

Measured
sections
Mt. Jadea

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOOSE-LEAF FIELD NOTEBOOK

9-137

1. South Horn Mt. ✓
2. Sycamore Hollow ✓
3. Lower Iceledo ✓
4. Atoka section ✓
5. Limestone ✓
6. Campbell Creek ✓
7. Cow Creek ✓
8. Whiteley Creek #1 ✓
9. Whiteley Creek #2 ✓

December 9, 1953

South Horn Mountain Section
SE $\frac{1}{4}$ sec 36, T15N, R19W
Measured and sampled by
Frezin & Glick

Section starts in Hurricane Hollow
in North central part of sec 2, T14N, R19W
where Pitkin top goes under at
about 1390. The top of the
Pitkin limestone is not clearly
exposed, but Pitkin? limestone
float is present 52 feet (HA) below
the ^{base of} first outcrop of siltstone
which is the first sample SH-1

Pitkin? Limestone float

Covered interval 52' 0"

This interval contains
float blocks of "Hole type"
sandstone interbedded with
siltstone. The sandstone is
very fine to fine grained and
contains crinoid columns and
spirifer brachiopods - gives no
lime reaction

SH-1 siltstone - medium gray to olive 5' 3"
gray, very finely sandy
thin bedded. No lime reaction

SH-2 siltstone as above 2' 0"

December 9, 1953
South Horn Mountain Continued

Covered interval 130' 0"

Most of this unit seems to be shale. However, float blocks 1 ft thick of fine grained fossiliferous Halo type sand that appears to come from a zone not more than 20' above the siltstone in SH-2.

- SH-3 Shale, dark gray, fissile, 1' 6"
makes slightly irregular contact with
overlying sandstone
- SH-4 Sandstone, massive, medium to 3' 0"
coarse grained, conglomeratic with
pebbles of ^{wh}quartzite and shale
Quartzite pebbles up to 3/4" in length
near middle of unit. Some brachiopod
molds & possible crinoid columnal
molds. Coarsely cross bedded
- SH-5 Sandstone, brownish gray, ^{medium to} coarse 5' 0"
grained, leached. Contains few
scattered white quartzite pebbles as in
underlying bed. Coarsely cross bedded
- SH-6 Sandstone, brownish gray, iron stained 3' 0"
medium to coarsely grained, leached.
Contains quartzite pebbles as in underlying
beds. Coarsely cross bedded. Contains
bryozoans as part of debris from other
formations

December 19, 1953

South Horn Mountain (continued)

SH-7 Sandstone, brownish gray iron stained, medium to very coarsely grained. Few scattered white quartz pebbles but fewer and smaller than in underlying beds. This unit is the top of a sand sequence which forms a pronounced bench around the mountain. The top layer of sand is studded with many white quartz pebbles up to 1/2" in length. 2'3"

Covered Interval 20' 0"
 May be shale because of flat slope and bench.

SH-8 Siltstone, kaolki, medium to thin bedded, hard, limy, with mica; base not exposed. Contains f-medium sand grains up to almost a sandstone. Some woody plant material. 1' 8"

SH-9 Sandstone dark brown stained, kaolki thick bedded, limy, f-medium grained. A single bed. 2' 11"

SH-10 Sandstone and siltstone, thin fissile kaolki colored siltstone, v of limy & f to c grained, kaolki, sl limy sandstone in beds about 2" thick. Interbedded irregularly with plant fragments on bedding planes. 1' 5"

Dec 9, 1953
South Horn Mountain (Continued)

- | | | |
|-------|---|------|
| SH-11 | Sandstone, khaki, f to medium grained, limy, contains clay pebbles up to $\frac{3}{4}$ ". A single bed. | 1'7" |
| SH-12 | Sandstone, medium bedded, f to medium grained, slightly limy. Contains some faint impressions of brachiopods. Upper 1" contains many quartz pebbles | 5'5" |
| SH-13 | Sandstone, khaki colored, f-medium grained, medium bedded, very limy; weathers to a soft sandstone. Badly weathered and decalcified on outcrop. Upper 4" has v. sd grs & wh. quartzite pebbles | 3'5" |
| SH-14 | Limestone, massive bedded, med. gray clastic, extremely sandy with coarse to medium sand grains. Lower 6" has v. coarse sd to pebbles of quartzite and clay. Pebble material occurs irregularly through the bed. Weathers to rounded, smooth, slope which tends to exfoliate. Sand appears to be both quartzite and quartz. Contains many fossil fragments. | 5'0" |
| SH-15 | Limestone as below (SH-14) | 5'8" |

Dec 9, 1953
South Horn Mountain Section (Cont'd)

- SH-16 Limestone, massive, medium gray 6'5"
v. sandy, f-medium grained &
scattered quartz pebbles, weathers
rounded & smooth with exfoliated
surface. This unit is so sandy, may
be a very limy sandstone. The pebbles grade
out in upper part of unit.
- SH-17 Sandstone, thin bedded, medium 3'6"
gray, very limy, medium to coarse
grained with some v. coarse sand;
slightly glauconitic
- SA-18 Sandstone, thin bedded to fissile, silty, 3'0"
limy; with scattered quartzite pebbles.
Some paper thin, kabki shales as partings
- SA-19 Sandstone, thin to medium bedded, kabki 4'0"
to brownish gray, f-med. grained
very limy. Fucoidal markings on
upper surface
- SA-20 Sandstone, massive, cross-bedded 5'0"
medium to coarse grained, very limy,
containing 1/4" quartzite pebbles
medium gray in color; fossil fragments,
some nearly 1/2" to 3/4" sd and lime
- SA-21 Sandstone, massive, very limy, 5'0"
cross bedded, light gray, contains
fossil frags., f to coarse sd. grains
with scattered white quartz pebbles

Dec 9, 1953

South Horn Mountain Section (Cont'd)

SH-22	Sandstone as below (SH-21)	5'0"
SH-23	Sandstone (same as SH-21) few scattered gtz. pebbles	5'0"
SH-24	Sandstone (same as SH-21) has some scattered gtz pebbles	3'0"
SH-25	Sandstone (same as SH-21) contains shale and quartzite pebbles	5'0"
SH-26	Sandstone (same as SH-21)	5'0"
SH-27	Sandstone (same as SH-21)	5'0"
SH-28	Sandstone (same as SH-21) Cross bedding in this unit is truncated by overlying unit SH-29 Quartzite pebbles and shale pebbles increase in quantity. More limy than underlying units (?) Very glauconitic & limy in upper 8 inches	6'0"

December 10, 1953

SH-29	Sandstone, massive bedded, brownish gray, very limy, f. to medium grained glauconitic, very hard, containing few scattered shale pebbles. Locally the lower few inches of this unit is a conglomerate, containing white quartz and clay pebbles with	6'0"
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December 10, 1953

South Horn Mountain Section (Cont'd)

- SH 29 (Cont'd) Fine to medium grained sand.
- SH-30 Sandstone brownish gray, fine to medium grained, very limy, glauconitic, containing many fossil fragments. Cross bedded 1'3"
- Covered interval 2'9"
- SH-31 Sandstone, thin to medium bedded, khaki colored, badly weathered with fossil fragments (brachiopods) very porous, leached (?). In upper 1' the unit is very conglomeratic with clay pebbles and very limy (probably almost a limestone) 3'2"
- SH-32 Sandstone, Medium to thick bedded, somewhat cross bedded, dark brownish gray, limy, finely to medium grained, glauconitic 5'2"
- SH-33 Sandstone as SH-32 except more massive and cross bedded 6'10"
- SH-34 Sandstone as SH-32 except weathers soft, f-medium grained decalcified sandstone 6'6"

December 10, 1953

South Horn Mountain Section (Cont'd)

