October, 1937.

Eldorado #1 Southard,
SW SW SE, 1-6S-18W.
Elevation 1870'

Cable.

Pennsylvanian ~~C~~onglomerate. Sample gap from 3053-3405' includes the top of the conglomerate.

Decorah 3405-3423' See remarks below.
3405-3411 Sand, medium to coarse, friable; with some red and green shale of Decorah type.
3411-3417 Sand, coarse, friable; with some brown oolites and rare brown and white medium cryst. dolomite.
3417-3421 Sand, medium to coarse, friable; with rare white and pink dolomite.
3421-3423 Shale, red and green; with included phosphate nodules.

Arbuckle Top 3423' Penetration 51' Sub-sea, minus 1553'
3423-3474 Dolomites. Probably all Cotter. The possibility of the upper material being Miller-Purcell was checke but the sequence does not check with that found in the Bemis area in 11S-17W. The lower part, from 3464-3474' could be pre-Cotter.

3464
3423
41

3464
300
3764
1870
1894

The sand in the interval from 3405-23' is quartzose and shows some secondary re-crystallization. There is none of the normal trash and smooth grains or stained chert normally associated with the Penn. conglomerate.
As Decorah, this section is sandier than a normal section. It is distinctly an abnormal section.
It was probably deposited on the Cotter without the deposition of the normally underlying Miller-Purcell. Such a late overlap suggests either erosion after the Miller-Purcell, which is not borne out in other areas, or more extensive transgression of the Decorah sea. Somewhat similar deposits, though not as sandy, have been found on the Cotter as far west as 8S-25W. These have been called unconformity sands, with the idea that they were younger than Decorah and represented locally derived unconformity material.
The preservation of the Decorah in this test is probably due to its presence in a solution depression. Decorah would not be expected over much of the area, even if it was deposited uniformly over the Cotter, because removal of the Viola almost predicates removal of the Decorah. A check on the presence of Viola residuum in this test would be important, but is impossible because of a sample gap from 3053-3405'