

OUTSTANDING GEOLOGIC FEATURE OF PENNSYLVANIA

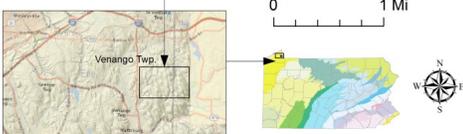
DRUMLINS, ERIE COUNTY

Stuart O. Reese, 2016



Location

Intersection of Kimball and Macedonia Roads, Erie Co., Venango Twp., lat: 42.0718, lon: -79.7816; Wattsburg 7.5-minute quadrangle



Geology

Drumlins are glacial topographic features (landforms) and are typically spoon-shaped elongate hills or low ridges. A drumlin has a blunt nose that points in the direction of ice approach (here, the north-northwest) and a gentler slope in the direction of ice advance. They may be especially noticeable from the air, on a topographic map, or on a shaded-relief map. The drumlin's long axis is typically parallel to the direction of ice movement. Drumlins are generally two to three times longer than they are wide.

The specific mechanism of drumlin formation has been studied for decades. Drumlins apparently formed under special topographic conditions; they were molded under the ice and shaped as the ice advanced. The composition of drumlins can be very diverse, having bedrock cores, till, or sorted sands and gravels in various ratios. In their formation, they can be depositional or erosional. They often occur in "swarms."

Erie County has the only distinct drumlins in Pennsylvania. Their orientation is approximately S35°E. These drumlins are part of the Chautauqua drumlin field that extends into Pennsylvania from western New York.

Right: Black-and-white photograph showing the topographic relief of a drumlin in long profile, Venango Township, Erie County (from Tomikel and Shepps, 1967, p. 41).



Below: Topographic relief in the area is less than 200 feet. The drumlins shown on the map below are about 60 to 110 feet higher than the surrounding landscape.



Recommended Reading

- Sevon, W. D., Fleeger, G. M., and Shepps, V. C., 1999, *Pennsylvania and the Ice Age* (2nd ed.): Pennsylvania Geological Survey, 4th ser., [Educational Series 6](#), 30 p.
- Tomikel, J. C., and Shepps, V. C., 1967, *The geography and geology of Erie County, Pennsylvania*: Pennsylvania Geological Survey, 4th ser., [Information Circular 56](#), 64 p.