- SH-35 Sandstone, platy to thin bedded 6' 0"
khaki colored, slightly lumpy
fine grained; form a calcareous
conglomerate at base with shale
pebbles: $\frac{1}{2}$ " to $\frac{3}{4}$ ". One 3" long.
Congl. has v coarse s.d.g.s. Appears
to be more fine. This cong. is
lower 1' of unit
- Covered interval 5' 0"
- SH-36 Limestone, brownish gray, platy 1' 5"
to medium bedded, very sandy
with f-v coarse sd gray, fossil
fragments, and white quartzite
and shale pebbles. Glauconitic
- SH-37 Sandstone, khaki, very fine grained 4' 0"
to siltstone, thin to platy
A siltstone with 6" of sandstone
in middle of unit (coarser grained
and thicker bedded)
- Covered interval 6' 4"
- SH-38 Shale, paper thin, fissile 2' 8"
khaki colored, lower 4" is
khaki colored, medium grained
locally bedded sandstone

December 10, 1953

South Horn Mountain Section (Cont'd)

	Covered interval	4' 0"
SH-39	Sandstone brownish grey, medium to thick bedded, very fine grained slightly limy, leached and soft.	5' 2"
SH-40	Sandstone, thick bedded, fine grained, very soft & decalcified	4' 11"
	Notes: SH-39 & SH-40 form a ridge across hill with covered slope above and below the ridge	
	Covered interval Probably sandstone	3' 0"
SH-41	Sandstone pinkish colored, decalcified soft, medium to thick bedded, fine grained forms rounded out crop.	5' 0"
SH-42	Sandstone as SH-41	5' 8"
SH-43	Sandstone as SH-41	4' 8"
SH-44	Sandstone as SH-41	5' 0"
SH-45	Sandstone as SH-41	5' 0"
SH-46	Sandstone as SH-41	5' 6"
SH-47	Sandstone as SH-41	3' 8"

South Horn

Covered interval 10' 0"

SH-48 Sandstone brownish gray fine 1' 3"
graded very limy

Covered interval - top kabki sh sample 60' 0"
in SH-49

SH-49 Sandstone, fine to medium graded 7' 0"
massive, reddish brown (rust)

Covered interval; ^{to Aloka pass} probably underlain 34' 0"
siltstone as SH-50; exposed in
places on slope

SH-50 Siltstone olive gray, fissile to
platy, non-limy, very finely
sandy. the top of this exposure
is 6' 0" from top of dirt 3' 0"

SH-51 Sandstone, ^{thick to} massive, cross bedded
f. & graded with v. c. gravels
and pebbles of white
quartzite. approx 24'

Finis 11:50 AM
12/10/53

APRIL 30, 1954

Sycamore Hollow SECTION
T. 15N R. 17W.

SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 2A in stream
bottom along the Eastern main tributary
of Sycamore Hollow, upstream toward the
NORTH end of HORN Mountain.

No base exposed of St. Clair Ls.

T
SH-1
5'-3"

Ls - med. pinkish gy to Lt. pinkish gy
thin to med bedded. F gran to
med xlln. containing brachi
trilobites, gastropods. Contains
flesh colored xls. ~~contains~~ xlln
calcite in this zone.

T
SH-2
5'-3"

Ls as below. Some vertical
seams up to $\frac{1}{2}$ " wide
containing med. dark gy. F gran to
F xlln. Sandy Ls. Contains
crinoid, brachs, cephalopods (akithoceras)

T
SH-3
4'-6"

Ls as below. contains cephalopods,
trilobites, brachs.

T
SH-4
4'-8"

Ls - as below. No Fossils noted.

T
SH-5
2'-3"

Ls as below. NO cracks (filled) as
below (SH-2 thru SH-4) - top of St. Clair Ls

T
SH-6
2"

Ls med gy F gran to F xlln.
Sandy to v. sandy grading into limy ss.
in some stringers. Contains pebbles
and small cobbles of black
phosphatic material. Slightly pyritic
v. thin bedded.

Sycamore Hollow section

T
SH-7

7"

LS f gran to f xlm med.
gy, v. thin bedded. Contains
numerous small crinoid columnals
Vogy. (small) caused by alteration
of pyrite to limonite, pyrite
limonite.

T
SH-8
3'-1"

LS - within to thin bedded, med. gr. gy.
Contains numerous crinoid frags
f. granular.

T
SH-9
4'-11"

LS - med gray f gran. to v.f. xlm.
thin to med bedded. contains pyrite
& crinoid columnals.

T
SH-10
5' 4"

Chert gy to dk gy thin to med.
bedded. irregularly bedded. containing
some irregular beds of med gr.
f gran to f xlm. siliceous LS w/
lenses of dk gy chert.

T
SH-11
5'-3"

chert w/ LS as below. LS definitely
minor in amount overall.

T
SH-12
5' 9"

Chert w/ LS as below. - LS occurs only
as lenses in chert. - no beds of LS
as such.

3/4/54

T
SH-13
11' 4"

Chert as #12 -- slightly more limestone in upper
part.

5/14/54

Sycamore Hollow section (cont.)

- T
SH-14 11' 0" Chert and limestone, medium bedded
Chert - medium to medium dark gray
slightly limestone w/ blueish-gray stringers
limestone - medium to medium dark
gray, finely granular to finely
crystalline
Chert and limestone are mixed together
in same bed as lenticular masses
1' to 2' across. Probably slightly more
limestone than chert.
- T
SH-15 9' 6" Chert and limestone as #14 - top 4'
poorly exposed or covered but
appears to be as below and above
- T
SH-16 11' 0" As # 14
- T
SH-17 11' 0" As # 14 - Chert slightly lighter colored
where weathered in creek bottom
- T
SH-18 11' 0" As # 14 - Chert is in part medium-
brownish-gray with brownish-gray
streaks. Otherwise it is medium-gray
to medium-dark gray. Probably
more chert than limestone. Upper
5' almost pure chert.
- T
SH-19 11' 0" As # 14 -
Upper 4 1/2' covered - probably as above and
below. Still more chert than limestone
Chert is limy as below

5/14/54

Sycamore Hollow Section (cont.)

5H-20
11' 0"

As # 19

5H-21
11' 0"

Limestone and chert - bedding irregular - not readily apparent - thin to medium? chert - light brownish gray with brownish-gray streaks - limy
Limestone - medium to medium dark gray finely granular to finely crystalline - no fossils
Limestone and chert in irregular lenticular masses from 1" to 2' across. Upper 3' has more limestone than chert - otherwise about 50% limestone

5H-22
11' 0"

As # 21 - about 50% limestone

5H-23
11' 0"

As # 21 - More limestone than chert in upper 2' very little chert, limestone nearly medium crystalline in part. one brachiopod cast noted. (lowest Grand Falls?)

5H-24
11' 0"

Limestone and chert - bedding irregular and not too apparent - probably medium-bedded

More limestone than chert. Limestone is medium-gray, fine-medium crystalline - very fossiliferous (crinoids and brachiopods) in part.

Chert - very light gray to brownish-gray in beds 3" - 4" thick in lower $\frac{1}{2}$ of unit and in lenses 1' to 2' long - very fossiliferous in upper $\frac{1}{3}$ of unit in very small to large lenses.

5/14/54

Sycamore Hollow (cont)

- SH-25^T Chert & limestone - no bedding apparent
11' 0" Mostly limy chert with irregular patches of limestone
Chert, limy, light gray finely granular some brownish-gray streaks. Very fossiliferous - crinoids and brachiopods - in part.
Limestone patches (only a few) medium-dark gray, finely to medium crystalline
- SH-26^T As #25 -- some of the limestone is very fossiliferous. No chert in upper 4'.
11' 0"
- SH-27^T Limestone ^{thin to} medium-bedded slightly lenticular medium-dark gray to medium light brownish gray. Mostly medium-crystalline with some finely crystalline beds which contain some medium-crystals. 1' 6" ± (poorly exposed) medium-brownish gray dense to very finely granular limy chert in center of unit. Otherwise all limestone
11' 0"
- SH-28^T Limestone - medium to thick bedded, light brownish-gray, finely granular to medium-gray finely crystalline
(snake)
11' 0"

5/14/54

Sycamore Hollow Section (cont)

SH-29 As in #28
11' 0"

SH-30 Limestone, massive? (bedding not
11' 0" apparent) light ^(most) to medium-gray
finely granular to finely
226' 4" crystalline. No chert apparent
Limestone is siliceous in part.

