Done

E. O. Ulrich

North Arkansas, Ouachita Mt's, *Western*
(Franklin) Central Texas.

Nb. 5, 1902, 1904, 1906. *r 1911.*

U

LY

TRAVERSE BOOK

9-904

II. Season 1902 - in Northern Arkansas, Texas & the Ouachita mts of Ark. - Ind. Terr.

	Millstone grit -	400'
Bostongr. - Chester	Kessler li	
	Coal bearing shale	
	Pentremital li.	250'
	Washington shale & s.s.	
	Archimedes li.	80'
	Shaly s.s. & sh.	200'
	Marshall shale	250'
	Batesville s.s.	170'
	Fayetteville shale	300'
	Wynman s.s.	
	Boone chert & li.	320'
	St. Joe marble	50'
	Sylamore s.s.	40'
	Eureka sh.	0' - 50'
Silurian	St. Clair li.	
Richmond	Polk Bayou li.	12'
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As the section on the opposite page shows the whole of the Devonian deposition was irregular and of variable conditions. There were comparatively quiet intervals when, as far as 4,500', only shale was deposited, but all the other beds (3,600' + 8) are more or less conglomeratic. This is especially true of No. 8, which breaks the black phosphatic pebbles in largely made up of clear quartz grains 1/16 to 1/32 inch in dia. In its present condition No. 8 probably was sorted and laid down to form a level floor during early Carboniferous time - i.e. preceding Burlington which is indicated in No. 10. The black phosph. pebbles in No. 10 show that when it was being laid down there were still some nearly sand points or shales that were being sorted of Devonian strata.

An interesting & perplexing condition is shown about middle of cut where there are first two distinct bands of black shale, one of which, the upper probably, alone continued, after an interruption, to the N.W. end of the cut. So far as it seems to me now all of the beds in this section between the top of the St. Clair & the bottom of the St. Joe are of Devonian age and probably the whole is equivalent to the phosphatic horizon at the base of the black shale in W. Town. In support of this view is the character of the black shale members of this section which look more like the shales which often replace the purple bed in Tenn. than they do like the typical black shale above it. The fact that conglomerates occur here likewise points to the same conclusion.

Concerning the St. Clair & good the conditions seem to be practically the same as obtaining at the top of the Wills li. in Ind. Terr. where it is capped by Richmond. No break between them except change in character of li., the lower being compact & thin bedded, the upper massive & craggy.

From R. V. cut to m. West of St. Joe Ark.
On South West creek,
About 150 feet.

Good li.

1. Compact, bluish gray, almost black granitic li. Thin bedded - 20 feet.
2. Massive, rather coarsely craggy, mainly a light pink, no part bluish or light green. Traces of thin bedded Richmond age. Blends, few scattered some O. subquadrata Rhy. corymb. Top undulating. The Devonian No. 3 shale lying above. The long ago sorted surface is clearly shown by some of the blocks.
3. Blue, clayey, more or less phosphatic, irregularly bedded & shaly with shale. Few or no phosph. nodules. Few or no phosph. nodules.
4. Soft, yellowish shale. No nodules.
5. Black, greenish shale, occasionally with a few very small concretions at bottom. Some a small bryozoan.
6. Mostly hard, yellow - faintly green shales, with black phosph. nodules. 1/2-2" diameter. At 8' it includes two bryozoa, or bryozoan.
7. 1/2-8" thick, hard & in which the nodules are aggregated. At top it is mostly nodules with which is soft & decidedly greenish yellow, & contains no nodules. The matrix is dark gray or black.
8. Thin layers with phosphatic conglomeratic, in part being, as in the Syncline section.
9. A thin layer of soft, mud like yellow shale. At bottom it is bluish green, some with thin bedded Richmond age. Some with thin bedded Richmond age.
10. Red St. Joe massive - conglomeratic li. Black pebbles, some with thin bedded Richmond age. Some with thin bedded Richmond age.

