group, 34, 179:

Bennington Limestone, 34

Bokchito Formation, 34: Denton Clay Member, 34; McNutt Limestone Member, 34; Pawpaw Sandstone Member, 34; Soper Limestone Member, 34; Weno Clay Member, 34

Caddo Formation, 34: Duck Creek Member, 34; Fort Worth Member, 34

Grayson Marl, 34, 179

Gulfian Series:

Woodbine Formation, 34: Dexter Member, 34

Permian-Cretaceous boundary, 77

data system, petroleum and natural gas, 273

DEVONIAN:

Arkansas Novaculite, 90, 119, 134, 197, 201, 202, 249, 288

Hunton Group, 28, 38, 76, 93, 113, 118, 128, 132, 144, 161:

Bois d'Arc Formation, 38, 93: Cravatt Member, 38; Fittstown Member, 38

Haragan Formation, 38, 93

Henryhouse Formation, 128

Turkey Creek Formation, 113

Woodford Formation, 38, 76, 113, 132, 144, 161

Mississippian-Devonian boundary, 80

paleogeography, 113

phosphorites, 113

Pinetop Chert, 249

EARTHQUAKES:

catalog, 1900-1978, 158

El Reno, 1952, 40, 170, 171

general: 1900-1978, 157, 158, 170, 171, 172, 216; 1978, 156

map, 1900-1978, 157

relation to Nemaha Ridge, 248

ENVIRONMENTAL GEOLOGY:

air pollution, 8

flooding: Atoka County, 240; Blue Beaver Creek, 49; Bryan County, 47; Carter County, 190; Choctaw County, 261; flood control, Red River Basin, 289;

flood-hazard estimation through soil moisture, 176; flood-retarding dam, Sugar Creek, 197; Haskell County, 35; McClain County, 191; Nowata County, 220; Osage County, 32; Pushmataha County, 12; Washita County, 192; West Cache Creek, 49

land use: Atoka County, 240; Bryan County, 47; Carter County, 190; Choctaw

County, 261; Haskell County, 35; Kiowa County, 151; McClain County, 191; Nowata County, 220; Osage County, 32; Palo Duro Creek Basin, 228; Pushmataha County, 12; Seminole County, 188; Washita County, 192

mine disasters, 212

mined-land reclamation, 8, 212

Oklahoma Geological Survey programs, 185

regulations, 8

waste disposal, subsurface, 131, 132

water management: Atoka County, 240; Bryan County, 47; Carter County, 190; Choctaw County, 261; general, 169; Haskell County, 35; Kiowa County, 151; McClain County, 191; Nowata County, 220; Osage County, 32; Seminole County, 188; Washita County, 192

water pollution: Boone aquifer, pollution susceptibility, 10; Garber-Wellington aquifer, 292; general, 8; management planning, 169; pollution control, 169

water quality: Antlers aquifer, 110; Arbuckle aquifer, 71; Arkansas River Basin, 276; Boone aquifer, 10; Garber-Wellington aquifer, 292; Keystone Reservoir, 136; Ogallala aquifer, 148, 228; Red River Basin, 277; surface water, general, 149; zinc-mine water, 8

GEOCHEMISTRY:

alteration of red beds over oil reservoirs, 74, 75

Arkansas Novaculite, oxygen-isotope analyses, 134; manganese deposits, 288

bitumens, Tri-State area, 108

Butterly Dolomite, 147

catagenesis of kerogens, 31, 107

hydrogeochemical prospecting for uranium, 2, 15, 25, 26, 274

limestone analyses, Carboniferous, 287

Ogallala aquifer, 148

oxygen-isotope study of carbonate cements in Permian surface rocks, 117

Permian cornstones, 150

pyrolysis analysis of well cuttings, 145

pyrolyzates from kerogens, Woodford Shale, 161

radium-rich oil-field brines, 26

rare-earth analyses, Pennsylvanian-Permian rocks, 53

Rb/Sr ratios in Beavers Bend Illite, 42

red-bed copper, 50

soil analyses, Washita County, 192; Choctaw County, 261

vitronite reflectance of coals, 31

water analyses in geothermal exploration, 238

GEOMORPHOLOGY:

Arkansas River Valley, 160

Cimarron River Valley, 199

Great Plains, physiographic provinces, 244

Wichita Mountains, 87

GEOPHYSICS:

abnormal pressures, Morrow sands, 16

fault-displacement-prediction model, 44

fracture strength of rock, Arkansas Novaculite, 90

geomagnetism, Van Buren Quadrangle, 290

gravity anomalies, Nemaha Ridge, 170; Southern Oklahoma Aulacogen, 294

Midcontinent Geophysical Anomaly, 248

paleomagnetism, Upper Permian rocks, 217

radiometric and magnetic survey, Clinton Quadrangle, 274

reflectivity studies of thunderstorms, 89, 173, 265

- seismology: Arkoma Basin, 171; attenuation studies, Mounds, 85; earthquakes, 40, 156, 157, 158, 170, 171, 216; Nemaha Ridge, 170, 172, 248; Oklahoma Geophysical Observatory, 156, 157, 158; seismic activity, petroleum, 1978, 291; seismic stratigraphic analyses, Pennsylvanian sandstones, 86; seismograph-station codes, 221
- shale-reservoir logs, 144
- history: Ardmore Geological Society, 229; first Red Fork Field well, 231; flood control in Red River Valley, 289; petroleum exploration, 43
- Hollis Basin, waste-disposal reservoirs, 132
- Holocene: pollens, northeastern Oklahoma, 98
- HYDROGEOLOGY, HYDROLOGY:
 - hydrogeochemical prospecting for uranium, 2, 15, 25, 274
 - Oklahoma Geological Survey programs, 185
 - resources: Antlers aquifer, 110; Arbuckle aquifer, 71; Arkansas River Basin, 276; Atoka County, 240; Carter County, 190; Choctaw County, 261; Garber aquifer, Garber-Wellington aquifer, 18, 292; ground water, general, 88; McClain County, 191; Nowata County, 220; Ogallala aquifer, 148, 227; Pushmataha County, 12; Red River Basin, 277; Rush Springs aquifer, 18; Tillman aquifer, 3; Washita County, 192
 - subsurface waters: Antlers aquifer, 110; aquifers, general 88; Arbuckle aquifer, 71; Boone aquifer, 10; Garber aquifer, Garber-Wellington aquifer, 18, 292; general, 88; ground-water levels, 88, 276, 277; North Canadian River alluvial aquifer, 56; Ogallala aquifer, 148, 228; Rush Springs aquifer, 18; stream-sediment analyses, Clinton and Lawton Quadrangles, 15; Tillman alluvial aquifer, 3; Washita River alluvial aquifer, 143; zinc-mine water, 8
 - surface waters: Arkansas River, 160; Blue Beaver Creek, 49; Cimarron River valley, 199; general, 149, 169; Keystone Reservoir, 136; Lake Texoma, 289; North Canadian River, 56; Red River, 92, 289; stream-sediment analyses, Clinton and Lawton Quadrangles, 15; Sugar Creek watershed and dam, 198; Washita River, 143, 198; water-quality management, 169; West Cache Creek, 49
 - water management: Atoka County, 240; Bryan County, 47; Carter County, 190; Choctaw County, 261; Haskell County, 35; Kiowa County, 151; McClain County, 191; Nowata County, 220; Osage County, 32; pollution control, surface waters, 169; Pushmataha County, 12; Seminole County, 188; Washita County, 192
 - water quality: Antlers aquifer, 110; Arbuckle aquifer, 71; Arkansas River Basin, 276; Boone aquifer, 10; Garber-Wellington aquifer, 292; Keystone Reservoir, 136; management planning, 169; Ogallala aquifer, 148, 228; pollution control, 169; pollution, general, 8; Red River Basin, 277; seepage estimates from dam, 198; surface waters, general, 149; Washita River alluvial aquifer, 143; zinc-mine water, 8
- indexes: Oklahoma geology, 1978, 100; *Oklahoma Geology Notes*, v. 39, 205; *Shale Shaker*, v. 23-29, 246
- Jurassic: Morrison Formation, Cimarron County, 1
- Lawton NTMS Quadrangle, NURE survey, 15
- McAlester Basin: sedimentology, 24; Spiro sand, 24; structure, 283, 284
- Marietta Basin: structure, 34, 294
- memorials: John Fredrick Roberts, 101
- meteorology: Doppler radar recordings of lightning impulses, 89, 173; Doppler radar study of reflectivity, velocity, and spectrum width of storms, 265; Oklahoma thunderstorm study, 89
- MINERAL INDUSTRIES:
 - commodities: boron, 9; brick manufacturing, 8; carbon, 8, 9; cement, 8, 9, 104;