SH-31 Limestone, medium to thick bedded
11' 0" light gray to light brownish-gray,
finely granular. Weathers to white
porous siliceous residue.

SH-32 Limestone, medium to thick-bedded
5' 0" light gray to light brownish-gray finely
granular and medium-gray, medium
crystalline (upper part only)

Cori
11' 0"

SH-33 Limestone, medium to thick-bedded
11' 0" medium to light gray finely
granular to medium-crystalline,
siliceous?, very fossiliferous
brachiopods up to 2" across, crinoids)

SH-34 Limestone - medium-bedded very light
11' 0" gray finely granular. Part is
siliceous grading into limy chert,
some medium-gray fine to medium
crystalline limestone

May 4, 1959

Lower Iceledo Section

on small tributary of East Fork of
Cave Creek. Section starts at
Junction of Tributary and E. Fork
of Cave Creek. This tributary
has its head below the Iceledo
School.

NE $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ SEC. 15, T14N, R. 19W.

- LI-1
7' 0" Ls - Lt gy to Lt. olive gy, med. bedded.
~~thin~~ F to med. Xltn. No chert beds
or Lenses noted.
- 3' + covered interval - best estimate -
may be slightly great.
- LI-2
4' 4" Ls - massive - Lt to med gy
very oolitic. Slightly cross laminated.
oolites have a light gy coating w/
darker central part.
- LI-2 Not connected w/ remainder of
oolite section but apparently the top two
feet tie in w/ the overlying
continuous exposure.
- LI-3
5' 6" Ls as below w/ faint oil odor.
- LI-4
5' 6" Ls as below w/ Fossiferous Lens
Upper half of zone - crinoid
Colonials bryozoan oolite otherwise
non-fossiliferous as Foss was
observed below this zone.

Lower iceleda section

may 1

- LI-5 6'-6" LS - Lt gy v. oolitic massive bedded - Fossil frags??
Cross-laminated - bryozoa
Small lens near middle of unit only sl. oolitic.
- LI-6 2'-6" LS - Lt to med gy. F. to med xlm. sl. oolitic to oolitic in lower $\frac{1}{3}$ and grades upward into non oolitic LS upper 8" are siliceous F gran Foss. ls. or limy chert. - med bedded
- LI-7 2' 0" Chert med gy med bed F gran. Ev. limy
Top of Bruce Form.
- LI-8 2' 0" trace of bone pebbles in shale at base. Shale blue gy weath. to yellow silty - in middle of zone 5" LS med to dk gy F gran. Foss thin bedded - some pyrite
- LI-9 1' 3" LS - med. bedded. med to dk gy F gran. Foss. sl. oolitic in part silty. *Petriliferus adox.*
- LI-10 2' 0" Siliceous khaki to gy platy to v. thin bedded abundant Fossiliferous Pyrites F gran tends ls. beds and lenses - unit probably 50% LS.

May 1

LI-11

11-4"

LS to dk gy F to med xlm thick
bedded v. calcare at base grading up
to sl. calcare at top.

1'-8"

LS med gy, F gran to ds. -
silty? - thick bedded.

5"

LS med to dk gy med xlm. Foss.
thin to med bedded.

LI-12

4' 3"

LS med to thick bedded med
to dk gy yellowish calcare weath.
silty, F gran to ds. fossiliferous
w/ brachs etc.
lower 2' more silty
upper 2' dove colored ds. ls. w/
calcite frags.

LI-13

3' 0"

LS med to dk gy thin to
platy bedded v. silty some beds
type of siltstone or marl
interbedded w/ lime.
1' above base is 2" bed. of dk. dr.
gy v. limy chert or maybe type of
siliceous marl. upper 2' are
mostly siliceous dk. gy ds. LS
either weathering to interbedded w/
platy marl - Med bedded on
siliceous ls.

May 1, 1957

Lower iceledo section

med bedded
L I-14 LS - dk gy to blk f. gray to ls.
3'-8" silty, siliceous, fossiliferous
brachiopods, etc. trace of adites in
part.

overlain by blk fissile Fayetteville shale not sampled.

MAY 1, 1954

ATOKA SECTION.

Location: ^{SE-6th} Along The LURTYN - BASS
Road in (SW $\frac{1}{4}$), NW $\frac{1}{4}$, sec. 22,
T 14 N, R 19 W. The section
started in a small gully below the
road being measured up this gully to
the road, then along the road
to the end of the section.

SS underlain by 6" Kikkri shale - sandstone.

- A-1 22'-6" SS yellowish gy weath. med to coarse
grained, scattered quartzite pebbles.
massive
- 26' Covered - w/ one small sandstone out-
crop in middle of covered zone.
probably ss as above and below or
ss and siltstone interbedded.
- A-2 24' SS massive weath. soft, micaceous,
brown weath. chex. massive.
F to med. gr.
- 16' covered
- A-3 71' Base not exposed. SS - brown gy
backgy weath. massive very much
cross laminated. F to C grained
abundant shale chips along cross
laminæ.

ATWA Section

- A-4
15' Shale Khaki colored when wet bluish when wet so weather. Flaty bedded.
2' badly leached ss base 7' above base of unit. F to C general w/ shale pebbles & curved columnar quartzite pebbles.
Whole unit cross-laminated.
- A-5
4' SS - br. gy, v. fgr. silty thick bedded.
- A-6
14' siltstone khaki colored, dirty to thin bedded poorly exposed badly weathered. Above first of grades into platy khaki colored shale.
- A-7
4'6" Siltstone Khaki colored thin to med bedded.
Lower 5' not sampled khaki colored friable shale slumpy not sampled. Covered above. may be in part shale.
- A-8
5' SS c gr. v. lt gy. grades to fgr. quartzite pebbles.
Slightly shaly but probably essentially in place. Some shale chips and stringers near middle of unit. med. bedded.

Atoka Section

MAY 1, 1959

12'

covered zone.

A-9
91

SS - white to v. lt. gy. to lt yellow -
15h gy. v. E to F gr.
med to thick bedded

SS makes Flat top of Hill.
end of section.

Limestone Section

5-8-54

Glick & FRENZ

Location: SW $\frac{1}{4}$, NW $\frac{1}{4}$, sec 8, R 21W,
T 13 N. This section starts at the
bridge across the last large southward
flowing stream on the west edge of Mt. Jordan quad.
The section was measured north in or near the
stream. The section of the main NINE FORK
was measured to near the head of.

- 25' 0" Approx B-R-M thickness - Not Sampled
- 165' 0" Approx Fayetteville shale thickness
Not sampled. Approximately 40'
between base of Fayetteville lime
and Rabin base
- LP-1
4' 10" Limestone, medium to thick bedded
dark gray, finely granular to
dense; has thin shale and silty
limestone partings up to 2" thick
- LP-2
4' 9" Limestone, thin to medium bedded
Lithology as underlying ls with
3/4" shale partings. Basal bed bedded
probably lenses are silicious or are chert
- LP-3
6' 0" Limestone, medium bedded, dark gray
finely granular to dense with thin
shale partings up to 1" in thickness
Secondary lime (caliche) on
outcrop
- LP-4
4' 8" Limestone, medium bedded, finely
granular to dense, dark gray
with shale partings probably. Brittle
silicious (?) in lower part. Upper 6"
bed fossiliferous; brachs.
- LP-5
6' 0" Shale, black fissile, badly weathered,
not more than 50% exposed.