(The Pilot)
Section of hills just west of Baker S. house
camp, 3 m. N.E., E. of St. Joe, Ark.
A hot climb! From Aug. 26th 1902.

maps of other contour interval, or the vertical distance in feet between one contour and the next, is stated at the bottom of each map. This interval varies according to the character of the area mapped; in a flat country it may be as small as 10 feet, in a

Aug. 28 -

Visited several outcrops of Chester, the portion in every case being the Archimedes li. at Loc. 5 however, which is at extreme top of this, Pentremites occur with the Archimedes - as might be expected. Loc. 5 furnished a large Camarophoria? which occurs also at Loc. 6. at Loc. 7 (all four exposures of Arch. li. are along a line & seem to face a fault) got only some rocks filled with a ^{Camarotoechia} Stenocrania-like brachiopod. This is basal ls. of Fayetteville group.

At Loc. 6 some s.s. (orig. calc. s.s. or aren. li.) with Archimedes & lamelli, may be on north side of fault or may be base of beds on S. side of fault.

Loc. 8. Well at St. Joe, Ark, exposes arenaceous li. Top of s.s. & shale overlying Boone chert. This horizon is in question, provided the terms Wyman and Batesville and Fayetteville and Marshal are not synonymous. The fossils collected at this well may settle the question.

Loc. 9. This same s.s. is well exposed at this loc. The trail-like markings are abundant and also another form, branching sparsely, with an invaginated cup structure. Got some good specimens. In shaly basal part a 3 ft. oolite and 1 ft. blue li. with fossils.

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St. Joe, Ark.

s.s.
 & Furcoid & Trails.
 Shale.
 Oolite
 shale.

11 ft. over 30 ft.

9

Aug. 28th 1902

Section of Devonian interval etc. 1 mile
East of Duff, Ark.

Within 1/4 m. east of R. R. cut the Devonian, together with shale beneath it, is reduced to about 6 or 7 feet, the Syl. ss. taking up less than 2 feet. Here and on to Buffalo where the thickness is but slowly reduced, the last exposure showing about 5 ft. with Syl. ss. very congl. and phosphatic and the green shale beneath it with decidedly black streaks, and on the whole darker.

Across Buffalo near mouth of Bear creek 15 to 20 ft. of Izard is shown in bluff. Has a small interconglutinal congl. at base. ~~No Polk Bayou~~ recognized here.

At west edge of Marshall the Wyman (Baltimore) ss. shows about 35 ft. of shale at base and ss. at top in which some is built. Some of the ss. layers are full of pebbles, particularly those immediately above shale. Some are blackish - a dark blue (cf. Co. (Cincinnati) near base of shale).

Section at hill $\frac{1}{2}$ m. S.E. of Marshall, Ark.

* Primarily by upper half of this section - equivalent to bed 5 of that section. More nearly all of it.

Provisional & sketchy section at
Batesville, Ark.

Compare Morrifield shale east of Batesville and oolite ls. at Spring Valley and Grindstone Mt. in Enreka Springs Quad. All of these are probably of early Chester age, in which case they would correspond to the str. given in form. of Miss. Valley.

Section of Carboniferous (Burd. Formation) between Mt. +
Burd, Lampasas co., Tex.

Sep. 19, 1902.

1. 5.5. 2'-3'
2. 3 1/2' shale with fossils.
3. 3' 3/4' brown, some ammonites, etc. 7' 1/2' with Tamarion fossils.
4. 125-30 ft. - Burd. Formation, with corals in several layers.
5. 6" 1/2' black shale etc.
6. 2' 1/2' sandy shale.
7. 2' 1/2' sandy shale.
8. 2' 1/2' sandy shale.
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100. 2' 1/2' sandy shale.

Section at $\frac{1}{2}$ mi. above Brand, San Saba co., Tex.
on south west bank of Colorado river.

22

J. W. Bader
Sept. 1904

Two miles S.W. of Chaparral, on Cherokee Creek, there is a good exposure of Band 12. 60-80 ft. thick. The top layers look like those at base of section on p. 21 and probably are to be correlated with them. 9th & 10th members of Noville form base about 40-50 ft. from top. Saw a *Siphonaria* near boundary between 10th & 11th members.

4 miles S.W. of Chaparral, on road to Cherokee, see also p. 21. The base of the Band 12 is shown. Several fossils. Fossils not described perhaps except below top of Band 12. The other fossils 25-30 ft above base of Band 12 are layers in middle of same band. *Strophomena* & a *Leptorhynchus*-like shell. (Some last seen again west of Thompson.)

