

## **Section 1 of *A Guidebook to OGS Guidebooks***

**by Brittany N. Pritchett, 2015**

### **Educational Publications**

**Johnson, K.S., 1982, *Guidebook for Geologic Field Trips in Oklahoma Book II: Northwest Oklahoma*, OGS: Educational Publication 3, 43 p.**

1. Alfalfa County Site 1: Parts of T26N and T27N, R9W and R10W (Great Salt Plains)
  - a. Great Salt Plains
  - b. Quaternary deposits
  - c. brine
2. Alfalfa County Site 2: sec. 22, T26N, R10W (Great Salt Plains)
  - a. hourglass selenite crystals
3. Alfalfa County Site 3: NW  $\frac{1}{4}$  sec. 31, T25N, R11W
  - a. Hennessey Formation
  - b. Cedar Hills Sandstone Member (Hennessey)
  - c. gypsum
  - d. Quaternary sediment
  - e. vertebrate fossils
4. Blaine County Site 1: secs. 23 and 24, T17N, R12W (Roman Nose State Park)
  - a. Dog Creek Shale Formation
  - b. Southard Dolomite Bed (Dog Creek Shale)
  - c. Watonga Dolomite Bed (Dog Creek Shale)
  - d. Blaine Formation
  - e. Shimer Gypsum Member (Blaine)
  - f. Altona Dolomite Member (Blaine)
  - g. Nescatunga Gypsum Member (Blaine)
  - h. Magpie Dolomite Member (Blaine)
  - i. Medicine Lodge Gypsum Member (Blaine)
  - j. Flower Pot Shale Formation
5. Blaine County Site 2: sec. 10, 11, 15 T18N, R12W (U.S. Gypsum); sec. 27, T17N, R11W (Universal Atlas); and sec. 35, T19N, R12W (Walton Gypsum) (Contact quarries)
  - a. Blaine Formation
  - b. Shimer Gypsum Member (Blaine)
  - c. Nescatunga Gypsum Member (Blaine)
6. Blaine County Site 3: NE  $\frac{1}{4}$  sec. 30, T16N, R10W (gypsum and dolomite); N  $\frac{1}{2}$  sec. 25, T16N, R11W (gravel)

- a. Pleistocene terrace deposits
  - b. Dog Creek Shale
  - c. Blaine Formation
  - d. Nescatunga Gypsum Member (Blaine)
  - e. Magpie Dolomite Member (Blaine)
  - f. malachite
7. Blaine County Site 4: sec. 36, T16N, R13W (Trench Canyon)
    - a. Quaternary sand and gravel
    - b. Rush Springs Sandstone
  8. Blaine County Site 5: SE  $\frac{1}{4}$  sec. 19 and SW  $\frac{1}{4}$  of sec. 20, T15N, R11W (Red Hill butte)
    - a. Marlow Formation
    - b. Relay Creek Dolomite Bed (Marlow)
    - c. Dog Creek Shale
  9. Dewey County Site 1: SE  $\frac{1}{4}$  sec. 20, T19N, R19W
    - a. bentonite
    - b. montmorillonite
    - c. volcanic ash
  10. Dewey County Site 2: SE  $\frac{1}{4}$  sec. 23, T19N, R16W
    - a. Quaternary sand and gravel deposits
    - b. Cloud Chief Formation
    - c. Day Creek Dolomite Bed (Cloud Chief)
    - d. Rush Springs Sandstone
    - e. collapse features
  11. Ellis County Site 1: SW  $\frac{1}{4}$  sec. 3, T24N, R25W (gravel); NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 2, T24N, R25W (collapse 1); SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 36, T25N, R25W (collapse 2)
    - a. Laverne Formation
    - b. oyster shell fossils
    - c. fossilized wood
    - d. collapse features
    - e. snail molds
  12. Ellis County Site 2: W  $\frac{1}{2}$  NE  $\frac{1}{4}$  sec. 9, T21N, R25W (Flattop Hill near Shattuck)
    - a. Ogallala Formation
    - b. caliche
  13. Ellis County Site 3: sec. 12, T18N, R26W (gravel and red beds); SW  $\frac{1}{4}$  sec. 23 and NW  $\frac{1}{4}$  sec. 26, T18N, R26W (volcanic ash)(both in Lake Vincent area)
    - a. Pleistocene terrace deposits
    - b. Pleistocene volcanic ash
    - c. Cloud Chief Formation

14. Harper County Site 1: SW  $\frac{1}{4}$  sec. 18, T28N, R22W
  - a. Ogallala Formation
  - b. Kiowa Formation
  - c. Cloud Chief Formation
  - d. Day Creek Dolomite Member (Cloud Chief)
  - e. Rush Springs Formation
  - f. oyster shell fossils
  - g. petrified wood
  - h. chert
15. Harper County Site 2: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 13, T28N, R22W
  - a. late Pleistocene lake deposit
  - b. fossil snail shells
  - c. gypsum
16. Major County Site 1: S  $\frac{1}{2}$  SW  $\frac{1}{4}$  sec. 22, T22N, R13W (Glass Mountains)
  - a. Blaine Formation
  - b. Medicine Lodge Gypsum Member (Blaine)
  - c. Flowerpot Formation
  - d. gypsum (selenite, satin spar, and alabaster)
17. Major County Site 2: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 34, T22N, R10W
  - a. Quaternary sediments
  - b. snail shell fossils
  - c. lime nodules
18. Major County Site 3: SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 24, T21N, R11W
  - a. Hennessey Formation
  - b. Cedar Hills Sandstone Member (Hennessey)
19. Woods County Site 1: SE  $\frac{1}{4}$  sec. 32, T29N, R15W
  - a. the Alva volcanic ash deposit
  - b. Pleistocene sandstone
  - c. Flowerpot Formation
  - d. gypsum
20. Woods County Site 2: SE  $\frac{1}{4}$  sec. 1, T27N, R14W (Alva Concrete and Materials); NW  $\frac{1}{4}$  Sec 7, T27N, R13W (Koppitz pit)
  - a. Pleistocene sand and gravel deposits
  - b. Hennessey Formation
  - c. Cedar Hills Sandstone Member (Hennessey)
  - d. petrified bone
  - e. petrified wood
21. Woods County Site 3: SE  $\frac{1}{4}$  sec. 20, T27N, R16W

- a. Marlow Formation
  - b. Doe Creek Limestone Lentil (Marlow)
  - c. Dog Creek Shale Formation
  - d. pelecypod shells
  - e. gastropods
  - f. brachiopods
  - g. bryozoans
  - h. cabbage-head algae
22. Woods County Site 4: E ½ sec. 20, T27N, R19W (Big Salt Plain)
- a. Blaine Formation
  - b. Flowerpot Shale
  - c. halite
23. Woods County Site 5: secs. 23 and 26, T24N, R16W (Little Sahara sand dunes)
- a. Pleistocene terrace deposits
  - b. sand dunes
24. Woodward County Site 1: sec. 28 and sec. 33, T26N, R18W (Alabaster Caverns State Park)
- a. Blaine Formation
  - b. Shimer Gypsum Member (Blaine)
  - c. Nescatunga Gypsum Member (Blaine)
  - d. Medicine Lodge Gypsum Member (Blaine)
  - e. Flowerpot Shale
  - f. caves
  - g. alabaster
  - h. selenite
25. Woodward County Site 2: sec. 23 and sec. 24, T23N, R20W (Boiling Springs State Park)
- a. Quaternary terrace and sand deposits
  - b. Marlow Formation
  - c. Doe Creek Limestone Lentil (Marlow)
26. Woodward County Site 3: common corner of secs. 5, 6, 7, and 8, T22N, and R21W
- a. caliche

**Naff, J.D., 1981, Guidebook for Geologic Field trips in North-Central Oklahoma, OGS: Educational Publication 4, 49 p.**

- 1. Canadian County Site 1: SE ¼ sec. 2, T14N, R9W
  - a. Permian gypsum (selenite, satin spar, and massive)
- 2. Canadian County Site 2: secs. 4, 5, 6, 7, and 8, T12N, R10W
  - a. Canadian River terraces

3. Creek County Site 1: NE  $\frac{1}{4}$  sec. 28, T19N, R7E
  - a. Ada Group
  - b. Lecompton Limestone (Ada)
4. Creek County Site 2: Near C sec. 4, T18N, R7E
  - a. old Oilton oil field (1914)
  - b. Vamoosa Group
5. Creek County Site 3: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 26, T18N, R11E
  - a. coal bed (18 inches below Hogshooter Limestone)
  - b. Pecopteris (in silty shales above and below coal)
  - c. Calamites (in silty shales above and below coal)
6. Garfield County Site 1: SW  $\frac{1}{4}$  sec. 1, T22N, R8W
  - a. gravel pit in Quaternary terrace deposits
  - b. cobble size fragments of various rocks, minerals, and fossils
7. Garfield County Site 2: SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 35, T20N, R4W
  - a. Garber Sandstone (near type locality)
8. Grant County Site 1: NW  $\frac{1}{4}$  sec. 36, T26N, R6W, NE  $\frac{1}{4}$  sec. 35, T25N, R6W
  - a. Salt Fork of the Arkansas River
  - b. halite
  - c. sand dunes
9. Kay County Site 1: secs. 27, 28, 29, 30, 31, 32, 33, T27N, R5E
  - a. limestone cuestas
  - b. Fort Riley Limestone
  - c. Wreford Limestone
  - d. Funston Limestone
  - e. Crouse Limestone
  - f. Cottonwood Limestone
  - g. Neva Limestone
10. Kay County Site 2: NE  $\frac{1}{4}$  sec. 3, T25N, R2E
  - a. Herington Limestone
11. Kingfisher County Site 1: sec. 11, T17N, R7W
  - a. gravel pit
  - b. cobble size fragments of various rocks, minerals, and bones
12. Kingfisher County Site 2: C sec. 16, T19N, R9W
  - a. sand dunes
  - b. Cimarron River
13. Lincoln County Site 1: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 32, T15N, R2E
  - a. high-terrace gravel
14. Lincoln County Site 2: E line of the NE  $\frac{1}{4}$  sec. 19, T14N, R3E
  - a. concretions (calcite)
15. Lincoln County Site 3: SE  $\frac{1}{4}$  sec. 31, T13N, R6E
  - a. sandstone (Vanoss Group)
16. Logan County Site 1: C of the S line, sec. 14, T17N, R1E

- a. Horsethief Canyon
  - b. Wellington Formation
  - c. Fallis Sandstone Member (Wellington)
17. Logan County Site 2: SE ¼ sec. 2, T16N, R4W
- a. Cimarron River
  - b. sand dunes (north of river)
  - c. braided stream
18. Logan County Site 3: red beds along I-35 near Guthrie (Logan County line to Cimarron River)
- a. Garber Sandstone
19. Noble County Site 1: Near C sec. 8, T24N, R4E
- a. coarse gravel
  - b. Arkansas River
  - c. *Gryphaea*
  - d. hand-worked chert
  - e. chert and flint pebbles
  - f. quartz cobbles
  - g. agatized wood
20. Noble County Site 2: SE ¼ sec. 27, T21N, R3E
- a. copper deposit (chalcocite)
21. Okfuskee County Site 1: secs. 34 and 35, T11N, R10E
- a. volcanic ash
22. Okfuskee County Site 2: C of the W ½ sec. 31, T13N, R9E
- a. hogback
  - b. Barnsdall Formation
  - c. upper Chanute shale
  - d. lower Chanute sandstone
  - e. Dewey Formation
23. Okfuskee County Site 3: SW ¼ NW ¼ sec. 27, T12N, R8E
- a. Boley Conglomerate
24. Oklahoma County Site 1: NW ¼ sec. 13, T11N, R3W
- a. barite roses
25. Oklahoma County Site 2: Near C of the N lines, sec. 31, T12N, R3W
- a. Acme brick pit
  - b. Hennessey Group
26. Oklahoma County Site 3: sec. 27, T12N, R3W
- a. Oklahoma City Oil Field
27. Oklahoma County Site 4: sec. 13, T12N, R3W
- a. Garber Sandstone (aquifer)
28. Osage County Site 1: 400 feet N of the C of the E line, sec. 31, T26N, R6E
- a. Sallyards Limestone
  - b. Rocha Shale
  - c. Spiriferids (brachiopod) (Sallyards)

- d. Productids (brachiopod) (Sallyards)
  - e. Rhynchonellids (brachiopod) (Sallyards)
  - f. *Neospirifer* (Sallyards)
  - g. *Composita* (Sallyards)
  - h. *Cryrithyris* (Sallyards)
  - i. *Juresania* (Sallyards)
  - j. *Marginifera* (Sallyards)
  - k. *Dictyoclostus* (Sallyards)
  - l. *Linoproductus* (Sallyards)
  - m. *Rhipidomella* (Sallyards)
  - n. *Wellerella* (Sallyards)
  - o. *Hustedia* (Sallyards)
  - p. *Derbyia* (Sallyards)
  - q. crinoid dorsal cup (Sallyards)
  - r. *Stegocoelia* (gastropods) (Rocha)
  - s. *Pharkidonotus* (Rocha)
  - t. *Cymatopira* (Rocha)
  - u. *Myalina* (Rocha)
  - v. *Pseudorthoceras* (Rocha)
  - w. *Aviculopecten* (Rocha)
  - x. ostracodes (Rocha)
29. Osage County Site 2: T26N and T27N, R5E and R6E
- a. Burbank Oil Field
30. Osage County Site 3: SE ¼ sec. 25, T26N, R5E (Burbank Limestone Quarry)
- a. Rocha Shale
  - b. Red Eagle Limestone
31. Osage County Site 4: SW ¼ NW ¼ sec. 21, T22N, R10E
- a. Barnsdall Formation
  - b. Wildhorse Dolomite Member
  - c. *Conocardium* (pelecypod)
  - d. *Trepostira* (gastropod)
  - e. *Worthenia* (gastropod)
  - f. *Nudirostra* (brachiopod)
  - g. *Pseudorthoceras* (cephalopod)
32. Osage County Site 5: about 100 feet S of the C of the N line, NE ¼ sec. 11, T25N, R8E
- a. Deer Creek-Lecompton Limestone
  - b. Elgin Sandstone
33. Pawnee County Site 1: SW ¼ sec. 30, T24N, R5E
- a. Oscar Group
  - b. Neva Limestone (Oscar)
  - c. *Neospirifer*
  - d. *Composita*

- e. *Juresania*
  - f. *Dictyoclostus*
  - g. *Meekella*
  - h. *Rhipidomella*
  - i. *Derbyia*
  - j. *Marginifera*
  - k. *Triticites*
  - l. chert
34. Pawnee County Site 2: SE ¼ SW ¼ sec. 34, T24N, R5E
- a. Vanoss Group
  - b. Foraker Limestone
  - c. Long Creek Limestone Member (Foraker Limestone)
  - d. Hughes Creek Shale Member (Foraker Limestone)
  - e. *Triticites* (fusulinid)
  - f. *Lophophyllidium* (horn coral)
  - g. *Fistulipora* (bryozoan)
  - h. *Rhombopora* (bryozoan)
  - i. *Ditomopyge* (trilobite)
35. Pawnee County Site 3: NE ¼ sec. 2, T23N, R5E
- a. Admire Sandstone
36. Pawnee County Site 4: SW ¼ sec. 17, T22N, R5E
- a. Vanoss Group
  - b. Rocha Shale (Vanoss)
  - c. *Chonetes*
  - d. *Chonetinella*
  - e. *Composita*
  - f. *Linoproductus*
  - g. *Marginifera*
  - h. *Rhombopora*
  - i. *Meekopora*
  - j. *Rhipidomella*
  - k. *Crurithyris*
  - l. complete dorsal cups of a crinoid *Delocrinus*
37. Pawnee County Site 5: C of the W line, SW ¼ sec. 29, T23N, R5E
- a. Vanoss Group
  - b. Rocha Shale (Vanoss)
  - c. brachiopods
  - d. fenestrate bryozoans
  - e. *Fenestrellina* (bryozoan)
  - f. *Peniretepora* (bryozoan)
  - g. *Astartella* (pelecypods)
  - h. *Aviculopina* (pelecypods)



- i. *Myalina* (pelecypods)
  - j. *Wilkingia* (pelecypods)
  - k. *Amphiscapha* (pseudoplanospiral gastropod)
  - l. *Pharkidonotus* (planospiral gastropod)
  - m. *Pseudorthoceras* (cephalopod)
  - n. *Petalodus destructor* (shark tooth)
38. Payne County Site 1: NW ¼ sec. 15, T19N, R5E
- a. Grayhorse Limestone
  - b. *Triticites* (fusulinid)
  - c. *Lophophyllidium* (horn coral)
  - d. brachiopods
  - e. fenestrate bryozoans
39. Payne County Site 2: C of the E line of the SE ¼ sec. 9, T18N, R5E
- a. Gano Shale
  - b. *Fistulipora* (bryozoan)
  - c. *Rhombopora* (bryozoan)
  - d. *Lioclema* (bryozoan)
  - e. *Rhipidomella* (brachiopod)
  - f. *Derbyia* (brachiopod)
  - g. *Composita* (brachiopod)
  - h. *Wellerella* (brachiopod)
  - i. *Hustedia* (brachiopod)
  - j. *Punctospirifer* (brachiopod)
  - k. *Amphiscapha* (gastropod)
  - l. *Phymatopleura* (gastropod)
  - m. *Pseudorthoceras* (cephalopod)
  - n. *Orbiculoidea* (inarticulate brachiopod)
  - o. *Trigonoglossa* (inarticulate brachiopod)
40. Payne County Site 3: SW cor. sec. 7, T18N, R5E
- a. loess
  - b. Cimarron River
  - c. sand dunes
41. Payne County Site 4: Most of secs. 16, 17, 18, and 19, T18N, R2E and secs. 13, 24, and 25, T18N, R1E
- a. Ramsey Oil Field
  - b. Calamites (Permian sandstones and siltstones in area)
42. Payne County Site 5: Entire NW ¼ sec. 26, T19N, R1E
- a. fossil wood (limonite)
  - b. *Lepidodendron*
  - c. *Sigillaria*
  - d. Calamites
43. Payne County Site 6: SE ¼ sec. 22, T20N, R3E

- a. copper mine
- b. chalcocite
- c. malachite
- d. azurite

## **OGS Guidebooks**

### **Huffman, G.G., 1953, Filed Conference on Pre-Atoka Rocks in Western Park of the Ozark Uplift, Northeastern Oklahoma, OGS: Guidebook 1, 45 p. (Field trip held April 24-25, 1953)**

1. Stop 1: sec. 13, T16N, R19E (Wagoner County)
  - a. Fort Gibson Dam observation point
  - b. Atoka Sandstone
  - c. Boyd Formation (no longer recognized by OGS)
  - d. Hale Formation (no longer recognized by OGS)
  - e. Pitkin Limestone
- Stop 2: sec. 18, T16N, R20E (East end of Fort Gibson Dam) (Cherokee County)
  - a. Atoka Sandstone
  - b. Boyd Formation (no longer recognized by OGS)
  - c. Hale Limestone (no longer recognized by OGS)
  - d. Pitkin Limestone
  - e. Fayetteville Formation
2. Stop 3: sec. 18, T16N, R20E (Muskogee County)
  - a. reconstructed Fort Gibson
3. Stop 4: sec. 6 and 7, T15N, R21E (Cherokee County)
  - a. Atoka Formation
  - b. Moorefield Formation
  - c. South Muskogee Fault
4. Stop 5: sec. 35, T15N, R21 E (Cherokee County)
  - a. Boone Formation
  - b. Chattanooga Shale
  - c. Sallisaw Formation
  - d. St. Clair Formation
  - e. Sylvan Formation
  - f. Fernvale Formation
  - g. Fite Formation
  - h. Tyner Shale
  - i. Burgen Sandstone
  - j. Cotter Formation
  - k. Qualls Dome
  - l. fault
5. Stop 6: sec. 2, T14N, R21E (Cherokee County)
  - a. Boone Chert

- b. St. Clair Formation
  - c. Sylvan Shale
  - d. *Dicellograptus complanatus*
6. Stop 7: sec. 20, T15N, R20E (Muskogee County)
- a. Atoka Sandstone
  - b. Bloyd Formation (no longer recognized by OGS)
  - c. coal seam
7. Stop 8: sec. 21 and 28, T15N, R20E (Muskogee County)
- a. Atoka Formation
  - b. Bloyd Formation (no longer recognized by OGS)
  - c. Hale Formation (no longer recognized by OGS)
  - d. Pitkin Formation
  - e. Fayetteville Formation
  - f. Hindsville Limestone
  - g. Moorefield Formation
8. Stop 9: sec. 10, T13N, R20E (spillway of Greenleaf Lake) (Muskogee County)
- a. Bloyd Limestone (no longer recognized by OGS)
  - b. *Pentremites blastoids*
9. Stop 10: sec. 14, T13N, R21E (Sequoyah County)
- a. Part (a) Lake Tenkiller Dam
  - b. Part (b) Atoka Formation
10. Stop 11: sec. 10, T13N, R21E (Sequoyah County)
- a. Moorefield Formation
  - b. Chattanooga Shale
  - c. St. Clair Limestone
11. Stop 12: sec. 20 and 21, T13N, R21E (Sequoyah County)
- a. Moorefield Formation
  - b. Chattanooga Shale
  - c. St. Clair Limestone
12. Stop 2-1: sec. 16, T19N, R19E (Union Mission) (Mayes County)
- a. Atoka Formation
  - b. Bloyd Formation (no longer recognized by OGS)
  - c. Hale Formation (no longer recognized by OGS)
  - d. Fayetteville Formation
  - e. Moorefield Formation
  - f. Boone Chert
13. Stop 2-2: sec. 9 and 16, T19N, R19E (Mayes County)
- a. Fayetteville Formation
  - b. Hindsville Limestone
  - c. Moorefield Formation
14. Stop 2-3: sec. 36, T20N, R18E (Mayes County)
- a. Atoka Formation

- b. Hale Formation (no longer recognized by OGS)
- 15. Stop 2-4: sec. 34, T20N, R19E (Mayes County)
  - a. Hindsville Formation
  - b. Moorefield Formation
  - c. *Agassizocrimus* zone
- 16. Stop 2-5: sec. 26, T20N, R19E (Mayes County)
  - a. Hindsville Limestone
  - b. Moorefield Formation
  - c. Keokuk Formation
- 17. Stop 2-6: sec. 6, T20N, R20E (Grand River) (Mayes County)
  - a. Hindsville Limestone
  - b. Moorefield Formation
  - c. Keokuk Chert
- 18. Stop 2-7: sec. 14, T20N, R19E (Mayes County)
  - a. Moorefield Formation
  - b. Keokuk Chert
- 19. Stop 2-8: sec. 16, T22, R21E (Mayes County)
  - a. Chattanooga Shale
  - b. Cotter Dolomite
- 20. Stop 2-9: sec. 15, T22N, R21E (Mayes County)
  - a. Spavinaw Granite
  - b. core of anticline
- 21. Stop 2-10: Sec 15, T22N, R21E (Spavinaw Dam and Lake) (Mayes County)
  - a. Reed Spring Limestone
  - b. St. Joe Limestone
  - c. Chattanooga Shale
- 22. Stop 2-11: Sec 14 and 15, T23N, R21E (Grand Lake Dam) (Mayes County)
  - a. Boone Chert
  - b. Seneca Fault
- 23. Stop 2-12: Sec 3 and 4, T24N, R21E (Craig County)
  - a. Atoka Formation
  - b. Fayetteville Shale

**Branson, C.C., 1954, Field Conference on Desmoinesian Rocks of Northeastern Oklahoma, OGS: Guidebook 2, 43 p. (Field Trip held May 14-15, 1954)**

- 1. Stop 1: NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 3, T27N, R22E (axis of Miami syncline) (Ottawa County)
  - a. coal (unspecified)
  - b. conglomerate (Burgess sand in the subsurface)
  - c. Hindsville Limestone
- 2. Stop 2: W  $\frac{1}{2}$  SE  $\frac{1}{4}$  of irregular shaped sec. 5, T28N, R22E (Ottawa County)
  - a. Quaternary alluvium
  - b. Quaternary terrace deposits

- c. McAlester Formation
  - d. coal bed (unspecified)
  - e. coal bed (unspecified)
  - f. *Toanurus* (McAlester)
  - g. Warner Sandstone Member (McAlester; Booch sand in the subsurface)
3. Stop 3: C of the S line of the SE ¼ SE ¼ SW ¼ sec. 24, T28N, R19E (Craig County)
- a. Fort Scott Formation
  - b. Higginsville Limestone Member (Fort Scott)
  - c. Black Jack Creek Limestone Member (Fort Scott)
  - d. Senora Formation
  - e. Excello Shale (Senora)
  - f. Breezy Hill Limestone Member (Senora)
  - g. Kinnison Shale Member (Senora)
  - h. Iron Post coal bed (Senora)
4. Stop 4: SE Corner of sec. 32, T28N, R20E on side of Highway 10, looking at hill to the Northeast (about 0.5 miles) (Craig County)
- a. Senora Formation
  - b. Breezy Hill Limestone Member (Senora)
  - c. Iron Post coal bed (Senora)
  - d. Wheeler coal bed (Senora)
  - e. Verdigris Limestone Member (Senora)
  - f. Croweburg coal bed (Senora)
  - g. unnamed thin limestone bed (Senora)
  - h. Russell Creek Limestone Member (Senora)
  - i. Mineral coal bed (Senora)
  - j. Weir-Pittsburg coal bed (Senora)
5. Stop 5: C of the S line of the SE ¼ SW ¼ SW ¼ sec. 24, T27N, R20E (Craig County)
- a. Senora Formation
  - b. Chelsea Sandstone Member (Senora; subsurface name is Skinner sand)
  - c. Tiawah Limestone Member (Senora)
  - d. Weir Pittsburg coal bed (Senora)
  - e. unnamed coal
  - f. Boggy Formation
  - g. Bluejacket Sandstone Member (Boggy; subsurface names are Bartlesville sand, Glenn sand, and Salt sand)
  - h. Savanna Formation
  - i. Drywood coal bed (Savanna)
  - j. "Twelve-Foot" sandstone\* (unit not recognized)
  - k. Doneley Limestone Member (Savanna)
  - l. Rowe coal bed (Savanna)
6. Stop 6: cor. of sec. 27, 28, 33, and 34, T26N, R19E (Craig County)
- a. Senora Formation
  - b. Chelsea Sandstone Member (Senora)
  - c. Weir-Pittsburg Coal (Senora)
7. Stop 7: SE ¼ SE ¼ sec. 28, T26N, R17E (Author's correctly located this stop on their map and their road log, but mislabeled it sec. 28. The correct location is sec. 27) (Nowata County)
- a. Oologah Formation
  - b. Pawnee Limestone Member (Oologah)