Limestone Section (cont'd)

5-8-54

- LP-6
4'0" Limestone and shale interbedded
Limestone beds (6" thick) are 6
in number, spaced approx equal
distance apart. Limestone, dk gray to
black, finely granular, sl. silty
softer than underlying ls. brachs and
gastropods. Shale is black fissile.
- LP-7
9'1" Limestone and shale
10 limestone beds 4-10" thick
ls thicker toward top with thin
sh breaks; ls dk gray to black
silty with brachs; dark gray
to black, fissile shale. ls also
has small con. cols
- LP-8
5'6" Limestone, medium bedded, thin sh
partings up to 2". Upper 18'
is soft 4" thick ls beds which
are "knobby" with shale beds up to
2" thick. Appears to be top of
Fayetteville. Limestone dark gray
to black, finely granular to
dense; 1 1/2' bed in middle is
medium x/lime. Top is fine
granular and hard
- 45 (47)
- LP-9
5'8" Limestone, massive bedded, dark
gray, finely granular to, finely
x/lh, abundant fossils in whole.
Upper 8" is dark gray, fissile shale
not easily sampled

Limestone section (Cont'd)

5-8-54

- LP-10 8' 11" Limestone, dark gray, medium bedded, finely granular to dense, fossiliferous. Locally silty and locally finely x-lime, brachs, few crin.
- LP-11 8' 11" Limestone, medium to thick bedded, finely granular to dense, dark gray; trace thin sh partings in middle; fossiliferous throughout, brachs, few crin; cherty nod. near top.
- LP-12 12' 5" Limestone, thick to massive bedded, finely granular to finely x-lime. More crin than beds below.
- LP-13 3' 10" Limestone, thin to medium bedded, dark gray, dense, trace brachs.
- LP-14 4' 2" Limestone, medium bedded, f. gran to finely x-lime, med. to dark gray silty, contains; crin, brachs. Upper 1' very silty, almost sh. Shaly zones which are fossiliferous.
- LP-15 1' 6" Limestone, thin bedded, dense, dark gray; partings of black shale between beds.
- LP-16 7' 10" Limestone, medium to thick bedded, medium gray, f. granular to finely x-lime, oolitic; locally silicious; lots of fossils, esp. crin; locally silicious and contains; oolitic and spicular chert.

Limestone section (Cont'd) 5-28-5

- LP-17 3'3" Limestone medium to thick bedded medium gray, f. gran to f. xllim v fossiliferous, oolitic
- LP-18 3'8" Limestone, medium bedded, medium gray, crinoidal, finely granular to finely xllim; Oolitic in part
- LP-19 2'6" Limestone, medium gray, finely granular weathers to rough, blocky, marble size masses conchoidal bedding
- LP-20 6'6" Limestone, medium to thick bedded medium gray, finely granular to dense, probably silty. Becomes dark gray and oolitic in upper 2/3. Crins
- 3'6" Covered interval - Limestone ???
- LP-21 8'0" (80) Limestone, medium bedded, dark gray, dense, silty in part; thin silty partings 1/4 to 1 inch in thickness; contains (12) crins brachs. gastropods
- LP-22 5'11" Limestone, thin irregular bedded dk gray to black, finely granular to dense, very fossiliferous; abundant brachs.
- LP-23 3'4" Limestone, massive, medium gray, finely granular to dense; very fossiliferous: brachs, crins

Limestone Section (cont'd) 5-8-54

- LP-24 6'8" Limestone, massive, brownish-gray finely granular to finely x-litoid; oolitic; abundant macerated fossils
- LP-25 3'10" Limestone, thin to medium bedded medium gray, finely granular, abundant local crin. Some thin near dense beds
- LP-26 5'9" Limestone, massive brownish gray clastic, finely granular, abundant macerated crin + foss. frags.
- 9'0" Covered interval - hillslope indicates soft zone - shale?
- LP-27 8'0" Limestone, massive, medium to dark gray, finely granular very fine oolites in upper 5' - oolitic throughout, scattered fossils; crins, brachs
- LP-28 4'6" Limestone, medium to thick bedded medium to dark gray, finely granular probably elastic zones of fossiliferous frags, crins, brachs. Upper 10' has two 2" shale beds above and below a 6" limestone bed
- LP-29 4'6" Limestone, medium bedded, dark gray, finely granular lower 1/2' contains fossil material (crins? brachs); remainder dense

Limestone section (Cont'd)

5-8-54

2'10" Covered Interval

LP-30 Limestone, medium to thick
10'4" bedded, medium to dark gray,
finely granular, fossil frags.
Upper 6" is black shale.

LP-31 Limestone, medium to thick bedded
7'3" dark gray, finely granular,
crinoidal. A 6" sharp break
below uppermost limestone bed
which is 16" thick; fossiliferous:
crini, brachi, pelecypods.

LP-32 Limestone, thin to medium bedded
2'0" dark gray, finely granular, very
silty. 4" black shale break
at base.

LP-33 Limestone, medium to thick bedded
5'10" medium to dark gray, crinoidal,
(59) silty (?), a clastic ls with broken
fossil frags.

LP-34 Limestone, thin to medium bedded
7'8" silty, finely granular with shale
partings & beds up to 2" thick.
Weather back; overlying bed forms
tip of water fall. Upper 5' is medium
gray, limy siltstone, very marly.

LP-35 Limestone, medium bedded
3'11" medium to dark gray, finely granular
crinoidal; silty; 1' bed in middle
weathers to rounded knobs size of
walnuts surrounded by clay (weathered ls?)

Limestone section (Cont'd) 5-8-54

- LP-36 Limestone, medium to thick, medium
5'6" to dark gray except where
limestone stained, finely grained,
crinoidal, pelitic in part
- LP-37 Limestone med. bedded, med. gray
1'7" crinoidal, pelitic, underlain
by 2" black shale, and locally
(178') overlain by 3" v. silty limestone
Top of Pithia limestone
- LP-38 Conglomerate, Pithia limestone
1'8" cobbles in very limy siltstone
many brachs, crins.
- LP-39 beds are lenticular +
2'1" 15" silty black-shale at base
5" Congl. with thin ls stringers
5" Silty shale with siltstone, + thin
bedded, dark gray
- LP-40 Base upward
4'5" 1'0" Siltstone, dk gy, very limy, crin
cols.
2'5" Dark gray to black, fissile silty
shale, limy?
1'0" Siltstone, dark gray, hard, limy,
containing shale pebbles which
are found de. i. contains crins,
brachs; contains Pithia pebbles

Limestone section (Concl'd)

5-9-54

- LP-41 10' 4" Shale, black, fissile with beds of limestone $\frac{1}{2}$ " to 1" thick spaced about 1' 0" apart
- LP-42 6' 3" Siltstone, ^{fine, ss.} thin to medium bedded brownish gray to black, non-limy, micaceous w/ thin shale partings and stringers. Looks like sandstone in outcrop due to blocky form.
- LP-43 6' 0" siltstone as below -
- No further outcrops - probably overlain by shale - slope breaks
- 104' 0" Covered interval - probably shale
- LP-44 16' 6" Shale, fissile, silty, dark-gray to black containing lenses and irregular beds of light-gray slightly limy very fine grained sandstone up to $\frac{1}{4}$ inch thick - top 5' poorly exposed
- LP-45 6' 2" Limestone, medium to thick bedded, medium to dark gray, finely granular silty matrix containing maceferated fossils - mostly crinoids, and ~~3~~ white quartzite pebbles to $\frac{1}{2}$ " in diameter. Some dark-gray to black shale chips

Limestone section (continued) 5-9-54

- LP-46 5' 3" Sandstone, thick bedded to massive, light gray, very limy very fine grained; shale chips in basal 5" crinoid molds throughout
- LP-47 5' 0" sandstone as #46 - well leached
- LP-48 7' 3" sandstone as #46 - very limy where not leached. May have black carbon residue?
- LP-49 4' 5" Sandstone as #46 - grades upward into very sandy limestone in top 8"
- LP-50 6' 7" Limestone, thin to medium - bedded brownish-gray to medium gray sandy to very sandy. Clastic, fossilite fragments?
- LP-51 1' 6" Sandstone, very thin to thin - bedded medium to dark gray very fine to fine grained shaley (lower 5" only) Shale - dark gray to black, fissile - (upper 1') entire unit is lenticular and thin to 1" along crop
- LP-52 1' 4" Limestone; platy to very thin-bedded gray to brownish-gray, finely granular to finely crystalline. Black shale chips in entire unit. Entire unit crinoidal and silty?

