Field notes, circa 1956

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Devonian
of
New Mexico
1952

J. R. Cooper
C.L. Brecher, Fats.

Alamo Canyon
Alamo Rocks
Fish Canyon
Drainage Canyon
Dempster's
San Diego Wells Canyon
Johnson Park Canyon
Mid Springs Mesa
Mule Canyon
Pig Canyon
Rhodes Canyon
Rincón
San Andreas Canyon
Vinton

26
23
16
15
10
25
9
19
11
29
17
10
15
33
Sept. 16
Indian Wells Canyon
Total 39'

Miss

2½' of orange-yellow lo. with small dwelling all capped by a hard band of 4-6'
2' of bluish lo. hard with Hypo.
10' of light cobbly lo. somewhat more coherent than C but with numerous fossils

F

E

D

C

B

4' of olive green shale

A: Opaque - About 25' of shaly gray to brownish dolomite becoming massive in upper 5'. No fossils such
Sept 22

Section NW of Kirvan sec 1-185-3W.

The base of the section not clearly visible as lowest shale is uncertainly measured. The lowest beds are soft shale weathering pink or red with large trilobites, mastigophora, and atypo spiriferids. This is overlain by 5' or 6' of thin-bedded sandstone with conodonts. Over this are two shales aggregating nearly 10' consisting of dark gray shale below with dull bluish shale. This is overlain by blocky dirty fine sandstone with Clytophylus and Ambrosia in the lower part. This as is overlain by 10' or 15' of red sandstone with conodonts. Art thinks the red as is Miss.

Section in Berry Hill.

No base known to section. Lowest beds are two or three bands of nodular l.s. 3' thick separated by shale and having Ambrosia. Overlains by 15' or 20' of soft shale with mastigophora and large rugosides. This is overlain by 20-30' of blocky black and dark green gray shale. Over this is 8'-10' of flasers, soft 10' brown weathering gray l.s. followed by 3' of clay beds. Top is 9' of thin-bedded blue gray 10' with fish fragments. Over this is 2' of cobbly gray shale with Pennsylvanian fossils.
Sept. 23  
Mud Spring Mtns.

<table>
<thead>
<tr>
<th>Penn.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>cobbles, Pa - 3'</td>
</tr>
<tr>
<td>R 2-3'</td>
<td>brass green shale</td>
</tr>
<tr>
<td>J 9'</td>
<td>olive green shale</td>
</tr>
<tr>
<td>I 10'</td>
<td>Hemicyonina nodular zone with short, wide Atyga, Newostrophias</td>
</tr>
<tr>
<td>H 8'</td>
<td>green shale</td>
</tr>
<tr>
<td>G 2'</td>
<td>hard cobbly band, Newostrophias, Donovillina Hemicyonina</td>
</tr>
<tr>
<td>F 15'</td>
<td>green shale with scarce calcite, cobbles</td>
</tr>
<tr>
<td>E 7'</td>
<td>green shale</td>
</tr>
<tr>
<td>D 14'</td>
<td>orange yellow, nodular 3' and thin yellow shale, Schiz, Atyga, mastinia about 3' below top</td>
</tr>
<tr>
<td>C 15-20'</td>
<td>soft shale with anpans, pigmoids, Atyga long, light gray, Splachnospira at about 1/2</td>
</tr>
<tr>
<td>B 7'</td>
<td>shale, weathered with hard cobbly bands of blds. with Chamaeura. Pink weathering gr.</td>
</tr>
<tr>
<td>A 2½-5'</td>
<td>dolomite, red weathering, brown 1½', fumaroles ke small pieces</td>
</tr>
</tbody>
</table>
B. On the exposure of B two specimens of Hypothyridina were found loose. Head seemed to be nearly in place but may have come from E-I. Bed B suggests Tullyandia Ambrosia beds of Denny.

A. Poorly preserved brachiopods suggest Terebratulina.

C. corresponds to the Pseudoides shale at Derry.

D. The material comes from near the top about 3' below, with Seligrphoria and the large Atypus. Card D may correspond to others in terms of New York. These beds seem to be confined to Mud Springs, Denny and Caballoe nitra.