- c. Anna Shale Member (Oologah)
  - d. Labette Shale
  - e. Lexington coal bed (Labette)
  - f. Wimer School Limestone Member (Labette)
  - g. Peru sand (informal subsurface name, surface name = Englevale Sandstone Member of the Labette Shale)
  - h. Fort Scott Limestone
  - i. Higginsville Limestone Member (Fort Scott)
8. Stop 8: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 10, T27N, R16E (Nowata County)
    - a. Lenapah Formation
    - b. Nowata Shale
    - c. Walter Johnson sandstone member (unit not recognized)
    - d. Oologah Formation
    - e. Altamont Limestone Member(Oologah)
    - f. Worland limestone bed (Altamont)
    - g. Lake Neosho shale bed (Altamont)
    - h. Amoret limestone bed (Altamont)
  9. Stop 9: S  $\frac{1}{2}$  of the NE  $\frac{1}{4}$  sec. 30, T28N, R16E (Peerless Rock Co. quarry) (Nowata County)
    - a. Lenapah Formation
    - b. Sni Mills Limestone Member (Not recognized in OK)
    - c. Perry Farm Shale Member (Lenapah)
    - d. Norfleet Limestone Member (Lenapah)
    - e. "*Marginifera*" *muricata*
  10. Stop 10: W  $\frac{1}{2}$  W  $\frac{1}{2}$  sec. 26, T27N, R15E (Nowata County)
    - a. Dawson coal bed
  11. Stop 11: NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 15, T22N, R16E (strip pit may be covered now) (Rogers County)
    - a. Senora Formation
    - b. Verdigris Limestone (Senora)
    - c. Croweburg coal bed (Senora)
  12. Stop 2-1 C of the S line of the SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 12 and sec. 13, T22N, R16E (Rogers County)
    - a. Senora Formation
    - b. Chelsea Sandstone Member (Senora, subsurface name is Lower Skinner Sand)
    - c. Tiawah Limestone Member (Senora, subsurface name is Pink Limestone)
    - d. Tebo Coal (Senora)
    - e. upper Red Fork sand (informal subsurface name, surface name = Taft Sandstone Member of the Senora Formation)
  13. Stop 2-2: N  $\frac{1}{2}$  N  $\frac{1}{2}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 18, T21N, R18E (Mayes County)
    - a. Boggy Formation
    - b. lower Taft Sandstone Member (Boggy)
    - c. Inola Limestone Member (Boggy)
    - d. Bluejacket Sandstone Member (Boggy, subsurface name = Bartlesville sand)
  14. Stop 2-3: NW  $\frac{1}{4}$  sec. 20, T18N, R19E (Wagoner County)
    - a. McAlester Formation
    - b. Warner Sandstone Member (McAlester)
    - c. Hartshorne Formation
    - d. Atoka Formation
  15. Stop 2-4: SE  $\frac{1}{4}$  sec. 30, T18N, R18E (West Wagoner oil field) (Wagoner County)
    - a. Atoka Formation

- b. Hale Limestone (now recognized as Sausbee Formation)
- 16. Stop 2-5: NE ¼ sec. 9, T17N, R18E (Wagoner County)
  - a. Savanna Formation
  - b. Spaniard Limestone Member (Savanna)
  - c. unspecified coal bed
  - d. unspecified carbonaceous sandstone bed
  - e. *Caninia torquia* (Spaniard)
- 17. Stop 2-6: C of E line of SE ¼ SE ¼ SE ¼ NE ¼ sec. 2, T16N, R15E (Wagoner County)
  - a. Senora Formation
  - b. Chelsea Sandstone Member (Senora)
  - c. unnamed shale (Senora)
  - d. Tiawah Limestone Member (Senora)
  - e. unnamed shale (Senora)
  - f. Tebo coal bed (Senora)
  - g. underclay (Senora)
  - h. unnamed shale (Senora)
  - i. unnamed sandstone (Senora)
- 18. Stop 2-7: sec. 7, T16N, R15E (on top of Concharty Mountain) (Wagoner County)
  - a. Labette-Wewoka Formation
  - b. Fort Scott Formation
  - c. Blackjack Creek Limestone Member? (Fort Scott, author not sure of correlation)
  - d. Senora Formation
  - e. Breezy Hill Limestone Member? (Senora, author not sure of correlation)
  - f. Verdigris Limestone Member (Senora)
  - g. Croweburg coal bed (Senora)
  - h. Chelsea Sandstone Member (Senora)

**Ham, W.E., 1955, Field Conference on Geology of the Arbuckle Mountain Region, OGS: Guidebook 3, 65 p.**

- 1. Stop 1: W ½ SW ¼ sec. 19, T2S, R2E (Carter County)
  - a. Joins Limestone
  - b. West Spring Creek Limestone
  - c. Kinblade Limestone
  - d. *Pomatotrema murale* (West Spring Creek)
  - e. *Ceratopea* sp. 1 (West Spring Creek)
  - f. *Diparelasma typicum* (West Spring Creek)
  - g. *Pomatotrema oklahomense* (West Spring Creek)
  - h. *Polytoechia subrotunda* (West Spring Creek)
  - i. *Didymograptus* (West Spring Creek)
  - j. *Ceratopea* sp. 2 (West Spring Creek)
  - k. *Ceratopea ankylose* (West Spring Creek)
  - l. *Ceratopea tennesseensis* (Kindblade)
- 2. Stop 2: NE ¼ NE ¼ sec. 13 and SE ¼ SE ¼ sec. 12 T2S, R 1E (Murray County)
  - a. McKenzie Hill Limestone

- b. Butterly Dolomite
  - c. Signal Mountain Limestone
  - d. Royer Dolomite
  - e. Fort Sill Limestone
  - f. Apheoorthis (Butterly)
  - g. Apheoorthis ornate (Signal Mountain)
  - h. Finkelburgia auriculata (Signal Mountain)
3. Stop 3: SW  $\frac{1}{4}$  sec. 24, T1S, R1W (Murray County)
    - a. Honey Creek Limestone
    - b. Reagan Sandstone
    - c. trilobites
  4. Stop 4: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 28, T1S, R1W (Murray County)
    - a. McKenzie Hill Limestone
    - b. Butterly Dolomite
    - c. Signal Mountain Limestone
    - d. Fort Sill Limestone
    - e. Honey Creek Limestone
    - f. Apheoorthis (Signal Mountain)
    - g. Finkelburgia auriculata (Signal Mountain)
    - h. Billingsella rectangulata (Signal Mountain)
    - i. Cymbithyrus hami (Signal Mountain)
    - j. Billingsella corrugate (Fort Sill)
    - k. Billingsella n. sp. (Fort Sill)
    - l. Plectotrophia bridge (Fort Sill)
    - m. Mesonomia n. sp. (Fort Sill)
    - n. algae (Fort Sill)
  5. Stop 2-1: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 14 and NE  $\frac{1}{4}$  sec. 15 T2S, R4E (Johnston County)
    - a. Fort Sill Limestone
    - b. Honey Creek Limestone
    - c. Reagan Sandstone
    - d. Tishomingo Granite
  6. Stop 2-2: SW  $\frac{1}{4}$  sec. 36, T2S, R4E and NE  $\frac{1}{4}$  sec. 2, T3S, R 4E (Johnston County)
    - a. McKenzie Hill Limestone
    - b. Butterly Dolomite
    - c. Royer Dolomite
    - d. Fort Sill Limestone
  7. Stop 2-3: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 2, T3S, R4E (Johnston County)
    - a. McKenzie Hill Formation
    - b. Cool Creek Formation
    - c. dolomite bodies of tectonic replacement origin
  8. Stop 2-4: SE  $\frac{1}{4}$  sec. 14, T2S, R7E
    - a. West Spring Formation



- b. Kindblade Formation
  - c. Cool Creek Formation
  - d. *Ceratopia tennesseensis* (Kindblade)
  - e. *Tritoechia* typical (Kindblade)
  - f. *Finkelburgia cullisoni* (Kindblade)
  - g. *Orospira* (Kindblade)
  - h. *Tritoechia delicatula* (Kindblade)
  - i. *Archaeoscyphia* (Kindblade)
9. Stop 3-1: NE  $\frac{1}{4}$  sec. 25, T2S, R1E and SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 19, T2S, R2E (Carter County)
- a. Simpson Group
  - b. Bromide Formation (Simpson)
  - c. Tulip Creek formation (type locality) (Simpson)
  - d. McLish Formation (Simpson)
  - e. Oil Creek Formation (Simpson)
  - f. Joins Formation (Simpson)
10. Stop 3-2: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 7, T2S, R2E (Murray County)
- a. Royer Dolomite
  - b. Fort Sill Limestone
  - c. Chapman Ranch Fault
11. Stop 3-3: SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 36, T1S, R1E
- a. Collings Ranch Conglomerate
  - b. Viola Limestone
  - c. Bromide Formation
  - d. Tulip Creek Formation
  - e. McLish Formation
  - f. Oil Creek Formation
  - g. Joins Formation
  - h. West Spring Creek Formation
12. Stop 3-4: SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 30, T1S, R2E (Murray county)
- a. Woodford Formation
  - b. Hunton Group
  - c. Haragan Limestone (Hunton)
  - d. Henryhouse Formation (Hunton)
  - e. pink crinoidal limestone (Hunton)
  - f. glauconitic limestone (Hunton)
  - g. oolitic limestone (Hunton)
  - h. Sylvan Shale
  - i. *Camarocrinus* (Haragan)
  - j. *Dayia* (?) (Henryhouse)
  - k. *Calymene* (Henryhouse)
  - l. *Encrinurus* (Henryhouse)
  - m. *Glassia* ?)(Henryhouse)

- n. Pisocrinus (pink crinoidal limestone)
  - o. Stephanocrinus (pink crinoidal limestone)
13. Stop 3-5: NE  $\frac{1}{4}$  sec. 11, T1S, R1E (Murray County)
    - a. Vanoss Formation
    - b. shale member (Vanoss)
    - c. conglomerate member (Vanoss)
  14. Stop 3-6: NW  $\frac{1}{4}$  sec. 10, T1S, R1E (Murray County)
    - a. Deese Formation
    - b. Caney Shale
    - c. Vanoss conglomerate
    - d. Wilson Syncline
  15. Stop 3-7: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 31, T1N, R3E (Murray County)
    - a. Vanoss Formation
    - b. maroon shale and lenses of arkose in shale member (Vanoss)
  16. Stop 3-8: SW  $\frac{1}{4}$  sec. 15, T1S, R3E (Murray County)
    - a. Oil Creek Formation
    - b. sandstone member (Oil Creek)
    - c. Mill Creek Syncline (western edge)
  17. Stop 3-9: S  $\frac{1}{2}$  SE  $\frac{1}{4}$  sec. 23, central part of sec 26, T1S, R3E (Buckhorn asphalt quarry) (Murray County)
    - a. Vanoss Formation
    - b. Deese Formation
    - c. Springer Shale
    - d. Fusulina (Deese)
    - e. Wedekindellina (Deese)
    - f. Mill Creek Syncline
  18. Stop 3-10: Center NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 2, T2S R3E (Murray County)
    - a. Woodford Shale
    - b. Sycamore Limestone
    - c. Caney Shale
    - d. phosphate nodules (Caney)
    - e. Reagan Fault
    - f. Tishomingo Anticline
    - g. Mill Creek Syncline
  19. Stop 3-11: NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 2, T2S, R3E (Murray County)
    - a. Hunton Group
    - b. Bois d'Arc Limestone (Hunton)
    - c. Haragan marl (Hunton)
    - d. Henryhouse Formation (Hunton)
    - e. Chimneyhill subgroup (Hunton)
    - f. Meristella (Haragan)
    - g. Rensselaerina (Haragan)

- h. Levenea (Haragan)
  - i. Rhipidomella (Haragan)
  - j. Orthostrophia (Haragan)
  - k. Camarocrinus (Haragan)
20. Stop 4-1: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 20, T2S, R5E (Century Granite Company quarry) (Johnston County)
- a. Tishomingo Granite (coarse-grained biotite)
  - b. Tishomingo Anticline
  - c. biotite rich schlieren
21. Stop 4-2: S  $\frac{1}{2}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 7, T2S, R5E (quarry) (Johnston County)
- a. Deese Formation
  - b. Atoka Formation
  - c. Wapanucka Limestone
  - d. Springer Formation
  - e. Fusulinella (Atoka)
  - f. Mill Creek Syncline (central part)
22. Stop 4-3: NE cor. sec 17, T2S, R5E (Johnston County)
- a. basal sandstone of Atoka Formation
  - b. Wapanucka Formation (poorly exposed)
23. Stop 4-4: SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 6, T2S, R5E (Johnston County)
- a. Deese Formation
  - b. Mill Creek Syncline (just north of axis)
24. Stop 4-5: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 24, T1S, R4E (Johnston County)
- a. Oil Creek Limestone
  - b. Kindblade dolomite
  - c. Sulphur Fault Zone
25. Stop 4-6: NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 11, T1N, R4E (Quarry of Oklahoma Glass Sand Co.) (Murray County)
- a. Oil Creek Formation
  - b. sandstone member (Oil Creek)
  - c. limestone member (Oil Creek)
26. Stop 4-7: SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 1, T1N, R4E (Murray County)
- a. West Spring Creek Dolomite
  - b. Ada Formation (conglomerate)
  - c. unconformity
27. Stop 4-8: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 13, T2N, R4E (Quarry of Mid-Continent Glass Sand Co.) (Pontotoc County)
- a. McLish Formation
  - b. sandstone member (McLish)
  - c. Hunton Anticline (northern edge)
28. Stop 4-9: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 2, T1N, R6E (Townsend quarry) (Pontotoc County)
- a. McLish Formation
  - b. "birdseye" limestone member (McLish)
29. Stop 4-10: SW  $\frac{1}{4}$  sec. 12, T1N, R6E (Pontotoc County)

- a. Viola Limestone
  - b. Bromide Formation
30. Stop 4-11: sec.s 7 and 8, T1S, R8E (Coal County)
- a. Woodford Formation
  - b. Hunton Group
  - c. Bois d'Arc Limestone (Hunton)
  - d. Haragan marlstone (Hunton)
  - e. pink crinoidal limestone (Hunton)
  - f. glauconitic limestone (Hunton)
  - g. oolitic limestone (Hunton)
  - h. Sylvan Shale
31. Stop 4-12: SE cor. sec 27, T2S, R8E (Johnston County)
- a. Woodford Shale (siliceous)
  - b. Hunton Group
  - c. Bois d'Arc Limestone (Hunton)
  - d. Haragan marlstone (Hunton)
  - e. Chimneyhill Limestone (Hunton)
  - f. oolitic limestone (Chimneyhill)
  - g. Sylvan Shale

**Ham, W.E., Merritt, C.A., and Frederickson, E.A., 1957, Field Conference on Geology of the Wichita Mountain Region: Oklahoma Geological Survey Guide Book 5, 83 p.**

- 1. Stop 1: NE ¼ NE ¼ sec. 5, T9N, R22W (Beckham County)
  - a. Quartermaster Formation
  - b. Doxey Shale Member (Quartermaster)
- 2. Stop 2: NE ¼ sec. 24 T8N, R22W (Beckham County)
  - a. Blaine Formation
  - b. Mangum Dolomite Member (Blaine)
  - c. Collingsworth Gypsum Member (Blaine)
  - d. Cedartop Gypsum Member (Blaine)
  - e. Haystack Gypsum Member (Blaine)
  - f. Flowerpot Shale
  - g. Kiser Gypsum Member (Flowerpot)
  - h. Chaney Gypsum Member (Flowerpot)
- 3. Stop 3: NW ¼ SW ¼ sec. 15, T7N, R20W (Kiowa County)
  - a. El Reno Group
  - b. Duncan Sandstone (El Reno)
  - c. Hennessey Shale
- 4. Stop 4: SE ¼ NW ¼ sec. 26, T6N, R21W (Pellow Brothers Monument Works) (Greer County)
  - a. Reformatory Granite

5. Stop 5: NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 33, T5N, R20W (Greer County)
  - a. Hennessey Shale
  - b. Lugert Granite
  - c. xenolith
  - d. irrigation canal
6. Stop 6: NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 26, T5N, R20W (Kiowa County)
  - a. Lugert Granite
  - b. xenoliths
7. Stop 2-1: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 7, T5N, R18W (Kiowa County)
  - a. Lugert Granite
  - b. erosional features
8. Stop 2-2: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 6, T4N, R18W (Kiowa County)
  - a. Tepee Creek sediments
  - b. anorthosite
  - c. dolomite
  - d. zeolites
  - e. opal
9. Stop 2-3: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 18, T4N, R17W (Round Mountain area, Roosevelt Quarry) (Kiowa County)
  - a. "andesite"
  - b. Cold Springs "granite"
10. Stop 2-4: NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 20, T6N, R15W (Otis Quarry of Gilbert Contracting Company) (Kiowa County)
  - a. Sylvan Shale
  - b. Viola Limestone
  - c. Simpson Group
11. Stop 2-5: SW  $\frac{1}{4}$  sec. 35, T5N, R13W (Caddo County)
  - a. Post Oak Conglomerate
12. Stop 2-6: NW  $\frac{1}{4}$  sec. 2, T4N, R13W (Comanche County)
  - a. Honey Creek Formation
  - b. Reagan Sandstone (and conglomerate)
  - c. Carlton Rhyolite
13. Stop 2-7: NE  $\frac{1}{4}$  sec. 24, T4N, R13W (Comanche County)
  - a. Fort Sill Formation
  - b. Honey Creek Formation
14. Stop 2-8: NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 32, T4N, R13W (Comanche County)
  - a. gabbro (unspecified)
  - b. Meers Quartzite
15. Stop 2-9: SE  $\frac{1}{4}$  sec. 11, T3N, R13W (Top of Mount Scott) (Comanche County)
  - a. "Lugert Granite" (now recognized as Mount Scott Granite)
16. Stop 3-1: SW  $\frac{1}{4}$  sec. 31, T4N, R11W (Richards Spur Quarry of Dolese Brothers Co.) (Comanche County)

- a. Arbuckle Group
  - b. Kindblade Formation (Arbuckle)
  - c. Cool Creek Formation (Arbuckle)
  - d. Archeosyphia sponges (Kindblade)
  - e. Ceratopea (Kindblade)
  - f. Lecanospira (Cool Creek)
  - g. Diaphelasma (Cool Creek)
  - h. Captorhinus fossils (in Permian caves and sinkholes)
17. Stop 3-2: NW ¼ NW ¼ sec. 27, T5N, R11W (Southeast edge of Apache) (Caddo County)
- a. Whitehorse Group
  - b. El Reno Group
  - c. Duncan Sandstone (El Reno)
18. Stop 3-3: NW ¼ SW ¼ sec. 3, T6N, R11W (Caddo County)
- a. Whitehorse Group
  - b. Rush Springs Sandstone (Whitehorse)
  - c. Anadarko Basin
19. Stop 3-4: SW ¼ SW ¼ sec. 28, T7N, R11W (Caddo County)
- a. Cloud Chief gypsum
  - b. Anadarko Basin

**Ham, W.E., 1969, Regional Geology of the Arbuckle Mountains, Oklahoma, OGS: Guidebook 17, 54 p.**

1. Stop 1-1: NW ¼ NE ¼ NE ¼ sec. 28, T1S, R2E (Rayford Quarry of Dolese Bros. Co.) (Murray County)
- a. Viola Limestone
  - b. *Climacograptus*
  - c. *Diplograptus*
  - d. *Glossograptus*
  - e. *Cryptolithoides*
  - f. *Robergia*
  - g. other trilobites
  - h. sponge spicules
  - i. chitinozoans
2. Stop 1-2: NW ¼ SE ¼ SW ¼ sec. 29, T1S, R2E (Seven Sisters overlook) (Murray County)
- a. Viola Limestone (hogback ridge)
  - b. Dougherty Anticline
  - c. Washita Valley Syncline
  - d. East Timbered Hills (to the SW)
  - e. Arbuckle anticline
3. Stop 1-3: NE ¼ SE ¼ NE ¼ sec. 36, T1S, R1E (Murray County)
- a. Collings Ranch Conglomerate
4. Stop 1-4: SW ¼ SE ¼ NE ¼ sec. 36, T1S, R1E (Turner Falls overlook) (Murray County)

- a. Collings Ranch Conglomerate
  - b. Cool Creek Limestone
  - c. McKenzie Hill Limestone
  - d. Carlton Rhyolite
  - e. travertine deposits
  - f. Washita Valley Fault
  - g. East Timbered Hills
5. Stop 1-5: W  $\frac{1}{2}$  NE  $\frac{1}{4}$  sec. 1, T2S, R1E (Murray County)
    - a. Colbert Rhyolite
  6. Stop 1-6: W  $\frac{1}{2}$  SW  $\frac{1}{4}$  sec. 1, and SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 2, T2S, R1E (Murray County)
    - a. Colbert Rhyolite
    - b. Reagan Sandstone
    - c. Honey Creek Limestone
    - d. Fort Sill Limestone
    - e. Royer Dolomite
    - f. Signal Mountain Limestone
    - g. Butterly Dolomite
    - h. McKenzie Hill Limestone
  7. Stop 1-7: west side of U.S. 77, NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 19, T2S, R2E (Carter County)
    - a. West Spring Creek Formation (carbonate rocks in basal section)
  8. Stop 1-8: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 25, T 2 S, R1E (Carter County)
    - a. Viola Limestone
    - b. Bromide Formation
    - c. Pooleville Member (Bromide)
    - d. Mountain Lake Member (Bromide)
    - e. Tulip Creek Formation
  9. Stop 1-9: NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 25, T2S, R1E (Carter County)
    - a. Woodford Formation
    - b. Hunton Group
    - c. Bois d'Arc Formation
    - d. Haragan Formation
    - e. Henryhouse Formation
    - f. Clarita Limestone
    - g. Cochrane Limestone
    - h. Keel Limestone
    - i. Sylvan Shale
  10. Stop 2-1: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 3, T4S, R5E (Johnston County)
    - a. dark shale (Morrowan?)
    - b. Reagan Sandstone
    - c. Tishomingo Granite
    - d. "Southern Oklahoma Geosyncline"
  11. Stop 2-2: C NE  $\frac{1}{4}$  sec. 3, T3S, R5E (Capitol quarry at Ten Acre Rock) (Johnston County)

- a. Tishomingo Granite
- 12. Stop 2-3: SW ¼ SW ¼ SW ¼ sec. 20, T2S, R5E (Johnston County)
  - a. Troy Granite
- 13. Stop 2-4: S ½ NW ¼ SW ¼ sec. 7, T2S, R5E (Johnston County)
  - a. Wapanucka Limestone
- 14. Stop 2-5: SW ¼ NE ¼ sec. 6, T2S, R5E (Pennsylvania Glass Sand Corp.) (Johnston County)
  - a. Oil Creek Sandstone
- 15. Stop 2-6: N ½ SW ¼ SE ¼ sec. 15, T1S, R3E (Murray County)
  - a. Vanoss Formation
  - b. Oil Creek Formation
  - c. asphalt deposits
- 16. Stop 2-7: north-central part of sec. 26, T1S, R3E (Murray County)
  - a. Vanoss Conglomerate
  - b. Deese Group
  - c. Springer Shale
- 17. Stop 2-8: SE ¼ NW ¼ SW ¼ sec. 3, T1S, R3E (Murray County)
  - a. Vanoss conglomerate
- 18. Stop 2-9: SW ¼ SW ¼ SW ¼ sec. 31, T1N, R3E (Murray County)
  - a. Vanoss Formation
  - b. arkose lenses (Vanoss)

**Sutherland, P.K., and Manger, W.L., eds., 1977, Upper Chesterian-Morrowan stratigraphy and the Mississippian-Pennsylvanian boundary in northeastern Oklahoma and northwestern Arkansas: OGS Guidebook 18, 185 p. (field trip no. 5 held August 5-7, 1977, North American Paleontological Convention II)**