Limestone section continued 5-9-54

LP-53 Lower 1'7"
4'5" Sandstone, platy to very thin bedded, medium to dark gray very fine grained. Many shaley partings. Lenses of dark gray sandy limestone up to $\frac{1}{2}$ " thick.

Middle 1'3"
Limestone, olive-gray to dark-gray finely granular very silty. Lower part sandy. Crinoids, bryozoa, brachiopods.

Upper 1'7"
Shale, fissile, dark gray, limy, silty; clay shale in upper part.

LP-54 Limestone, medium to thick-bedded
6'5" medium gray finely-granular, silty; crinoid fragments - light gray. Basal 6" is dirty shale chips throughout.

17'8"
Mostly covered; one shale crop. Probably all shale as LP-55.

LP-55
6'4" Shale, fissile to platy, dark gray, silty. Contains thin beds dark gray siltstone and light gray very fine sandstone - lenticular up to $\frac{1}{2}$ " thick.

Limestone section (continued)

5-9-54

- LP-56 11' 7" Sandstone, thin to medium bedded, medium-to-dark-gray, fine to medium grained, limy, scattered quartz pebbles and shale chips. Cross laminated in irregular 4-6" beds. Laminations dip toward the north.
- 29' 10" Covered interval - slope shows shale at top and bottom - appears to be shale as in #57 throughout.
- LP-57 13' 0" Shale, dark-gray, platy to fissile.
- LP-58 14' 1" Sandstone, very thin to medium bedded, olive-gray to light gray, silty, limy. Contains many fissile and platy irregular beds of gray siltstone with shale partings in lower 3'.
- Above lower 3'
- Siltstone, fissile to platy, irregularly bedded, - many shale partings. Contains very fine grained sandstone in beds to $\frac{1}{2}$ " thick.
- LP-59 4' 9" Sandstone, thin to medium bedded, light yellowish to gray, very silty, very fine-grained; shale partings; weathers to reddish-brown soft slightly limy sandstone.

Limestone section continued 5-9-57

- LP-60 3' 0" Sandstone, thick-bedded, yellowish-brown - badly weathered. Silty fine-grained sandstone, Crinoid columnar impressions indicate leaching. Shale chips. Upper 6" very irregularly bedded. Passes to platy siltstone with shale stringers and siltstone pebbles. Almost conglomeratic.
- LP-61 10' 0" Sandstone, massive, medium-gray, very limy (where not leached) fine-grained. This is base of a massive cliff-forming sandstone faultly cross-laminated. Weathers rounded & 3 must
- LP-62 10' 0" Sandstone as #61
- LP-63 10' 0" Sandstone as #61
- LP-64 10' 0" Sandstone as #61
- LP-65 10' 0" Sandstone as #61
- LP-66 10' 0" Sandstone as #61
- LP-67 4' 0" Sandstone as #61

Limestone Section continued 5-9-54

LP-68 shale, dark-gray, fissile
7'6"

LP-69 Sandstone - medium to thick-
bedded - massive cross bedded
40' 0"[±]
(estimated) light gray - weathers brown
fine to medium grained - in lower
20' feet. Cross beds dip west
and south west. Forms cliff
estimated to be 40' high

Grades upward into medium to
coarse grained massive sandstone
with white quartzite pebbles in
upper 1/2 of unit.

Finis - 4:10 PM 5-9-54

5-14-54

Sycamore Hollow Section Continued
from 21 pages back.

SH^T 35 Limestone, as in #34
11' 0"

SH^T 36 As in #34
10' 0"

Cov.
18' 6"

SH^T 37 Limestone, medium to thick-bedded
11' 0" medium-light-gray, medium-crystalline
w/ many crinoids and some large
brachiopods in lower 2'. Few corals
throughout.

SH^T 38 Limestone, thick-bedded medium-gray
11' 8" finely crystalline with crinoids
and brachiopods - some very finely
granular light-gray (weathers white)
siliceous limestone.

SH^T 39 Limestone, thick-bedded, medium-
6' 0" light gray, finely granular to
finely crystalline. Trace small
brachiopods.

Cov.
3' 6"

SH^T 40 Limestone - thick-bedded, very light
4' 0" gray, very calcitic

Cov.
7' 0"

Sycamore Hollow Section (cont) 5/14/54

SH 41
11' 0"

Limestone and chert medium bedded to massive
Lower 1' 6" f-m crystalline limestone medium-gray - crinoids, brachs.
Upper part (above lower 1' 6") is mixture of chert and limestone.
Limestone is medium-gray, finely granular to finely crystalline
Chert in small lenses to masses as much as 2' across, medium light gray, dense, limy?

SH 42
5' 6"

Limestone - medium to thick, irregularly bedded, medium-gray, finely granular to medium-crystalline - many large to medium ^{lenses} 4" to 18" across - of chert - light gray, dense

Cor
14' 6"

Probably Batesville - looks soft and contains abundant Batesville conglomerate float -

SH 43
5' 6"

Limestone, medium-bedded - medium to medium-dark gray, finely granular to medium granular, finely crystalline, contains chert pebbles angular to subrounded 1/2 to 3" Crinoids. loss chert pebbles in upper part

Finis 4:35 pm
5/14/54

May 15, 1954

Chisholm & Glick

5' 6"

5' 6"

7' 4"

CAMPBELL CREEK SECTION

Location: Section starts in Campbell Creek and was measured up this creek to the first tributary to the north. The section was then measured along this tributary to the end of the section NE $\frac{1}{4}$, NW $\frac{1}{4}$, Sec 27, R 20W, T 14 N.

start in Fayetteville "Ls"

CCP-1

5' 6"

Ls, med. bedded DK gy. to dk brn gy. F gran to F xlm. individual beds separated by shale partings up to $\frac{1}{2}$ " thick Ls probably silty.

CCP-2

5' 10"

Ls, med. bedded as below w/ trace of brachs.

CCP-3

4' 3"

Ls as below but w/ thicker shale partings w/ basal shale partings 5" thick, others up to 1". Ls gl. more siliceous? No Fossils noted.

17' 7"

covered interval

CCP-4

5' 6"

shale & Ls. interbedded - 5 Ls beds 4" to 6" thick evenly spaced in DK gy fissile shale Ls. at bottom shale at top. Ls. dk gy silty F gran. shale & Ls gradational in upper part. shale very limy.

CCP-5

5' 6"

as below but six Ls beds. w/ limy shale Ls bed at top and bottom.

May 16, 1959

Campbell Creek section

CCP-6
7' 11"
Ls. med. bedded w/ shale partings.
Few fossils in Ls. Ls. dk gy F gran.
silty sh. foss. - shaly dk gy fissile
L. my - shale partings 2" to 4" mostly.

CCP-7
5'
Same as CCP-7 but
shale breaks become progressively
thinner.

Top of unit is
marked by top of
shale break.

CCP-8
4'-6"
Ls. med to thin bedded dk.
gy fossiliferous F gran.
shale partings 2" to 5" thick
w/ brachs.

Top of Fayetteville Form. at
Top. of CCP-8.