Beds E - F correspond to Sly Dog of San Andres nitra. as exhibited at Sly Dog and Rhodes Canyon.

I. Cobble at 6 appears to be same as cobbles of Penn. age of Denny Hills.
September 25
Sacramento Mts.
Section in Deadman Canyon

Cobbly Caballers
black shale, layer of cobbles at top. 5'

Cobbly 2. 10'

Lo beds (3) top no. 9", middle 3", bottom 4".
shale 4'.

Cobbly lo + shale 5' fossil Thomasina

Dark shale 4'.

Shale with sparse cobbles, Calamaria 5'.

Covered 12-15' dark shale, few cobbles

About 40', darkly lathy, to at base
passing into shaly, weathering
and massive, pink, gravelly
Dolomite at top, Loys 3", pinkish
and layered. Forams common
6' below top. Tribrachidium common in lower half.

Ord.
Total Penelia 47'
Section of Caballeros
Deadman Canyon

massive limestone

Cobbly limestone, dense, packed cobbles, cobbles peppered with crinoidal debris

hand cobbly limestone forming a prominent ledge.

Cobbly limestone, cobbles smooth, small products, and small Spinifex
Type section Oside
Inside San Andreas Canyon near lead mine.

15'
I. No fossils in these beds except Martian at base. Hard gray dol., fine grained weathering red brown - top band 4' solid bed.

12'
H. - soft calc. shale with eimoid stand Atypo, Schizophrina & large Martiania at top.

1'
G. - hard 50. with Leptostrophina

2'
F. - slighly 50. eimoid stems

4'
E. - hard brown 50. 2 massive ledges Leptostrophina

9'
D. - shale weathering 50. with Cystodictya, Atypo, Leptostrophina, Productella, Schizophrina

C. - ash gray shale culminating in a 2' hard band, Leptostrophina, C. amorar, Leiolechnus, Cystodictya

13'
1'
B. - dark shale big Leiolechnus common

8'
A. - chunky light ash gray weathering is in beds up to 4' thick, C. amorar, Echinoceratia near top.
Ashe Canyon (Nth.)

Sept. 28

32' hard, shale
blue band
40' green shale, with small Cambroteschina
42' band with spinifex
20' 3-folds fauna

Hand cobble, blue tos with thin band
red sh 3' below top, large Cambroteschina
Hand blue cobble tos. With 2' cobble sh.
at base

Red crumbly shale.
Cobbly shale with fly gap fauna
7 bands of cobble band is separated
by 2 conspicuous bands 8-9" thick
at about 20' 25'. These thinner
bands to top.

12' soft shale with thin lining, coarse near top

8' shaly with bands of hard silt, dol 8-4" 6" thick.
Spinifex mostly covered, but indications of weathered
gray silty shale

12' shaly with bands of hard silt, dol 4'-6" thick, spinifex
"Montana"

3' dark shaly to at base becoming reddish, weathering dol at top.

Cobbled Post - Carboniferous
Rhode, Pass

Section about 1 mile west of entrance to Rhodes Pass and about 1/2 mile N of road

Sept. 30, 1958

P - Rhodes Canyon
L - L - Contadero
E - K - Elly Gap
A - D - Oñate

Mississippi

P

62'

O

N

M

6' as with yellow gray to pink with phosphatic pebbles in a sand 1/1 thick at base
9' hard, dark, nodular limestone inدل
4' shaly and limy beds with Amborella spinafissa, Donvillina
See page above—lying flat beds with fossils

36' shale, dark gray, alternating with layers of 10', at base 2 layers 2' with 5' pink, gray, white material above. About 20 layers of platy 10'.

Contenders
Big Step

10' shale red at bottom becoming red-gray at top.

7' hard nodular 1/2, with Elytia, Pachyphylum—big helizoplia.

Nodular shale abounding in Atrypa.

35' and the Ely Step fauna.

