COLUMNAR SECTION

GENERALIZED SECTION OF THE SEDIMENTARY ROCKS OF THE GAINES QUADRANGLE.
SCALE: 1 INCH=200 FEET.

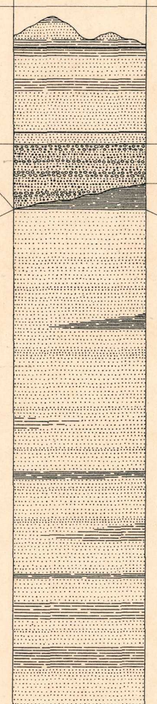
System.		Formation Name.	Symbol.	Columnar Section.	Thickness in Feet.	Character of Rocks.	Character of Topography and Soil.
CARBONIFEROUS	PENNSYLVANIAN	Pottsville formation.	Cpv		200	Sandstone, black shale, and fire clay, with a 3-foot coal bed in the upper part.	Gently undulating or flat cappings to the plateau remnants. Soil sandy and rather barren. Inaccessible for cultivation.
		Sharon conglomerate member.	Cps		60 – 100	White quartz conglomerate and sandstone.	Cappings to or rims about the plateau remnants, frequently forming cliffs. Soil highly siliceous sand of very limited distribution.
		UNCONFORMITY.					
	MISSISSIPPIAN	Mauch Chunk shale.	Cmc		0 – 40 ?	Red shale.	No appreciable effect on topography. Clayey soil, covered by talus from overlying beds.
		Oswayo formation.	CDo		1000±	Heavy beds of green and gray flaggy sandstones with some green and gray shales and local beds of red shale. Thin-bedded gray or buff sandstone appears to predominate in the upper 200 feet of the formation.	Steep hillsides with frequent projecting ledges. Slopes generally covered with talus of sandstone plates. Soil stony and barren.
	?						
DEVONIAN		Cattaraugus formation.	Dcr		500±	Persistent red shales, alternating with red, brown, and green sandstones and gray and green shales.	The lower, moderately steep slopes of hillsides, frequently covered with talus of sandstone from its own beds or from the overlying Oswayo formation. Soil generally sandy and stony. Poorly situated for farming.
		Chemung formation.	Dch		600+	Relatively thin fossiliferous beds of gray and buff sandstones, calcareous sandstone and shale, argillaceous shale, and thin beds and streaks of limestone in rapid alternation.	The lower slopes of steep hillsides and well-rounded hills of moderate slope and height, free from talus. Soil yellowish and of good quality. Contains many platy fragments of shale and shaly limestone.