- clay and shale, 8, 212; coal, *see* Coal; cobalt, 72; copper, 129, 130, 212; crushed stone and aggregate, 8; feldspar, 8, 9; glass sand, silica sand, 8, 119, 166; granite, 8, 165, 212; gypsum, 8, 9, 129, 130, 212; helium, 8, 9; iodine, 8, 9, 58, 124, 167; lead and zinc, 9, 129; lime, 8; limestone, 212; petroleum and natural gas, *see* Petroleum and Natural Gas; pumice (volcanic ash), 9; salt, 9, 130; sand and gravel, 8, 9, 168, 212; soda ash, 8; stone, 9; sulfur, 9; tripoli, 8, 9, 119, 212; uranium, *see* Uranium
 - Interstate Mining Compact Commission, 212
 - mine disasters, 212
 - mined-lands reclamation, 8, 212
 - Oklahoma Geological Survey programs, 185
 - producers, 9, 212
 - regulations, 8, 9
 - statistics, 8, 9, 212
 - technology, 166, 167, 168
 - Tri-State mining district, exploration, 224
- MISSISSIPPIAN:
- Arkansas Novaculite, 90, 119, 134, 197, 201, 202, 249, 253, 288
 - Boone Formation, 10, 287
 - Caney Formation, Caney Shale, 187, 195: Delaware Creek Member, 187; Rhoda Creek Shale Member, 195; Sand Branch Member, 187
 - Compton Limestone, 267
 - crinoidal bioherms, Osagean, 184
 - Fayetteville Formation, 180, 183, 208, 210, 237, 257
 - Hindsville Formation, 180, 208, 257
 - Imo Formation, 180, 183, 210, 237
 - Jackfork Group, 163, 195, 196
 - Kinderhookian–Osagean boundary, 184
 - Mississippian–Devonian boundary, 80
 - Mississippian–Pennsylvanian boundary, 80, 180, 183, 195, 208, 210, 253, 256, 257, 258, 259, 260
 - Ozark Shelf, Chesterian, 182
 - paleogeography, 51
 - Pitkin Formation, 180, 181, 183, 208, 210, 237, 257, 287
 - St. Joe Limestone, 267, 287
 - Springer Formation, Springer Group, 132, 195
 - Stanley Group, Stanley Shale, 103, 195, 196, 202, 249, 252, 253, 256: Beavers Bend tuff, 202; Chickasaw Creek Formation, 196, 249, 252; Hatton tuff, 202, 249, 253; Hot Springs Sandstone Member, 253; Moyers Formation, 196; Mud Creek tuffs, 202; Tenmile Creek Formation, 196
 - stratigraphy, general, 80
 - tectonics, 51
 - Woodford Shale, 76, 132, 144
- Nemaha Ridge, Nemaha Uplift: seismicity, 170, 172; structure, 21, 51, 69, 170, 172, 194, 248
- OKLAHOMA GEOLOGICAL SURVEY:
- annual report, July 1, 1978–June 30, 1979, 185
 - coal programs, 185
 - core catalog, 206
 - energy programs, 185
 - environmental programs, 185
 - hydrologic investigations, 185
 - mineral investigations, 185
 - Oklahoma Geophysical Observatory, 156, 157, 158, 170, 171, 172, 185, 221
 - petroleum and natural-gas programs, 185
 - uranium programs, 185

Oklahoma Geophysical Observatory, 156, 157, 158, 170, 171, 172, 185, 221

Oklahoma Panhandle, waste-disposal reservoirs, 132

see also Counties: Beaver, Cimarron, and Texas

ORDOVICIAN:

Arbuckle Group, 29, 71, 132, 270; Cool Creek Formation, 270; Kindblade Formation, 270

Bigfork Chert, 249

Blakely Sandstone, 249, 250

Collier Formation, 64, 249

Corbin Ranch Limestone, 5

Crystal Mountain Formation, 64, 249

Fernvale Formation, 5

Fite Limestone, 5

Hunton Group, 28

kerogen-diffraction pattern of shale, 107

Lukfata Sandstone, 64

Mazarn Shale, 64, 249

Ordovician-Silurian boundary, 4

Polk Creek Shale, 249

Simpson Group, 5, 24, 28, 29, 37, 38, 46, 71, 78, 79, 127, 132, 141, 166, 214, 241, 255, 303:

Bromide Formation, 5, 29, 38, 46, 78, 79, 127, 141, 214, 255, 303; Mountain Lake Member, 79; Pooleville Member, 5

Joins Formation, 29, 255, 303

McLish Formation, 29, 241, 255, 303

Oil Creek Formation, 29, 166, 255, 303

Simpson sands, 24

Tulip Creek Formation, 29, 255, 303

Wilcox sands, 24

Sylvan Shale, 5, 38, 46, 127, 303

Tyner Formation, 5

Viola Formation, 5, 29, 38, 120, 127, 303

Welling Formation, 5

Womble Formation, 64, 240

OUACHITA MOUNTAINS, OUACHITA GEOSYNCLINE:

Backbone Anticline and Fault, 123, 253

Broken Bow-Benton Uplift, 64, 201, 227, 249, 293

Carboniferous sandstones, 59

Choctaw Anticlinorium and Fault, 20, 64

Cross Mountain Anticlinorium, 64

geothermal areas, Arkansas, 238

glaciation, evidence of, 251

Greenwood Syncline, 253

Linson Creek Anticlinorium, 64

manganese deposits, Arkansas Novaculite, 288

Ordovician rocks, Choctaw Anticlinorium, 64

Ouachita seaway, 113

Potato Hills, 293

pre-Carboniferous sandstones, 59

relation of interior zone to Coahuila, Mexico, igneous rocks, 135

relation to Appalachian belt, 103

sedimentology, 51, 91, 103, 134, 163, 196, 200, 202, 249, 250, 252, 253, 256, 258, 259, 283, 284, 293

source of Missouri lead-zinc ore fluids, 159

structure and tectonics, 20, 51, 59, 64, 67, 80, 91, 103, 105, 159, 194, 200, 201, 227, 235, 242, 249, 250, 251, 253, 256, 258, 259, 266, 268, 283, 284, 293, 296