G
End of algae 11/2'.

F
1/2 dark gray, black at 1/2 with 6' silty band at top.

E
10' gray, light shale, somewhat calcareous, large helizoplia, large Atrypa, columella in banded gray band. Layer 11/2' thick.

D
7' gray, dark shale with megalith. Capped by brownish saltstone 11/2'.

A
4 1/2' gray shale with 3' layers (1 1/2') saltstone (brine).

C
3 1/2' gray, saltstone 6', shale 1', saltstone 1'.

B
2-3' reddish dolomitic mass, marine bryozoan, silts, thin-beded, dol with shale, 1/2'.

A
10' shale, thin-beded, calc with shale, 1/2", 1/2'.

C
9' atak, flat-beded dolomite with chert & a few fossils.
October

Johnson Park Canyon

Section thin and composed mostly of sandstone. At lower 12-5', Tropidolepus, snails, teeth-like structures, snails & teeth often in cheat lenses in a thin-bedded, red-brown sandstone. Tropidolepus debris often wrapped around or on surface of cheat lenses.

About 10' above base is a hard sandy bed with Leptostrophia and Steliocystis. This may be top of chert. Spiniifer occur in lenses below the Leptostrophia in 5-10' above base. The spiniferae are common, 1 about 1-2' below a thin-bedded 25' about 5' above. A second spinifer zone occurs about 3' above this 25'.

Just above the Leptostrophia bed comes punky humus as with Meehouse. This 25' thick, then 16' mostly covered but with lumpy sandstone. Ambrocolia cale about 15' below top. The top beds are soft green shale with small crinoid fragments.
Sacramento Oct 3
First canyon N of Pig Canyon

Cahuilla
Cnocotache in top foot

1. hard yellow limestone
2. yellow shale with 6” band of silstone (big rock)
3. fine cobbly limestone few fossils
4. light blue clay. Thin below large smooth at top.
5. Cobble gray limestone few fossils (solid band)
6. yellow shale with smooth at top.
7. Yellow shale
8. black shale
9. Layers of 3
10. Cobble 5 separated by yellow shale
11. Hypothydinae about 6” below top. Many algae like nodules
12. Black shale
13. Dark gray shale

- 20’ Mostly greenish yellow shale with scattered nodules and scattered thin bands of dark shale. No fossils seen

Onate
1st Canyon N of Pig Canyon

5' Hard reddish massive dolomite.
   No fossils. Numerous horizontal worm tubes.

2' Soft shiny rock.

4' Massive hard ledge of dolomitic rock.

16' Shaly weathering, ash gray, somewhat leached limestone with Eodicyclus, Spirifer, Rhizidionella. Numerous vertical frustules scattered in upper half.

10' Dark leached shale passing into grey argillaceous rock with Eodicyclus

Covered 5'+
Caballeros

1st Canyon N of Pig Canyon

3' fairly hard blue l.s.

cobbly l.s., the cobbles separated by soft or hard calcarenite

5-2' shale

3' hard nodular l.s.

4' nodular limestone

Sly Dog
Oct. 5
Alamos Park

A
B
C
D
E
F
G
H
I

11+ black shale
80\textup{cm}

1/4 hard gray dolomite

3' Dark gray, soft silty shale

2' Dark gray, silty shale with rare Decolynchus

4' Hard massive yellow to brown, weathering dolomite with scattered Decolynchus, autumn

6' Soft silty lined rock with abundant Climites, Throhophylus, Epinara

2 1/2' hard massive ledge, brown weathering Climites, Decolynchus

2' Hard dol. rock with Climites, Septopophyllum

1' hard dol. rock with Climites, Septopophyllum

1' of brown dol. nodules in soft shale?
Sky Gap - Alamo Peak

Total 29'

1/2 shale, soft, dark

1/4 limestone, hard, thick, algal, bottom, 4" and 6"

2" shale

8" limestone in 3 layers, Petromeria, Hypothyridina in lowest bed

25" grayish shale, fine and friable in thin flakes. Cobbles, cobbles few in lower 10', becoming more abundant above.

