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eton Mills; authority, arch 6, 1909, and com-

irch 6,	1909, an
ekness	Total
Teet.	Feet.
18	18
2	20
40	60
60	120
2 40 60 45 30 95 4 46 20	165 195 290 294 340 360
40 5 15 30 50 55 55	400 405 420 450 500 555 560 615
65	680
80	760
350	1110
70	1180
50	1230
40	1270.
50	1320
5	1325
35	1360
5	1365
160	1525
5	1530
30	1660
70	1630
35	1665
40	1705
10	1715
75	1890
10	1990
80	1980
60	2040
40	2080
40	2120
45	2165
15	2180

Thickness Feet.	
Chemung Series (1122')	r cct.
Unrecorded 455	2635
Cherry Grove? sand 10	2645
Slate and shells	2855
Bradford? sand 20	2875
Slate and shells 60	2935
Sand 35	2970
Slate and shells	3000
Slate and shells 302	3302
10" casing, 240'; 8"-715'; 6%"-1500'. Dry hole.	

The well starts 130 feet below the horizon of the Upper Freeport Coal and about 760 feet below the Pittsburgh bed. The correlations in parentheses are inserted by the authors. Only a slight show of oil was encountered in what appears to be the Seventh or Elizabeth sand. The Big Injun is the only sand below the Greenbrier Limestone (Big Lime) that carries water in this synclinal basin, where they all should be saturated if they were water bearing. The driller's report shows the regular sands of unusual hardness and closeness, and with no oil or gas in any formation except the slight show above mentioned.

The Steven Tichenal No. 1 well (34), located in the southern point of Pleasant district, 400 to 500 feet northeast of the mouth of Muddy creek, was bored, according to R. B. Frazier of Terra Alta, a driller on the well, during 1881, who reports as follows:

"We drilled 600 feet. Could not case off the water (all fresh water). We got the best oil sand I ever saw at 347 feet. We had 14 feet of oil sand. As the hole was wet all the time we found no oil or gas and the water could not be cased off at all. We found coal at 12 feet—about three feet of it."

This well starts 30 to 40 feet below the crop of the Upper Freeport coal, so that the vein encountered at 12 feet should correlate with the Lower Freeport bed, and the good sand mentioned at 347 feet, with the Second Cow Run. The boring evidently did not quite reach down to the Maxton sand.

The Steven Tichenal Salt Well (35), located 200 yards from the last well discussed, was drilled several years previous to 1881, according to the same Mr. Frazier, who reports as follows:

"About 200 yards from where we drilled, was an old Salt well (35) drilled several years before we went there and had to be abandoned on account of what the natives then called "the Devil Soap," but from all descriptions it was heavy oil, what we were drilling for. They found the oil or whatever it was at 340 or 350 feet. This information I got of good reliable people who boarded the men that drilled the old well, a family by the name of Metheny."

This boring starts near the same horizon as the one last described; hence, the oil show was apparently in the Second Cow Run sand.

Prospective Oil and Gas Areas, Pleasant District.—As mentioned above, the structural conditions are practically the same in this district as in Grant, and the presence of oil or gas in paying quantities just as doubtful. The structure is favorable for gas in that region along the crest of the Preston anticline northeastward from Cheat river for 4 miles, and likewise northeastward from Valleypoint to the region immediately northwest of Kelley Knob. As in Grant the failure to get gas in paying quantity in these localities would render it futile to search for oil in the district. Gas might be encountered in a test along the crest of the Briery Mountain anticline in Pleasant, but it would be very problematical, especially so as the Pleasant-Portland, district line is approached, owing to the intense folding in the region around the nose of this great arch.

Valley District.

Valley district lies immediately southwest of Grant and Pleasant and adjoins Monongalia county, so that its area is traversed in a northeast-southwest direction by three structural folds; viz, the Chestnut Ridge and Preston anticlines and the Ligonier syncline. Practically the same conditions prevail in this district as outlined above for the last two mentioned; hence, the prospects of finding oil or gas in paying quantities are doubtful.

The Isaac Welton No. 1 well (46), located in the Ligonier Basin, 0.4 mile southward from Bretz, and drilled 10 to 12 years ago, is the only test ever sunk within the boundaries of Valley district. No log of this boring could be obtained, but it was a dry hole and is reported to have reached a depth of 3200 feet. As it starts about 25 feet below the Upper Freeport

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