1716—

about 25'

This being in contact with large numbers of sperm (Bosmina) from which the sperm comes to the surface and from the surface to the bottom. The sperm is the same as one in the water, and of the same size and shape. The sperm is the same as one in the water, and of the same size and shape. The sperm is the same as one in the water, and of the same size and shape.

Sutton 3 to 5½ miles west of Lampasas, Tex., along
Sutton creek.

Fayetteville Shale Sect.
Near SE corner of Sect 19, 17 N., 21 E.

This ls. thickens locally
westward becoming 15'±
in SW 1/4 of Sect 19, 17 N., 21 E.

H. D. Shale & Smith.
July 23 1904

Consult map

Pittkin-Brantwood Section
 SE. 1/4 of Sect 2. 16 N., 21 E.
 Muscogee ggc

July 22 1904
 U. T. Sh. & Sm.

See Map

Section west slope of Hill near
center of cut 25- 17 N., 20 E.

July 23 1904
H. P. Sh. & Son.

Section - Basal Fayellville
Shale. Sect. 6 16 N. 22 E., near east line
Muscowqua quad.

Black shale
Thin bedded light blue ls.
Very fossiliferous. Callulim
Black shale, few feet exposed.
Base not seen.

July 22, 1904
W. T. Sh. & Son.

Near center of Sect 6
16 N. 22 E. -

Fayellville shale.
Light blue ls., base not
exposed.

Contains new crinoids. also
known shells. Collections

July 22/04, W. T. Sh. & Son.

1560' 1565' 1570' 1575' 1580' 1585' 1590' 1595' 1600' 1605' 1610' 1615' 1620' 1625' 1630' 1635' 1640' 1645' 1650' 1655' 1660' 1665' 1670' 1675' 1680' 1685' 1690' 1695' 1700' 1705' 1710' 1715' 1720' 1725' 1730' 1735' 1740' 1745' 1750' 1755' 1760' 1765' 1770' 1775' 1780' 1785' 1790' 1795' 1800' 1805' 1810' 1815' 1820' 1825' 1830' 1835' 1840' 1845' 1850' 1855' 1860' 1865' 1870' 1875' 1880' 1885' 1890' 1895' 1900' 1905' 1910' 1915' 1920' 1925' 1930' 1935' 1940' 1945' 1950' 1955' 1960' 1965' 1970' 1975' 1980' 1985' 1990' 1995' 2000'

1400' 1405' 1410' 1415' 1420' 1425' 1430' 1435' 1440' 1445' 1450' 1455' 1460' 1465' 1470' 1475' 1480' 1485' 1490' 1495' 1500' 1505' 1510' 1515' 1520' 1525' 1530' 1535' 1540' 1545' 1550' 1555' 1560' 1565' 1570' 1575' 1580' 1585' 1590' 1595' 1600' 1605' 1610' 1615' 1620' 1625' 1630' 1635' 1640' 1645' 1650' 1655' 1660' 1665' 1670' 1675' 1680' 1685' 1690' 1695' 1700' 1705' 1710' 1715' 1720' 1725' 1730' 1735' 1740' 1745' 1750' 1755' 1760' 1765' 1770' 1775' 1780' 1785' 1790' 1795' 1800' 1805' 1810' 1815' 1820' 1825' 1830' 1835' 1840' 1845' 1850' 1855' 1860' 1865' 1870' 1875' 1880' 1885' 1890' 1895' 1900' 1905' 1910' 1915' 1920' 1925' 1930' 1935' 1940' 1945' 1950' 1955' 1960' 1965' 1970' 1975' 1980' 1985' 1990' 1995' 2000'