- Ti Valley Fault, 91, 249, 256
- Washburn Anticline, 253
- Windingstair Fault, 64, 91, 249, 253, 256
- "Y" City Fault, 253
- OZARK MOUNTAINS, OZARK UPLIFT, OZARK SHELF:
 - lead-zinc deposits, 159
 - sedimentology, 180, 182, 237, 257, 258, 259
 - source of Morrowan sediments, 209
 - stratigraphy, Chesterian-Morrowan, 257
 - structure and tectonics, 51, 80, 108, 159, 180, 209, 258, 259
- PALEOBOTANY:
 - acritarchs, 127
 - algae, 27, 48, 269, 270
 - algal-bryozoan bioherms, 27
 - algal-sponge community, 269
 - lycopods, 60
 - fern, 186
 - Krebs Group, general, 232
 - Pennsylvanian coals, 297, 299
- PALEOCURRENTS, PALEOECOLOGY, PALEOENVIRONMENTS, PALEO GEOGRAPHY:
 - Atokan, 279
 - Blaine seas, 271
 - Bloyd Formation, 304
 - Carboniferous, Ozark Shelf, 237
 - Chesterian, 208
 - Devonian, general, 113
 - Devonian-Mississippian, 134
 - Gearyan and Leonardian, 244
 - Lansing Group, 154
 - Late Mississippian, Ouachita area, 103
 - Late Paleozoic, 235
 - Lower Ordovician, 270
 - Marchand sands, 13
 - Mississippian, general, 51, 80
 - Missourian, 55
 - Morrow Series, Morrow sands, 137, 209, 262
 - Pennsylvanian, general, 121, 194
 - pre-Pennsylvanian, 225
 - Quaternary, Osage County, 97
 - Simpson Group, Arkoma Basin, 255
 - Wann Formation, 211
 - Wreford Megacyclothem, 99
- paleotemperatures: application of kerogen examination, 31, 107; application to petroleum exploration, 278
- PALEOZOLOGY:
 - acritarchs, 127
 - algal-bryozoan bioherms, 27
 - algal-sponge community, 269
 - ammonoids, 181, 237
 - biometrics, Missourian crinoids, 211
 - brachiopods, 45, 120, 270, 285
 - bryozoans, 27, 99, 269
 - cephalopods, 187, 270
 - chitons, 236, 270
 - conodonts, 153, 260, 267, 270
 - corals, 155

crinoidal bioherms, Lower Mississippian, 184
crinoids, 78, 79, 141, 178, 211, 214, 254
cystoids, 214
fusulines, 235
gastropods, 270
Krebs Group, general, 232
micromorphs, Grayson Formation, 179
molluscs, 11, 54
ptychaspid biomere, 213
sponges, 269, 270
trilobites, 213, 215
vertebrates, 112, 207, 244: amphibians, 207; general, 244; reptiles, 112
Wreford Megacyclothem, 99

PALYNOLOGY:

Cherokee Group, Kansas, 301
miospores, Morrowan, 210
Ordovician acritarchs, 46, 127
pollens: late Holocene, northeastern Oklahoma, 98; Quaternary, Osage
County, 97, 116
spores: Pennsylvanian coals, 297, 299, 300; trilete spores, Carboniferous, 219;
Wellington Formation, 152

PENNSYLVANIAN:

Atokan Series:

Atoka Formation, 6, 7, 145, 180, 249, 251, 252, 253, 256, 257, 279, 295:
Red Oak Sandstone, 279
Cherokee Group, 301
correlation with Europe, 153
north-central Texas, Ouachita belt, 200
Ouachita Mountains, 283, 284
Wapanucka Formation, 20, 91, 180, 256, 257: Chickachoc Chert
Member, 91; Trace Creek Shale Member, 91, 180, 257

Desmoinesian Series:

Cabaniss Group:

Henryetta coal, 280, 281, 282, 297
Oswego Limestone, 280, 281
Senora Formation, 19, 60, 82, 83, 139, 225: Croweburg coal, 19,
82, 83, 297; Eram coal, 82; Iron Post coal, 60; Morris coal,
19, 82
Skinner sands, 20, 225, 226, 280, 281, 282
Verdigris Limestone, 65, 225, 280, 281, 282

Cherokee Group, 20, 65, 66, 146, 187, 225, 226, 280, 281, 282, 301:
Bartlesville Limestone, 225, 226; Booch sands, 225, 226; Burbank
sands, 146; Inola Limestone, 225; Pink lime, 225; Prue sands,
225, 280, 281, 282; Red Fork sand, 20, 225, 226, 280, 281, 282;
Senora Limestone, 225; Skinner sands, 20, 225, 226, 280, 281,
282; Verdigris Limestone, 225

Deese Group, Deese Formation, 29, 187

Desmoinesian-Missourian boundary, 299, 300

heavy oil, 108, 109

Krebs Group:

Boggy Formation, 20, 65, 66, 82, 108, 139, 225, 226, 232, 280, 281

282: Bluejacket-Bartlesville sand, 20, 65, 66, 82, 108, 139,
225, 226, 280, 281, 282; Inola Limestone Member, 139, 225,
280, 281, 282; Secor coals, 82, 83, 232; Taft Limestone
Member, 149

Brown Limestone, 280, 281, 282

- McAlester Formation, McAlester coals, 19, 39, 65, 66, 82, 83, 84, 108, 122, 123, 139, 232, 253, 256, 295, 301: Booch sands, 20, 225, 226; Cameron Sandstone, 82; Hartshorne Formation, Hartshorne coals, 19, 39, 57, 65, 82, 83, 84, 108, 122, 123, 139, 232, 253, 256, 295; Riverton coal, 108, 139, 301; Stigler coal, 82, 83, 84, 232; Stuart Shale, 232; Thurman Sandstone, 232; Warner Sandstone Member, 65, 66, 82, 108
- Pink Limestone, 280, 281, 282
- Savanna Formation, 24, 65, 82, 139, 232: Cavanal coals, 82, 232; Drywood coal, 139; Rowe coal, 139; Sam Creek Limestone, 82; Spaniard Limestone, 82; Spiro sand, 24; Witteville (Rowe) coal, 82, 232
- Marmaton Group:
 - Calvin Formation, 82
 - Cleveland sand, 20
 - Fort Scott Limestone, 139: Blackjack Creek Member, 139
 - Holdenville Formation, 19
 - Pawnee Limestone, 269
 - Seminole Formation, 19
 - Wewoka Formation, 19, 186, 187: Nowata Shale, 19
- molluscs, 11
- Gearyan Series:
 - Oscar Group, 68, 99, 244: Wreford Megacyclothem, 99, 164
 - Vanoss Group, 37, 68, 244
- Mississippian–Pennsylvanian boundary, 80, 180, 183, 195, 210, 253, 256, 257, 258, 259, 260
- Missourian Series:
 - Desmoinesian–Missourian boundary, 299, 300
 - Hoxbar Group, 13, 14, 19, 29, 61, 272; Checkerboard Limestone, Checkerboard coal, 19, 29; Cottage Grove Sandstone, 272; Hogshooter Formation, 13, 29; Huber sand, 29; Marchand sands, 13, 14; Tuley sand, 29
 - Kansas City Group, 154
 - Lansing Group, 154
 - Ochelata Group, 55, 68, 211: Iola Formation, Avant Limestone Member, 55; Wann Formation, 211
 - Skiatook Group, 19, 20, 68, 299, 300: Checkerboard Limestone, Checkerboard coal, 19, 29, 299, 300; Cleveland sand, 20; Dawson coal, 19, 299, 300; Seminole coal, 19, 299, 300
 - Stanton Formation, 187
- Morrowan Series:
 - bioherms, 27
 - Bloyd Formation, 91, 180, 209, 237, 254, 257, 287, 304: Brentwood Limestone Member, 180, 237, 254, 257, 287, 304; Dye Shale Member, 180, 209, 257, 304; Kessler Limestone Member, 91, 180, 209, 257, 257, 287; Trace Creek Shale Member, 209, 257; Woolsey Member, 180, 257, 304
 - correlation with Europe, 153
 - Dornick Hills Group, 91, 153, 174
 - fan-delta deposits, 239
 - Hale Formation, 180, 209, 210, 237, 237, 253, 257: Cane Hill Member, 180, 183, 209, 257; Prairie Grove Member, 180, 209, 237, 253, 257
 - Jackfork Group, 163, 195, 196, 244, 249, 252, 253: Wesley Formation, 244; Wildhorse Mountain Formation, 249, 252, Prairie Hollow Member, 249
 - Johns Valley Shale, 195, 249, 250, 252, 253, 256