Stops 1-6 not in Oklahoma

- 1. Stop 7: NW ¼ SE ¼ sec. 31, T15N, R23E (Cherokee County)
  - a. Sausbee Formation
  - b. Braggs Member (Sausbee Formation)
  - c. Fayetteville Formation
  - d. Hindsville Formation
  - e. *Neognathodus bassleri* (Braggs)
  - f. *Neognathodus symmetricus* (Braggs)
  - g. *Archimedes* (Hindsville)
- 2. Stop 8: SE ¼, sec. 1, T14N, R22E (Cherokee County)
  - a. Atoka Formation
  - b. McCully Formation
  - c. shale "B" member (McCully)
  - d. Greenleaf Lake Member (McCully)
  - e. shale "A" member (McCully)
  - f. Chisum Quarry Member (McCully)
  - g. Sausbee Formation
  - h. Brewer Bend Member (Sausbee)



- i. Braggs Member (Sausbee)
  - j. *Axinolobus modulus* (Chisum Quarry)
  - k. Petalaxis colonies (Brewer Bend)
  - l. *Indiognathodus sinuosis* (Braggs)
  - m. *Chaetetes* colonies (Braggs)
  - n. *Neognathodus bassleri* (Braggs)
  - o. *Neognathodus symmetricus* (Braggs)
  - p. *Indiognathodus sinuatus* (Braggs)
3. Stop 9: SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 35, T13N, R20E (Chisum Quarry) (Muskogee County)
- a. Atoka Formation
  - b. McCully Formation
  - c. shale "B" member (McCully)
  - d. Greenleaf Lake Member (McCully)
  - e. shale "A" member (McCully)
  - f. Chisum Quarry Member (McCully)
  - g. Sausbee Formation
  - h. Brewer Bend Member (Sausbee)
  - i. Braggs Member (Sausbee)
  - j. algal wackestone (Brewer Bend)
  - k. *Pentremites* (Braggs)
  - l. algal-bryozoan mounds (Braggs)
  - m. *Branneroceras branneri* (Braggs)
  - n. bryozoan mounds (Braggs)
4. Stop 10: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 34, T13N, R20E (Webber Falls Lock and Dam) (Muskogee County)
- a. Atoka Formation
  - b. McCully Formation
  - c. Greenleaf Lake Member (McCully)
  - d. shale "A" member (McCully)
  - e. Chisum Quarry Member (McCully)
  - f. Sausbee Formation
  - g. Brewer Bend Member (Sausbee)
  - h. Braggs Member (Sausbee)
  - i. local bryozoan mounds (Braggs)
  - j. *Petalaxis* colonies in local clusters (Brewer Bend)
5. Stop 11: S  $\frac{1}{2}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 34, T13N, R20E (McCully Mountain) (Muskogee County)
- a. Atoka Formation
  - b. McCully Formation
  - c. shale "B" member (McCully)
  - d. Greenleaf Lake Member (McCully)
  - e. shale "A" member (McCully)
  - f. Chisum Quarry Member (McCully)
  - g. Sausbee Formation
  - h. Brewer Bend Member (Sausbee)
  - i. Braggs Member (Sausbee)
  - j. *Archaeolithopyllum* (Brewer Bend)
  - k. brachiopods (Brewer Bend)
  - l. *Petalaxis* (Brewer Bend)

- m. *Pelmatozoan* debris including a lot of blastoid material (Brewer Bend)
  - n. *goniatites* (Brewer Bend)
  - o. *Gaitherites solidum* (Brewer Bend)
  - p. *Pseudopronorites arkansiensis* (Brewer Bend)
  - q. *Syngastrioceras morrowense* (Brewer Bend)
  - r. *Proshumardites morrowanus* (Brewer Bend)
  - s. *Branneroceras branneri* zone (Brewer Bend)
6. Stop 12: NW ¼ NW ¼ sec. 28, T15N, R20E (Braggs Mountain) (Muskogee County)
- a. Atoka Formation
  - b. McCully Formation
  - c. shale "B" member (McCully)
  - d. Greenleaf Lake Member (McCully)
  - e. shale "A" member (McCully)
  - f. Chisum Quarry Member (McCully)
  - g. Sausbee Formation
  - h. Brewer Bend Member (Sausbee)
  - i. Braggs Member (Sausbee)
  - j. Pitkin Formation
  - k. Fayetteville Formation
  - l. bryozoan-crinozoan grainstone (shale "A")
  - m. crinozoan-bryozoan grainstone (Chisum Quarry)
  - n. algal mudstone (Brewer Bend)
  - o. bryozoan biolithite (Braggs)
  - p. *Archimedes* (Pitkin)
7. Stop 13: N ½ sec. 18, T16N, R20E (Fort Gibson Dam east) (Cherokee County)
- a. Atoka Formation
  - b. Sausbee Formation
  - c. Brewer Bend Member (Sausbee)
  - d. Braggs Member (Sausbee)
  - e. Pitkin Formation
  - f. Fayetteville Shale
  - g. *Neognathodus bassleri* (Brewer Bend)
  - h. *Osogia oncolith* (Brewer Bend)
  - i. *Neognathodus symmetricus* (Braggs)
8. Stop 14: NE ¼ sec. 13, T16N, R19E (Wagoner County)
- a. Sausbee Formation
  - b. Braggs Member (Sausbee)
  - c. Pitkin Formation

**Sutherland, P.K., and Manger, W.L., eds., 1979, Mississippian-Pennsylvanian shelf-to-basin transition, Ozark and Ouachita regions, Oklahoma and Arkansas: OGS Guidebook 19, 72p. (field trip no. 11 held May 27-June 1, 1979, Ninth International Congress of Carboniferous Stratigraphy and Geology)**

Stops 1-9 were not in Oklahoma

- 1. Stop 10: Near C W. line sec. 19, T15N, R24E (Adair County)

- a. Sausbee Formation
  - b. Pitkin Formation
  - c. Fayetteville Shale
2. Stop 11: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 20, T15N, R23E (Cherokee County)
  - a. Atoka Formation
  - b. McCully Formation
  - c. Greenleaf Lake Limestone Member (McCully)
3. Stop 12: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 31, T15N, R23E (Cherokee County)
  - a. Sausbee Formation
  - b. Braggs Member (Sausbee)
  - c. Fayetteville Formation
  - d. Hindsville Formation
4. Stop 13: SE  $\frac{1}{4}$  sec. 1, T14N, R22E (Cherokee County)
  - a. Atoka Formation
  - b. McCully Formation
  - c. Greenleaf Lake Member (McCully)
  - d. shale "A" member (McCully)
  - e. Chisum Quarry Member (McCully)
  - f. Sausbee Formation
  - g. Brewer Bend Member (Sausbee)
  - h. Braggs Member (Sausbee)
5. Stop 14: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 34, T13N, R20E (Muskogee County)
  - a. Atoka Formation
  - b. McCully Formation
  - c. Greenleaf Lake Member (McCully)
  - d. shale "A" member (McCully)
  - e. Chisum Quarry Member (McCully)
  - f. Sausbee Formation
  - g. Brewer Bend Member (Sausbee)
  - h. Braggs Member (Sausbee)
6. Stop 15: SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 35, T13N, R20E (Muskogee County)
  - a. Atoka Formation
  - b. McCully Formation
  - c. Greenleaf Lake Member (McCully)
  - d. shale "A" member (McCully)
  - e. Chisum Quarry Member (McCully)
  - f. Sausbee Formation
  - g. Brewer Bend Member (Sausbee)
  - h. Braggs Member (Sausbee)
7. Stop 16: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 28, T15N, R20E (Braggs Mountain) (Muskogee County)
  - a. Atoka Formation
  - b. McCully Formation

- c. Greenleaf Lake Member (McCully)
  - d. shale "A" member (McCully)
  - e. Chisum Quarry Member (McCully)
  - f. Sausbee Formation
  - g. Brewer Bend Member (Sausbee)
  - h. Braggs Member (Sausbee)
  - i. Pitkin Formation
  - j. Fayetteville Formation
8. Stop 17: NW ¼ SW ¼ sec. 31, T9N, R27E (Backbone Mountain) (Le Flore County)
- a. Atoka Formation

Stops 18-24 not in Oklahoma

9. Stop 25: SE ¼ NE ¼ sec. 1, T2N, R25E (Le Flore County)
- a. Jackfork Sandstone
10. Stop 26: NE ¼ sec. 26, T2N, R25E (Le Flore County)
- a. Jackfork Sandstone
  - b. Stanley Shale
  - c. Chickasaw Creek Shale Member (Stanley)
11. Stop 27: NW ¼ SE ¼ sec. 25, T2N, R25E (Le Flore County)
- a. lower Jackfork Sandstone
  - b. submarine slump
12. Stop 28: NE ¼ sec. 24, T3N, R25E (Le Flore County)
- a. lower Atoka Formation
13. Stop 29: NW ¼ SE ¼ sec. 17, T3N, R26E (Le Flore County)
- a. lower Atoka Formation
14. Stop 30: NW ¼ SE ¼ and SW ¼ NE ¼ sec. 12, T3N, R25E (Le Flore County)
- a. Johns Valley Shale
  - b. "wildflysch facies"
15. Stop 31: SW ¼ SE ¼ sec. 24, T4N, R21E (Le Flore County)
- a. Atoka Formation
  - b. Johns Valley Shale
16. Stop 32: NW ¼ SE ¼ sec. 13, T4N, R21E (Le Flore County)
- a. Johns Valley Shale
17. Stop 33: SE ¼ NE ¼ sec. 34, T5N, R21E (Latimer County)
- a. Atoka Formation
18. Stop 34A: SW ¼ SW ¼ sec. 23, T5N, R21E (Latimer County)
- a. Wapanucka Limestone
19. Stop 34B: NW ¼ SW ¼ sec. 23, T5N, R21E (Latimer County)
- a. Atoka Formation
20. Stop 35: SE ¼ NE ¼ sec. 24, T5N, R17E (Latimer County)
- a. upper Atoka Formation

21. Stop 36: SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 28 and SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 28, T4N, R17E (Latimer County)
  - a. Wapanucka Formation
22. Stop 37: NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 34, T4N, R16E (Pittsburg County)
  - a. Wapanucka Formation
  - b. Chickachoc Chert Member (Wapanucka)
23. Stop 38: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 9, T3N, R15E (Pittsburg County)
  - a. Wapanucka Formation
24. Stop 39: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 36, T3N, R13E (Pittsburg County)
  - a. Wapanucka Formation
25. Stop 40: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 5, T2N, R14E (Pittsburg County)
  - a. Wapanucka Formation
  - b. Chickachoc Chert Member (Wapanucka)

**Sutherland, P.K., Ed., 1982, Lower and Middle Pennsylvanian Stratigraphy in South-Central Oklahoma, OGS: Guidebook 20, 51 p. (Field trip held March 27-28, 1982, Geological Society of America, South-Central Section annual meeting)**

1. Stop 1: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 8, T1N, R7E (Pontotoc County)
  - a. Atoka Formation
  - b. Wapanucka Formation
  - c. *Idiognathoides convexus* conodont zone (Atoka)
  - d. *Idiognathoides ouachitensis* conodont zone (Atoka)
  - e. *Fusulinella prolifica* (Atoka)
  - f. *Fusulinella sp. aff. F. devexa* (Atoka)
  - g. *Idiognathoides noduliferous* (Atoka)
  - h. *Neognathodus medadultimus* (Atoka)
  - i. spiriferid and productid brachiopods (Wapanucka)
  - j. pelecypods (Wapanucka)
  - k. cephalopods (Wapanucka)
  - l. gastropods (Wapanucka)
  - m. solitary rugose corals (Wapanucka)
  - n. blastoids (Wapanucka)
  - o. crinoids (Wapanucka)
2. Stop 2: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 15, T1N, R7E; NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 15, T1N, R7E (Pontotoc County)
  - a. Atoka Formation
  - b. Wapanucka Formation
  - c. *Fusulinella sp. aff. F. devexa* (Atoka)
  - d. *Neognathodus medadultimus* (Atoka)
3. Stop 3: SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 9, T1S, R8E; E  $\frac{1}{2}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 10, T1S, R9E (Coal County)
  - a. Atoka Formation
  - b. Wapanucka Formation

- c. *Fusulinella* sp. aff. *F. prolifica* (Atoka)
  - d. *Fusulinella* sp. aff. *F. devexa* (Atoka)
- 4. Stop 4: NW ¼ NE ¼ NW ¼ sec. 28, T1N, R8E (Coal County)
  - a. Atoka Formation
  - b. "Griley" limestone
  - c. *Beedeina* sp. (Atoka)
- 5. Stop 5: C W ½ SW ¼ sec. 7, T2S, R5E (Mill Creek Quarry) (Johnston County)
  - a. Atoka Formation
  - b. Wapanucka Formation
  - c. *Neognathodus colombiensis* (Atoka)
  - d. *Diplognathodus coloradoensis* (Atoka)
  - e. *Diplognathodus orphanus* (Atoka)
  - f. *Profusulinella* sp. aff. *P. kentuckyensis* (Atoka)
  - g. *Idiognathoides convexus* (Wapanucka)
  - h. *Idiognathoides sinuatus* (Wapanucka)
- 6. Stop 6: C N ½ S ½ sec. 2, T2S, R4E (Johnston County)
  - a. Deese Formation
  - b. Atoka Formation
  - c. Wapanucka Formation
  - d. *Beedeina* sp. (Deese)
  - e. *Neognathodus colombiensis* (Atoka)
  - f. *Diplognathodus orphanus* (Atoka)
  - g. *Streptognathodus* sp. aff. *S. wabaunsensis* (Atoka)
  - h. *Fusulinella* sp. (Atoka)
  - i. *Streptognathodus elegantulus* (Atoka)
  - j. *Diplognathodus coloradoensis* (Atoka)
  - k. *Idiognathoides* (Wapanucka)
  - l. *Adentognathus* (Wapanucka)
  - m. *Idiognathoides ouachitensis* (Wapanucka)
  - n. *Idiognathoides convexus* (Wapanucka)
  - o. *Neognathodus* n. sp. (Wapanucka)
- 7. Stop 7: NW ¼ NW ¼ SW ¼ sec. 15, T3S, T3E (Carter County)
  - a. Lake Murray Formation
  - b. Lester Member (Lake Murray)
  - c. unnamed unit II (Lake Murray)
  - d. Bostwick Member (Lake Murray)
  - e. Golf Course Formation
  - f. unnamed unit I (Golf Course)
  - g. Otterville Member (Golf Course)
  - h. Gene Autry Shale Member (Golf Course)
- 8. Stop 8: SW ¼ SW ¼ sec. 19, T3S, R2E (Carter County)
  - a. Lake Murray Formation

- b. Lester Member (Lake Murray)
- c. unnamed unit II (Lake Murray)
- d. Bostwick Member (Lake Murray)
- e. Golf Course Formation
- f. unnamed unit I (Golf Course)
- g. Otterville Member (Golf Course)

**Gilbert, M.C., and Donovan, R.N., 1982, Geology of the Eastern Wichita Mountains Southwestern Oklahoma, Oklahoma Geological Survey Guidebook 21, 168 p.**

1. Stop 1: sec. 13-14, T4N, R17W (Reid's pit area) (Kiowa County)
  - a. late diabase
  - b. Cold Springs Breccia
  - c. Glen Creek Gabbro
  - d. Glen Mountain Layered Complex
2. Stop 2: sec. 25-27, 34-36, T4N, R16W (Highway 54 area) (Kiowa County)
  - a. Tepee Creek lithofacies
  - b. Glen Mountains Layered Complex
  - c. anorthosite
  - d. anorthositic gabbro
  - e. olivine gabbro
3. Stop 3: sec. 3-5, 8-10, T3N, R15W (Private lands and wildlife refuge-need permit from refuge manager and other land owners) (Comanche County)
  - a. Hale Spring pegmatites
  - b. Mount Scott Granite
  - c. Raggedy Mountain Gabbro Group
  - d. Roosevelt Gabbros (Raggedy Mountain Group)
  - e. Sandy Creek Gabbro Member (Roosevelt)
  - f. Meers Quartzite
4. Stop 4: NW ¼ sec. 14, T3N, R13W (Mount Scott campground) (Comanche County)
  - a. Mount Scott Granite
  - b. basal Mount Scott Granite
  - c. Carlton Rhyolite
  - d. Meers Quartzite
5. Stop 5: SW ¼ sec. 23, T3N, R14W (Camp Doris Campground or Lake Quannah Parker dam parking area) (Comanche County)
  - a. Quanah Granite
  - b. Glen Mountain Layered Complex
  - c. Quanah-Glen contact
  - d. aplite dikes
  - e. "Hale Spring" type pegmatites
6. Stop 6: NW ¼ sec. 20, T3N, R14W (French Lake Parking area) (Comanche County)

- a. Quanah Granite
  - b. Glen Mountain Layered Complex
  - c. aplitic dike
  - d. xenoliths
  - e. gabbro-granite contacts
  - f. granitoid dikes
7. Stop 7: sec. 6, 7, 18 T2N, R13W and sec. 1, 12, 13 T2N, R14W (Eagle-Craterville Park area) (Comanche County)
- a. Quanah Granite
  - b. Cache Granite
  - c. Cache-Quanah contact
8. Stop 8: SE ¼ NE ¼ sec. 23, T3N, R13W (Hide-A-Way area) (Comanche County)
- a. late diabase
  - b. Mount Scott Granite
  - c. Carlton Rhyolite
  - d. Pratt Hill quartzite (informal field name)
9. Stop 9: S ½ sec. 13, N ½ sec. 24, T3N, R12W (Comanche County)
- a. Medicine Park Granite(?)
  - b. Mount Scott Granite
  - c. Mount Scott-Medicine Park(?) contact
  - d. granophyric texture
10. Stop 10: sec. 2, 3, 10, 11 T4N, R13W (Kimbell Ranch) (Comanche County)
- a. Permian Post Oak Conglomerate
  - b. Cool Creek Formation
  - c. McKenzie Hill Formation
  - d. Signal Mountain Formation
  - e. Fort Sill Formation
  - f. Honey Creek Formation
  - g. Reagan Sandstone
11. Stop 11: Along State Highway 19, 5 miles NE of Blue Creek Canyon (Caddo County)
- a. Post Oak Conglomerate
  - b. lower Paleozoic limestones
  - c. karst features
  - d. detritus-filled fissures
  - e. vadose cave systems

**Gilbert, M.C., 1986, Petrology of the Cambrian Wichita Mountains Igneous Suite: Oklahoma Geological Survey Guidebook 23, 198 p.**

1. Stop 1: sec. 14, 23, 26, T4N, R17W (Reid's pit area) (Kiowa County)
- a. Glen Creek Gabbro
  - b. Glen Mountain Layered Complex



2. Stop 2: sec. 15, T4N, R17W (Site CS6: Amphitheater Southeast of Reid's pit)(Site CS4: Roosevelt Black Granite CO. Quarry)(Site CS9: Cold Spring Granite CO. Quarry) (Site CS11: Oklahoma Granite and Monumental CO. Quarry) (CS8 and CS12: Railroad Cuts North of the Oklahoma Granite and Monumental CO. Quarry) (Kiowa County)
  - a. Cold Springs Breccia
  - b. Otter Creek Microdiorite
  - c. Glen Mountains Layered Complex
3. Stop 3: sec. 15, 22, T5N, R20W (New Horizon Trail Head) (Greer County)
  - a. Lugert Granite
  - b. Reformatory Granite
  - c. Reformatory-Lugert contact
4. Stop 4: sec. 29, 28, 32, 33, T5N, R18W (Kiowa County)
  - a. Lugert Granite
  - b. granite-hybrid-rock relations
  - c. xenolith
5. Stop 5: SW ¼ sec. 18, T5N, R16W (3.5 mi west of the intersection of OK HWY 19 and 54) (Kiowa County)
  - a. rhyolite dike
  - b. Cooperton Granite
6. Stop 6: sec. 30, 31, 36, T5N, R14W (along the E-W county road ~2/3 of a mile west of the old Saddle Mountain store) (Kiowa County)
  - a. Saddle Mountain Granite
7. Stop 7: sec. 4, 5, T3N, R15W (Comanche County)
  - a. Hale Spring dike
  - b. Mount Scott Granite
  - c. faults
8. Stop 8: sec. 36, T2N, R12W (Fort Sill Military Reservation, contact the Commanding General for access) (Comanche County)
  - a. Medicine Bluffs
  - b. Hennessey Shale
  - c. Garber Sandstone
  - d. late diabase
  - e. Carlton Rhyolite Group

**Donovan, R.N., 1986, The Slick Hills of Southwestern Oklahoma—Fragments of an Aulacogen?: Oklahoma Geological Survey Guidebook 24 , 122 p.**

1. Stop 1: T4N, R13W (Kimbell Ranch) (Comanche County)
  - a. Post Oak Conglomerate
  - b. Arbuckle Group
  - c. Cool Creek Formation (Arbuckle)
  - d. Thatcher Creek Member (Cool Creek)

- e. McKenzie Hill Formation (Arbuckle)
  - f. Signal Mountain Formation (Arbuckle)
  - g. Fort Sill Limestone (Arbuckle)
  - h. Timbered Hills Group
  - i. Honey Creek Limestone (Timbered Hills)
  - j. Reagan Sandstone (Timbered Hills)
  - k. Carlton Rhyolite Group
  - l. Blue Creek Canyon Fault Zone
  - m. Pennsylvanian deformation
  - n. platform carbonate sequence
  - o. Wichita Mountains Frontal Fault Zone
  - p. Stumbling Bear Thrust and Shear Zone
  - q. Ketch Creek Fault
  - r. Paradox Anticline
  - s. Blue Creek "Horst"
  - t. Lawtonka "Grabben"
  - u. Kimbell Anticline
  - v. Blue Creek Syncline
2. Stop 2: T6N, R14W (Bally Mountain Area) (Kiowa County)
- a. Post Oak Conglomerate
  - b. Arbuckle Group
  - c. Kindblade Formation
  - d. Cool Creek Formation
  - e. Thatcher Creek Member (Cool Creek)
  - f. Signal Mountain Formation
  - g. Royer Dolomite or "Bally" dolomite
  - h. Fort Sill Limestone
  - i. Timbered Hills Group
  - j. Carlton Rhyolite
  - k. algal boundstone
  - l. Permian karst fissures
3. Stop 3: SW ¼ SW ¼ sec. 9, T6N, R14W (Zodletone Mountain area) (Kiowa County)
- a. Post Oak Conglomerate
  - b. Arbuckle Group
  - c. Signal Mountain Formation (Arbuckle)
  - d. Royer Dolomite or "Bally" dolomite (Arbuckle)
  - e. Fort Sill Limestone (Arbuckle)
  - f. Timbered Hills Group
  - g. Honey Creek Limestone (Timbered Hills)
  - h. Reagan Sandstone (Timbered Hills)
  - i. Carlton Rhyolite
  - j. Cambrian sedimentary units

- k. barite-depositing spring
- 4. Stop 4: NW ¼ NW ¼ NW ¼ sec. 24, T5N, R13W; St HWY 19, 10 miles west of Apache (Cool Creek Road Cut) (Caddo County)
  - a. Arbuckle Group
  - b. Kindblade Formation (Arbuckle)
  - c. dolomite
  - d. platform carbonates
  - e. Permian paleokarst
  - f. Blue Creek Horst
- 5. Stop 5: NW ¼ NW ¼ sec. 22, T4N, R13W (Meers Valley) (Kimbell Ranch) (Comanche County)
  - a. Post Oak Conglomerate
  - b. Meers Fault

**Johnson, K.S., ed., 1988, Shelf-to-basin geology and resources of the Pennsylvanian strata in the Arkoma basin and frontal Ouachita Mountains of Oklahoma: OGS Guidebook 25, 105p. (Field trip held October 1, 1988, American Institute of Professional Geologists, annual national meeting)**

1. Stop 1: sec. 34, T15N, R17E (Pollyana No. 5 strip mine) (Muskogee County)
  - a. unspecified shale
  - b. unspecified limestone
  - c. Secor Rider coal bed
  - d. unspecified shale
  - e. Secor coal bed
  - f. underclay
2. Stop 2: sec. 25 and 35, T10N, R18 E (Eufaula Dam) (McIntosh and Haskell Counties)
  - a. Bluejacket Sandstone (Bartlesville sand in subsurface)
3. Stop 3: sec. 24, T9N, R18 E (north side of highway 9 at Stigler Stone Company Quarry) (Haskell County)
  - a. Bluejacket Sandstone (Bartlesville sand in subsurface)
4. Stop 4: sec. 13 and 24, T6N, R18E (Robbers Cave State Park: Lake Carlton and Lake Wayne Wallace) (Latimer County)
  - a. Bluejacket Sandstone (Bartlesville sand in subsurface)
5. Stop 5: sec. 27, T4N, R19E (along State Highway 2) (Latimer County)
  - a. Atoka Formation
  - b. asymmetrical folds
6. Stop 6: secs. 2 and 3, T3N, R19E (hairpin curve locality) (Latimer County)
  - a. Atoka Formation
  - b. Johns Valley Formation
  - c. Jackfork strata
7. Stop 7: sec. 13, T4N, R16E (Pittsburg County)
  - a. Wapanucka Formation

**Ritter, S.M., 1990, Early to Middle Paleozoic Conodont Biostratigraphy of the Arbuckle Mountains, Southern, Oklahoma. OGS: Guidebook 27, 122 p. (Field trip held March 3-4 1990, 24<sup>th</sup> annual meeting of the South-Central Section of the Geological Society of America)**