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ILLUSTRATION SHEET

PENNSYLVANIA–NEW YORK
GAINES QUADRANGLE

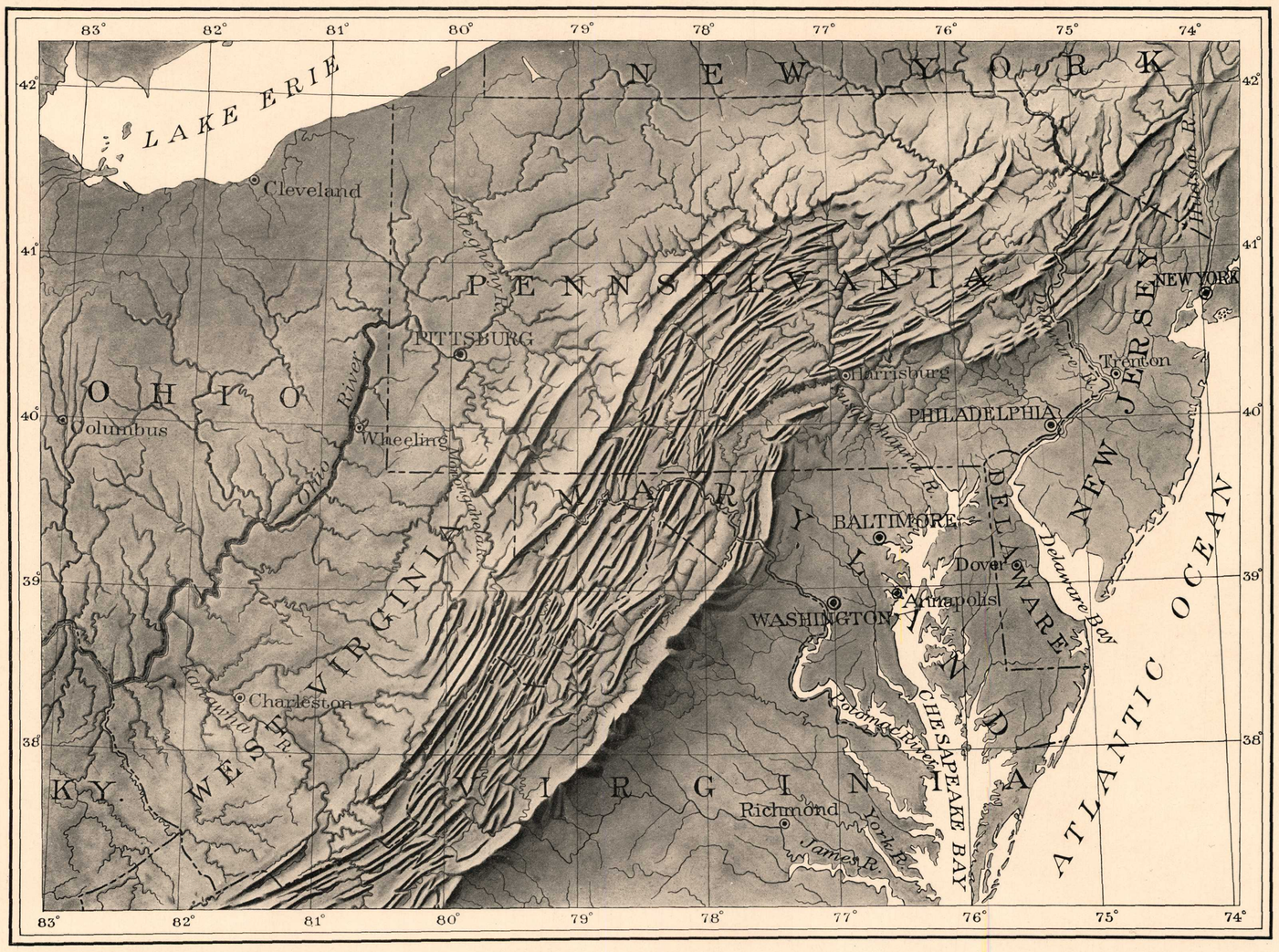

FIG. 7.—RELIEF MAP OF THE NORTHERN APPALACHIAN MOUNTAINS.

The Gaines quadrangle is situated in northern Pennsylvania, in the plateau belt north of the high valley ridges. It lies between meridians 77° and 78°, and its northern border approximately coincides with the New York–Pennsylvania State line.

FIG. 8.—MICROSCOPIC SECTION OF ATWELL SAND.

The light-colored angular grains are of quartz. The irregular dark patches are solid hydrocarbons deposited from the oil while it occupied the pores of the sandstone. Enlarged about 25 diameters

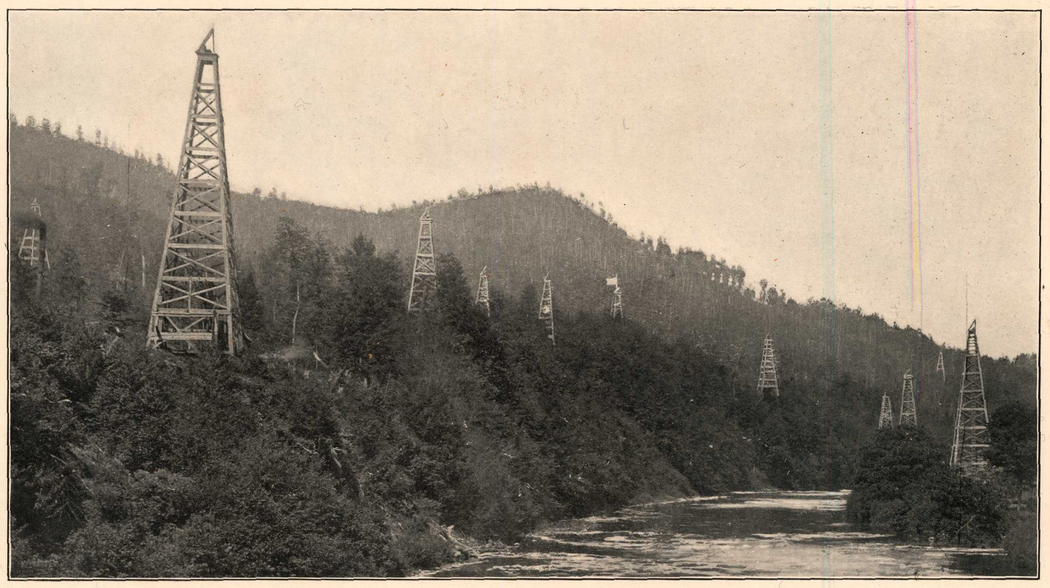

FIG. 10.—OIL WELLS ALONG PINE CREEK, WEST OF MANHATTAN.

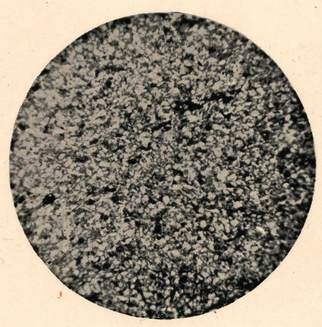

FIG. 9.—MICROSCOPIC SECTION OF ONE OF THE SANDS OF THE BLOSSBURG FORMATION.

Sample taken rom the level of highest production (660 feet from surface) in well No. 4 of Blossburg and Gaines Oil and Gas Company. The well produced 2,100 barrels a day from this level. The white and light-colored grains are of finely divided and highly angular quartz. The dark patches are solid hydrocarbons occupying the pores of the sandstone Enlarged about 25 diameters.