Carbonate matrix, dark shale with large, flat, uniform nodules. Also long rod-like "friable" may beomite or nodules weather like omate.

Omote
Oct. 6
Dog Canyon

6” black shale with cobbles like Caballeros, fish remains, phosphatic nodules.
8-10’ covered

2’
Hand resistant in 2 beds, upper one with black
upper one with black

9”
slightly weathering
slightly weathering, big Echinoderma, Atypa

3’
Hand dol
slightly weathering, big Echinoderma, Atypa

1’
Hand red weathering dol, resistant

1’
slightly weathering dolomite, Atypa, Septobryozoic

7’
slightly weathering dolomite, light gray

18’
Dolomite, slightly weathering at base becoming
harder and resistant at top, Atypa,
Cyrtodictya scattered at base

3’
Shaly weathering dol with Testudinaria

3’
Covered

6’
Porphyry sill

Fusselman

No sly Gap present
Alamos Canyon
2 1/2 miles up from mouth
Onate

Reddish dolomite 1'

Interbedded thin dolomite and dark shale with Atypo and fossils

Dol. shale with hard band in top 2' and another 3' below top band and one 4' below top. Atypo Zeiothyrella and Chononites Dolomite massive with Zeiothyrella

Black shale with 2 dol. beds of 4'' 2' and 4' below top.

Es with chert and small pebbles 1'

Fusselman
Alamo Canyon

M 2" black ch. phosphate pebble

L 3' green shale with 1/2 x-bedded as in middle

K 2' hard, gritty limestone, greenish, weathered
red brown, big atypia. 2'

J 8' grey cobbly shale, big atypia

I 3' light gray limestone, cobbly

H 3' block shale

G 11' grey shale

F 4' Cobbly limestone, band

E 1' green shale

D Consisting of 3 thin beds of top about 6"

C middle 2 3/4"; bottom 1 1/2", with shale in between

B 3' Green shale

A 3' Cobbly lo. with Nerina, Hypothyris, Hypothyris

1' of greenish crumby shale with several thin layers of dark gray to black shale and layers of cobbles

Mantoceras about 6' below top in a cobbly bed.

O<aux

Total 54
On a side gully bed this missing and limestone has a one-inch sand with conodonts on it just under 6" of black shale with phosphate.
Mule Canyon
Oct. 8

Bill 5' 4"

- Covered 3'
- Shale green 2'
- Shale + cobbles 1'
- Green shi 1'
- Limestone 3 bands 2"
- Hypo bed 1'
- Shale greenish + dark 4'

Cobbles 3'

8' Basal shale with few thin cobbles bands and dark shi bands.

- Cobbles 6"
- 2'
- Cobbles 6"
- 3'

- 6" cobble

5' Greenish crumbly shale

On top 39' [?cement] [?fillers]
Mule Canyon
Bully to north.

Sill 7'

4½' block shale becoming red under sill
Dark gray shale, 1'

4' blue gray cobbles or nodular hard lks.
Punctuated interbeds black gravel
Enhall algal maraxes

Dike 2½'
Cobble to 6'
Shale 3½'
Hypo bed 15'
Above 7' sill

Caballero
Black shale 2'

17'
18' shale is metamorph.
appeared to upper
1st of 11'

Sill 7'
Mule Canyon

Caballero

48' cobbly lo.

 sill 2½' 
 9' cobbly lo. 
 Sky Gap
5 mi. E of Vinton

October 9

Caneville fm.

**Black shale**
60-70'

- 4½' black limestone weathering to orange brown color

- 20-25' thin bedded chalky to platy limestone and dark gray to black shale. Solider bands of 2-3' thick often with fossils: *Anastenites, Stygiolina, Brachypecten, Leichtiobolus, Asbestobolus*. Bottom with thick black chert lenses.

- Gray dolomite with chert lenses, thick at top. Fossils 2' below top.
Collected Pachna
& Bridge
Dyker Strand & Brinken 1970

Pachna 1974-7