1. Stop 1: NW ¼ sec. 30, T1S, R2E (Murray County)
  - a. Woodford Shale
  - b. Hunton Group
  - c. Frisco Formation (Hunton)
  - d. Haragan-Bois d'Arc Formation (Hunton)
  - e. Henryhouse Formation (Hunton)
  - f. Chimneyhill Subgroup (Hunton)
  - g. Clarita Formation (Chimneyhill)
  - h. Fitzhugh Member (Clarita)
  - i. Prices Falls Member (Clarita)
  - j. Cochrane Formation (Chimneyhill)
  - k. Keel Formation (Chimneyhill)
  - l. Sylvan Shale
  - m. *Scyphocrinites (camarocrinus)* (Haragan)
  - n. *Icriodus* (Haragan)
  - o. *Monograptus bohemicus* (Henryhouse)
  - p. *Polygnathoides siluricus* (Henryhouse)
  - q. *Dapsilodus obliquicostatus* (Henryhouse)
  - r. *Ozarkodina excavate excavate* (Henryhouse)
  - s. *Decoriconus fragilis* (Henryhouse)
  - t. *Panderodus unicostatus* (Henryhouse)
  - u. *O. snajdri* and *O. n. sp.* of Schönlaub (Henryhouse)
  - v. *Oulodus elegans* (Henryhouse)
  - w. *Ozarkodina remscheidensis eosteinhornesis* (Henryhouse)
  - x. *o. excavate excavate* (Henryhouse)
  - y. *Belodella spp.* (Henryhouse)
  - z. *Dapsilodus obliquicostatus* (Fitzhugh)
  - aa. *Pseudooneotodus bicornis* (Fitzhugh)
  - bb. *Decoriconus fragilis* (Fitzhugh)
  - cc. *Panderodus unicostatus* (Fitzhugh)
  - dd. *Walliserodus santiclairi* (Fitzhugh)
  - ee. *Dapsilodus sparsus* (Fitzhugh)
  - ff. *D. praecipuus* (Fitzhugh)
  - gg. *Belodella silurica* (Fitzhugh)
  - hh. *Kockelella* various species (Fitzhugh)
  - ii. *P. amorphognathoides* (Fitzhugh)
  - jj. *Distomodus staurognathoides*(Fitzhugh)
  - kk. *Kockelella ranuliformis* (Fitzhugh)

- ll. *Ozarkodina excavata excavata* (Fitzhugh)
  - mm. *Kockelella amsdemi* (Fitzhugh)
  - nn. *Ozarkodina bohémica* (Fitzhugh)
  - oo. *K. stauros* (Fitzhugh)
  - pp. *Kockelella variabilis* (Fitzhugh)
  - qq. *amorphognathoides* Zone fauna (Prices Falls)
  - rr. *Pterospodus celloni* (Prices Falls)
  - ss. *Panderodus* (Cochrane)
  - tt. *Walliserodus* (Cochrane)
  - uu. *Noixodontus girardeauensis* (Satterfield); (Keel)
  - vv. *Istorinus erectus* Knüpfner (Keel)
  - ww. *Eocarniodus* Orchard (Keel)
2. Stop 2: NW ¼ SE ¼ sec. 25, T2S, R1E (Carter County)
- a. Woodford Shale
  - b. Haragan Formation
  - c. Henryhouse Formation
  - d. Frasnian conodonts (badly broken within Woodford Shale)
  - e. *Pseudooneotodus beckmanni* (Haragan)
  - f. *Decoriconus* (Haragan)
  - g. *Ozarkodina remscheidensis* (Haragan)
  - h. *Opsiconidion* sp. (Haragan)
  - i. *Icriodus* (Haragan)
  - j. *Pedavis* (Haragan)
  - k. *Belodella* (Haragan)
  - l. *Decoriconus* (Haragan)
  - m. *Dvorakia* (Haragan)
  - n. "*Lissatrypa*" *henryhousesensis* (Henryhouse)
  - o. *Ozarkodina remscheidensis eosteinhornensis* (Henryhouse)
  - p. *O. excavate* (Henryhouse)
  - q. *Oulodus elegans* (Henryhouse)
3. Stop 3: SE ¼ sec. 24, T2S, R1E (Carter County)
- a. Oil Creek Formation
  - b. Joins Formation
  - c. *Oistodus multicorrugatus* (Joins and Oil Creek)
  - d. *Oistodus cristatus* (Oil Creek)
  - e. *Drepanoistodus angulensis* (Joins and Oil Creek)
  - f. *Histiodella sinuosa* (Joins and Oil Creek)
  - g. *Histiodella serrata* (Joins and Oil Creek)
  - h. *Histiodella minutiserrata* (Joins)
  - i. *Microzark. ? marathonensis* (Joins and Oil Creek)
  - j. *Multioistodus auritas* (Joins)
  - k. *Neomultioistodus compressus* (Joins and Oil Creek)

- l. *Ptiloncodus simplex* (Joins and Oil Creek)
  - m. *Paraprioniodus costatus* (Joins and Oil Creek)
  - n. *Pteracantiodus cryptodens* (Joins and Oil Creek)
  - o. *Scandodus sinuosus* (Joins and Oil Creek)
4. Stop 4: NE ¼ sec. 24, T2S, R1E (Carter County)
- a. upper Arbuckle Group
  - b. West Spring Creek Formation
  - c. Kindblade Formation
  - d. Cool Creek Formation
  - e. *Candodus sinuosis* Mound (West Spring Creek)
  - f. *Tricladiodus clypeus* Mound (West Spring Creek)
  - g. *Pteracantiodus cryptodens* (Mound) (West Spring Creek)
  - h. *Neomultioistodus compressus* Harris and Harris (West Spring Creek)
  - i. unspecified conodonts (Kindblade)
  - j. *Oneotodus* (Cool Creek)
  - k. *Macerodus diana* (Cool Creek)
5. Stop 5: SE ¼ sec. 30, T1S, R2E (Murray County)
- a. upper Simpson Group
  - b. Bromide Formation (Simpson)
  - c. Tulip Creek Formation (Simpson)
  - d. McLish Formation (Simpson)
  - e. *Phragmodus inflexus* Stauffer (Bromide)
  - f. *Plectodina* n. sp. (Bromide)
  - g. *Oneotodus? ovatus* (Bromide)<sup>3</sup>
  - h. *Erismodus typus* Branson and Mehl (Bromide)
  - i. *Cahabagnathus sweeti* (Bromide)
  - j. *Eoplacognathus elongates* (Bromide)
  - k. *Prioniodus (Baltoniodus) gerdæ* Bergström (Bromide)
  - l. *Bryantodina* n. sp. (Bromide)
  - m. *Appalachignathus delicatulus* Berström, Carnes, Ethington Votaw, and Wigley (Bromide)
  - n. *Ansella nevadensis* (Bromide)
  - o. *Plectodina aflexa* (Bromide)
  - p. *Staufferella falcate* (Bromide)
  - q. *P. (B.) gerdæ* (Bromide)
  - r. *E. elongates* (Bromide)
  - s. *Walliserodus* sp. (Bromide)
  - t. *Panderodus gracilis* (Bromide)
  - u. *Curtognathus* spp. (Bromide)
  - v. *Cahabagnathus chazyensis* Bergström (Tulip Creek)
  - w. *Plectodina* n. sp. (Tulip Creek)
  - x. *Dapsilodus variabilis* (Tulip Creek)
  - y. *Neomultioistodus* (McLish)

- z. *Scandodus?* (McLish)
  - aa. *Pteracontiodus* (McLish)
  - bb. *Phragmodus polystrophos* (McLish)
  - cc. *Phragmodus* n. sp. 1 (McLish)
  - dd. *Ansella robusta* (McLish)
  - ee. *Cahabagnathus* n. sp. (McLish)
  - ff. *Drepanoistodus suberectus* (McLish)
  - gg. *Panderodus gracilis* (McLish)
  - hh. *Protopanderodus varicostatus* (McLish)
  - ii. *Staufferella* n. sp. (McLish)
  - jj. *Phragmodus* n. sp. 2 (McLish)
  - kk. *Thrinodus palaris* Bauer (McLish)
  - ll. *Phragmodus? arcus* Webers (McLish)
  - mm. *Ansella* n. sp. (McLish)
  - nn. *Belodina monitorenensis* Ethington and Schumacher (McLish)
  - oo. *Cahabagnathus directus* Bauer (McLish)
  - pp. *Erismodus arbucklensis* Bauer (McLish)
  - qq. *Leptochoirognathus quadratus* Branson and Mehl (McLish)
6. Stop 6: SE ¼ SE ¼ sec. 35, T3N, R6E (Hass G Section) (Pontotoc County)
- a. Caney Shale
  - b. Welden Limestone
  - c. Pre-Welden Shale
  - d. Woodford Shale
  - e. *Bactrognathus distortus lanei* (Caney)
  - f. *Scaliognathus anchoralis anchoralis* (Caney)
  - g. *S.a. europensis* (Caney)
  - h. *G. subbilineatus* (Caney)
  - i. *Staurognathus cruciformis (genotype)* (Caney)
  - j. *Bactrognathus excavate* (Caney)
  - k. *B. distorta* (Caney)
  - l. *B. inornata* (Caney)
  - m. *B. angularis* (Caney)
  - n. *Doliognathus dubia* (Caney)
  - o. *Gnathodus bilineatus* (Caney)
  - p. *G. bulbosus* (Caney)
  - q. *Gnathodus punctatus* (Welden)
  - r. *Polygnathus communis communis* (Welden)
  - s. *P.c. carina* (Welden)
  - t. *Gnathodus typicus* M1 and M2 (Welden)
  - u. *G. semiglaber* (Welden)
  - v. *G. delicates* (Welden)
  - w. *G. cuneiformis* (Welden)

- x. *Siphonodella* (Welden)
  - y. *Pseudopolygnathus multistriatus* (Welden)
  - z. *Protognathodus praedelicatus* (Welden)
  - aa. *Bactrognathus* (Welden)
  - bb. *Ps. oxypageus* (Welden)
  - cc. *Pr. cordiformis* (Welden)
  - dd. *Doliognathus latus* (Welden)
  - ee. *Siphonodella* (Pre-Welden)
  - ff. *Pseudopolygnathus*(Pre-Welden)
  - gg. *Protognathodus*(Pre-Welden)
  - hh. *Gnathodus* (*G. typicus* and *G. punctatus*) (Pre-Welden)
  - ii. *Siphonodella sulata* (Woodford)
  - jj. *S. praesulcata* (Woodford)
  - kk. *Protognathodus collinsoni* (Woodford)
  - ll. *Pr. kockeli* (Woodford)
  - mm. *Pr. meischneri* (Woodford)
  - nn. *Pseudopolygnathus dentilineatus/primus* (Woodford)
  - oo. *Pseudopolygnathus marburgensis trigonicus* (Woodford)
  - pp. *Palmatolepis gracilis gracilis* (Woodford)
  - qq. *Bispathodus stabilis* (Woodford)
  - rr. *B. aculeatus aculeatus* (Woodford)
  - ss. *Branmehla* (Woodford)
  - tt. *Pelekysgnathus guizhouensis?* (Woodford)
  - uu. *Polygnathus "symmetricus"* (Woodford)
  - vv. *Fungulodus* Gagiev (Woodford)
7. Stop 7: SW ¼ sec. 12, T1N, R6E (Pontotoc County)
- a. Viola Springs Formation
  - b. upper Simpson Group
  - c. Bromide Formation (Simpson)
  - d. Pooleville Member (Bromide)
  - e. Mountain Lake Member (Bromide)
  - f. McLish Formation (Simpson)
  - g. *Amorphognathus tvaerensis* Bergström (Viola Springs)
  - h. *Iccriodella superba* Rhodes (Viola Springs)
  - i. *Periodon grandis* (Viola Springs)
  - j. *Plectodina aculeate* (Viola Springs)
  - k. *Phragmodus undatus* Branson and Mehl (Viola Springs)
  - l. *Appalachignathus delicatulus* (Pooleville)
  - m. *Ansella nevadensis*(Pooleville)
  - n. *Curtognathus spp.* (Pooleville)
  - o. *Phragmodus inflexus*(Pooleville)
  - p. *Plectodina aculeate*(Pooleville)



- q. *Staufferella n. sp.* (Mountain Lake)
  - r. *Thrincodus paralis*(Mountain Lake)
  - s. *Phragmodus inflexus*(Mountain Lake)
  - t. *Dapsilodus variabilis*(Mountain Lake)
  - u. *Walliserodus*(Mountain Lake)
  - v. *Belodina monitorenensis* (McLish)
  - w. *Drepanoistodus suberectus* (McLish)
  - x. *Leptochirognathus quadratus* (McLish)
  - y. *Plectodina joachimensis* (McLish)
  - z. *Panderodus gracilis* (McLish)
  - aa. *Plectodina n. sp.* (McLish)
  - bb. *Phragmodus n. sp. 2* (McLish)
  - cc. *Erismodus typus* (McLish)
  - dd. *Bryantodina n. sp.* (McLish)
  - ee. *Walliserodus* (McLish)
  - ff. *Pteracantiodus* (McLish)
8. Stop 8: SE ¼ sec. 8, T1N, R7E (Canyon Creek)(Pontotoc County)
- a. McAlester Formation
  - b. Atoka Formation
  - c. Wapanucka Formation
  - d. unnamed shale
  - e. "Union Valley" formation
  - f. Rhoda Creek Formation

**Hemish, L.A., 1993, Geology of the Wister State Park Area, Le Flore County, Oklahoma: OGS Guidebook 28, 28p.**

- 1. Stop 1: SW ¼ NW ¼ NE ¼ SW ¼ sec. 6, T5N, R25E (Le Flore County)
  - a. Atoka Formation
- 2. Stop 2: SE ¼ SW ¼ NE ¼ NW ¼ sec. 6, T5N, R25E (Le Flore County)
  - a. Quaternary alluvium
  - b. Atoka Formation
- 3. Stop 3A and B: NW ¼ SW ¼ NW ¼ sec. 6, T5N, R25E (Le Flore County)
  - a. Atoka Formation
- 4. Stop 4: NE ¼ NW ¼ NE ¼ SW ¼ sec. 31, T6N, R25E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
  - c. McCurtain Shale Member (McAlester)
- 5. Stop 5: NE ¼ SW ¼ SW ¼ NW ¼ sec. 36, T6N, R24E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
- 6. Stop 6: NW ¼ SW ¼ SW ¼ sec. 36, T6N, R24E (Le Flore County)

- a. Hartshorne Formation
  - b. Atoka Formation
7. Stop 7: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 4, T5N, R24E (Le Flore County)
- a. Quaternary terrace deposits
  - b. Atoka Formation

**Suneson, N.H., and Hemish, L.A., eds., 1994, Geology and resources of the eastern frontal belt, Ouachita Mountains, and southeastern Arkoma basin, Oklahoma: OGS Guidebook 29, 294p. (field trip held November 15-17, 1994)**

1. Stop 1A: SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 21, T6N, R25E (Le Flore County)
  - a. Savanna Formation
  - b. Spaniard (?) Limestone (Savanna)
  - c. McAlester Formation
2. Stop 1B: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 21, T6N, R25E (Le Flore County)
  - a. Savanna Formation
  - b. Spaniard (?) Limestone (Savanna)
  - c. McAlester Formation
3. Stop 2: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 21, T6N, R25E (Le Flore County)
  - a. McAlester Formation
  - b. Keota Sandstone Member (McAlester)
4. Stop 3: SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 6, T5N, R25E (Le Flore County)
  - a. McAlester Formation
  - b. Hartshorne Formation
  - c. Atoka Formation
5. Stop 4: C WL NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 21, T6N, R24E (Le Flore County)
  - a. Boggy Formation
  - b. Bluejacket Sandstone Member (Boggy); (Bartlesville sand in subsurface)
6. Stop 5: N  $\frac{1}{2}$  sec. 18, T6N, R24E (Le Flore County)
  - a. Boggy Formation
  - b. Secor Rider coal
  - c. Secor coal
7. Stop 6: C NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 35, T6N, R23E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
8. Stop 7: C WL SW  $\frac{1}{4}$  sec. 31, T6N, R23E (Le Flore County)
  - a. McAlester Formation
  - b. Cameron Sandstone Member (McAlester)
9. Stop 8: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 12, T5N, R20E (Latimer County)
  - a. Hartshorne Formation
  - b. Atoka Formation
10. Stop 9: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 23, T5N, R21E (Latimer County)

- a. Atoka Formation
- 11. Stop 10: C SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 23, T5N, R21E (Latimer County)
  - a. Atoka Formation
  - b. Spiro Sandstone Member (Atoka)
- 12. Stop 11: C NE  $\frac{1}{4}$  sec. 34, T5N, R21E (Latimer County)
  - a. Atoka Formation
  - b. turbidites
- 13. Stop 12: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 11, T4N, R21E (Latimer County)
  - a. Johns Valley Shale
  - b. Woodford Chert-Caney Shale Olistolith
- 14. Stop 13: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 20, T4N, R22E (Le Flore County)
  - a. Johns Valley Shale
- 15. Stop 14: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 13, T4N, R21E (Le Flore County)
  - a. Johns Valley Shale
- 16. Stop 15: C N  $\frac{1}{2}$  NW  $\frac{1}{4}$  sec. 2, T3N, R21E (Latimer County)
  - a. Stanley Group
  - b. Moyers Formation? (Stanley)
- 17. Stop 16: N  $\frac{1}{2}$  SE  $\frac{1}{2}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 26, T6N, R26E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
  - c. McCurtain Shale Member (McAlester)
- 18. Stop 17A: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 17, T5N, R26E (Le Flore County)
  - a. Savanna Formation
- 19. Stop 17B: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 20, T5N, R26E (walk up road to overlook) (Le Flore County)
  - a. Heavener Anticline
- 20. Stop 18: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 36, T5N, R25E (Le Flore County)
  - a. Hartshorne Formation
  - b. upper Atoka Formation
- 21. Stop 19: C E  $\frac{1}{2}$  sec. 12, T3N, R25E (Le Flore County)
  - a. Johns Valley Shale
- 22. Stop 20: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 17, T3N, R26E (Le Flore County)
  - a. Atoka Formation
  - b. Bouma Sequences (complete and incomplete)
- 23. Stop 21: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 36, T3N, R25E (Le Flore County)
  - a. Jackfork Group
  - b. Wildhorse Mountain Formation (Jackfork)
  - c. Stanley Group
  - d. Chickasaw Creek Shale (siliceous); (Stanley)
  - e. Moyers Formation
- 24. Stop 22: C SL SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 6, T3N, R24E (Le Flore County)
  - a. Sugarloaf Vista
  - b. San Bois Mountains

- c. Cavanal Mountain
  - d. Blue Mountain
  - e. Sugarloaf Mountain
  - f. Poteau Mountain
  - g. Holson Valley
25. Stop 23: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 30, and N  $\frac{1}{2}$  NE  $\frac{1}{4}$  sec. 31, T3N, R20E (Latimer County)
- a. Stanley Group
  - b. Arkansas Novaculite
  - c. Missouri Mountain Shale
  - d. Polk Creek Shale
  - e. Bigfork Chert
  - f. Womble Shale

**Hemish, L.A., and Suneson, N.H., eds., 1997, Stratigraphy and Resources of the Krebs Group (Desmoinesian) South-Central Arkoma Basin, Oklahoma: OGS Guidebook 30, 91p.**

1. Stop 1: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 32, T6N, R13E (Pittsburg County)
  - a. Thurman Formation
2. Stop 2A: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 21, T6N, R15E (Pittsburg County)
  - a. Boggy Formation
3. Stop 2B: SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 21, T6N, R15E (Pittsburg County)
  - a. Boggy Formation
4. Stop 3: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  and NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 30, T6N, R16E (Pittsburg County)
  - a. Boggy Formation
  - b. Savanna Formation
5. Stop 4: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 30, T6N, R16E and NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  and NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 31, T6N, R16E (Pittsburg County)
  - a. Savanna Formation
  - b. McAlester Formation
6. Stop 5: Section-line road and route of power line between sec. 1, T5N, R16E and sec. 6, T5N, R17E and between sec. 36, T6N, R16E and sec. 31, T6N, R17E (Pittsburg County)
  - a. Savanna Formation (Principle Reference Section—Neostratotype)
7. Stop 6: N  $\frac{1}{2}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 12, T5N, R16E (Pittsburg County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
  - c. McCurtain Shale Member (McAlester)
8. Stop 7: SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 5, T3N, R15E (Pittsburg County)
  - a. McAlester Formation
  - b. Cameron Sandstone Member (McAlester)
  - c. McCurtain Sandstone Member (McAlester)
9. Stop 8: C E  $\frac{1}{2}$  E  $\frac{1}{2}$  sec. 26, T4N, R15E and SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 25, T4N, R15E (Pittsburg County)
  - a. Hartshorne Formation

- b. Atoka Formation
- 10. Stop 9: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 35, T5N, R16E (Pittsburg County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
  - c. McCurtain Shale Member (McAlester)
- 11. Stop 10: S  $\frac{1}{2}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 10, T5N, R17E and N  $\frac{1}{2}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 11, T5N, R 17E (Latimer County)
  - a. lower Hartshorne Formation
- 12. Stop 11A: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 12, T5N, R20E (Latimer County)
  - a. Hartshorne Formation
  - b. Atoka Formation
- 13. Stop 11B: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 12, T5N, R20E (Latimer County)
  - a. Hartshorne Formation
  - b. Atoka Formation

**Suneson, N.H., 1998, Geology of the Hartshorne Formation, Arkoma Basin, Oklahoma: OGS Guidebook 31, 86p.**

- 1. Stop 1: C S  $\frac{1}{2}$  S  $\frac{1}{2}$  sec. 30, T1N, R9E (Coal County)
  - a. Hartshorne Formation
- 2. Stop 2: near common corners of secs. 17, 18, 19, and 20, T1S, R10E (Coal county)
  - a. Hartshorne Formation
- 3. Stop 3: C N  $\frac{1}{2}$  NE  $\frac{1}{4}$  sec. 3, T2S, R11E (Atoka County)
  - a. Hartshorne Formation
- 4. Stop 4: N  $\frac{1}{2}$  S  $\frac{1}{2}$  NW  $\frac{1}{4}$  sec. 10, T2N, R13E (Atoka County)
  - a. Hartshorne Formation
- 5. Stop 5: SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 13, T3N, R14E (Pittsburg County)
  - a. Hartshorne Formation
- 6. Stop 6: C E  $\frac{1}{2}$  E  $\frac{1}{2}$  sec. 26, T4N, R15E and SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 25, T4N, R15E (Pittsburg County)
  - a. Hartshorne Formation
  - b. Atoka Formation
- 7. Stop 7: N  $\frac{1}{2}$  NW  $\frac{1}{4}$  sec. 9 and N  $\frac{1}{2}$  N  $\frac{1}{2}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 8, T4N, R17E (Pittsburg County)
  - a. Hartshorne Formation
- 8. Stop 8: S  $\frac{1}{2}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 10, T5N, R17E and N  $\frac{1}{2}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 11, T5N, R17E (Latimer County)
  - a. Hartshorne Formation
  - b. Atoka Formation (?)
- 9. Stop 9: C W  $\frac{1}{2}$  E  $\frac{1}{2}$  sec. 8, T5N, R20E (Latimer County)
  - a. McAlester Formation
  - b. Hartshorne Formation
  - c. Atoka Formation
- 10. Stop 10A: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 12, T5N, R20E (Latimer County)

- a. Hartshorne Formation
  - b. Atoka Formation
11. Stop 10B: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 12, T5N, R20E (Latimer County)
    - a. Hartshorne Formation
    - b. Atoka Formation
  12. Stop 11: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 10, T5N, R21E (Latimer County)
    - a. Hartshorne Formation
    - b. Atoka Formation
  13. Stop 12: sec. 34, T6N, R24E (Le Flore County)
    - a. Hartshorne Formation
  14. Stop 13: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 36, T6N, R24E (Le Flore County)
    - a. Hartshorne Formation
    - b. Atoka Formation
  15. Stop 14: NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 36, T6N, R24E (Le Flore County)
    - a. Hartshorne Formation
  16. Stop 15: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 36, T5N, R25E (Le Flore County)
    - a. Hartshorne Formation
    - b. Atoka Formation
  17. Stop 16: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 12, T8N, R26E and SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 11, T8N, R26E (Le Flore County)
    - a. Hartshorne Formation
  18. Stop 17: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 10, T8N, R27E and NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 9, T8N, R27E (Le Flore County)
    - a. Hartshorne Formation
  19. Stop 18: W side of SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 18, T8N, R24E and along section-line road between sec. 18, T8N, R24E and sec. 13, T8N, R23E (Le Flore County)
    - a. Hartshorne Formation
    - b. Atoka Formation (?)
  20. Stop 19: C W side NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 18, T8N, R23E (on boundary between Haskell and Le Flore Counties)
    - a. Hartshorne Formation
    - b. Atoka Formation

**Hemish, L.A., and Andrews, R.D., 2001, Stratigraphy and Depositional Environments of the Sandstones of the Springer Formation and the Primrose Member of the Golf Course Formation in the Ardmore Basin, Oklahoma, OGS: Guidebook 32, 47 p.**

1. Stop 1: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 31, T4S, R2E (Carter County); N  $\frac{1}{2}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 6, T6S, R2E (Love County)
  - a. Springer Formation
  - b. unnamed shale (Springer)
  - c. Rod Club? Member (Springer)
  - d. unnamed shale (Springer)