CCP-9
4' 6"
Ls. med bedded v. Foss. w/
trilobids brachs, bryozoa, ceph.
F gran. blk shale break up to 5"
thick near center of unit.

CCP-10
6' 5"
Ls. med. to thick bedded,
med dk gy F. gran. v. Foss.
oolitic in part? shale break 19"
from top 6" thick.
Chert in lower half of unit chert
nodules dk gy ds. v. limf.

May 15, 1954

Campbell Creek section

- CCP-11 Ls. med. bedded, DK gy, v.f gran.
3'-6" Foss in upper half.
- CCP-12 Ls. med. bedded. DK gy f gran.
7'-2"
- CCP-13 Ls. med to thick bedded.
4'-10" DK br. gy to dk gy. extremely
foss. in part. brachs & crinoids
mostly at top of unit
2" Shale break.
- CCP-14 Ls. massive DK br. gy weath.
6'-5" med. gy. Ls. weath soft.
F gran. Silty. Foss. but pieces
small maceurated.
- CCP-15 poor med. to thick bedding.
8'-2" DK br gy v.f foss. small foss. Ls.
F gran.
- CCP-16 Ls. irregular med. bedded.
6'-3" DK gy. F. gran. Ls. brittle.
Upper 6" Foss. rest no. Fossils
noted.
- CCP-17 Ls. irregularly med. bedded. DK br gy
7'-3" to dk. gy. F. gran. Small Fossil
pieces.
- CCP-18 thin bedded. Knobby small Lenticular
3'6" like whole unit. Lenticular in form
that is thickness varies along
crop. dk. gy. to blk f gran to ls
very brittle Ls.

May 15, 1957

Campbell Creek Section

CCP-19 6' Ls. med to thick bedded. dk gy
to dk br. gy. F gran. Foss. mostly
in lower part. upper 6" thin
bedded knobby ls. as in CCP-18.

CCP-20 8'-1" Ls. massive. DK br. gy. oolitic F gran.

CCP-21 11' Ls. med. to thick bedded.
med gy to dk gy. F gran to ds.
oolitic in part.

CCP-22 2'-9" very foss. Ls. ~~mass~~ ^{thick} bedded
br gy. F gran.

6' covered interval

CCP-23 2'-9" Ls. med bedded. br. gy to dk gy.
F gran. oolitic in part.

8'-11" Covered interval

CCP-24 9'-1" Ls. med. bedded. DK gy. F gran. to
ds. v. brittle.

CCP-25 5'-6" Ls. med. to thick bedded. br. gy
to dk gy. archimedes, colonial corals
gastropods, etc. F gran.

May 15, 1959

Campbell Creek Section.

- CCP-26 Not too well exposed - Ls med.
3' bedded, br. gy, calcitic f gran.
- 6'6" concealed zone
- CCP-27 Ls. Massive bedded brgy f gran.
8'-2" Foss. small, crinoids etc.
- CCP-28 Ls. med to thick bedded
7' dk br. gy Silty f gran.
 crinoidal, interbedded dk gy
 hard nearly ds. Ls.
- CCP-29 Ls. med to dk gy med
4' to thick bedded. v. foss.
 upper 8" of unit not
 exposed - probably shale break.
- CCP-30 Ls. med to thick bedded.
10' br. gy. f. gran. Silty Foss.
- CCP-31 Ls. thick to massive bedded. dk br. gy
8'-6" f. gran.
- CCP-32 Ls. med to thick bedded med dk gy
7'6" f. gran. silty
- 7' covered zone

Campbell Creek Section.

CCP-33
9' Ls - med to thick bedded.
med to dk gy silty f gran.
Foss in part.

CCP-34
6' Ls. massive

12' Shaly Ls. as below poorly exposed.

CCP-35
7' 4" Ls med to thick bedded.
med dk gy f gran. silty.

CCP-36
5' 8" Ls. med to thick bedded. br. gy
to med. gy f gran. Foss.
8" shale break 19" below Pitkrn
top. silty shale v.l. med. dk. gy. contains
crinoids.

TOP OF Pitkrn

CCP-37
4' 2" SS massive weath. rusty br.
v. f. gr.
apparently little or no basal
conglomerate in this area.

Cow Creek section

130' \pm Cane Hill member.

this interval was measured w/
an altimeter.

Location. NE $\frac{1}{4}$, NE $\frac{1}{4}$ Sec. 33,
T 14 N, R 20 W, this measurement
was made almost directly south
from Cow Creek up the hill slope.

5-16-54

Chishalm & Glick

Cow Creek - Prairie Grove section

Section in SW $\frac{1}{4}$ / NW $\frac{1}{4}$ sec. 33, R20W, T14N
of Mt. Judia quadrangle. Cane Hill
Shale 30' ^{not} (pedestal) to main
stream level. Section starts
on cliff along west side of
tributary to Cow Creek and
extends southward up tributary

CG-1 Shale, fissile, black with thin (1")
45' 0" transverse bands about 5' apart
(on left or east side of tributary above main stream)

CG-2 Sandstone, thin to medium irregular
2' 0" bedded olive gray weathering
brownish gray conglomeratic medium
grained. Shale pebbles up to 2"
long and quartzite granules (only a
few). Conglomeratic throughout
non-limy on fresh surface - thin to
shale partings

CG-3 Sandstone, platy (mostly) to medium lenticular
5' 0" irregular bedded, olive-gray ^{fine to} medium-grained
sandstone with abundant silt laminae
and layers to $\frac{1}{2}$ " thick. Scattered
shale chips and pebbles and quartzite
pebbles. Sandstone beds to 7" are
slightly cross-laminated

CG-4 Sandstone as #3 - grades upward
5' 8" into more sandstone and less siltstone

5/16/54

Cow Creek Prairie Grove section cont

- CG-5
5' 7" Sandstone, massive, brownish-gray, medium to coarse-grained - Forms overhanging cliff
- CG-6
0' 9" Shale - lower 3" fissile dark gray
Sandstone - upper 6" medium-gray, medium grained
- CG-7
13' 7" Shale, dark gray, platy to fissile silty
- CG-8
4' 6" Sandstone, medium to thick bedded olive-gray weathered to brownish-gray, shale chips and white quartzite pebbles. Silt fragments and laminae in lower part
- 8' 0" covered - probably shale - black shale flat under overlying sand bed - slope looks like shale slope - this unit appears lenticular and is probably locally absent
- CG-9
15' 0" Sandstone, massive, iron stained leached, fine to medium-grained
Base of sandstone cliff
- CG-10
11' 0" Sandstone, massive, brownish gray, iron stained where leached very finely fine-grained, slightly cross-laminated

5/19/54

Cow Creek - Prairie Grove Section (cont)

- CG-11 Sandstone, massive, medium-gray
20' 0" (weathers brownish-gray) very limy
Fine to medium-grained. Some
harder bands (more limy?)
- CG-12 Sandstone as #11
9' 0"
- CG-13 Sandstone as #11
11' 0"
- CG-14 Sandstone as #11
11' 0"
- CG-15 Sandstone as #11
11' 0"
- CG-16 Sandstone as #11
19' 9"
- CG-17 shale, fissile, dark gray
6' 0"
- CG-18 Sandstone, thick-bedded to massive
7' 8" gray (weathers brown) very limy where
not leached fine grained
- CG-19 Sandstone, medium-bedded, brownish-gray
4' 0" (leached) fine to medium-grained
limy where not leached
- CG-20 lower 8" thin-bedded brownish-gray
1' 7" leached fine-grained sandstone
upper 11" siltstone and shale - platy
siltstone interbedded with
dark gray shale

5-19-54

Cow Creek - Prairie Grove Section (cont)

(162)

- CG-21 2' 1" Sandstone, thin to medium-bedded, ^{lumpy} very limy, fine to medium grained, trace shale pebbles and lenses; trace crinoid plates and coarse sand grains.
- CG-22 2' 3" sandstone, medium-bedded with shale breaks (5) up to 3". Sandstone - medium-dark-gray weathered brownish-gray very limy, fine to medium-grained - trace shale pebbles and crinoid fragments. Shale is dark-gray fissile.
- CG-23 1' 10" Limestone (lower 4" only) one bed medium-gray, finely granular, very sandy with fine to medium grains. Pyrite, crinoid columnals. Shale (1' 6" at top) dark-gray, platy to fissile.
- CG-74 1' 8" Sandstone, medium-lenticular bedded cross laminated, very limy, fine to medium grained (locally ^{limestone} shale s/l. ^{kingors} in lower 1'). Crinoid columnals and gastropods ^{100% to 50%}
- CG-75 3' 11" Shale (top 6") and as perhaps ^{100% to 50%} ^{limestone} Sandstone as in #24. In trackpods shale is medium dark gray platy to fissile ^{was limy}.