McCully Formation, 180, 209, 257: Chisum Quarry Member, 180, 209, 257; Greenleaf Lake Limestone Member, 180, 209, 257; Shale "A" Member, 180, 209; Shale "B" Member 209, 257
Morrow sands, 16, 128, 137, 138, 239, 243, 262, 263
Ouachita Mountains, 283, 284
Sausbee Formation, 180, 183, 208, 209, 254, 257: Braggs Member, 180, 183, 209, 254, 257; Brewer Bend Member, 180, 209, 257
Springer Formation, Springer Group, 91, 153, 174, 195: Target Limestone, 153
Union Valley Formation, 195
Wapanucka Formation, 20, 91, 180, 257: Chicachoc Chert Member, 91; Trace Creek Shale Member, 91, 180, 257
Witt Springs Formation, 180
paleogeography, general, 121, 194
Pennsylvanian-Permian boundary, 235, 298
rare-earth analyses, 53
sandstones: Anadarko Basin, 69; general, 36, 43, 121; waste-disposal reservoirs, 132
uraniferous deposits, 22
Virgilian Series:
 Ada Group, 68
 Cisco Group, 29
 Douglas Group, 154, 285:
 Oread Limestone, 154, 285: Heebner Shale Member, 154, 285;
 Oread Megacyclothem, 285
 Tonhawa Sandstone, 154
 Stranger Formation, 187
 Vamoosa Group, 68, 187, 285: Heebner Shale, 285
 Vanoss Group, 37, 68, 244

PERMIAN:

Carboniferous-Permian boundary, 235, 298
Cimarronian Series, Cimarronian Group, 2, 18, 68, 87, 112, 129, 130, 152, 207, 244, 245, 271, 292:
 El Reno Group, 68, 129, 130, 152, 244, 245, 271:
 Blaine Formation, 129, 130, 245, 271
 Chickasha Formation, 130, 271
 Dog Creek Shale, 129, 130, 245: Yelton salt, 130
 Duncan Sandstone, 130, 244
 Flowerpot Shale, 129, 130, 152
 Glorieta Formation, 130
 Hennessey Group, 68, 207, 244: Fairmont Shale, 207
 Post Oak Formation, 2, 87
 Sumner Group, 2, 18, 68, 112, 129, 152, 244, 292:
 Garber Formation, 2, 18, 112, 244, 292
 Wellington Formation, 68, 112, 129, 152, 244, 292
cornstones, 150
Custerian Series, 2, 25, 130, 217:
 Cloud Chief Formation, 2, 25, 130, 217: Moccasin Creek Gypsum Member, 2
 Doxey Shale, 2, 25, 130, 217
dissolution of salts, 92

Gearyan, *see* Pennsylvanian
paleomagnetism, 217
Permian-Cretaceous boundary, 77
rare-earth analyses, 53
red-bed copper, 50

salt deposits, waste-disposal reservoirs, 132

PETROLEUM AND NATURAL GAS:

abnormal pressures, 16

accumulation, entrapment, and reservoirs:

- Anadarko Basin, 41, 69, 70, 105, 128, 137, 138, 262, 263, 268, 272
- Ardmore–Anadarko Basin trend, 268
- Arkansas Novaculite, 197
- Arkoma Basin, 6, 7, 105, 279
- Atoka sandstones, 6, 7
- Cherokee sands, 280, 281, 282
- Cottage Grove Sandstone, 272
- deltaic reservoirs, 36, 43, 86, 239
- estuarine reservoirs, Morrow sands, 137
- fluvial-sand reservoirs, 36, 86
- Jackfork Group, 163
- Mills Ranch complex, 128
- Morrow sands, 137, 138, 239, 243, 262, 263: estuarine reservoirs, 137; fan-delta deposits, 239
- Northwest Butterly Field, 29
- Pennsylvanian sandstones, general, 43, 86, 121
- shale reservoirs, 76, 144; shale-reservoir well logs, 144
- Southwest Davis Field, 302, 303
- submarine-fan reservoirs, 239, 279: Morrowan deposits, 239; Red Oak Sandstone, 279

alteration of red beds over petroleum accumulations, 74, 75

Anadarko Basin, 13, 14, 41, 43, 52, 61, 62, 69, 70, 75, 105, 106, 114, 125, 128, 137, 138, 145, 175, 193, 203, 218, 239, 243, 262, 263, 268, 272

Arbuckle Mountains, 29, 138, 302, 303

Arkoma Basin, 6, 7, 43, 105, 218, 255, 279

coal-bed-derived natural gas, 57, 122, 123

deep wells, 114

economics, 63, 114, 223, 291

enhanced recovery, 52, 73, 203, 243: bauxite fracturing, 52; fracturing, Morrow sands, 203, 243; waterflooding, 73

exploration and development:

- Anadarko Basin, 52, 69, 70, 114, 125, 128, 175, 210, 239, 268
- application of diagenetic-alteration indicators, 61, 62
- application of Landsat direct detection, 62
- application of paleotemperature gradients, 278
- application of vitrinite reflectance of coals, 31
- Arbuckle production, 128
- Ardmore–Anadarko Basin trend, 268
- Arkoma Basin, 218, 255, 279
- computer applications, 233
- fluvial/deltaic sands, Pennsylvanian, 36
- gamma-ray monitoring, 76
- general, 9, 133, 223, 264
- giant oil fields, 223
- heavy oil, 108, 109, 203: Anadarko Basin, 203; Tri-State area, 108, 109
- history, 43, 231
- Hunton production, 128
- Marchand sands, 13, 14
- Morrow sands, 137, 138
- Osage County, 233
- Pennsylvanian sandstones, general, 43, 69, 86
- pyrolysis analysis of well cuttings, 145