2. Stop 2: SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  and SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 12, T4S, R1E (Carter County)
  - a. Springer Formation
  - b. Overbrook Member (Springer)
  - c. unnamed shale (Springer)
3. Stop 3: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  and NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 1, T3S, R2E (Carter County)
  - a. Golf Course Formation
  - b. Gene Autry Shale Member (Golf Course)
  - c. Primrose Sandstone Member (Golf Course)
  - d. Springer Formation
  - e. unnamed shale (Springer)
  - f. Lake Ardmore Member (Springer)
  - g. unnamed shale (Springer)
4. Stop 4: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 33, T2S, R1E (Carter County)
  - a. Springer Formation
  - b. unnamed shale (Springer)
  - c. Rod Club Member (Springer)
5. Stop 5: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 16, T3S, R1E (Carter County)
  - a. Springer Formation
  - b. Rod Club Member (Springer)
6. Stop 6A: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 27, T3S, R1E and the NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 34, T3S, R1E (Carter County)
  - a. Springer Formation
  - b. unnamed shale (Springer)
  - c. Lake Ardmore Member (Springer)
7. Stop 6B: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 34, T3S, R1E (Carter county)
  - a. Springer Sandstone
  - b. Overbrook Sandstone Member (Springer)
  - c. unnamed shale? (Springer)

**Stanley, T.M., 2001, Stratigraphy and Facies Relationships of the Hunton Group, Northern Arbuckle Mountains and Lawrence Uplift, Oklahoma, OGS: Guidebook 33, 81 p.**

1. Stop 1: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 11, T2N, R6E (Pontotoc County)
  - a. Frisco Formation (type locality)
  - b. Bois d'Arc Formation
  - c. Fittstown Member (Bois d'Arc)
2. Stop 2: W  $\frac{1}{2}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec 36, T3N, R5E (Pontotoc County)
  - a. Hunton Group
  - b. Chimneyhill subgroup (Hunton)
  - c. Cochrane Formation (Chimneyhill)
  - d. Keel Formation (type locality); (Chimneyhill)
  - e. Ideal Quarry Member (Keel Formation)

- f. Sylvan Shale
3. Stop 3: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 33, T1S, R3E (Bois d'Arc); N  $\frac{1}{2}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 33, T1S, R3E (Haragan); S  $\frac{1}{2}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 33, T1S, R3E (Chimneyhill) (Murray County)
    - a. Hunton Group
    - b. Bois d'Arc Formation (Hunton)
    - c. Fittstown Member (Bois d'Arc)
    - d. Cravatt Member (Bois d'Arc)
    - e. Haragan Formation (Hunton)
    - f. Henryhouse Formation (Hunton)
    - g. Chimneyhill subgroup (Hunton)
    - h. Clarita Formation (Chimneyhill)
    - i. Fitzhugh Member (Clarita)
    - j. Prices Falls Member ? (Clarita)
    - k. Cochrane Formation (Chimneyhill)
  4. Stop 4: N  $\frac{1}{2}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 31 (Bois d'Arc); SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 31 (Chimneyhill) SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 31 (Henryhouse); SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 31, T1S, R3E (Haragan)
    - a. Hunton Group
    - b. Bois d'Arc Formation (Hunton)
    - c. Fittstown Member (Bois d'Arc)
    - d. Cravatt Member (Bois d'Arc)
    - e. Haragan Formation (Hunton)
    - f. Henryhouse Formation (Hunton)
    - g. Chimneyhill subgroup (Hunton)
    - h. Clarita Formation (Chimneyhill)
    - i. Fitzhugh Member (Clarita)
    - j. Prices Falls Member? (Clarita)
    - k. Cochrane Formation (Chimneyhill)
  5. Stop 5: along S line of the SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 31, T1S, R3E (Hunton Anticline Quarry) (Murray County)
    - a. Hunton Group
    - b. Bois d'Arc Formation (Hunton)
    - c. Fittstown Member (Bois d'Arc)
    - d. Cravatt Member (Bois d'Arc)
    - e. Haragan Formation (Hunton)
  6. Stop 6 (Optional): NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 33, T1S, R2E (Murray County)
    - a. Hunton Group
    - b. Bois d'Arc Formation (Hunton)
    - c. Cravatt Member (Bois d'Arc)
    - d. Henryhouse Formation (Hunton)
    - e. Chimneyhill subgroup (Hunton)
    - f. Clarita Formation (Chimneyhill)
    - g. Fitzhugh Member (Clarita)



- h. Prices Falls Member (Clarita)
  - i. Cochrane Formation (Chimneyhill)
  - j. Keel Formation (Chimneyhill)
  - k. Ideal Quarry Member? (Keel)
7. Stop 7: E  $\frac{1}{2}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 33 (Cravatt and Woodford); W  $\frac{1}{2}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 33, T1S, R2E (Chimneyhill and Henryhouse) (Murray County)
- a. Woodford Shale
  - b. Hunton Group
  - c. Bois d'Arc Formation (Hunton)
  - d. Cravatt Member (Bois d'Arc)
  - e. Henryhouse Formation (Hunton)
  - f. Chimneyhill subgroup (Hunton)
  - g. Clarita Formation (Chimneyhill)
  - h. Fitzhugh Member (Clarita)
  - i. Prices Falls Member (Clarita)
  - j. Cochrane Formation (Chimneyhill)
  - k. Keel Formation (Chimneyhill)
  - l. Ideal Quarry Member (Keel)
8. Stop 8: NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 30 (Woodford-Henryhouse); SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 30 (basal Henryhouse-upper Chimneyhill); NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 30, T1S R2E (rest of Chimneyhill) (Murray County)
- a. Woodford Shale
  - b. Hunton Group
  - c. Haragan Formation (Hunton)
  - d. Henryhouse Formation (Hunton)
  - e. Chimneyhill subgroup (Hunton)
  - f. Clarita Formation (Chimneyhill)
  - g. Fitzhugh Member (Clarita)
  - h. Prices Falls Member? (Clarita)
  - i. Cochrane Formation (Chimneyhill)
  - j. Keel Formation (Chimneyhill)
  - k. Ideal Quarry Member (Keel)
9. Stop 9: W  $\frac{1}{2}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 30, T1S, R2E (Murray County)
- a. Woodford Shale
  - b. Hunton Group
  - c. Haragan Formation (Hunton)
  - d. Henryhouse Formation (Hunton)
  - e. Chimneyhill subgroup (Hunton)
  - f. Clarita Formation (Chimneyhill)
  - g. Fitzhugh Member (Clarita)
  - h. Prices Falls Member (Clarita)
  - i. Cochrane Formation (Chimneyhill)

- j. Keel Formation (Chimneyhill)
- k. Sylvan Shale

**Suneson, N.H., Cemen, I., Kerr, D.R., Roberts, M.T., Slatt, R.M., and Stone, C.G. , 2005, Stratigraphic and Structural Evolution of the Ouachita Mountains and Arkoma Basin, Southeastern Oklahoma and West-Central Arkansas: Applications to Petroleum Exploration: OGS Guidebook 34, 137 p.**

Stops 1-4 not in Oklahoma

1. Stop 5: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 20, T5N, R26E (Le Flore County)
  - a. Pine Mountain Syncline
  - b. Heavener Anticline
  - c. Arkoma Basin-Ouachita Mountains transition zone
2. Stop 6A: N  $\frac{1}{2}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 27, T2N, R25E (Le Flore County)
  - a. Jackfork Group
  - b. friable and cemented sandstones (Jackfork Group)
  - c. Wildhorse Mountain Formation (Jackfork Group)
3. Stop 6B: N  $\frac{1}{2}$  N  $\frac{1}{2}$  NW  $\frac{1}{4}$  sec. 34, T2N, R25E and SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 27, T2N, R25E (Le Flore County)
  - a. Jackfork Group
  - b. friable and cemented sandstones (Jackfork Group)
  - c. Wildhorse Mountain Formation (Jackfork Group)
4. Stop 7: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 1, T2N, R25E (Le Flore County)
  - a. Jackfork Group
  - b. friable and cemented sandstones (Jackfork Group)
  - c. Wildhorse Mountain Formation (Jackfork Group)
5. Stop 8: C SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 23, T5N, R21E (Latimer County)
  - a. Atoka Formation
  - b. Spiro sandstone (informal) member (Atoka)
  - c. Wapanucka Formation
6. Stop 9: C W  $\frac{1}{2}$  NE  $\frac{1}{4}$  sec. 24, T4N, R21E (Latimer County)
  - a. Atoka Formation
  - b. "Spiro equivalent" sandstone
  - c. Johns Valley Formation
7. Stop 10: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  and NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 24, T4N, R21E (Le Flore County)
  - a. Atoka Formation
  - b. "Spiro equivalent" sandstone
  - c. Johns Valley Formation
8. Stop 11: E  $\frac{1}{2}$  E  $\frac{1}{2}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 31, T3N, R20E (Latimer County)
  - a. Stanley Group
  - b. Arkansas Novaculite
  - c. Missouri Mountain Shale

- d. Polk Creek Shale
  - e. Bigfork Chert
  - f. Womble Shale
9. Stop 12: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  and NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 3, T3N, R19E (Latimer County)
    - a. Atoka Formation
    - b. "Spiro equivalent" sandstone
    - c. Johns Valley Formation (poorly exposed)
  10. Stop 13: C E  $\frac{1}{2}$  sec. 25, T4N, R17E
    - a. Johns Valley Formation
  11. Stop 14A: NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 10, T4N, R17E (Latimer County)
    - a. Atoka Formation
    - b. Spiro sandstone (informal) member (Atoka)
    - c. Wapanucka Limestone
  12. Stop 14B: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 10, T17E, R4N (Latimer-Pittsburg County line)
    - a. Atoka Formation
    - b. Spiro sandstone (informal) member (Atoka)
  13. Stop 15: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 34, and NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 33, T5N, R19E (Latimer County)
    - a. Atoka Formation
    - b. "Red Oak sand?"

**Suneson, N.H., and Boyd, D., 2008, Guidebook to the Booch Sandstones: Surface to Subsurface Correlations: OGS Guidebook 35, 107 p.**

1. Stop 1: Center E  $\frac{1}{2}$  SE  $\frac{1}{4}$  sec. 6, T3N, R15E (Pittsburg County)
  - a. McAlester Formation
  - b. Cameron Sandstone Member (McAlester)
2. Stop 2: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 35, T5N, R16E (Pittsburg County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
  - c. McCurtain Shale Member (McAlester)
3. Stop 3: C SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 11, T5N, R16E (Pittsburg County)
  - a. McAlester Formation
  - b. Lequire Sandstone Member (McAlester)
4. Stop 4: C N  $\frac{1}{2}$  N  $\frac{1}{2}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 7, T5N, R17E (Pittsburg County)
  - a. McAlester Formation
  - b. Cameron Sandstone Member (McAlester)
  - c. South flank of San Bois Syncline
5. Stop 5: C SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 8, T5N, R20E (Latimer County)
  - a. McAlester Formation
  - b. McCurtain Shale Member (McAlester)
  - c. Hartshorne Formation
  - d. upper Hartshorne coal bed

- e. lower Hartshorne coal bed
- 6. Stop 6: SW corner NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 31, T6N, R23E and SE corner NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 36, T6N, R22E (Le Flore and Latimer Counties)
  - a. McAlester Formation
  - b. Cameron Sandstone (McAlester)
- 7. Stop 7: NW corner SW  $\frac{1}{4}$  sec. 31, T6N, R25E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone (McAlester)
- 8. Stop 8: NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 32; NW corner SW  $\frac{1}{4}$  sec. 33; SW corner NW  $\frac{1}{4}$  sec. 33; and SE corner NE  $\frac{1}{4}$  sec. 32, T6N, R25E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
- 9. Stop 9: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 35, T6N, R25E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
- 10. Stop 10: NW corner of sec. 28, T8N, R26E (Le Flore County)
  - a. Lequire Sandstone (McAlester)
- 11. Stop 11: NW corner sec. 29, T8N, R26E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone (McAlester)
- 12. Stop 12: SE corner NE  $\frac{1}{4}$  sec. 25, T9N, R25E (Le Flore County)
  - a. McAlester Formation
  - b. Lequire Sandstone Member (McAlester)
- 13. Stop 13: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 1, T8N, R25E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
- 14. Stop 14: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 3, T8N, R 25E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
- 15. Stop 15: C N  $\frac{1}{2}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 1, T8N, R24E
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
- 16. Stop 16: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 30, T11N, R24E (Sequoyah County)
  - a. McAlester Formation
  - b. Warner Sandstone Member? (McAlester)
- 17. Stop 17: NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 4; west side of SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 3, T8N, R23E (Le Flore County)
  - a. McAlester Formation
  - b. Warner Sandstone Member (McAlester)
- 18. Stop 18: N  $\frac{1}{2}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 14, T10N, R22E (Haskell County)
  - a. McAlester Formation
  - b. Tamaha Sandstone Member (McAlester)

19. Stop 19: south side of SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 12, T9N, R21E (Haskell County)
  - a. McAlester Formation
  - b. Lequire-Warner Sandstone Members (undivided); (McAlester)

**Chaplin, J.R., 2010, Stratigraphic Analysis of the Permian Chase Group in Northern Oklahoma Outcrop Analogs of Reservoir Rocks in the Hugoton Embayment of Northwestern Oklahoma and Southwestern Kansas, OGS: Guidebook 36, 124 p.**

1. Stop 1: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 8, T. 28 N., R. 3 E. and NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 17, T. 28 N., R. 3 E. (Kay County)
  - a. Nolans Limestone
  - b. Herington Limestone Member (Nolans)
  - c. Enterprise/Odell Shale
  - d. Luta Limestone Member (Enterprise/Odell)
  - e. Winfield Limestone
  - f. Doyle Shale (part)
  - g. Gage Shale Member (part) (Doyle)
2. Stop 2: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 25, T. 28 N., R. 3 E. and SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 24, T. 28 N., R. 3 E. (Kay County)
  - a. Chase Group
  - b. Barneston Limestone
  - c. Fort Riley Limestone Member (Barneston)
  - d. Florence Limestone Member (Barneston)
  - e. Matfield Shale
  - f. Blue Springs Shale Member (Matfield)
  - g. Kinney Limestone Member (Matfield)
  - h. Wymore Shale Member (Matfield)
3. Stop 3: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 36, T. 27 N., R. 3 N. (Kay County)
  - a. Chase Group
  - b. Nolans Limestone
  - c. Herington Limestone Member (Nolans)
  - d. Enterprise/Odell Shale (part)
4. Stop 4: N  $\frac{1}{2}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 25, T. 27 N., R. 4 E. (Kay County)
  - a. Chase Group (part)
  - b. Wreford Limestone (part)
  - c. Council Grove Group (part)
  - d. Garrison Formation (part)
  - e. Speiser Shale Member (part); (Garrison)
5. Stop 5: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 25, T. 26 N., R. 3 E. (Kay County)
  - a. Chase Group (part)
  - b. Winfield Limestone
  - c. Doyle Shale
  - d. Gage Shale Member (Doyle)

- e. Towanda Limestone Member (Doyle)
  - f. Holmesville Shale Member (Doyle)
  - g. Barneston Limestone (part)
6. Stop 6: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 28, T. 26 N., R. 3 E. and NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 33, T. 26 N., R. 3 E. (Kay County)
- a. Chase Group
  - b. Nolans Limestone
  - c. Herington Limestone Member (Nolans)
  - d. Enterprise/Odell Shale
  - e. Luta Limestone Member (Enterprise/Odell)
  - f. Winfield Limestone
  - g. Doyle Shale (part)
  - h. Gage Shale Member (part); (Doyle)
7. Stop 7: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 17, T. 24 N., R. 3 E. (Noble County)
- a. Enterprise/Odell Shale (part)
  - b. Winfield Limestone
  - c. Doyle Shale (part)
  - d. Gage Shale Member (part); (Doyle)
8. Stop 8: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 14, T. 23 N., R. 2 E. (Noble County)
- a. Chase Group (part)
  - b. Nolans Limestone
  - c. Herington Limestone Member (Nolans)
  - d. Enterprise/Odell Shale (part)
9. Stop 9: SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 32, T. 23 N., R. 3 E. (Pawnee County)
- a. Chase Group (part)
  - b. Barneston Limestone
  - c. Fort Riley Limestone Member (Barneston)
  - d. Matfield Shale
  - e. Blue Springs Shale Member (part); (Matfield)
10. Stop 10: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 9, T. 22 N., R. 4 E. (Pawnee County)
- a. Chase Group (part)
  - b. Wreford Limestone
  - c. Council Grove Group (part)
  - d. Garrison Formation (part)
  - e. Speiser Shale Member (part); (Garrison)
11. Stop 11: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 31, T. 21 N., R. 3 E. (Noble County)
- a. Winfield Limestone
  - b. Doyle Shale (part)
  - c. Gage Shale (part)

**Friedman, S.A., 2011, Desmoinesian Coal Deposits in part of the Arkoma Basin, Eastern Oklahoma: OGS Guidebook 37, 69 p. (Field trip held April 8-9, 1978, American Association of Petroleum Geologists National Annual Meeting, Oklahoma City, Oklahoma)**

1. Stop 1: SW  $\frac{1}{4}$  sec. 33, T12N, R13E (Pollyana mine of P&K Co.) (Okmulgee County)
  - a. Senora Formation
  - b. Croweburg coal bed
2. Stop 2: sec. 32, T12N, R18E (McIntosh County)
  - a. Boggy Formation
  - b. Secor coal bed
3. Stop 3: sec. 31, T11N, R20E (Muskogee County)
  - a. McAlester Formation
  - b. Stigler coal bed
4. Stop 4: SW  $\frac{1}{4}$  sec. 7, T10N, R21E (Haskell County)
  - a. McAlester Formation
  - b. Stigler coal
  - c. *Cordaites*
  - d. *Mariopteris*
  - e. *Sphenopteris*
5. Stop 5: sec. 5, T9N, R21E (Haskell County)
  - a. McAlester Formation
  - b. Stigler coal bed
  - c. *Stigmara* (roots)
6. Stop 6: C of S line of NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 15, T9N, R22E (Port Carl Albert) (Haskell County)
  - a. barges with coal
7. Stop 7: sec. 14, T8N, R 22E; sec. 23, T8N, R22E (Haskell County)
  - a. Hartshorne Formation
  - b. upper and lower Hartshorne coals
8. Stop 8: sec. 16, 17 T8N, R24E (Le Flore County)
  - a. Hartshorne Formation
  - b. upper and lower Hartshorne coals
9. Stop 9: NW  $\frac{1}{4}$  sec. 36, T5N, R25E (Le Flore County)
  - a. Hartshorne Formation
  - b. lower Hartshorne coal bed
  - c. Atoka Formation
  - d. *calamites* (Atoka)

**Suneson, N.H., ed., 2014, Igneous and Tectonic History of the Southern Oklahoma Aulacogen: Oklahoma Geological Survey Guidebook 38, 392 p.**

1. Stop 1: W  $\frac{1}{2}$  sec. 29, T2S, R5E (Mill Creek Quarry) (Johnston County)
  - a. diabase dikes
  - b. Troy Granite

2. Stop 2A: NE ¼ sec. 1, T2S, R1E (Murray County)
  - a. Arbuckle Group
  - b. Carlton Rhyolite
  - c. Chapman Ranch Thrust Fault
3. Stop 2B: S ½ N ½ NE ¼ sec. 1, T2S, R1E (Murray County)
  - a. Carlton Rhyolite
4. Stop 2C: SW ¼ sec. 36, T1S, R2E and E ½ sec. 35, T1S, R2E (Murray County)
  - a. Carlton Rhyolite
5. Stop 3: E ½ of sec. 10, T1S, R1W (Murray County)
  - a. Reagan Sandstone
  - b. diabase dikes
  - c. coarse-grained polymict igneous breccia
  - d. Carlton Rhyolite
6. Stop 4: SW ¼ SW ¼ NW ¼ sec. 13, T4N, R13W (Comanche County)
  - a. diabase dikes
  - b. Carlton Rhyolite
7. Stop 5: SW ¼ NE ¼ SE ¼ sec. 13, T3N, R13W (Lake Elmer Thomas Dam) (Comanche County)
  - a. diabase dikes
  - b. Mount Scott Granite
8. Stop 6: C N ½ SE ¼ sec. 11, T3N, R13W (Comanche County)
  - a. summit of Mount Scott
  - b. boulder fields (on the ascent)
  - c. Mount Scott Granite
  - d. views of: Meers Valley, Lake Lawtonka, Lake Elmer Thomas, Medicine Park, rhyolite hills, Fort Sill, Jed Flat Plateau, Mount Scott Granite, Quanah Granite, Roosevelt Gabbros, Slick Hills (Cambrian-Ordovician rocks)
9. Stop 7: SW ¼ SE ¼ NE ¼ sec. 16, T3N, R13W (Quetone Overlook) (Comanche County)
  - a. alluvium
  - b. Post Oak Conglomerate
  - c. diabase dike
  - d. Mount Scott Granite
  - e. Rush Lake Granite
  - f. Davidson metarhyolite
  - g. Carlton Rhyolite
10. Stop 8: E ½ W ½ NE ¼ sec. 21, T3N, R14W (Comanche County)
  - a. Buford Lake Geology Interpretive Trail

**Gilbert, M.C., 2014, The Wichita Mountains in Oklahoma: Their Story Through Time: Oklahoma Geological Survey Guidebook 39, 48 p.**

1. Stop 1: SE ¼ SW ¼ NW ¼ sec. 15, T2N, R11W (Comanche County)
  - a. Fort Sill tar pit



- b. Garber-Hennessey Formation
  - c. vertebrate fossils
- 2. Stop 2: sec. 36, T3N, R12W (Medicine Bluffs) (Comanche County)
  - a. Carlton Rhyolite
- 3. Stop 3: NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 24, T3N, R12W (Comanche County)
  - a. Mount Scott Granite
  - b. asphalt
  - c. diabase dikes
- 4. Stop 4: SW  $\frac{1}{4}$  sec. 5, T3N, R12W (Comanche County)
  - a. Mount Scott Granite-Mount Sheridan Gabbro contact (to the west)
  - b. Carlton Rhyolite (to the south)
  - c. Slick Hills and Meers fault (to the north)
- 5. Stop 5: SE  $\frac{1}{4}$  sec. 13, T3N, R13W (Comanche County)
  - a. Mount Scott Granite
  - b. diabase dikes
- 6. Stop 6: sec. 11, T3N, R13W (Top of Mount Scott) (Comanche County)
  - a. Mount Scott Granite
- 7. Stop 7: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 16, T3N, R13W (Comanche County)
  - a. Post Oak Conglomerate
  - b. unconformity on fractured granite, rhyolite (unspecified)
- 8. Stop 8: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 23, T3N, R14W (Quanah Parker Lake Dam) (Comanche County)
  - a. Quanah Granite
- 9. Stop 9: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 21, T3N, R14W (Comanche County)
  - a. Glen Mountains Layered Complex
- 10. Stop 10: NW  $\frac{1}{4}$  sec. 20, T3N, R14W (French Lake Dam) (Comanche County)
  - a. Quanah Granite
  - b. Glen Mountains Layered Complex
  - c. xenoliths
- 11. Stop 11: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 13, T3N, R15W (Comanche County)
  - a. Twin Rocks
  - b. topographic feature
  - c. Quanah Granite
- 12. Stop 12: sec. 24-25 line, T4N, R13W (Comanche County)
  - a. Meers fault
  - b. Hennessey Shale
- 13. Stop 13: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 16, T4N, R17W (Kiowa County)
  - a. Cold Springs Breccia
- 14. Stop 14: NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 22, T5N, R20W (Quartz Mountain) (Greer County)
  - a. Lugert Granite
  - b. Reformatory Granite
  - c. miarolitic cavities
- 15. Stop 15: SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 15, T5N, R20W (Greer County)

- a. Lugert Granite (two phases)
- b. xenoliths

## **Informational Series**

**Siemers, W.A., Stanley, T.M., and Suneson, N.H., 2000, Geology of Arcadia Lake Parks—An Introduction and Field-Trip Guide, OGS: Information Series 7, 20 p.**

1. Stop 1A: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 36, T14N, R2W (Oklahoma County)
  - a. Garber Sandstone
  - b. ripple marks
2. Stop 1B: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 35, T14N, R2W (Oklahoma County)
  - a. Garber Sandstone
  - b. Oklahoma mudballs
3. Stop 2A: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 36, T14N, R2W (overlook point) (Oklahoma County)
  - a. Garber Sandstone
  - b. jointing
4. Stop 2B: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 36, T14N, R2W (overlook point) (Oklahoma County)
  - a. Garber siltstone
  - b. mud cracks
5. Stop 2C: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 36, T14N, R2W (overlook point) (Oklahoma County)
  - a. Garber Sandstone
  - b. calcite nodules
6. Stop 2D: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 36, T14N, R2W (overlook point) (Oklahoma County)
  - a. Garber Sandstone
  - b. trough cross-bedding
7. Stop 3: C of the W  $\frac{1}{2}$  of SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 36, T14N, R2W (Central State Park Cherokee Pavillion) (Oklahoma County)
  - a. Garber Sandstone
  - b. conglomerate
  - c. trough cross-bedding
  - d. dolomite clasts
8. Stop 4: NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 35, T14N, R2W (Edmond Park Boat Dock) (Oklahoma County)
  - a. Pleistocene sand deposits
  - b. present-day sedimentary structures
  - c. ripple marks
  - d. organism tracks/burrows
9. Stop 5: NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 35, T14N, R2W (Spring Creek Park Comanche Pavilion) (Oklahoma County)
  - a. Garber Sandstone
  - b. Liesegang bands

10. Stop 6: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 35, T14N, R2W (Spring Creek Park Boat Ramp Parking Area) (Oklahoma County)
  - a. limestone riprap (erosion control)