5-19-54

Oow Creek Prairie Grove Section (cont)

177

- CG-26 Limestone, thick-bedded (lenticular
2' 4" along crop and thins to 1' thick
within 50') brownish-gray, sandy,
with medium sand grains - (shale
pebbles in lower 6". Crinoids,
gastropods, bryozoa, brachiopods)
- CG-27 Sandstone, medium-bedded, lenticular
2' 10" brownish-gray very-fine, medium-
grained. trace quartzite pebbles.
Lenticular shale partings and
one shale lensa from 2" to 6"
thick (partly siltstone) 6" to 10"
- CG-28 sandstone, platy to thin bedded
2' 6" medium-gray very-fine grained
interbedded with medium-gray
lenticular platy siltstone.
Sandstone contains shale pebbles
shale streaks along bedding planes
of siltstone

Note: Trencher made here to larger stream
to the west. Tie in traced around
hill and lithologic units were recognized

- CG-29 sandstone - medium-gray. Due to
4' 0" medium gray very fine, very
thin to thin bedded. Interbedded
with siltstone, medium light to
dark gray, platy to very thin
bedded and dark gray fissile
shale. About equal amounts
of sandstone, shale, and siltstone

5/19/59

Cave Creek - Prairie Grove Section (cont)

CG-30 Sandstone, cross laminated, thin to medium bedded, brownish gray very limy, fine to medium grained.

CG-31 Siltstone (mostly) interbedded with sandstone - lithology as in #29

5' 2" covered

CG-32 Shale, fissile, dark gray, trace siltstone beds to 1/2" thick

CG-33 Shale as #32

5' 6"

5' 6" covered - probably shale

CG-34 Shale, fissile, very dark gray

9' 0"

CG-35 shale, fissile, very dark gray

6' 0"

CG-36 Shale, fissile, very dark gray

6' 6"

May 20, 1959

CG-37 siltstone thin to med. bedded. med to olive gy a few dk gy shale stringers. Upper 7' slightly coarser and maybe vt gr. ss w/ a few shale stringers & pebbles

10'

CG-38 Lower 1' similar to and gradational to lower unit. grades upward into interbedded siltstone & shale platy to thin bedded.

8' 2"

May 20, 1959

Cow Creek - PRAIRIE GROVE SECTION (cont.)

- CG-38
cont. Irregular leatrical type of bedding.
shale dk gy, silty & siltstone olive gy.
siltstone & shale ~~thin~~ very much interbedded
but shale content gradually increases
upwards
- CG-39
4'-2" ss - thin to med bedded med. dk gy,
very limy; f to med gr. contains
shale pebbles upper 2'-6" contains
silty streaks and very thin olive
gy siltstone beds. & one dk gy
shale break 1" thick 1/2 from top.
- CG-40
3' shale - dk gy f. side lower 1/2 contains
thin beds of v. limy f. gr. ss.
- CG-41
7' ss - massive med. dk gy, v. limy,
f. gr. -
- CG-42
7'-2" ss - massive as CG-41 except
becomes more limy especially upper
2' and w/ a few fossils, brachs & crinoids
- CG-43
1'-10" paleo sample taken. ls
med. bedded med. dk gy
sandy silty, f gran. v. foss.
brachs crinoids
- CG-44
6'-4" ls - massive but weath into v. thin
to med beds med dk gy silty
v. foss. sandy f gran. continuous
w/ CG-43 paleo sample taken.

May 20, 1959

Cow Creek - PRAIRIE GRASS SECTION

14'-6" Covered interval

CG-45 v. dk gy fissile clay shale.

9'6"

3'

concealed zone probably mostly shale

- top of PG -

CG-46

20' +

SS forms cliff lower $\frac{1}{2}$ sampled.

SS thick bedded to massive.

br gy to lt. br. c grain ~~low~~ lower

part grading upward to fine

to med. grained. cross

bedding dips toward the south.

Few quartzite pebbles.

No sample

6'

between CG-45 & 46

Top of this unit in contact w/
basal Atoka

Shale v. dk gy.

about 100 yards from section
upstream.

#1

Whiteley Creek Section - BATESVILLE,
Fayetteville & Cane Hill sections.

WF Series

Location: SE $\frac{1}{4}$, SW $\frac{1}{4}$ SEC 22,
R 23 W, T 16 N, in a main
tributary to Whiteley Creek
which has a trend slightly
East of North.

May - 30, 1959

Whiteley Creek - Batesville Fayetteville -
Cane Hill Section #1

Bacone LS continuous in outcrop below.

WF-1
5'

LS massive, med. gr. F gran
to med. xln. has trace of brachis
almost non-fossiliferous.

top of Bacone LS

WF-2
1'-3"

LS med bedded, weath to
platy to thin bedded. br gy to
med. dk. gy. extremely silty and
may actually be a siltstone.
this is a very sharp contact
between Bacone and overlying
rock with no evidence of a
basal conglomerate at this
outcrop.

WF-3
1'-11"

LS, med bedded, med dk gy
F gran. extremely foss. w/
numerous brachis a little zone
in middle of unit which weathers
back and is extremely silty

WF-4
1'-4"

conglomerate med dk gy mostly LS matrix
w/ pebbles of chert (a very few) silty LS
and shale plus abundant muscovated
fossil fragments. conglomerate
grades laterally into a single bed
of dk gy, F. gran, silty LS. which
is apparently cut out in places and this
interval is replaced w/ the conglomerate
Samples of LS taken.

May 20, 1954

Whiteley Creek B-F-C.H.

1101 Altitude

#1

WF-5

1'-11"

LS - med bedded, med to dk
gy. Foss. F gran. contains
little beds & stringers of
vf sand to silt and
apparently grades upward into
overlying vf ss or siltstone.

WF-6

7'-5"

SS - med. bedded, vf gr. Lt to med.
br. Leached w. fossil casts. Limy
where not leached. upper part of
unit apparently grades into silty LS
w/ pyrite (but is upper 1')

-TOP - Batesville.

WF-7

20'

Blk fissile shale - Fayetteville
contains small septarian concretions (LS)
about 9' above base.

60'

Covered interval - probably shale

WF-8

25'

Shale - blk, fissile

Top of Fayetteville.

WF-9

7'

SS - thick bedded. Lt. brgy to med br.
heavily weath. vf gr. grain size
seems to be larger upward.
Upper 3" extremely hard med dk
gy limy siltstone.

May 20, 1959

Whiteley Creek - B-F-C.H. Section
#1

WF-10
2'-3"

conglomerate - thick bedded -
med dk gy silty limy matrix
w/ pebbles that range in size up
to 6" long generally about gravel
size. Many lithologic types represented.
- one type med dk gy ds ls pebbles
quite common. - also contains some
chert pebbles.
crin. archimedes present.

WF-11
2'-10"

ss Lt gy to med dk gy - thin
to med. bedded. limy, v. gn
very upper bed 1" thick leached out
has small fossil casts.

Shale flat directly over ss.