Red Oak Sandstone, 279
Simpson sands, 255
fields, trends, units: Aledo, 128; all fields, 125, 223; Altus, 75; Antioch fields, 43; Aylesworth fields, 34; Bartlesville–Dewey, 43; Binger fields, 13, 14; Brooksville, 226; Buffalo Wallow, 239; Burbank, 43; Carpenter, 218; Cement fields, 61, 62; Centerpoint, 226; Chelsea, 43; Cherokee fields, 43; Chickasha, 75; Cromwell, 43; Cumberland, 34; Cushing, 43; Davenport, 61; Doyle, 117; Dutton, 43; Earlsboro pools, 226; Elk City, 218, 239; Eola, 38, 75; Fox-Graham, 117; Glen, 43; Golden Trend, 43; Granite, 43; Grisso, 226; Handy, 34; Healdton, 43; Isom Springs fields, 34; Jenks, 43; Keyes, 43; King, 226; Kingston, 34; Kinta, 43; Leedey, 218; Lenora, 278; Light, 43; Madill, 34; Mannsville, 34; Maud pools, 226; Mayfield, 218; Mills Ranch Complex, 128; Mocane–Laverne, 43; Morrow–Springer trend, 69; Morvin pools, 226; Noel, 218; Northeast Olney, 175; Northwest Butterly, 29; Oklahoma City, 247; Poteau, 43; Powell, 34, 218; Red Fork, 43, 231; Red Oak, 43; Reydon–Cheyenne Area, 203, 218, 239, 243; Russellville, 218; St. Louis, 226; Shawnee Lake pools, 226; Shreickey, 239; South Gage, 272; South Thomas, 175; Southwest Arnett, 175; Southwest Davis, 38, 302, 303; Strong City, 218; Tecumseh Lake, 226; Tulsa, 43; Velma, 74, 117; Verden fields, 43; Viking, 239; Weatherford, 218; West Civit, 33; Wheeler, 43, 117; Yukon, 218
heavy oil, 108, 109, 203, 275: bibliography, 275
Marshall County, 34
migration, 174, 193: constraints, 174; general, 193
Oklahoma Geological Survey core catalog, 206
Oklahoma Geological Survey programs, 185
origin, generation, source, 76, 161, 268, 278: black shales, 76, 161; magmatic heating, 268; relation to paleotemperatures, 278
Perry gas sand, 55
Petroleum Data System, 273
pressure, effect on crude-oil/natural-gas equilibrium, 247
radium in oil-field brines, 26
reserves and resources, 9, 41, 52, 114, 175, 197, 203, 255
simulation study, West Dykeman Sand Unit, 33
statistics: economics, 63, 223, 291; exploration and development, 9, 63, 133, 218, 223; drilling, 63, 133, 218, 223; general, 9; production, 9, 125, 204; reserves and resources, 9, 204, 218, 223, 255; seismic activity, 291; stripper wells, 126; waterflooding, 63, 73
stripper wells, 126
well logs, shale reservoirs, 144
Petroleum Data System, 273
Precambrian: Blue River Gneiss, 23; Spavinaw Granite, 23; Tishomingo Granite, 23, 37; Troy Granite, 23, 37
QUATERNARY:
Birch Creek Valley pollens, 116
Blue Beaver Creek alluvium, 96
Crater Creek alluvium, 96
East Cache Creek alluvium, 96
Medicine Creek alluvium, 96
North Canadian River alluvium, 56
Ogallala Formation, 148

Pleistocene molluscs, Tulsa County, 54
Post Oak Creek alluvium, 96
Tillman alluvium, 3
West Cache Creek alluvium, 96
remote sensing: fracture discrimination, Landsat and Skylab, 10; Tri-State district,

Landsat study, 224; use of Landsat images in assessing pollution susceptibility, Boone aquifer, 10

SEDIMENTOLOGY:

- algal-bryozoan bioherms, Morrowan, 27
- algal-sponge community, 269
- Anadarko Basin, 13, 14, 28, 61, 62, 92, 137, 262, 263, 272
- Arbuckle Mountains, 37, 134, 163, 270, 294
- Arkoma Basin, 6, 7, 19, 20, 249, 252, 256, 279, 283, 284
- bar deposition, 91
- basinal clastic deposits, Douglas Group, 154
- birdseye structures, McLish Formation, 241
- boulder beds, erratics: Johns Valley Shale, 249, 252, 253, 256, 283, 284, 293; Stanley Shale, 252
- Bouma sequences: Atoka Formation, 249, 252, 253, 256; Morrowan and Atokan, Ouachita Mountains, 283, 284
- channel-fill deposition: Cherokee Group, 65; Hartshorne Formation, 253; Jackfork Sandstone, 252; Morrow sands, 137
- Cretaceous, Marshall County, 34
- cyclothems, cyclic sedimentation: coal cycles, 19; Desmoinesian, 19, 20, 65, 280, 281, 282; mesothems, Carboniferous, Ozark Shelf, 182, 237; Oread Megacyclothem, 285; Wreford Megacyclothem, 99, 164
- deltaic deposition: Atoka Formation, 253; Cherokee sands, 280, 281, 282; Desmoinesian, northeastern Oklahoma, 19, 20, 65; Dockum Group, 177; Hartshorne Formation, 253; Jackfork Group, 163; lacustrine delta, Alfalfa County, 162; Morrowan and Atokan, Ouachita Mountains, 283, 284; Morrow Formation, 262, 263; Pennsylvanian sands, general, 36; Pennsylvanian uraniferous deposits, 22; Stanley Group, 103
- diagenesis: Arkansas Novaculite, 134; Butterly Dolomite, 147; catagenesis of kerogens, 31, 107; Cherokee sands, 280, 282; Cottage Grove Sandstone, 272; Hunton Group, 28; Morrow sands, 137; Permian sandstones, 2, 61, 62; Rush Springs Sandstone, 61, 62; Simpson sand, 24, 28; soft-sediment deformation, 250; Spiro sand, 24; Stanley Group, 196; Vanoss sandstones and mudrocks, 37; Wilcox sand, 24
- dissolution of Permian salts, 92
- evaporite origin of Arkansas Novaculite, 134
- flaser deposition, McAlester Formation, 253
- fluvial deposition: Arkansas River, 160; Arkansas River point bar, 81; Bloyd Formation, 304; Dockum Group, 177; Morrow sands, 262; North Canadian River, 56; Pennsylvanian sands, 36
- flysch deposition: Arkansas Novaculite, 253; Atoka Formation, 256; Carboniferous, Ouachita area, 249, 293; Jackfork Sandstone, 252; Stanley Group, 103, 202, 253
- Mississippian, general, 51, 80
- Morrowan rocks, northeastern Oklahoma, 209, 237
- Oread Megacyclothem, shale facies, 285
- organic buildups, Kindblade Formation, 270
- Ouachita Mountains, 51, 91, 103, 134, 196, 200, 202, 249, 250, 252, 253, 256, 258, 259, 283, 284, 293
- Ozark Mountains, Ozark Shelf, 180, 182, 237, 256, 257, 258, 259
- paragenesis, Permian copper, 152
- Pennsylvanian, general, 194
- Pennsylvanian sandstones, general, 36, 121
- Pitkin and Fayetteville Formations, 208, 237
- point-bar deposits: Arkansas River, 81; Morrow sands, 262
- shallow-marine and shelf deposition: Atoka sandstones, 6, 7; Bloyd Formation, 304; Cottage Grove Sandstone, 272; Desmoinesian, northeastern Oklahoma, 19, 20; Kinderhookian-Meramecian carbonate shelf, 184; Lans-

ing Group 154; Wapanucka Limestone, 20
submarine-fan deposition: Jackfork Group, 163; Pennsylvanian sands, 36; Red
Oak Sandstone, 279; Stanley Group, 103, 202, 252, 253
tidal deposition: Marchand sands, 13, 14; Morrow sands, 137
transgressive barrier facies, Cherokee Group, 146
turbidites: Atoka Formation, 256; Carboniferous, Ouachita area, 249, 293;
Jackfork Group, 163, 196; Morrowan and Atokan, Ouachita area, 283,
284; Stanley Group, 196, 202; Wapanucka Formation, 91
Wreford Megacyclothem, 99, 164

SILURIAN:

Beavers Bend Illite, 42
Blaylock Formation, 42, 249
Hunton Group, 28, 38, 45, 93, 118, 128, 132, 155, 178, 215, 285: Chimneyhill
Subgroup: 38, 45, 93, 128, 285: Clarita Formation, 38, 93; Cochrane
Formation, 38, 93; Keel Formation, 38
Henryhouse Formation, 38, 93, 128, 155, 178, 215
Missouri Mountain Formation, 249
Ordovician–Silurian boundary, 4

SOILS:

Atoka County, general, 240
Bryan County, general, 47
Carter County, general, 190
Choctaw County, general, 261
clay minerals in Oklahoma soils, 234
Enid Quadrangle, derivation of soils, 68
Haskell County, general, 35
Kiowa County, general, 151
McClain County, general, 191
Nowata County, general, 220
Osage County, general, 32
Pushmataha County, general, 12
Seminole County, general, 188
soil-moisture monitoring, 176
Washita County, general, 192