## **Mineral Resources Conference**

### **Ham, W.E., 1946, Mineral Resources Field Trip, Wichita Mountain District: Oklahoma Geological Survey and Oklahoma Mineral Industries Conference, 12 p.**

1. Stop 1: N  $\frac{1}{2}$  N  $\frac{1}{2}$  Sec 20, T2N, R12W (Comanche County)
  - a. Strange Dolomite
2. Stop 2: SW  $\frac{1}{4}$  Sec 31, T4N, R11W (Richards Spur Quarry of Dolese Brothers Co.) (Comanche County)
  - a. McKenzie Hill
3. Stop 3: C of corners of Secs 7, 8, 17, 18, T4N, R12W (Comanche County)
  - a. Reagan Sandstone
4. Stop 4: E  $\frac{1}{2}$  E  $\frac{1}{2}$  Sec 5, T2N, R17W (Roosevelt Granite Co.) (Kiowa County)
  - a. Lugert Granite (in nearby quarry)
5. Stop 5: W  $\frac{1}{2}$  NE  $\frac{1}{4}$  Sec 18, T4N, R17W (Original Roosevelt Granite Co. location, abandoned) (Kiowa County)
  - a. Cold Springs "granite"
  - b. quartz monzonite
6. Stop 6: C of Bottom line of Sec 31, T3N, R17W (Mountain Park Granite Co.) (Kiowa County)
  - a. Lugert Granite
7. Stop 7: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  Sec 12, T2N, R17W (Plant of Century Granite Co.) (Kiowa County)
  - a. granite (unspecified)

## **Open-File Reports**

### **Suneson, N.H., and Ferguson, C.A., 1987, Ouachita Mountains Frontal Belt Field Trip: OGS Open-File Report 1-87, 40 p.**

1. Stop 1: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 9, T4N, R17E (Pittsburg County)
  - a. entrance to Ouachita Mountains
  - b. Choctaw Fault
  - c. McAlester Formation
  - d. Hartshorne Sandstone
  - e. Atoka Formation
2. Stop 2: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 5, T4N, R18E (Latimer County)
  - a. Atoka Formation
  - b. Spiro sandstone (Atoka)
  - c. Wapanucka Limestone
  - d. Springer Shale

3. Stop 3: southernmost strip of the SE  $\frac{1}{4}$  sec. 5, T4N, R18E (Latimer County)
  - a. lower Atoka Formation
  - b. turbidites
  - c. sedimentary structures
  - d. west to east paleocurrents
4. Stop 4: C W  $\frac{1}{2}$  E  $\frac{1}{2}$  sec. 25, T4N, R17E (Latimer County)
  - a. Atoka Formation
  - b. olistostrome?
5. Stop 5: C sec. 5, T3N, R18E (Latimer County)
  - a. lower Atoka Formation (upright and overturned)
  - b. Bouma Sequences
  - c. dish and pillar structures
  - d. flute molds
  - e. grooves
  - f. trace fossils
6. Stop 6: C S  $\frac{1}{2}$  S  $\frac{1}{2}$  sec. 5, T3N, R18E (Latimer County)
  - a. Exxon Retherford No. 1 wellsite
  - b. sandstone (Spiro equivalent?)
7. Stop 7: center of SE  $\frac{1}{4}$  sec. 21, T4N, R18E (Latimer County)
  - a. Atoka Formation
  - b. major anticline
  - c. mesoscopic north verging folds on south limb of anticline
8. Stop 8: Center of the east  $\frac{1}{2}$  sec. 28, T4N, R18E (Latimer County)
  - a. Atoka Formation?
  - b. or Johns Valley Formation?
  - c. limestone
  - d. cephalopods
  - e. calcareous shale
9. Stop 9: C SW  $\frac{1}{4}$  sec. 28, T4N, R18E (Latimer County)
  - a. Atoka Formation
  - b. chert block (olistostrome? or thrust slice?)
10. Stop 10: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 35, T4N, R19E (Latimer County)
  - a. Atoka-Johns Valley Contact
  - b. "Caney" (?) shale
  - c. north flank of syncline
11. Stop 11: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 3, T3N, R19E (Latimer County)
  - a. Atoka-Johns Valley Contact
  - b. south flank of syncline

**Chaplin, J.R., 1989, Guidebook for Selected Geologic Stops in the Arbuckle Mountains, OGS: Open-File Report 4-89, 63 p. (Field trip held May 13-17, 1989, American Association of State Geologists Annual Meeting)**

1. Stop 1: CNE  $\frac{1}{4}$  sec. 24, T2S, R1E (Murray-Carter Counties)
  - a. Kindblade Formation
2. Stop 1A: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 13, T2S, R1E (Murray County)
  - a. lower Kindblade Limestone
  - b. tombstone topography
  - c. "rabbit ear" structure
  - d. cross-crestal faults and folds
  - e. normal and reverse faulting
  - f. synclines and anticlines
3. Stop 2: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 31, T1S, R2E (Murray County)
  - a. Collings Ranch Conglomerate
  - b. Viola Formation
  - c. Bromide Formation
  - d. West Spring Creek Formation
  - e. angular unconformity
  - f. deposition in proximal part of alluvial-fan complex
4. Stop 3: SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 36, T1S, R1E (Turner Falls Overlook) (Murray County)
  - a. Collings Ranch Conglomerate
  - b. Cool Creek Limestone
  - c. McKenzie Hill Limestone
  - d. Carlton Rhyolite
  - e. Washita Valley Fault
  - f. travertine-tufa deposits
5. Stop 4: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 23, T1S, R3E (Buckhorn Asphalt Quarry) (Murray County)
  - a. Vanoss Conglomerate
  - b. Deese Group
  - c. Boggy Formation (Deese)
  - d. aragonitic molluscan faunas
  - e. cephalopods
  - f. brachiopods
  - g. fusulinids
  - h. bryozoans
  - i. plant remains
6. Stop 5: C sec. 31, T1S, R3E (Hunton Anticline and Hunton Quarry) (Murray County)
  - a. Woodford Shale
  - b. Hunton Group
  - c. Bois d'Arc Formation
  - d. Haragan Formation
  - e. Viola Limestone

**Suneson, N.H., 1995, The Geology of the Broken Bow Uplift: An Introduction and Field-Trip Guide: OGS Open-File Report 1-95, 31 p.**

1. Stop 1: NW ¼ sec. 4, T5S, R25E (McCurtain County)
  - a. Blaylock Sandstone
  - b. Polk Creek Shale
2. Stop 2: S ½ SE ¼ sec. 23, T4S, R24E (McCurtain County)
  - a. Collier Shale
  - b. quartz crystals (Collier Shale)
3. Stop 3: W ½ W ½ sec. 34, T3S, R24E (McCurtain County)
  - a. Arkansas Novaculite
  - b. Missouri Mountain Shale
  - c. Blaylock Sandstone
4. Stop 4: SE ¼ sec. 28, T4S, R24E (McCurtain County)
  - a. Collier Shale
5. Stop 5: NW ¼ sec. 23, T7S, 24E (McCurtain County)
  - a. Goodland Limestone
  - b. pelecypods
  - c. gastropods

**Hemish, L.A., Suneson, N.H., and Chaplin, J.R., 1995, Stratigraphy and Sedimentation of Some Selected Pennsylvanian (Atokan-Desmoinesian) Strata in the Southeastern Part of the Arkoma Basin, Oklahoma: OGS Open-File Report 3-95, 114 p. (field trip held May 20-21 1995, Midcontinent Pennsylvanian Stratigraphic Work Group)**

1. Stop 1: NW ¼ sec. 27, T5N, R15E (Pittsburg County)
  - a. Savanna Formation
  - b. fossils
2. Stop 2: NE ¼ sec. 33, T5N, R16E (Pittsburg County)
  - a. Savanna Formation
  - b. fossils
3. Stop 3: SW ¼ sec. 11, T4N, R16E (Pittsburg County)
  - a. Atoka Formation
4. Stop 4: SE ¼ sec. 10, T4N, R16E (Pittsburg County)
  - a. McAlester Formation
  - b. calcareous sandstone (McAlester)
5. Stop 5: NW ¼ sec. 30, T5N, R17E (Pittsburg County)
  - a. Gerty Sand
  - b. McAlester Formation
  - c. McCurtain Shale Member (McAlester)
  - d. phosphatic nodules
6. Stop 6: along a section-line road just NW of the town of Adamson (parts of sec. 1, T5N, R16E; sec. 6, T5N, R17E; sec. 31, T6N, R17E; and sec. 36, T6N, R16E) (Pittsburg County)
  - a. Savanna Formation (neostatotype)
7. Stop 7: spillway small lake Adamson area

- a. Savanna Formation
  - b. stromatolites
  - c. plant fossils
8. Stop 8: NE ¼ sec. 2, T3N, R17E (Latimer County)
    - a. Atoka Formation
    - b. calcareous turbidites
    - c. Choctaw Fault
    - d. conodonts
  9. Stop 9: NW ¼ sec. 1, T6N, R21E; NE ¼ sec. 2, T6N, R21E; S ½ sec. 35, T7N, R21E (Latimer County)
    - a. Boggy Formation
    - b. Bluejacket Member (Boggy)
    - c. Savanna Formation (Reference section)
    - d. McAlester Formation
    - e. stromatolites (Savanna)
  10. Stop 10: NW ¼ sec. 28, T6N, R24E (Le Flore County)
    - a. Savanna Formation
    - b. Sam Creek? Limestone Member (Savanna)
  11. Stop 11: NE ¼ sec. 21, T6N, R25E (Le Flore County)
    - a. Savanna Formation
    - b. Spaniard? Limestone Member (Savanna)
  12. Stop 12: SW ¼ sec. 6, T5N, R25E (Le Flore County) (Wister Lake Spillway)
    - a. Atoka Formation (upper part)

**Simms, J., Sims, F., and Suneson, N.H., 1995, The Geology of the Southwestern Ozark Uplift: An Introduction and Field-Trip Guide, OGS: Open-File Report 6-95, 30 p. (Field trip held Sept. 29-30, Oct. 1, 1995, Fall Field Meeting of the Oklahoma Academy of Science)**

1. Stop 1: C E ½ SW ¼ sec. 31, T18N, R23 E (Cherokee Baths) (Cherokee County)
  - a. Burgen Sandstone
2. Stop 2: SW ¼ SW ¼ sec. 31, T18N, R23E (Goat's Bluff) (Cherokee County)
  - a. Tyner Shale
  - b. upper Burgen Sandstone
3. Stop 3: NW ¼ NW ¼ sec. 24, T18N, R22E (Eagle's Bluff) (Cherokee County)
  - a. Keokuk Chert
  - b. Reeds Spring Formation
  - c. St. Joe Limestone
  - d. Chattanooga Shale
  - e. Noel Shale Member (Chattanooga )
  - f. Sylamore Sandstone Member (Chattanooga )
  - g. Tyner Formation
4. Stop 4: C E ½ E ½ E ½ sec. 23, T18N, R22E (Cherokee County)
  - a. Reeds Spring Formation
  - b. St. Joe Limestone
  - c. Chattanooga Shale

- d. Tyner Shale
  - e. bioherm (St. Joe Limestone)
  - f. horn corals (St. Joe Limestone)
  - g. crinoid columns (St. Joe Limestone)
  - h. spiriferid brachiopods (St. Joe Limestone)
  - i. fan-like and branching bryozoans (St. Joe Limestone)
  - j. athyrid and chonetid brachiopods (St. Joe Limestone)
  - k. snails (St. Joe Limestone)
  - l. sparse trilobite parts (St. Joe Limestone)
5. Stop 5: C NE  $\frac{1}{4}$  sec. 26, T17N, R22E (Cherokee County)
    - a. St. Joe Limestone
    - b. Chattanooga Shale
    - c. Noel Shale Member (Chattanooga)
    - d. pyrite (Noel Shale)
    - e. South Muskogee Fault
  6. Stop 6: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 4, T16N, R22E (Cherokee County)
    - a. Moorefield Formation
    - b. Keokuk Formation
  7. Stop 7: C N  $\frac{1}{2}$  S  $\frac{1}{2}$  sec. 25, T16N, R19E (Old Keough Quarry) (Cherokee County)
    - a. Atoka Formation
    - b. McCully Formation
    - c. colonial tabulate corals (McCully)
    - d. branching and net-like bryozoans (McCully)
    - e. productid, rhynocellid, and tear-shaped corals (McCully)
    - f. crinoids (McCully)
    - g. pentremites (McCully)
    - h. trilobite parts (McCully)
    - i. ammonoids (McCully)
    - j. straight shell nautiloids occasionally found (McCully)
  8. Stop 8: NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 13, T16N, R19E (West side of dam) (Wagoner County)
    - a. Atoka Formation
    - b. McCully Formation
    - c. Sausbee Formation
    - d. Pitkin Limestone
    - e. trace fossils (Atoka)
    - f. fossils, fossil molds, and carbonized plant debris (rare to find); (Atoka)
    - g. oolites (Pitkin)
  9. Stop 9: C South line SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 30, T17N, R21E (abandoned quarry on hillside) (Cherokee County)
    - a. Atoka Formation
    - b. McCully Formation
    - c. Sausbee Formation
    - d. Pitkin Limestone
    - e. Fayetteville Shale
    - f. *Archimedes* (spiral byozoans); (Pitkin)
    - g. *Pentremites* (blastoids); (Pitkin)



- h. productid and spiriferid brachiopods (Pitkin)
- i. horn corals (Pitkin)
- j. globular productid brachiopods (Pitkin)

**Suneson, N.H., 1996, The Geology of the Ardmore Basin in the Lake Murray State Park Area, Oklahoma: An Introduction and Field-Trip Guide, OGS: Open-File Report 2-96, 34 p. (Field trip held April 26-28, 1996, Spring Field Meeting of the Oklahoma Academy of Science)**

1. Stop 1: C NW ¼ SE ¼ sec. 17, T5S, R2E (Carter County)
  - a. Deese Group
  - b. West Arm Formation (Deese)
  - c. Natsy Limestone Member (West Arm Formation)
2. Stop 2: SE ¼ SE ¼ sec. 33, T5S, R2E (Carter County)
  - a. Deese Group
  - b. Rocky Point Conglomerate Member (Deese)
3. Stop 3: C W ½ sec. 10, T6S, R2E (Love County)
  - a. Deese Group
  - b. Upper Devils Kitchen Conglomerate Member (Deese)
  - c. Tucker Tower Nature Center
4. Stop 4: NW ¼ SW ¼ sec. 14, T6S, R2E (Love County)
  - a. Deese Group
  - b. Lower Devils Kitchen Conglomerate Member (Deese)
5. Stop 5: C SL SE ¼ sec. 19, T6S, R3E (Love County)
  - a. Antlers Sandstone
  - b. Dornick Hills Group
  - c. Big Branch Formation (Dornick Hills)
  - d. Pumpkin Creek Limestone Member (Big Branch)

**Suneson, N.H., 1997, The Geology of the Gulf Coastal Plain in Marshall County, Oklahoma: An Introduction and Field-Trip Guide, OGS: Open-File Report 1-97, 33 p. (Field trip held April 18-20, 1997, Spring Field Meeting of the Oklahoma Academy of Science)**

1. Stop 1: extreme south-center sec. 19, T7S, R6E (Marshall County)
  - a. Antlers Sandstone
  - b. angular unconformity
2. Stop 2: center S ½ SW ¼ sec. 20, T7S, R6E (Marshall County)
  - a. Goodland Limestone
  - b. Antlers Sandstone
3. Stop 3: extreme east-center sec. 20, T7S, R6E (Marshall County)
  - a. Caddo Formation
  - b. Duck Creek Member (Caddo)
  - c. *Eopachydiscus brazoensis* (Shumard); (Duck Creek)
  - d. *Idiohamites fremonti* (Marcou); (Duck Creek)

4. Stop 4: extreme SE corner sec. 10, T7S, R6E (Marshall County)
  - a. Bokchito Formation (Washita Group)
  - b. Soper Limestone Member (Bokchito)
  - c. Denton Clay Member (Bokchito)
5. Stop 5: border between SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 2 and SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 3, T7S, R6E (Marshall County)
  - a. Bokchito Formation (Washita Group)
  - b. Pawpaw Sandstone Member (Bokchito)
6. Stop 6: SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 1, T7S, R6E (Marshall County)
  - a. Woodbine Formation
  - b. Dexter Member (Woodbine)

**Suneson, N.H., 1997, The Geology of the Eastern Arbuckle Mountains in Pontotoc and Johnston Counties, Oklahoma: An Introduction and Field Trip Guide, OGS: Open-File Report 4-97, 25 p. (Field trip held May 31, 1997, Annual Meeting of the Oklahoma Chapter of the Nature Conservancy)**

1. Stop 1: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 11, T2N, R6E (Pontotoc County)
  - a. Woodford Shale
  - b. Hunton Limestone
  - c. splay fault off of the Stonewall Fault
2. Stop 2: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 12, T1N, R6E (Pontotoc County)
  - a. Viola Limestone
  - b. Bromide Formation
3. Stop 3: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 12, T1S, R6E (Johnston County)
  - a. McLish Formation
  - b. 'birdseye limestone'
  - c. pyrite
  - d. calcite
  - e. trace fossils
  - f. stylolites
4. Stop 4: NW  $\frac{1}{4}$  sec. 17, T3S, R6E (Slippery Falls Scout Camp) (Johnston County)
  - a. Tishomingo Granite
5. Stop 5: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 29, T2S, R7E (Johnston County)
  - a. Blue River Gneiss
6. Stop 6: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 22, T2S, R8E (Johnston County)
  - a. Wapanucka Limestone

**Suneson, N.H., 1998, The Geology of the Gypsum Hills in Woodward and Major Counties, Oklahoma: and Introduction and Field Trip Guide, OGS: Open-File Report 1-98, 21 p. (Field trip held May 30, 1998, Annual meeting of the Oklahoma Chapter of the Nature Conservancy)**

1. Stop 1: C of the W  $\frac{1}{2}$  of the S line sec. 28, T23N, R18W (Woodward County)

- a. Pleistocene and Holocene alluvial deposits
  - b. sand dunes of the North Canadian River
- 2. Stop 2: C of the W ½ of the S line sec. 25, T23N, R18W (Woodward County)
  - a. Rush Springs Formation
  - b. Marlow Formation
- 3. Stop 3: N ½ NW ¼ sec. 31, T31N, R17E (Woodward County)
  - a. Dog Creek Shale
- 4. Stop 4: SE ¼ corner sec. 18, T23N, R16W (Major County)
  - a. Blaine Formation
  - b. Haskew Gypsum Member (Blaine)
  - c. Shimer Gypsum Member (Blaine)
  - d. Nescatunga Gypsum Member (Blaine)
  - e. Medicine Lodge Gypsum Member (Blaine)
  - f. Flowerpot Shale Formation
- 5. Stop 5: W ½ of the S line sec. 33, T23N, R16W (Major County)
  - a. Blaine Formation
  - b. Flowerpot Shale Formation
  - c. Blaine-Flowerpot contact
- 6. Stop 6: SE ¼ sec. 23, T23N, R16 W (Major County)
  - a. Flowerpot Shale Formation
- 7. Stop 7: C of the W ½ sec. 5, T22N, R15W (Major County)
  - a. Pleistocene sand, gravel, and sand dunes
  - b. Blaine Formation
  - c. Medicine Lodge Gypsum Member (Blaine)
  - d. Flowerpot Shale Formation

**Suneson, N.H., 1999, A Field Trip Guide to the Geology of the Black Mesa State Park Area, Cimarron County, Oklahoma, OGS: Open-File Report 4-99, 56 p. (Field trip held September 17-19, 1998, Fall meeting of the Oklahoma Academy of Science)**

- 1. Stop 1: E end W ½ S sec. line sec. 6, T4N, R2 ECM (Cimarron County)
  - a. Dakota Sandstone
  - b. "middle shale member" (Dakota)
  - c. ripple marks (Dakota)
  - d. trace fossils (Dakota)
  - e. silicified tree trunks (Dakota)
  - f. leaf fossils (Dakota)
  - g. lignite (Dakota)
  - h. Ornithopod dinosaur footprint (Dakota)
- 2. Stop 2: N ½ E sec. line sec. 18, T4N, R2 ECM (Cimarron County)
  - a. Greenhorn Formation
  - b. Bridge Creek Member (Greenhorn)

- c. Hartland Member (Greenhorn)
  - d. Lincoln Member (Greenhorn)
  - e. Graneros Shale
  - f. upper unnamed member (Graneros)
  - g. Thatcher Limestone Member (Graneros)
  - h. lower unnamed member (Graneros)
  - i. inoceramid (Thatcher)
  - j. ostreid bivalves (Thatcher)
  - k. inoceramids (Greenhorn)
  - l. ostreidae (Greenhorn)
  - m. pectinidae (Greenhorn)
  - n. ammonites (Greenhorn)
3. Stop 3: C E  $\frac{1}{2}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 15, T5N, R2 ECM (Stovall's Dinosaur Bone Quarry 1) (Cimarron County)
- a. Purgatoire Formation
  - b. Cheyenne Sandstone Member (Purgatoire)
  - c. Morrison Formation
  - d. *Apatosaurus* (Morrison)
  - e. *Camarasaurus* (Morrison )
  - f. *Stegosaurus* (Morrison )
  - g. *Camptosaurus* (Morrison )
  - h. *Ceratosaurus* (Morrison )
  - i. *Saurophagus maximus* (Morrison )
4. Stop 4: SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 15 T5N, R1 ECM (Cimarron County)
- a. Dakota Sandstone
  - b. Purgatoire Formation
  - c. Kiowa Shale Member (Purgatoire)
  - d. Cheyenne Sandstone Member (Purgatoire)
  - e. petrified wood (Dakota)
  - f. *Texigryphaea* (Kiowa)
  - g. plant fossils (Kiowa)
  - h. petrified logs (Cheyenne)
5. Stop 5: NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 28, T6N, R1 ECM (Cimarron County)
- a. Morrison Formation
  - b. dinosaur trackway (Ornithopod); (Morrison)
6. Stop 6: C SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 28, T6N, R1 ECM (Quarry in Labrier Butte) (Cimarron County)
- a. Exeter Sandstone
  - b. Sheep Pen Sandstone
  - c. Sloan Canyon Formation
  - d. metoposaurid amphibian fossils (Sloan Canyon)
  - e. phytosaurian reptile fossils (Sloan Canyon)
  - f. chalcocite (Sheep Pen)

- g. malachite (Sheep Pen)
- h. azurite (Sheep Pen)

**Suneson, N.H., 2000, The Geology of the Tallgrass Praire Preserve, Osage County, Oklahoma: An Introduction and Field-trip Guide, OGS: Open-File Report 1-2000, 39 p. (Field trip held April 1, 2000, Meeting of the Legacy Club Members Oklahoma Chapter, The Nature Conservancy)**

1. Stop 1: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 3, T27N, R8E (Osage County)
  - a. Bird Creek Limestone
2. Stop 2: C of the N  $\frac{1}{2}$  N  $\frac{1}{2}$  sec. 21, T27N, R8E (Osage County)
  - a. Bird Creek Limestone
  - b. trace fossils
3. Stop 3: SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 20, T27N, R8E (Osage County)
  - a. Wakarusa Limestone (recognized by the USGS as a member of the Bern Limestone)
  - b. cryptozoon algae
  - c. crinoids
  - d. corals
4. Stop 4: C of the S  $\frac{1}{2}$  S  $\frac{1}{2}$  S  $\frac{1}{2}$  sec. 17, T27N, R8E (Osage County)
  - a. Pearsonia oil field
  - b. oil field brine spill site
5. Stop 5: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 36, T27N, R8E (Osage County)
  - a. Pawhuska Formation
  - b. Pearsonia Limestone Member (or Little Hominy?); (Pawhuska)
  - c. pelecypods
  - d. cephalopods
  - e. foraminifera *Triticites*
  - f. brachiopods
  - g. bryozoans
  - h. crinoids
6. Stop 6: C of the W  $\frac{1}{2}$  W  $\frac{1}{2}$  sec. 6, T26N, R9E (Osage County)
  - a. Pawhuska Formation
  - b. Pearsonia Limestone (Pawhuska)
  - c. Little Hominy Limestone Member (Pawhuska)
7. Stop 7: C of the S line of the SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 4, T26N, R9E (Osage County)
  - a. Vamoosa Formation
  - b. Elgin Sandstone Member (Vamoosa)

**Chaplin, J., Luza, K., Rodriguez, L., 2003, Field Guide to Geologic Features of Roman Nose State Park and Surrounding Areas, OGS: Open-File Report 15-2003, 35 p. (Field trip held May 2-4, 2003, Oklahoma Section American Institute of Professional Geologists Annual Meeting)**