26'-0"

covered interval - lower part slumpy
shale.

5/21/54

WF-12
2' 8"

sandstone, thin to medium bedded (weathers
very thin bedded) slightly cross-laminated.
medium-brownish-gray very fine to
fine-grained. Trace shale pebbles;
moss on bedding planes.

Whitely Creek - B-F - CH (cont)

5/21/54

#1

lower 10" only

WF-13 Sandstone, bedding indistinct - medium gray
1' 5" very fine grained. Abundant sandstone
"colls" ellipsoidal 10' x 3" + in
lower 2/3 of unit. Upper 1/3 siltstone
and sandstone interbedded
Net 5"

Sandstone, weathers to very thin beds
medium light gray; siltstone streaks,
very fine grained.

Upper 2"

Shale, platy, dark gray

WF-14 Sandstone, very thin to thin bedded, cross-
3' 9" laminated (dark shale partings to 3")
brownish-gray very fine to fine-
grained; contains thin siltstone
streaks and shale chips.
Upper 6" slightly more silty.

WF-15 sandstone, very thin to medium-bedded
5' 0" brownish-gray to medium-gray
finest (very fine to fine grained
trace shale pebbles;
1' above base is 1" to 3" dark
gray shale lense.

WF-16 Sandstone and siltstone interbedded
2' 9" in very thin beds
Siltstone - dark gray

sandstone brownish-gray very fine
grained.
Unit is mostly sandstone.

Whiteley Creek - B-F-CH

5-21-54

(cont)

#1

- WF-17 3' 0" Sandstone, siltstone and shale interbedded in platy to very thin beds.
Sandstone brownish-gray very fine grained
Siltstone medium-dark gray
shale - dark gray fissile
- WF-18 3' 8" Sandstone, very thin to medium bedded very fine to fine grained; siltstone and shale films and partings along bedding planes. Also some beds of dark gray siltstone.
- WF-19 5' 4" Siltstone and sandstone interbedded in platy to thin beds. Mostly sandstone in upper 3'. Sandstone is very fine-grained.
- WF-20 2' 8" Sandstone, very thin to thin bedded brownish-gray very fine to fine grained; siltstone streaks; some beds of hard siltstone.
- 4' 6" Covered
- WF-21 5' 6" Shale, dark gray fissile; ironstone bands to 1" thick - 4" to 1' apart
- WF-22 20' 2" Shale as #21
Upper 4' contains siltstone lenses in beds to 4" thick - medium-gray to dark gray.

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Whitely Creek B-F-CK (cont)

1

- WF-23 Sandstone - 1" @ base
2' 7" Shale with lenticular beds of siltstone
and sandstone 1-2" in middle
Sandstone 5" at top
Sandstone platy to very thin bedded
brownish gray very fine grained
Shale dark gray fissile
Siltstone medium dark gray
- WF-24 Shale, dark-gray, fissile
6' 6" Ironstone bands and siltstone
lenses - mostly in upper 3'
- WF-25 Sandstone, medium-thin bedded
3' 1" medium light gray to brown
fine-grained; shale pebbles in
lower feet
- Note: moored across gully to west
side. Top of fine-grained
sandstone is 2' beneath
massive Horn Mountain sandstone
- 2' 0" Correl - soft badly weathered
shale - probably dark-gray
fissile with siltstone lenses
when fresh; not sampled
- WF-26 Sandstone, thick bedded (single bed)
1' 7" weathers medium-brown, slightly
~~limy~~ ^{limy}, medium-grained; shale pebbles,
quartzite pebbles (few)

5-21-54

Whitley Creek - B-F-CH (cont)

#1

WF-27
3'7" Sandstone (conglomeratic - bedding is poor - probably 2 thick beds) brownish-grey, fine, medium to coarse grained with some very coarse grains. Shale pebbles to 2" long, quartzite pebbles, very fine-grained sandstone pebbles, crinoid columnals (few)

WF-28
9'9" Sandstone, thick bedded to massive. Slightly cross laminated medium-grey (brown when weathered), medium to very coarse grained. Honey-combed weathering indicates limy where unweathered. Numerous quartzite granules to pebbles in center of unit. Nearly limestone in center of unit where not leached.

Finis 10:50 AM 5-21-54

Whiteley Creek - P.G.

5-21-54

Christholm & Glick

#2

Location: SE $\frac{1}{4}$; NW $\frac{1}{4}$ Sec. 128

T16N, R23W

IN main west branch of Whiteley Creek

Section base is on south side of
canyon about 25' above floor of canyon

WP-1
9'3"

Lower 2' sandstone & siltstone
Upper 7'3" Dark gray fissile shale
with thin beds of siltstone
and brownish-gray very fine
sandstone

Lower sandstone is also very
fine grained -- has silty stringers
In upper 7'3" siltstone 50% of
unit.

WP-2
4'0"

Sandstone massive, olive-gray to
weathered brown, limy to very limy
medium-grained to coarse grained
Upper 1" is conglomeratic -- this
is discontinuous, lenses and grades
out within 10 feet along crop
Contains shale, sandstone and
quartzite pebbles - shale pebbles
to 1/2", crinoid columnals.

LS to v. limy ss

WP-3
6'0"

Sandstone massive, medium-gray
very limy (may be limestone in
part). Fine to medium grained
Crinoid fragments, brachiopods,
trilobites - extremely fossiliferous
in most limy part.

5-21-54

Whitely Creek - PG (cont)

#2

- ^{LS}
 W.P.-4 ~~Sandstone~~ as #3 -- in both units
 5' 0" some limestone bands up to 2"
 thick contain no sand - these
 bands are very fossiliferous
- ^{LS}
 W.P.-5 ~~Sandstone~~ to limestone as #3
 4' 2" medium dark gray - abundant
 fossils
- W.P.-6 Limestone, massive, medium light
 5' 6" gray, oolitic, finely granular
 P-sample very fossiliferous. Lower 6"
 Taken is similar to #5. sand grade
 out upward within lower 1' and
 unit becomes very oolitic
 P-sample taken - crinoids, gastropods,
 brachiopods, bryozoans, etc.
 + R. Lobites, Pelecypods.
- W.P.-7 Limestone, as #6
 5' 6" Oolitic grade out upward in upper
 half of unit. top is not oolitic
 Very fossiliferous throughout
 No P-sample
- W.P.-8 Limestone, thick-bedded irregular,
 5' 0" medium light to medium olive-gray
 finely granular limestone. 3' above
 base is sandy zone 4" thick.
 Unit is crinoidal throughout.
- W.P.-9 Limestone, massive, medium-light gray
 5' 6" to olive-gray finely granular.
 Crinoidal, brachiopods.
 Traces sand lenses

5-21-54

Whiteley Creek, - Prairie Grove (cont)

48°

2

WP-10 Limestone as shg - probably no sand.
5' 6"

WP-11 Limestone, massive, medium light gray
6' 9" very finely granular to dense
Slightly sandy in lower 2'
Abundant crinoids.
In upper 4' - more dense, few fossils.
Lower 2' similar to # 10 but sandy
finely granular and very fossiliferous

WP-12 Limestone, medium to thick bedded
3' 8" medium - olive - gray very finely granular, few crinoid fragments.

WP-13 Limestone, thin to medium bedded
5' 2" medium - gray to medium - brownish - gray crinoidal finely granular.
2' starting 7" above base is very silty and tends to weather dark.
Fossiliferous throughout

5' 0" Covered - at least upper part is probably shale

WP-14 Shale very dark gray, fissile
10' 0" In upper part at unit, platy beds
at medium dark gray siltstone
(overlies 3' clay shale at base)
Thus upper 7' is silty shale to siltstone.

Top of Morrow

WP-15 Sandstone medium bedded to massive, highly cross-bedded,
60' 0" medium - grained light gray.

A704 Only lower 5' sampled.
Fins - 3:55 pm. 5-21-54