Southern Oklahoma Aulacogen: gravity anomalies, 294; sedimentology, 294; stratig-
raphy, general, 294; structure, 93, 268, 294

STRATIGRAPHY (*see also* under various geologic systems):

Anadarko Basin, general, 69
biostratigraphy: Cambrian biomere, 213; Carboniferous, 180, 183, 195, 237,
256, 257, 258, 259; Carboniferous, ammonoid zonations, 237; Cherokee
Group, palynology, 301; Chesterian and Morrowan, 195, 210, 256,
257, 258, 259, 260; Chesterian–Morrowan, conodonts, 260;
Desmoinesian–Missourian boundary, plants, 299, 300; Late
Ordovician–Early Silurian, 4; Lower Ordovician, 270; Morrowan and
Atokan, conodonts, correlation with Europe, 153; Oread Megacyc-
lothem, lithofacies and conodont biofacies, 285; Pennsylv-
anian–Permian boundary, 298; Permian, fusulines, 235; Waun
Formation, conodont zonation, 211; Wreford Megacyclothem, correla-
tion between Kansas and Oklahoma, 164
Carboniferous: Carboniferous–Permian boundary, 235, 298; Chesterian–
Morrowan unconformity, 183, 208, 257, 260; Ouachita Mountains,
253, 258, 293

Cretaceous: Marshall County, 34; Permian–Cretaceous boundary, 77

Mississippian: Chesterian, northeastern Oklahoma, 208; Chester-
ian–Morrowan unconformity, 183, 208, 257, 260; general, 80;
Kinderhookian–Osagean boundary, 184; Mississippian–Devonian

- boundary, 80; Mississippian–Pennsylvanian boundary, 80, 180, 183, 195, 208, 210, 253, 256, 258, 259, 260; Ouachita Mountains, 253, 258, 259, 293
- Ordovician: Ordovician–Silurian boundary, 4; Simpson Group, correlation with Arkansas Ordovician, 255; Welling Formation, 5
- Pennsylvanian: Avant Limestone, 55; Cherokee Group, 65, 66, 225, 226, 301; Chesterian–Morrowan unconformity, 138, 208, 257, 259, 260; Desmoinesian Tri-State area, 65, 66; dichotomy of facies and time boundaries, 68; general, 121; Mississippian–Pennsylvanian, boundary, 80, 180, 183, 195, 208, 210, 253, 256, 257, 258, 259, 260; Morrowan, northeastern Oklahoma, 208; 209; Ouachita Mountains, 253, 258, 259, 293; Pennsylvanian–Permian boundary, 235, 298; Vanoss Group, 37
- Permian: Carboniferous–Permian boundary, 235, 298; dichotomy of facies and time boundaries, 68; Permian–Cretaceous boundary, 77; Upper Permian, correlation with Texas and New Mexico, 130; Vanoss Group, 37
- STRUCTURAL GEOLOGY (includes tectonics):
- Anadarko Basin, 51, 52, 61, 62, 69, 70, 80, 105, 106, 128, 194, 268, 294
- Arbuckle Anticline, 38
- Arbuckle Mountains, 29, 37, 38, 93, 294, 302, 303
- Ardmore Basin, 105, 194, 268, 294
- Arkoma Basin, 6, 7, 105, 123, 159, 194, 225, 226, 249, 279, 283, 284, 294
- Backbone Anticline and Fault, 123, 253
- Boktukola Fault, 249
- Bourbon Arch, Kansas, 108
- Brazil Anticline, 279
- Briery Fault, 249
- Broken Bow–Benton Uplift, 64, 201, 227, 249, 293
- Carbon Fault, 249
- Cavanal Syncline, 123
- Central North American Rift System, 21
- Cherokee Basin, 106
- Cherokee Group, subsurface, 225, 226
- Cherokee Platform, 108, 194
- Choctaw Fault and Anticline, 20, 64, 91, 249, 256, 279, 283, 284
- Clarita Anticline and Fault, 6, 7
- Cordell Anticline, 69
- Cowlington Syncline, 123
- cratonic rifting, Ouachita orogeny, 242
- Cross Mountain Anticlinorium, 64
- crustal movement during Desmoinesian, 20
- Cumberland Anticline and Syncline, 34
- Dougherty Anticline, 93
- Fort Cobb Anticline, 13, 69
- Greenwood Syncline, 253
- Horse Creek Anticline, 108
- Kinta Anticline, 123
- Lake Anticline, 93
- lineaments, Tri-State area, 224
- Linson Creek Anticlinorium, 64
- Lips Fault trend, 69
- Lynn Mountain Syncline, 249
- McAlester Basin, 283, 284
- Madill–Aylesworth Anticline, 34
- Marietta Syncline, 34, 294
- Miami Syncline, 108
- Midcontinent Geophysical Anomaly, 248

Mill Creek Fault, Graben, and Syncline, 29, 38, 93
 Milton Anticline, 123
 Mississippian, general, 51
 Mobeetie Anticline, 69
 Morvin Pool Horst, 225, 226
 Nemaha Ridge, 21, 51, 69, 170, 172, 194, 248
 Northwest Butterly Field, 29
 Oakland Anticline, 34
 Octavia Fault, 249
 Ouachita Mountains, Ouachita Geosyncline, 20, 51, 59, 64, 67, 80, 91, 103, 105,
 159, 194, 200, 201, 227, 235, 242, 248, 250, 251, 253, 256, 258, 259, 266,
 268, 283, 284, 293, 296
 Panther Mountain Syncline, 123
 pivotal fault, Osage County, 44
 plate tectonics, relation to sandstone composition, 59; late Paleozoic, 235, 293
 Potato Hills, 294
 Preston Anticline, 34
 Reagan Fault, 38, 93, 303
 Rich Mountain Syncline, 253
 San Bois Fault and Syncline, 123, 279, 283, 284
 Sayre Anticline, 69
 Seminole-Cushing Ridge, 225, 226
 Southern Oklahoma Aulacogen, 93, 268, 294
 submarine slumping, Ouachita Mountains, 250
 Sycamore Creek Anticline, 38
 Tishomingo Anticline, 38
 Ti Valley Fault, 91, 249, 256
 Washburn Anticline, 253
 Washita Valley Fault, 38, 294, 302, 303
 Whitefield Anticline, 123
 Wichita Mountains, 69, 87, 194, 222, 294
 Wilzetta Fault, 225, 226
 Windingstair Fault, 64, 91, 249, 253, 256
 "Y" City Fault, 253

TRI-STATE AREA:

Cherokee sandstone, 65, 66
 heavy oil, 108, 109
 Landsat study, 224
 lead and zinc, 129, 159
 lineaments, 224

URANIUM:

association with hydrocarbon deposits, 2
 Cambrian granites, 2
 Clinton Quadrangle, NURE study, 15, 25, 274
 Dockum Group, Texas Panhandle, 177
 hydrogeochemical exploration, 2, 15, 25, 274
 Lawton Quadrangle, NURE study, 15
 mineralization, 1, 2
 Morrison Formation, Cimarron County, 1
 Oklahoma Geological Survey programs, 185
 Pennsylvanian host rocks, 22
 Permian sandstones, 2
 radium-rich brines, origin, 26
 western Oklahoma, 130

WICHITA MOUNTAINS:

biotite gabbros, 222

geomorphology, 87
Iron Mountain rocks, 94
Kindblade Formation, organic buildups, 270
Lugert Granite, 142
sedimentology, 270
structure, 69, 87, 194, 222, 294
Unap Mountain, 270
uranium mineralization, 2
Wreford Megacyclothem, 99, 164

Harrison Attends Resource–Appraisal Meeting

William E. Harrison, Oklahoma Geological Survey petroleum geologist and geochemist, attended a resource-appraisal meeting called by the U.S. Geological Survey June 16 and 17 at the Denver Federal Center. The purpose of the conference was to gather data for updating estimates of recoverable resources of petroleum and natural gas in the United States. Harrison provided assessments on undiscovered petroleum resources in Oklahoma.