1. Stop 1: SE  $\frac{1}{4}$  sec. 24, T17N, R12W (Golf Course Pullout) (Blaine County)
  - a. Blaine Formation

- b. Shimer Gypsum Member (Blaine)
  - c. Nescatunga Gypsum Member (Blaine)
  - d. Medicine Lodge Gypsum Member (Blaine)
  - e. Flowerpot Shale
  - f. Cimarron Gypsum Hills Physiographic Province
  - g. Cat Canyon
2. Stop 2: NW ¼ sec. 10, T18N, R12W (US Gypsum Plant) (Blaine) County)
    - a. Blaine Formation
    - b. Shimer Gypsum Member (Blaine)
    - c. Nescatunga Gypsum Member (Blaine)
  3. Stop 3: S line of sec. 1 and 2, T17N, R12W (Blaine County)
    - a. Pleistocene Terrace deposits
    - b. Dog Creek Shale
    - c. Southard Dolomite Bed (Dog Creek)
    - d. Watonga Dolomite Bed (Dog Creek)
    - e. Blaine Formation (Type reference standard for the Blaine)
    - f. Shimer Gypsum Member (Blaine)
    - g. Nescatunga Gypsum Member (Blaine)
    - h. Medicine Lodge Gypsum Member (Blaine)
    - i. Flowerpot Shale
  4. Stop 4: NE ¼ SE ¼ sec. 23, T17N, R12W (Big Spring) (Blaine County)
    - a. Ground water springs (Big Spring, Middle Spring, Little Spring)
    - b. Blaine Formation
    - c. Shimer Gypsum Member (Blaine)
    - d. Altona Dolomite Member (as construction material for swimming pool); (Blaine)

**Suneson, N.H., and Andrews, R.D., 2003, Guidebook to the Geology of the Cromwell Sandstone and Equivalent Units in the Lawrence Uplift, Arkoma Basin, Ouachita Mountains, and Ozark Uplift of Eastern Oklahoma: With Notes on Historic and Modern Coal Mines: OGS Open-File Report 1-2005, 131 p.**

1. Stop 1: NW ¼ NW ¼ sec. 32, T3N, R7E (Pontotoc County)
  - a. Union Valley Formation
  - b. Union Valley Limestone Member (Union Valley)
  - c. Cromwell Sandstone Member (Union Valley)
  - d. Springer Formation
2. Stop 2: SW corner sec. 3 and SE corner sec. 4, T2N, R7E (Pontotoc County)
  - a. Union Valley Formation
  - b. Cromwell Sandstone Member (Union Valley)
3. Stop 3: Along Canyon creek E ½ sec. 8, T1N, R7E (Pontotoc County)
  - a. Morrowan strata
  - b. Union Valley Formation

- c. Cromwell Sandstone Member (Union Valley)
- 4. Stop 4: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 29, T4N, R16E (Along small tributary to Brushy Creek) (Pittsburg County)
  - a. Morrowan shale
  - b. Morrowan sandstone (mapped as "Springer Formation" by Suneson and Hemish 1996)
  - c. Choctaw faults
- 5. Stop 5: center NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 31, T4N, R16E (Pittsburg County)
  - a. Wapanucka Formation
  - b. Wapanucka Limestone Member (Wapanucka)
  - c. Springer Shale Group
  - d. Morrowan shale
  - e. Choctaw Fault
- 6. Stop 6: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 34, T13N, R20E to N  $\frac{1}{2}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 3, T12N, R20E (Weber Falls) (Muskogee County)
  - a. Atoka Formation
  - b. McCully Formation
  - c. Greenleaf Lake Limestone Member (McCully)
  - d. shale "A" member (McCully)
  - e. Chisum Quarry Member (McCully)
  - f. Sausbee Formation
  - g. Brewers Bend Limestone Member (Sausbee)
  - h. Braggs Member (Sausbee)
- 7. Stop 7: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 31, T15N, R23E (Cherokee County)
  - a. Sausbee Formation
  - b. Braggs Member (Sausbee)
  - c. basal Morrowan sandstone (same age as Cromwell sandstone)
  - d. Fayetteville Formation
  - e. Hindsville Formation
- 8. Stop 8: W  $\frac{1}{2}$  SW  $\frac{1}{4}$  sec. 21, T15N, R20E to NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 28 T15N, R20 E (Braggs Mountain) (Muskogee County)
  - a. Atoka Formation
  - b. McCully Formaiton
  - c. Greenleaf Lake Limestone Member (McCully)
  - d. shale "A" member (McCully)
  - e. Chisum Quarry Member (McCully)
  - f. Sausbee Formation
  - g. Brewer Bend Limestone Member (Sausbee)
  - h. Braggs Member (Sausbee)
  - i. Pitkin Formation
  - j. Fayetteville Formation

**London, D. and Gilbert, M.C., 2006, Interpreting Igneous Textures: A Field Trip to Outcrops in the Cambrian Wichita Mountains Igneous Suite: Oklahoma Geological Survey Open-File Report 5-2006, 12 p.**

1. Stop 1: Sec 26, T6N, R21W (NW side of town of Granite, OK) (Willis Granite Quarry) (Greer County)
  - a. Reformatory Granite
  - b. Headquarters Granite
  - c. Carlton Rhyolite (as xenolith inclusions in Reformatory Granite))
  - d. granophyric texture
2. Stop 2: NW Sec 21, T2N, R18W (Just W of North Fork Red River on US HWY 62 ) (Jackson County)
  - a. Long Mountain Granite
  - b. miarolitic cavities
  - c. granophyric texture
3. Stop 3: NE Sec 21, T4N, R17W (just S of the section line road E of US 183) (Kiowa County)
  - a. Glen Mountain Layered Complex
  - b. Glen Mountain Layered Complex "L Zone"
  - c. anorthosite
4. Stop 4: SE Sec 5, T3N, R13W (at the base on the SE side of Little Mount Sheridan in the restricted area of the Wichita Mountains Wildlife Refuge) (Comanche County)
  - a. Roosevelt Gabbros
  - b. Sandy Creek Gabbro (Roosevelt)
  - c. Mount Sheridan Gabbro (Roosevelt)
  - d. Glen Mountain Layered Complex

**Boardman, D., and Puckette, J., 2006, Stratigraphy and Paleontology of the Upper Mississippian Barnett Shale of Texas and the Caney Shale of Southern Oklahoma, OGS: Open-File Report 6-2006, 86 P. (Field trip held March 3-5, 2006, South-Central Section Meeting of the Geological Society of America)**

1. Stop 1: SE ¼ SW ¼ sec. 35, T3N, R6E (Haas G) (Pontotoc County)
  - a. Caney Shale
  - b. Delaware Creek Member (Caney)
  - c. Ahloso Member (Caney)
  - d. Weldon limestone
  - e. pre-Weldon shale
  - f. Woodford Shale
  - g. *Goniatites americanus* (Caney)
  - h. *Goniatites multiliratus* (Caney)
2. Stop 2: sec. 26, T3N, R6E (Jeff Luke Shale Pit) (Pontotoc County)
  - a. Caney Formation
  - b. Sand Branch Member (Caney)
  - c. *Cravenoceras* (Caney)



- d. *Gnathodus bilineatus* (conodonts); (Caney)
- e. *Lochriea communtata* (conodonts); (Caney)
- 3. Stop 3: SW ¼ NE ¼ NW ¼ NE ¼ sec. 30, T1S, R2E (Murray County)
  - a. Sycamore Limestone
  - b. Woodford Shale
  - c. *Gnathodus texanus* (conodonts); (Sycamore)
  - d. *Taphrognathus varians* (conodonts); (Sycamore)
  - e. *Goniatites americanus* (ammonoid); (Sycamore)
- 4. Stop 4: SE ¼ sec. 25, T2S, R1E (Tulip Creek) (Carter County)
  - a. Caney Shale
  - b. Delaware Creek Member (Caney)
- 5. Stop 5: not in Oklahoma

**Luzza, K.V., and Keheley, W.E., 2006, Field Trip Guide to the Tar Creek Superfund Site, Picher, Oklahoma, OGS: Open-File Report 8-2006, 71 p. (Field trip held April 28-29, 2006, Oklahoma Section of the American Institute of Professional Geologists)**

- 1. Stop 1: E ½ NE ¼ SW ¼ NW ¼ sec. 21. T29N, R23E (Mahutska Chat Pile) (Ottawa County)
  - a. overview of the Picher mining history
  - b. what pile from lead and zinc ore mining
- 2. Stop 2: SE ¼ SE ¼ SW ¼ SW ¼ sec. 29, T29N, R23E (Ottawa County)
  - a. Tar Creek
  - b. acid mine drainage
- 3. Stop 2A: C of the S line of the SE ¼ SE ¼ SE ¼ sec. 30, T29N, R23E (Ottawa County)
  - a. chat processing plant
  - b. Central Mill tailings ponds
- 4. Stop 3: SW ¼ NW ¼ SW ¼ SE ¼ sec. 29, T29N, R23E (Ottawa County)
  - a. old town of Douthat (Century)
  - b. Admiralty mines 1-4
- 5. Stop 3A: NW ¼ NE ¼ SE ¼ SW ¼ sec. 29, T29N, R23E (Ottawa County)
  - a. Admiralty No. 1 collapse

**Cardott, B.J., Andrews, R.D., Miller, G.W., and Paxton, S.T., 2007, Woodford Gas Shale Field Trip, OGS: Open-File Report 1-2007, 54 p.**

- 1. Stop 1A: SE ¼ SE ¼ SW ¼ sec. 19, T1S, 2E (Murray County)
  - a. Caney Shale
  - b. Sycamore Formation
  - c. Hunton Group
  - d. Sylvan Shale
  - e. south limb of Washita Valley Syncline
- 2. Stop 1B: N ½ NE ¼ SW ¼ NE ¼ sec. 30, T1S, R2E (Murray County)
  - a. Woodford Shale (overturned beds)
  - b. south limb of Washita Valley Syncline

3. Stop 2A: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 25, T2S, R1E (Carter County)
  - a. Woodford Shale
4. Stop 2B: SE  $\frac{1}{4}$  sec. 25, T2S, R1E (Carter County)
  - a. Caney Shale
5. Stop 3: E  $\frac{1}{2}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 30, T2S, R1E (Henry House Fall Quarry) (Carter County)
  - a. Woodford Shale (complete section)
6. Stop 4: SW  $\frac{1}{4}$  sec. 36, T5S, R1E (McAlister Cemetery Quarry) (Carter County)
  - a. Woodford Shale
  - b. phosphate nodules

**Paxton, S.T., and Cardott, B.J., 2008, Oklahoma Gas Shales Field Trip, OGS: Open-File Report 2-2008, 113 p. (Filed Trip held Oct. 21-23, 2008)**

1. Stop 1A: NH NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 30, T1S, R2E (Murray County)
  - a. Woodford Shale (overturned)
2. Stop 1B: C NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 30, T1S, R2E (Murray County)
  - a. Woodford Shale (overturned)
3. Stop 2: EH SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 30, T2S, R1E (Carter County)
  - a. Woodford Shale (complete section)
4. Stop 3: SW  $\frac{1}{4}$  sec. 36, T5S, R1E (McAlister Cemetery Quarry) (Carter County)
  - a. Woodford Shale
  - b. phosphate nodules

**Nichols, R.F., 2009, Ouachita Front Range/Arkoma Basin Field Trip Guide: OGS Open-File report 1-2009, 175 p.**

1. Stop 1: SW  $\frac{1}{4}$  sec. 6, T5N, R25E (Wister Lake Spillway)(Le Flore County)
  - a. Atoka Formation (upper)
  - b. Heavener Anticline
2. Stop 2: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 20, T5N, R26E(Le Flore County)
  - a. Pine Mountain Syncline
  - b. Heavener Anticline
3. Stop 3: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 17, T5N, R26E (Le Flore County)
  - a. Savanna Formation
  - b. Savanna #2 sandstone
4. Stop 4: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 36, T5N, R25E (Le Flore County)
  - a. Hartshorne Formation
  - b. Atoka Formation (upper)
5. Stop 5: C E  $\frac{1}{2}$  sec. 12, T3N, R25E (Le Flore County)
  - a. Johns Valley Shale
6. Stop 6: SE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 17, T3N, R26E (Le Flore County)
  - a. Atoka Formation
7. Stop 7: NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 27, T2N, R25E (Le Flore County)

- a. Jackfork Group
- b. Wildhorse Mountain Formation (Jackfork)
- c. friable and cemented sandstones (Wildhorse Mountain)
- 8. Stop 8: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 34, T2N, R25E (Le Flore County)
  - a. Jackfork Group
  - b. Wildhorse Mountain Formation (Jackfork)
  - c. friable and cemented sandstones (Wildhorse Mountain)
- 9. Stop 9: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 36, T3N, R25E (Le Flore County)
  - a. Jackfork Group
  - b. Stanley Group
  - c. Chickasaw Creek Shale (siliceous); (Stanley)
  - d. Stanley-Jackfork contact
- 10. Stop 10: SW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 1, T2N, R25E (Le Flore County)
  - a. Jackfork Group
  - b. Wildhorse Formation (Jackfork)
  - c. friable and cemented sandstones (Wildhorse)

Stop 11 is not in Oklahoma

- 11. Stop 2-1: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 8, T7N, R21E (Haskell County)
  - a. Savanna Formation
  - b. *Calamites*
  - c. lycopods
- 12. Stop 2-2: W  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 23, T5N, R21E (Latimer County)
  - a. Atoka Formation
  - b. incomplete Bouma Sequences
- 13. Stop 2-3 (optional): C SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 23, T5N, R21E (Latimer County)
  - a. Spiro sandstone (basal unit of the Atoka)
- 14. Stop 2-4: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 11, T4N, R21E (Latimer County)
  - a. Johns Valley Shale
  - b. Woodford chert-Caney Shale olistolith
- 15. Stop 2-5: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 24, T4N, R21E (Winding Stair Mountain) (Le Flore County)
  - a. Atoka Formation (deep-water)
  - b. "Spiro sandstone equivalent" (Atoka)
- 16. Stop 2-6: C N  $\frac{1}{2}$  NW  $\frac{1}{4}$  sec. 2, T3N, R21E (Latimer County)
  - a. Stanley Group
- 17. Stop 2-7: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 30, and N  $\frac{1}{2}$  NE  $\frac{1}{4}$  sec. 31, T3N, R20E (Latimer County)
  - a. Stanley Group
  - a. Arkansas Novaculite
  - b. Missouri Mountain Shale
  - c. Polk Creek Shale
  - d. Bigfork Chert

- e. Womble Shale
  - f. Potato Hills
  - g. southern limb of an overturned anticline
  - h. Cedar Creek Thrust Fault
18. Stop 2-8: SE ¼ sec. 3, T3N, R19E (Latimer County)
    - a. Atoka Formation (deepwater)
    - b. "Spiro sandstone equivalent" (Atoka)
    - c. incomplete Bouma successions
  19. Stop 2-9: NE ¼ SE ¼ SW ¼ sec. 10, T4N, R17E (Latimer County)
    - a. Wapanucka Limestone
  20. Stop 2-10: SW ¼ SW ¼ SW ¼ sec. 10, T17E, R4N (Latimer-Pittsburg County line)
    - a. Atoka Formation
    - b. Spiro sandstone (basal unit of the Atoka)
    - c. Wapanucka Limestone

**Friedman, S.A., 2010, Coal-Bed Methane Potential of the Mineral Coal Bed (Senora Formation, Desmoinesian Series) Okmulgee County, Oklahoma, OGS: Open-File Report 1-2010. 22 p. (Field trip held Sept. 13, 2005, Biennial meeting of the Mid-Continent Section of the American Association of Petroleum Geologists Energy Minerals Division)**

1. Stop 1: sec. 1, T13N, R14E (Metropolis Mine) (Okmulgee County)
  - a. Senora Formation
  - b. coal

## **Special Publications**

**Stone, G.T., 1967, The Structure and Igneous Rocks of the Wichita Mountains, Oklahoma: First Annual Meeting the South Central Section of the Geological Society of America, Inc. Oklahoma Geological Survey Special Publication 67\_1 , 50 p.**

1. Stop 1: SE ½ sec. 11, T3N, R13W (Top of Mount Scott) (Comanche County)
  - a. Mount Scott Granite
2. Stop 2: NW ½ NW ¼ sec. 26, T6N, R14W (Bally Mountain) (Kiowa County)
  - a. Reagan Sandstone
  - b. diabase
  - c. Carlton Rhyolite
3. Stop 3: SW ¼ SW ¼ sec. 27, T6N, R14W (Bally Mountain) (Kiowa County)
  - a. Reagan Sandstone
  - b. diabase
  - c. Carlton Rhyolite
4. Stop 4: SW ¼ SE ¼ SE ¼ sec. 4, T3N, R15W (Ira Smith Granite Quarry) (Comanche County)
  - a. Mount Scott Granite
  - b. xenoliths

5. Stop 5: SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 19, T4N, R16W (Road cut) (Kiowa County)
  - a. Raggedy Mountain Gabbro Group
  - b. Raggedy Mountain M-Zone
  - c. Raggedy Mountain L-Zone
  - d. biotite olivine gabbro
  - e. xenoliths
  - f. microdiorite dikes
  - g. aplite dikes
  - h. anorthosite
6. Stop 6: NE  $\frac{1}{4}$  sec. 21, T4N, R17W (Kiowa County)
  - a. Intrusion breccia
  - b. Cold Springs "granite"
  - c. microdiorite
7. Stop 7: NE  $\frac{1}{4}$ , sec. 21, T4N, R17W (Kiowa County)
  - a. Raggedy Mountain Gabbro Group
  - b. Raggedy Mountain K-Zone
  - c. troctolite
  - d. anorthosite

**Johnson, K.S., and Denison R.E., 1973, Igneous Geology of the Wichita Mountains and Economic Geology of Permian Rocks in Southwest Oklahoma: Geological Society of America 1973 Annual Meeting Dallas, Texas, Oklahoma Geological Survey Special Publication 73\_2, 38 p.**

1. Stop 1: NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 19 T3N, R12W (View of Mt Scott from Lake Lawtonka) (Comanche County)
  - a. Mount Scott Granite
  - b. Carlton Rhyolite
  - c. Raggedy Mountain Gabbro Group
2. Stop 2: C N  $\frac{1}{2}$  SE  $\frac{1}{4}$  sec. 11, T3N, R13W (Top of Mount Scott) (Comanche County)
  - a. Mount Scott Granite
  - b. microlitic cavities
3. Stop 3: SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 11, T4N, R10W (Texas Gypsum Company Quarry) (Comanche County)
  - a. Cloud Chief Formation
  - b. gypsum (alabaster)
4. Stop 4: W  $\frac{1}{2}$  sec. 26, T6N, R14W (Bally Mountain area) (Kiowa County)
  - a. Honey Creek Formation
  - b. Reagan Sandstone
  - c. Carlton Rhyolite
  - d. welded tuff
5. Stop 5: C NE  $\frac{1}{4}$  sec. 21, T4N, R17W (Roosevelt area) (Kiowa County)
  - a. Raggedy Mountain Gabbros
  - b. Raggedy Mountain "K-zone"

- c. troctolite
  - d. anorthosite
  - e. olivine gabbro
6. Stop 6: C NE ¼ NW ¼ sec. 7, T5N, R18W (Kiowa County)
    - a. Lugert Granite
    - b. erosional features
  7. Stop 7: sec. 15, 16, 21, and 22, T5N, R20W (Quartz Mountain State Park) Greer County)
    - a. Lugert Granite
    - b. Reformatory Granite
  8. Stop 8: sec. 2, 4, 10, and 11, T6N, R26W (Harmon County Salt Plains, south of Erick) (Harmon County)
    - a. Blaine Formation
    - b. Flowerpot Shale
    - c. halite
  9. Stop 9: W ½ sec. 24, T2N, R23W (Republic Gypsum Co Quarry at Duke) (Jackson County)
    - a. Blaine Formation
    - b. Van Vacter Member (Blaine)
    - c. gypsum
    - d. dolomite
  10. Stop 10: sec. 3, 4, 9, 10, 15, and 16, T1S, R22W (Eagle-Picher Industries, Inc's copper mine at Creta) (Jackson County)
    - a. Flowerpot Shale
    - b. Prewitt copper shale (informal name of copper bearing shale bed of Flowerpot )
    - c. malachite
    - d. chalcocite

**Ham, W.E., 1973, Regional Geology of the Arbuckle Mountains, Oklahoma, OGS: Special Publication 73-3, 62 p. (Field trip held Nov. 10-11, 1973, The Geological Society of America Annual Meeting)**

1. Stop 1: Along I-35 starting at station 2323 +25 feet (2 mile walk) (Carter and Murray County)
  - a. Collings Ranch Conglomerate
  - b. Goddard Shale
  - c. Delaware Creek Shale
  - d. Sycamore Limestone
  - e. Woodford Shale
  - f. Hunton Group
  - g. Bois d'Arc Limestone (Hunton)
  - h. Haragan Limestone (Hunton)
  - i. Henryhouse Marlstone (Hunton)
  - j. Clarita Limestone (Hunton)
  - k. Cochrane Limestone (Hunton)

- l. Keel Limestone (Hunton)
  - m. Sylvan Shale
  - n. Viola Limestone
  - o. Simpson Group
  - p. Bromide Formation (Simpson)
  - q. Pooleville Limestone Member (Bromide)
  - r. Mountain Lake Member (Bromide)
  - s. Tulip Creek Formation (Simpson)
  - t. McLish Formation (Simpson)
  - u. Oil Creek Formation (Simpson)
  - v. Joins Limestone (Simpson)
  - w. Arbuckle Group
  - x. West Spring Creek Formation (Arbuckle)
  - y. Kindblade Formation (Arbuckle)
  - z. Cool Creek Formation (Arbuckle)
  - aa. McKenzie Hill Formation (Arbuckle)
  - bb. Butterly Dolomite (Arbuckle)
  - cc. Signal Mountain Formation (Arbuckle)
  - dd. Royer Dolomite (Arbuckle)
  - ee. Fort Sill Limestone (Arbuckle)
  - ff. Timbered Hills Group
  - gg. Honey Creek Limestone (Timbered Hills)
  - hh. Reagan Sandstone (Timbered Hills)
  - ii. Colbert Rhyolite Porphyry
  - jj. Arbuckle Anticline
2. Stop 2: SW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 36, T1S, R1E (Turner Falls overlook) (Murray County)
    - a. Collings Ranch Conglomerate
    - b. Cool Creek Limestone
    - c. McKenzie Hill Limestone
    - d. Carlton Rhyolite
    - e. travertine deposits
    - f. Washita Valley Fault
    - g. East Timbered Hills
  3. Stop 3: road cut on west side of I-35, NW  $\frac{1}{4}$  sec. 30, T1S, R2E (Murray County)
    - a. Woodford Shale
    - b. Hunton Group
    - c. Frisco Formation (Hunton)
    - d. Haragan-Bois d'Arc Formation (Hunton)
    - e. Henryhouse Formation (Hunton)
    - f. Chimneyhill subgroup (Hunton)
    - g. Clarita Formation (Chimneyhill)
    - h. Cochrane Formation (Chimneyhill)

- i. Keel Formation (Chimneyhill)
- j. Sylvan Shale
- 4. Stop 4: NE ¼ SE ¼ NE ¼ sec. 36, T1S, R1E (Murray County)
  - a. Collings Ranch Conglomerate
- 5. Stop 5: SW ¼ sec. 5, T3S, R7E (Johnston County)
  - a. Blue River Gneiss
- 6. Stop 6: C NE ¼ sec. 3, T3S, R5E (Capitol quarry at Ten Acre Rock) (Johnston County)
  - a. Tishomingo Granite
- 7. Stop 7: SW ¼ NE ¼ sec. 6, T2S, R5E (Pennsylvania Glass Sand Corp.) (Johnston County)
  - a. Oil Creek Sandstone
- 8. Stop 8: north-central part of sec. 26, T1S, R3E (Murray County)
  - a. Vanoss Conglomerate
  - b. Deese Group
- 9. Stop 9: N ½ SW ¼ SE ¼ sec. 15, T1S, R3E (Murray County)
  - a. Vanoss Formation
  - b. Oil Creek Formation
  - c. asphalt deposits

**Shelton, J.W., and Rowland, T.L., 1981, Guidebook to the Depositional Environments of Selected Pennsylvanian Sandstones and Carbonates of Oklahoma, OGS: Special Publication 74-1, 80 p. (Field trip held in 1974 and Sept. 20-22, 1981, 1974 annual meeting of the South-Central Section of the Geological Society of American, 1981 Mid-Continent Section of the American Association of Petroleum Geologists)**

- 1. Stop 1: NW ¼ NW ¼ sec. 25, T20N, R7E (Pawnee County)
  - a. Vamoosa Formation (upper unnamed unit)
- 2. Stop 2: C N ½ N ½ sec. 36 and C S ½ S ½ sec. 25, T20N, R7E (abandoned quarries) (Pawnee County)
  - a. Pawhuska Formation
  - b. Lecompton Member (Pawhuska Formation)
  - c. algal calcilutite (Lecompton)
  - d. brachiopod debris (Lecompton)
  - e. mollusk debris (Lecompton)
  - f. foraminifera debris (Lecompton)
  - g. ostracode debris (Lecompton)
  - h. bryozoan debris (Lecompton)
  - i. pelmatozoan debris (Lecompton)
- 3. Stop 3: C W ½ sec. 28, T19N, R7 E (N of Cimarron River bridge on State Highway 99) (Creek County)
  - a. Pawhuska Formation
  - b. Lecompton Member (Pawhuska Formation)
- 4. Stop 4: SW ¼ and NW ¼ sec. 9, T18N, R7E (on Highway 99) (Creek County)
  - a. Vamoosa Formation
  - b. Elgin Sandstone Member (Vamoosa)