1300' 1305' 1310' 1315' 1320' 1325' 1330' 1335' 1340' 1345' 1350' 1355' 1360' 1365' 1370' 1375' 1380' 1385' 1390' 1395' 1400' 1405' 1410' 1415' 1420' 1425' 1430' 1435' 1440' 1445' 1450' 1455' 1460' 1465' 1470' 1475' 1480' 1485' 1490' 1495' 1500' 1505' 1510' 1515' 1520' 1525' 1530' 1535' 1540' 1545' 1550' 1555' 1560' 1565' 1570' 1575' 1580' 1585' 1590' 1595' 1600' 1605' 1610' 1615' 1620' 1625' 1630' 1635' 1640' 1645' 1650' 1655' 1660' 1665' 1670' 1675' 1680' 1685' 1690' 1695' 1700' 1705' 1710' 1715' 1720' 1725' 1730' 1735' 1740' 1745' 1750' 1755' 1760' 1765' 1770' 1775' 1780' 1785' 1790' 1795' 1800' 1805' 1810' 1815' 1820' 1825' 1830' 1835' 1840' 1845' 1850' 1855' 1860' 1865' 1870' 1875' 1880' 1885' 1890' 1895' 1900' 1905' 1910' 1915' 1920' 1925' 1930' 1935' 1940' 1945' 1950' 1955' 1960' 1965' 1970' 1975' 1980' 1985' 1990' 1995' 2000'

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1 1/2 miles south of Morrow, Ark.
SE 1/4 of Sect 6 13 N., 32 W.
Section by J. A. Gaff.

eat extent I could not
spoken to the man that
Pittsburg mines of which
body's statements are in
was only a small strip
aining very little lead
I wrote you was from
not as yet had an oport
m Dike, Springs ward.
ens tunnel No. 2 where s
feet deep, and still get
of spar with some lead
om water level to about
Below 80

R. H. Hunt
14. 2. 1884 - continued from
highly porous
michener
Brentwood Co.
Main fault
Top of Pittsburg

oil to any great extent I could not see much chance for
conditions.

Sincerely yours,

F. Julius Frohe

P.S.- I have spoken to the man that was foreman while the work was be
done at the Pittsburg mines of which, Mr. Moody wrote you of and he inf
me that Mr. Moody's statements are incorrect. He says that the vein of
lead and spar was only a small stringer cut in a crosscut, less than 2
wide and containing very little lead. The vein cut in the crosscut at
feet of which I wrote you was from 3 to 9 feet wide, spar mixed with s
calcite.

I have not as yet had an opportunity to investigate the supposed
in the Old Jim Dike, Springs ward.

Sincerely yours,

F. J. F.

At Stevens tunnel No. 2 where shaft was they have sunk this about
one hundred feet deep, and still get clay with some flints. They have
small pieces of spar with some lead and zinc I was told by Mr. Stevens
this clay. From water level to about 85 feet the clay was pink. Water
Below 85 feet clay was white again (was 40'.

Sections & structure in R.R. cut at
Fayetteville, Ark. Aug. 14th 1904.

Section of Franklin Mts. near E 1/2 Sec 20, T40N R10E S10E
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
made by E.O. Ulrick
Oct. 23, 1911.

X

At A. 10 - Western side of Dupson Valley.

Base of mountain with shales & s.s. The s.s. gradually becoming heavier and more frequent in climbing mt. till at top it appears to be solid s.s. arranged in steps the depressions possibly holding shales. The strike is N. 20 W and the dip from base to summit almost uniformly 30° west, though at base it seems to be perhaps 5 to 8 deg. less.

The series presents no evidence of faulting but appears to be continuous.

The base evidently is Standley the top of mt. apparently Jackfork (?) base.

Section at A. 11 east across valley to Mountain

At top of ridge strike dip 12° E & strike N. 5 E.

Top of ridge is 10 ft. above base of valley.

5. 27. 29. *Wagon* *supplies* *7.45*
Transport *supplies* *Same to 7.45*
Supplies *in route* *1.40*
 (P. R. *supplies* *to 7.45* *7.45*)
Supplies *in route* *3.00*
 1. 30 *Portage* *25*

+ other *supplies* *in route* *7.214, 17.4*
Wagon *supplies* *7.45*

At the *O'Flannery* mine, 14.9.6 W, 5.4.22.

14.9.6 W, 5.4.34, at the *Green* place.

East side of *Old* *Bayou* just above the *first* *fall*
 of the *Bayou* in the *wagon* road north from
Barkerville.

St. *Charles* *Spring*
 Best *location* for *supplies* of St. *Charles* *Spring*.