For purposes of this study, the United States was divided into 132 geologic provinces by the federal survey. Oklahoma contains five of these provinces—the Anadarko Basin, the Ardmore Basin, the Arkoma Basin, the Cherokee Platform, and the Nemaha Ridge. Harrison gave detailed comments on various aspects of exploration efforts in these Oklahoma provinces.

Evaluations are now being made on the basis of information about reservoir quality, source-rock quality and temperature history, and the potential of remaining undrilled (untested) areas of each of the provinces. Information collected will provide the basis for a revised version of USGS Circular 725, *Geological Estimates of Undiscovered Recoverable Oil and Gas Resources in the United States*, issued in 1975.

Oklahoma Receives Federal Mining Grant

Secretary of the Interior Cecil D. Andrus has announced that Oklahoma will receive a \$379,478 grant under the Surface Mining Control and Reclamation Act. The grant, administered by the U.S. Department of the Interior's Office of Surface Mining, will be used by the State to cover costs of Oklahoma's initial program to regulate surface coal mining and reduce potential harmful effects to the environment.

The new funds will enable the State to cover salary and fringe benefits for 16 current State employees, as well as to provide funding for travel, equipment, and the technical and legal consultant services necessary to carry out requirements of the regulatory program.

Oklahoma's coal industry produced 4,787,942 tons of bituminous coal during 1979.

New Director to Oversee School's Five-Year Plan



John S. Wickham

The University of Oklahoma announced recently that Dr. John S. Wickham has been appointed director of the School of Geology and Geophysics. As director, Wickham will begin implementing a "five-year plan" designed to assure the school of a top position in teaching and research.

Through the new five-year plan, which was recently endorsed by OU President William S. Banowsky and the OU Board of Regents, the University has committed itself to essentially doubling the size of the faculty in order to have strong academic programs in five areas. Emphasis will be placed

on petroleum geology, petrology and geochemistry, stratigraphy and paleontology, solid-earth geophysics and tectonics, and exploration geophysics.

"The School will have 12 full-time faculty members this fall, and four more will have been added by the fall semester of 1981 to bring the total to 16," Wickham said. "The University will then add two positions each year until the total has reached 26."

The recently created Monnett Professorship (endowed at \$750,000 through alumni contributions) will be filled this fall by David Stearns, whose specialties are structural geology and petroleum geology.

Two other endowments of \$300,000 each have created the Klabzuba and Schultz Professorships which, for the next few years, will bring distinguished visiting scientists to campus. This fall, Norman Domenico, consulting geophysicist with Amoco Research Lab in Tulsa, and next fall, Bill Galloway, who has done research in clastic depositional environments, will be teaching classes.

Wickham believes that the School will continue to provide a firm educational background that will allow its graduates to make important contributions to the energy industry. And he believes that, in a large way, this will be possible through the efforts of the alumni of the school.

"Alumni support has been outstanding in the past. Dr. Charles Mankin

[former director of the school and current director of both the Oklahoma Geological Survey and the Energy Resources Center] organized an alumni advisory council in the 1960's and it has continued to be very active.

Through this council, the alumni have given financial and moral support as well as some excellent advice.”

Since the nation’s attention has been focused in recent years on the energy needs of the country, the school has seen an increase in enrollments, Wickham said. Figures show approximately 350 undergraduate and 60 graduate students in geology and geophysics at OU.

Wickham noted that increases in enrollments began shortly after the Arab oil-embargo in 1973, and have been on the rise since.

The increasing enrollments have placed an added burden on Gould Hall, the already crowded building housing both the school and the Oklahoma Geological Survey. Both groups, however, are scheduled to benefit from a recently approved plan to direct \$3 million toward the renovation of the building, Wickham said.

“The planning and design phase of the operation will take place this fiscal year, and we hope to begin construction in the following fiscal year. We will add air conditioning to the building and update the heating system, as well as do some desperately needed work on research and teaching labs and classrooms.”

Wickham said attention would also be given to the exterior of the building, which now has a large expanse of glass that has been painted silver to help the un-airconditioned building remain as cool as possible during the scorching Oklahoma summers.

When the building was designed, he said, the glass was to be covered with large louvers that would be closed in the summer to keep out unwanted solar heating and opened in the winter to take advantage of the warming sunshine. Architects are currently working to update and improve this system to see if it would be feasible for future installation.

Wickham, who will see the school through the upcoming refurbishing of both building and program, came to OU as an assistant professor in 1969 after receiving his Ph.D. from Johns Hopkins. He had completed his undergraduate work at Pomona College, in southern California, in 1960 before beginning a four-year tour of duty in the Coast Guard. In 1975, he took a leave of absence from the University to work for Continental Oil Co. as a consultant in the Houston Division.

His work has included field and theoretical studies on structural problems in the Ouachita Mountains and the Southern Oklahoma Aulacogen. He has also worked on development of computer applications for lab research in structural geology, and computer models for rock deformation. Most recently, he has been involved with fracturing as it affects porosity, permeability, and migration of hydrocarbons.

The school is beginning the decade with a new director, a new five-year plan, proposed building modifications, and continued support from the alumni. The spirit is upbeat, and the outlook is bright.

—*Connie Smith*

AGI Issues New Glossary

"From A to Z, it's all here." So states the advertisement for the American Geological Institute's new, revised edition of the *Glossary of Geology*.

What is all here, from "aa" to "zygous basal plate," is an alphabetized list of 36,000 geological terms, complete with definitions, cross references, synonymy, some historical background, some bibliographic citations, some etymology, expansion of sometimes puzzling abbreviations or acronyms into understandable words, and phonetic pronunciation guides for foreign-language terms. There is also a listing of some 2,000 references from which the bibliographic citations were drawn. One hundred fifty geoscientists contributed to the accuracy of the information contained.

The science grows, expands into new areas, intensifies in established fields; and specialties become more specialized. The literature expands accordingly. The addition of 3,000 terms to AGI's 1972 *Glossary* and redefinition of some terms was needed, and AGI has done a good job in this second edition.

The first AGI geological dictionary, *Glossary of Geology and Related Sciences*, was published in 1957, seven years after The American Association of Petroleum Geologists considered such a project and rejected it, suggesting that it might be a good undertaking for the newly formed American Geological Institute. A new edition, with a 4,000-entry supplement, was released in 1960. Each re-issue has been an improvement on the preceding version, and the 1980 edition is no exception.

The volume is printed in easy-to-read Century Schoolbook type on non-glare, cream-toned paper. Entries are boldface, as in the first edition, but definitions are indented a space, so that terms described stand out and are easier to spot. Each letter of the alphabet has its own introduction of an artistic photo of geological, paleontological, or geomorphic interest. The Wedgewood-blue jacket has a graphic, organic spiral that starts from a thin thread that vanishes in a 4.5-billion-year past.

Editors of the new edition of the *Glossary* are Robert L. Bates, professor emeritus of Ohio State University, and Julia A. Jackson, an editor with AGI.

Most of us recognize Bob Bates as the writer of the clever, occasionally embarrassing "geologic column" on the antepenultimate page of *Geotimes*, which is the page many readers of AGI's monthly periodical turn to first. The tenor of his column indicates that he is a stickler, and that is surely a prerequisite for a good lexicographer. But he is also the author of many scientific papers and a textbook on industrial rocks and minerals and has served as editor for the *Journal of Geological Education*, *The Professional Geologist*, and AIME's fourth edition of *Industrial Minerals and Rocks*. He

is a distinguished member of the National Association of Geology Teachers, an honorary member and nominee for president-elect of the Association of Earth Science Editors, and a member of The American Association of Pe-

troleum Geologists, The Geological Society of America, and the American Institute of Professional Geologists.