5. Stop 5: NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 4 and NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 5, T17N, R7E and SW  $\frac{1}{4}$  sec. 33, T18N, R7E (Creek County)
    - a. Vamoosa Formation
    - b. Elgin Sandstone Member (Vamoosa)
  6. Stop 6: E  $\frac{1}{2}$  sec. 34, W  $\frac{1}{2}$  sec. 35, and W  $\frac{1}{2}$  sec. 26, T17N, R7E (abandoned quarry faces) (Creek County)
    - a. Pawhuska Formation
    - b. Lecompton Member (Pawhuska)
  7. Stop 7: NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 32, T17N, R7E (Creek County)
    - a. Pawhuska Formation
    - b. Lecompton Member (Pawhuska)
  8. Stop 8: SE  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 33, T17N, R7E, along Highway 16 (Creek County)
    - a. Vamoosa Formation (upper unit)
  9. Stop 9: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 4, T5N, R15E (Pittsburg County)
    - a. Savanna Formation (unnamed ss member)
    - b. underlying shale has thin coal
  10. Stop 10: S  $\frac{1}{2}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 18, T4N, R17E (Pittsburg County)
    - a. Wapanucka Formation
    - b. spiculites (Wapanucka)
  11. Stop 11: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 19, T5N, R18E (Latimer County)
    - a. Atoka Formation
    - b. burrows (Atoka)
  12. Stop 12: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 33, T5N, R18E (Latimer County)
    - a. Wapanucka Limestone
    - b. skeletal debris of brachiopods, mollusks, ostracodes, foraminifers (Wapanucka)
    - c. *Archaeolithophyllum* (algae); (Wapanucka)
    - d. *Girvanella* (algae); (Wapanucka)
    - e. *Osagia* (oncoliths); (Wapanucka)
    - f. *Hedraites* (foraminifer); (Wapanucka)
  13. Stop 13A: NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 29, T5N, R19E (road cut is on OK highway 2, about 2.5 mi south of Wilburton) (Latimer County)
    - a. Atoka Formation
    - b. distal turbidity-current deposits (Atoka)
  14. Stop 13B: SW  $\frac{1}{4}$  SW  $\frac{1}{4}$  sec. 27, T5N, R19E (Latimer County)
    - a. Atoka Formation
    - b. turbidity-current deposits (Atoka)
  15. Stop 14: SW  $\frac{1}{4}$  sec. 25, T10N, R18E (McIntosh County)
    - a. Boggy Formation
    - b. Bluejacket Sandstone Member (subsurface name is Bartlesville sand); (Boggy)
- Powell, B.N., and Fischer, J.F., 1976, Plutonic Igneous Geology of the Wichita Magmatic Province, Oklahoma: The Geological Society of America 10<sup>th</sup> Annual Meeting South-Central Section Houston, Texas, Oklahoma Geological Survey Special Publication 76\_1, 40 p.**
1. Stop 1: SE  $\frac{1}{4}$  sec. 11, T3N, R13W (Top of Mount Scott) (Comanche County)
    - a. Mount Scott Granite

- b. View of: Arbuckle Group, Carlton Rhyolite, Quanah Granite, Raggedy Mountain Gabbro Group, Mount Sheridan Gabbro, Meers Fault
- 2. Stop 2: SE  $\frac{1}{4}$  sec. 5, T3N, R13W (Little Mount Sheridan) (Comanche County)
  - a. granite (unspecified)
  - b. Raggedy Mountain Gabbro Group
  - c. Roosevelt Gabbro (Raggedy Mountain)
  - d. Mount Sheridan Gabbro (Roosevelt)
  - e. quartz diorite
  - f. granodiorite
  - g. xenoliths
- 3. Stop 3: NE  $\frac{1}{4}$ , sec. 32, T4N, R13W (Comanche County)
  - a. Raggedy Mountain Gabbro Group
  - b. pyroxene oikocrysts
  - c. epidote
  - d. prehnite
- 4. Stop 4: SW  $\frac{1}{4}$  sec. 32, T4N, R13W (Quarry at North Base of Mount Sheridan) (Comanche County)
  - a. Raggedy Mountain Gabbro Group
  - b. Roosevelt Gabbro (Raggedy Mountain)
  - c. Mount Sheridan Gabbro (Roosevelt)
  - d. Meers Quartzite
  - e. pegmatites
- 5. Stop 5: NE  $\frac{1}{4}$  sec. 21, T3N, R14W (Burford Lake/Panther Creek) (Comanche County)
  - a. Raggedy Mountain Gabbro Group
- 6. Stop 6: SE  $\frac{1}{4}$  sec. 4, T3N, R15W (Ira B. Smith Granite Quarry) (Comanche County)
  - a. Mount Scott Granite
  - b. xenoliths
  - c. molybdenite (trace amounts)
  - d. riebeckite pegmatite
- 7. Stop 7: NW  $\frac{1}{4}$ , sec. 4, T4N, R17W; SE  $\frac{1}{4}$  Sec 33, T5N, R17W (Road cut East of Roosevelt) (Kiowa County)
  - a. Raggedy Mountain Gabbro Group
  - b. troctolite
  - c. anorthosite
  - d. basalt dikes
  - e. aplite dikes
- 8. Stop 8: SE  $\frac{1}{4}$  sec. 15, T4N, R17W (Kiowa County)
  - a. Raggedy Mountain Gabbro Group
  - b. Raggedy Mountain "L-Zone"
  - c. Raggedy Mountain "M-Zone"
  - d. microdiorite
  - e. aplite

- f. intrusion breccia
- 9. Stop 9: SW ¼ sec. 21, T4N, R17W (Cold Springs “Granite” Co. Quarry) (Kiowa County)
  - a. Cold Springs “Granite”
  - b. microdiorite
  - c. leucogranite
  - d. aplite
  - e. tonalite
  - f. adamellite
- 10. Stop 10: SW ¼ sec. 1, T3N, R18W (Twin Mountain) (Kiowa County)
  - a. Lugert Granite
  - b. leucogranite-grabbro

**Johnson, K.S., Burchfield, M.R., Harrison, W.E., 1984, Guidebook for Arbuckle Mountain Field Trip, Southern Oklahoma, OGS: Special Publication 84-1, 24 p. (Field trip held July 28, 1984, Conference of Shallow Oil and Gas Resources sponsored by the United Nations Institute for Training and Research)**

- 1. Stop 1: NE ¼ NE ¼ SW ¼ sec. 31, T1S, R2E (Murray County)
  - a. Arbuckle Group
  - b. Kindblade Formation (Arbuckle Group)
  - c. West Spring Creek Formation (Arbuckle Group)
  - d. Collings Ranch Conglomerate
- 2. Stop 2: NE part of T3S and R1W and east-central part of T3S and R1E (Carter County)
  - a. tar sands of South Woodford area
  - b. Otterville? Sandstone
- 3. Stop 3: most of T1S, R3E (Murray County)
  - a. tar sands of Sulphur area
  - b. Oil Creek Formation
- 4. Stop 4: C sec. 31, T1S, R3E (Hunton Anticline and Hunton Quarry)(Murray County)
  - a. Woodford Shale
  - b. Hunton Group
  - c. Bois d’Arc Formation (Hunton)

**Suneson, N.H., Campbell, J.A., and Tilford, M.J., eds., 1990, Geology and resources of the frontal belt of the western Ouachita Mountains, Oklahoma: OGS Special Publication 90-1, 196 p.**

- 1. Stop 1: SE ¼ NW ¼ NW ¼ sec. 24, T5N, R19E (Latimer County)
  - a. Spiro sandstone (basal unit of Atoka Formation)
- 2. Stop 2: SE ¼ SE ¼ NW ¼ sec. 18, T3N, R20E (Latimer County)
  - a. Atoka Sandstone (on the Buffalo Valley School building)
- 3. Stop 3: SE ¼ sec. 3, T3N, R19E (Latimer County)
  - a. Atoka Formation
  - b. Johns Valley Shale

4. Stop 4: S  $\frac{1}{2}$  SE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 23, T4N, R17E (Latimer County)
  - a. major transverse structure (tear fault? thrust ramp?)
5. Stop 5: N  $\frac{1}{2}$  N  $\frac{1}{2}$  sec. 17, T4N, R17E (Dolese Quarry) (Pittsburg County)
  - a. Spiro sandstone (basal unit of Atoka Formation)
  - b. unnamed shale
  - c. Wapanucka Limestone
6. Stop 6: SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 5, T3N, R16E (Pittsburg County)
  - a. New State Mountain (Amoco Rosso Unit)
  - b. panoramic view of Ouachita Frontal Zone of Arkoma Basin
  - c. imbricate fan thrusts
  - d. Choctaw Thrust Fault
  - e. Haileyville Syncline
  - f. Craig Anticline
  - g. Kiowa Syncline
7. Stop 7: C E  $\frac{1}{2}$  W  $\frac{1}{2}$  sec. 32, T3N, R15E (Pittsburg County)
  - a. Atoka Formation
8. Stop 8: C NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  sec. 4, T2N, R15E (Pittsburg County)
  - a. Johns Valley Formation?
  - b. Caney Shale?
  - c. Woodford Shale?
  - d. Pinetop Chert
9. Stop 9: N  $\frac{1}{2}$  sec. 16, T1S, R12E (Stringtown Quarry) (Atoka County)
  - a. Bigfork Chert
10. Stop 10: NE  $\frac{1}{4}$  sec. 9, T1S, R14E (Atoka County)
  - a. Redden Oil Field
11. Stop 11: NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  sec. 4, T1N, R15E (Atoka County)
  - a. Waldrop Ranch Grahamite deposit (asphaltite)
  - b. Stanley Shale
12. Stop 12: S  $\frac{1}{2}$  SE  $\frac{1}{4}$  sec. 19, T1N, R15E (Atoka County)
  - a. Jackfork Group (type section)

**Johnson, K.S., 1990, Hydrogeology and Karst of the Blaine Gypsum-Dolomite Aquifer, Southwestern Oklahoma: Geological Society of America 1990 Annual Meeting, Dallas, Texas, Oklahoma Geological Survey Special Publication 90-5, 38 p.**

1. Stop 1: sec. 9 and 16, T4N, R22W (South of Mangum) (Greer County)
  - a. Blaine Formation
  - b. Van Vacter Member (Blaine)
  - c. Mangum Dolomite Bed (Van Vacter)
  - d. Elm Fork Member (Blaine)
  - e. Collingsworth Gypsum Bed (to the SE) (Elm Fork)
  - f. Creta Dolomite Bed (Elm Fork)

- g. Cedartop Gypsum Bed (Elm Fork)
  - h. Haystack Gypsum Bed (Elm Fork)
  - i. Flowerpot Shale
  - j. Hollis Basin
  - k. karst
2. Stop 2: sec. 23 and 26, T7N, R24W (Greer County)
    - a. Blaine Formation
    - b. Van Vacter Member (Blaine)
    - c. Mangum Dolomite Bed (Van Vacter)
    - d. Jester Cave ( in Blaine Formation)
    - e. Plainview Syncline
    - f. sink holes
    - g. gypsum
  3. Stop 3: N ½ sec. 35, T5N, R24W (South of Reed) (Greer County)
    - a. Blaine Formation
    - b. Van Vacter Member (Blaine)
    - c. Mangum Dolomite Bed (Van Vacter)
    - d. Horseshoe Valley Cave
    - e. Hollis Basin
    - f. gypsum
    - g. karst
  4. Stop 4: E ½ sec. 8, T4N, R22W (SW of Mangum) (Greer County)
    - a. Blaine Formation
    - b. Van Vacter Member (Blaine)
    - c. Acme Dolomite Bed (Van Vacter)
    - d. Mangum Dolomite Bed (Van Vacter)
    - e. Elm Fork Member (Blaine)
    - f. Creta Dolomite Bed (Elm Fork)
    - g. Cedartop Gypsum Bed (Elm Fork)
    - h. Jester Dolomite Bed (Elm Fork)
    - i. Haystack Gypsum Bed (Elm Fork)
  5. Stop 5: W ½ sec. 24 and E ½ sec. 23, T2N, R23W (Republic Gypsum Co. Quarry, South of Duke) (Jackson County)
    - a. Blaine Formation
    - b. Van Vacter Member (Blaine)
    - c. gypsum
    - d. dolomite
    - e. Late Pleistocene vertebrate fossils
    - f. sink holes
  6. Stop 6: NE ¼ sec. 12, T2N, R26W (SE of Hollis) (Harmon County)
    - a. Dog Creek Shale
    - b. Blaine Formation

- c. Blaine-Dog Creek contact (below ground)
  - d. irrigation Well
- 7. Stop 7: E ½ NE ¼ sec. 5, T2N, R25W (East of Hollis) (Harmon County)
  - a. Dog Creek Shale
  - b. recharge well
- 8. Stop 8: Near center N ½ sec. 18, T2N, R25W \*warning\* sink hole is continuing to develop and collapse of ground can occur without warning. (SE of Hollis) (Harmon County)
  - a. Blaine Aquifer
  - b. Van Vacter Member (Blaine)
  - c. Hollis Basin
  - d. recharge sink hole
  - e. dolomite
  - f. gypsum
- 9. Stop 9: SW ¼ SW ¼ sec. 36, T2N, R25W (Bullington Dam, South of Gould) (Harmon County)
  - a. Blaine Formation
  - b. Van Vacter Member (Blaine)
  - c. recharge sink hole
- 10. Stop 10: sec. 5, T2S, R 24W (Parking lot of the Cow Barn tavern) (Jackson County)
  - a. Red River
  - b. ground-water discharge

**Johnson, K.S. (ed), 1991, Arbuckle Group Core Workshop and Field Trip, OGS: Special Publication 91-3, 272 p.**

- 1. Stop 1: NE ¼ NE ¼ SW ¼ sec. 31, T1S, R2E (Murray County)
  - a. Kindblade Formation
  - b. megabreccia
- 2. Stop 2: NE ¼ SE ¼ SW ¼ sec. 31, T1S, R2E (Murray County)
  - a. lower Arbuckle Group
  - b. flower structure
- 3. Stop 3: NW ¼ NW ¼ NW ¼ sec. 7, T2S, R2E (Murray County)
  - a. lower Arbuckle Group
  - b. folding and thrusting discussion
- 4. Stop 4: SW ¼ SE ¼ NE ¼ sec. 36, T1S, R1E (Turner Falls overlook) (Murray County)
  - a. Cool Creek Formation
- 5. Stop 5: SE ¼ SE ¼ SE ¼ sec. 25, T1S, R1E (Murray County)
  - a. Cool Creek Formation
  - b. McKenzie Hill Formation
  - c. tufa-travertine deposits
- 6. Stop 6: W ½ SW ¼ sec. 19, T2S, R2E (Carter County), also at NE ¼ sec. 24, T2S, R1E (highway station 2405 on I-35) (Carter County)
  - a. West Spring Creek Formation

- b. Kindblade Formation
  - c. algal boundstones
  - d. collapse breccia
- 7. Stop 7: NE ¼ SE ¼ sec. 13, T2S, R1E along east side I-35 (Murray County)
  - a. Cool Creek Formation
  - b. bedded breccia
  - c. paleokarst
- 8. Stop 8: SE ¼ SE ¼ SE ¼ sec. 13, T2S, R1E (mile post 46, highway station 2423) (Murray County)
  - a. Kindblade Formation
  - b. parallel folds
  - c. shallowing-upwards cycles
- 9. Stop 9: secs. 18-19, T5N, R12W; on Highway 19, ~8 mi west of Apache (Caddo County)
  - a. Kindblade Formation
  - b. Permian karst features
- 10. Stop 10: ~7mi north of Comanche County; sec. 26, T6N, R14W (Kiowa County)
  - a. Arbuckle Group
  - b. Kindblade Formation (Arbuckle)
  - c. Cool Creek Formation (Arbuckle)
  - d. Thatcher Creek Member (Cool Creek)
  - e. McKenzie Hill Formation (Arbuckle)
  - f. Signal Mountain Formation (Arbuckle)
  - g. Fort Sill Formation (Arbuckle)
  - h. Timbered Hills Group
  - i. Honey Creek Limestone (Timbered Hills)
  - j. Reagan Sandstone (Timbered Hills)
  - k. unnamed glauconitic sandstone
  - l. unnamed lithic sandstone
  - m. unnamed conglomerate
  - n. Carlton Rhyolite
- 11. Stop 11: Secs. 35 and 36, T6N, R14W (Kiowa County)
  - a. Signal Mountain Formation
  - b. Fort Sill Formation
  - c. Bally dolomite (Fort Sill)
- 12. Stop 12: Sec. 25, T6N, R14W (Kiowa County)
  - a. Kindblade Formation
  - b. herringbone sandstone member (informal); (Kindblade)
  - c. Cook Creek Formation
  - d. McKenzie Hill Formation
- 13. Stop 13: Sec. 25, T6N, R14W (Leatherbury's Quarry) (Kiowa County)
  - a. Kindblade Formation
  - b. world's smallest oil field
  - c. Permian karst fissures

- d. indeterminate paleoniscoid teeth (Osteichthyes)
  - e. indeterminate labyrinthodont skull and jaw fragments (amphibia)
  - f. cf. *Euryodus primus* (microsaur)
  - g. indeterminate reptiles with laterally compressed, strongly recurved teeth
  - h. *Captorhinus aguti* (reptile)
  - i. cf. *Captorhinikos* sp. (reptile)
  - j. New caseid pelycosaur (reptile)
  - k. cf. *Myccterosaurus* sp. (a varanopseid pelycosaur) (reptile)
  - l. *Thrausmosaurus* sp. (possibly a varanospeid pelycosaur) (reptile)
  - m. *Delorhynchus priscus* (possibly a varanopseid pelycosaur) (reptile)
  - n. *Edaphosaurus* sp. (an edaphosaurid pelycosaur) (reptile)
14. Stop 14: sec. 28, T4N, R14W (Comanche County)
- a. West Spring Creek Formation
  - b. Kindblade Formation
  - c. Cool Creek Formation
  - d. Saddle Mountain dolomite (informal; locally includes part of West Spring Creek, most of Kindblade, and top part of Cool Creek)
15. Stop 15: sec. 11, T4N, R13W (Comanche County)
- a. Cool Creek Formation
  - b. Thatcher Creek Member (Cool Creek)
  - c. Blue Canyon Fault
  - d. parallel folds

**Cardott, B.J., and Chaplin, J.R., 1993, Guidebook for Selected Stops in the Eastern Arbuckle Mountains, Southern Oklahoma, OGS: Special Publication 93-3, 61 p. (Field Trip held Oct. 13, 1993, 10<sup>th</sup> Annual Meeting of the Society for Organic Petrology)**

- 1. Stop 1: SE ¼ SE ¼ NW ¼ sec. 31, T1S, R2E (Murray County)
  - a. Collings Ranch Conglomerate
  - b. Bromide Formation
  - c. Viola Springs Formation
  - d. intramontane alluvial fan complex
  - e. angular unconformity
- 2. Stop 2: NE ¼ SW ¼ NE ¼ sec. 25, T2S, R1E (Carter County)
  - a. Viola Springs Formation
  - b. graptolites
- 3. Stop 3: SE ¼ NW ¼ SE ¼ sec. 25, T2S, R1E (Carter County)
  - a. Sycamore Formation
  - b. Woodford Shale
  - c. Hunton Group
  - d. Bois d'Arc Formation (Hunton)
  - e. miospores (Woodford)



- f. acritarchs (Woodford)
  - g. algae (Woodford)
  - h. scolecodonts (Woodford)
  - i. conodonts (Woodford)
  - j. radiolarians (Woodford)
  - k. spicules (Woodford)
  - l. brachiopods (Woodford)
  - m. arthropods (Woodford)
  - n. gastropods (Woodford)
  - o. cephalopods (Woodford)
  - p. *Archaeopteris* (Woodford)
  - q. Cordaitales (Woodford)
  - r. *Callixylon* logs (Woodford)
4. Stop 4: SW ¼ SE ¼ NE ¼ sec. 36, T1S, R1E (Turner Falls overlook) (Murray County)
    - a. Cool Creek Formation
    - b. Carlton Rhyolite
    - c. traces of the Washita Valley and Chapman Ranch Fault Zones
    - d. travertine and tufa deposits
    - e. algal boundstones (Cool Creek)
    - f. karst
  5. Stop 5: SW ¼ SW ¼ NW ¼ SW ¼ sec. 30, T1S, R3E (Dougherty Asphalt Quarry) (Murray County)
    - a. Viola Group
    - b. asphalt quarry
    - c. exhumed reservoir
  6. Stop 6: SE ¼ SE ¼ NW ¼ sec. 31, T1S, R3E (Hunton quarry) (Murray County)
    - a. Woodford Shale
    - b. Hunton Group
    - c. Bois d'Arc Formation (Hunton)
    - d. Haragan Formation (Hunton)
    - e. Viola Group
  7. Stop 7: NW ¼ SE ¼ SW ¼ SE ¼ sec. 15, T1S, R3E (Murray County)
    - a. Simpson Group
    - b. Oil Creek Formation
    - c. asphalt quarry
    - d. exhumed reservoir

**Johnson, K.S. (ed), 1993, Hunton Group Core Workshop and Field Trip, OGS: Special Publication 93-4, 220 p.**

1. Stop 1: near center sec. 31, T1S, R2E (Murray County)
  - a. Arbuckle uplift overview
  - b. North flank of the Arbuckle Mountains

2. Stop 2: SE  $\frac{1}{4}$  sec. 25, T2S, R1E (Carter County)
  - a. Sycamore Limestone
  - b. Woodford Shale
  - c. Hunton Group
  - d. Clarita Formation (Hunton Group)
  - e. Cochrane Formation (Hunton Group)
  - f. Sylvan Formation-Hunton Group contact
3. Stop 3: SE  $\frac{1}{4}$  sec. 25, T2S, R1E (Carter County)
  - a. Hunton Group
  - b. Henryhouse Formation (Hunton Group)
  - c. Haragan Formation (Hunton Group)
  - d. Bois d'Arc Formation (Hunton Group)
  - e. Silurian-Devonian contact in the Hunton Group
4. Stop 4: SE  $\frac{1}{4}$  sec. 25, T2S, R1E (Carter County)
  - a. Woodford Shale
5. Stop 5: E  $\frac{1}{2}$  sec. 36, T1S, R1E (Turner Falls overlook)(Murray County)
  - a. Collings Ranch Conglomerate
  - b. Cool Creek Formation
  - c. McKenzie Hill Formation
  - d. Carlton Rhyolite
6. Stop 6: NW  $\frac{1}{4}$  sec. 30, T1S, R2E (Murray County)
  - a. Woodford Shale
  - b. Hunton Group
  - c. Haragan Formations (Hunton Group)
  - d. Henryhouse Formation (Hunton Group)
  - e. Chimneyhill subgroup (Hunton Group)
  - f. Sylvan Shale
7. Stop 7: NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 31, T1S, R3E (Hunton Anticline Quarry) (Murray County)
  - a. Woodford Shale
  - b. Hunton Group
  - c. Bois d'Arc Formation (Hunton)
  - d. Haragan Formation (Hunton)
  - e. Sylvan Shale
8. Stop 8: NE  $\frac{1}{4}$  sec. 11, T2N, R6E (Pontotoc County)
  - a. Hunton Group
  - b. Frisco Formation (Hunton)
  - c. Bois d'Arc Formation (Hunton)
  - d. Haragan Formation (Hunton)
  - e. Henryhouse Formation (Hunton)
9. Stop 9: NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  sec. 32, T3N, R6E (Pontotoc County)
  - a. Hunton Group
  - b. Bois d'Arc Formation (Hunton)

- c. Haragan Formation (Hunton)
  - d. Henryhouse Formation (Hunton)
10. Stop 10: sec. 36, T3N, R5E (Lawrence Quarry) (Pontotoc County)
- a. Hunton Group
  - b. Chimneyhill subgroup (Hunton)
  - c. Keel Formation (Chimneyhill)
  - d. Ideal Quarry Member (Keel)
  - e. Cochrane Formation (Chimneyhill)
  - f. Sylvan Shale

### **Publications Not Included**

Burkhalter, R., Czaplewski, N., and Lupia, R., 2002, Field Trip Guidebook 62<sup>nd</sup> Annual Meeting of the Society of Vertebrate Paleontology, OGS: Open-File Report 10-2002.

Decker, C.E., McGehee, R., Ulrich, E.O., 1930, Study of the Simpson Formation of the Arbuckle Mountains, OGS, 15 p. (Field trip held June 12-14, 1930 for the OGS 18<sup>th</sup> Field Conference)

Fay, R.O., 1989, Geology of the Arbuckle Mountains along Interstate 35, Carter and Murray Counties, Oklahoma, OGS: Guidebook 26, 59 p.

Gould, C.N., 1927, Arbuckle Mountains and the Ardmore Basin, OGS, 2 p. (Field trip held March 28-29, 1927)

Greene, D.A., 1936, Geologic Road Log: Tulsa to Sulphur, Oklahoma, OGS?, 6 p.

Ham, W.E., 1945, Mineral Resources Trip, Ada District, OGS, 22 p. (Field trip held November 30, 1945 for the 6<sup>th</sup> Annual Oklahoma Mineral Industries Conference)

Ham, W.E., 1946, Mineral Resources Trip, Ada District, OGS, 13 p. (Field trip held November 8-9, 1946 for the 7<sup>th</sup> annual Oklahoma Mineral Industries Conference)

Ham, W.E., 1950, Guidebook of Field Trip in the Arbuckle Mountains, OGS, 18 p. (Field trip held October 19-20, 1950 for Industrial Minerals Division AIME)

Johnson, K.S., 1968, Preliminary version of Guidebook for high school trips to the Arbuckle Mountains, OGS, 48 p.

Johnson, K.S. and McCasland, W., 1971, Highway Geology in the Arbuckle Mountains and Ardmore Area, Southern Oklahoma, OGS, 35 p. (Field trip held April 22, 1971 for the 22<sup>nd</sup> annual Highway Geology Symposium)