Julie Jackson edits the AGI monthly newsletter, *Geospectrum*. A graduate of Wayne State University, she is currently a student at George Washington University in the Publications Specialist curriculum. She has been active in the geology docent program for the Smithsonian Institution's Museum of Natural History. She is a member of the Geological Society of Washington and AESE.

To return to the beginning—not to four and a half billion or more years in the past, but to “aa”: Every student in beginning geology knows what that is, but “zygous basal plate”?

Look it up in the AGI *Glossary of Geology*. Every geologist should have access to a copy of the new second edition.

This book can be ordered from the American Geological Institute, One Skyline Place, 5205 Leesburg Pike, Falls Church, Virginia 22041. The price is \$60.00, with a discount of 10 percent on orders of 10 or more copies.

—Elizabeth A. Ham

Emre Sancaktar Named to OGS Staff

Emre Ayse Sancaktar has recently joined the OGS staff as the newest member of the analytical-chemistry section. Along with her regular lab duties, she will be assisting petroleum geologist William E. Harrison in a regional study of the Woodford Shale in western Oklahoma. The two main objectives of this project are a temperature history and a determination of the hydrocarbon source-rock potential in that area.

Emre comes to the Survey from Bogazici University, Istanbul, Turkey, where she was an instructor in the chemistry department. Prior to that, she had spent three years as a teaching and research assistant in the chemistry department of Virginia Polytechnic Institute and State University at Blacksburg, Virginia, and had also taught at Robert College, Istanbul.

Her list of publications includes “Adsorption-Desorption of Water on Poly (ethylene terephthalate)” and “A Study of the Chemistry of Lithiotriphenylphosphineacetylmethylene.”

Emre and her husband, Selim, who teaches in OU's School of Mechanical and Nuclear Engineering, live in Norman.



Emre A. Sancaktar

Energy-Research Exchange Agreement Signed with West Berlin University

University of Oklahoma Provost J. R. Morris and OU Energy Resources Center (ERC) director Charles J. Mankin have recently signed an energy-research exchange agreement with the Technical University of West Berlin. The agreement involves all OU departments engaged in energy-related research. Mankin, of course, is well known in his capacity as director of the Oklahoma Geological Survey.

"The Technical University of West Berlin is far advanced in coal research. Its scientists feel they can help us in that area, and we can help them in enhanced oil recovery and other areas related to petroleum recovery and exploration," Jo Wilke, ERC director of special programs, said.

"Student exchanges will be made on the basis of a semester, and equivalent credit will be given."

Much energy-related research at OU is coordinated by the ERC as well as by the OGS. The center was established in 1978 to sponsor faculty and staff efforts to develop energy knowledge, provide government and industry with statistics and study results, and create and direct new energy-related research.

Johnson Receives Achievement Award

Kenneth S. Johnson, associate director of the Oklahoma Geological Survey, has been named recipient of a distinguished-achievement award granted annually to a leading earth scientist of the Rocky Mountain-Great Plains states by the Rocky Mountain Federation (RMF) of the American Federation of Mineralogical Societies. The award was presented at the annual RMF banquet held June 7 in Topeka, Kansas.

Johnson was selected for the honor in recognition of "his many published studies on the geology, mineral resources, and environmental geology of Oklahoma, and because of his teaching activities at The University of Oklahoma and his service to the gem and mineral societies of Oklahoma and to the public."

As recipient of the award, Johnson was authorized to designate a graduate student in earth science to receive a 2-year RMF scholarship in the amount of \$1,000 per year. As his choice he has named Janina Bloch, Ph.D. candidate in the School of Geology and Geophysics at The University of Oklahoma, stating, "Ms. Bloch is an exceptionally well-qualified graduate student. She has maintained a 3.8 grade-point average, and as a graduate assistant she has instructed laboratory sections in mineralogy and petrology and has instructed lecture sections in sedimentary petrography."

Notes on New Publications

Man and the Biosphere

Published as part of the Man and the Biosphere Program (MAB), which is "an inter-governmental effort to focus research, public education, and technical training" on environmental problems facing today's world, this book outlines the physical characteristics, scientific-research potential, and modifications made by man on 27 existing U.S. Biosphere Reserves.

The excellent photography and the use of a number of tables add to the readability of this publication. The MAB program is being supervised by UNESCO General Conference representatives from 30 nations.

Order from: The University of Oklahoma Press, 1005 Asp Avenue, Norman, Oklahoma 73019. Price: \$6.95.

Problems of Petroleum Migration

Thirteen authors present their differing views on the process of petroleum migration in this 274-page large-format publication. The book is a collection of papers from the Symposium on Petroleum Migration that was a part of the 1978 Annual AAPG meeting held in Oklahoma City.

Order from: AAPG, P.O. Box 979, Tulsa, Oklahoma 74101. Price: AAPG-SEPM members, \$15; others, \$18.

Stratigraphic Traps in Carbonate Rocks

A collection of 10 papers from AAPG Bulletins (1960-75) and Memoirs (14 and 24), this publication has been compiled by S. J. Mazzullo to help geologists understand carbonate facies in exploration. The book contains a bibliography and an extensive table of selected carbonate stratigraphic traps.

Order from: AAPG, P.O. Box 979, Tulsa, Oklahoma 74101. Price: AAPG-SEPM members, \$6; others, \$7.

U.S. Geological Survey Open-File Reports

U.S. Geological Survey Open-File Report 80-50, dealing with the water table in the High Plains aquifer in 1978 in parts of Colorado, Kansas, Nebraska, New Mexico, Oklahoma, South Dakota, Texas, and Wyoming, has recently been issued. The material is by E. D. Gutentag and J. B. Weeks, and consists of one oversized sheet, scale 1:2,500,000.

Order from USGS, Water Resources Division, Room H-2920, Building 53, Mail Stop 412, Denver Federal Center, Denver, Colorado 80225. Price: microfiche, 50 cents; paper copy, \$3.50.

AAPG Mid-Continent Group to Examine Energy Exploration in the 80's

"Mid-Continent Energy Exploration in the 1980's" will be the central theme for the Mid-Continent Section of The American Association of Petroleum Geologists' biennial meeting scheduled for September 20, 21, and 22, 1981, at the Sheraton Century Center Hotel in Oklahoma City. James W. Cammack will serve as convention chairman.

Program co-chairmen Kenneth S. Johnson and Douglas J. Seyler are asking that abstracts for papers be submitted before December 1, 1980. They are requesting papers dealing with general geology and geophysics of the Midcontinent, potential new hydrocarbon objectives in the Midcontinent, innovations in exploration and production practices, and non-petroleum energy exploration.

Those interested in submitting abstracts should contact Johnson in advance for a copy of the style sheet for authors. His address is on the front cover.

OKLAHOMA GEOLOGY NOTES

Volume 40

August 1980

Number 4

<i>Bibliography and Index of Oklahoma Geology, 1979</i>	<i>Page</i>
ELIZABETH A. HAM	123
Ogallala Ash Outcrop in Ellis County	122
Harrison Attends Resource-Appraisal Meeting	169
Oklahoma Receives Federal Mining Grant	169
New Director to Oversee School's Five-Year Plan	170
AGI Issues New Glossary	172
Emre Sancaktar Named to OGS Staff	173
Energy-Research Exchange Agreement Signed with West Berlin University	174
Johnson Receives Achievement Award	174
Notes on New Publications	175
AAPG Mid-Continent Group to Examine Energy Exploration in the 80's	176