

hard shale, usually from 2 to 5 feet thick. The latter contain large symmetric concretions and septaria, some of which attain a diameter of 6 to 8 feet. The formation has a total thickness of about 200 feet on the lake shore in the town of Evans and is 165 feet thick in the southeast corner of this quadrangle. Its lower beds appear along Smoke's creek, $1\frac{1}{2}$ miles south of Windom and some of the shales and concretions near the middle along a branch of the same stream $\frac{1}{2}$ mile west of Orchard Park.

Unlike every other formation represented on this quadrangle except the Bertie waterlime, it becomes thinner toward the east, diminishing at the rate of $1\frac{1}{2}$ feet a mile to Naples, Ontario co., where it measures 21 feet. It may be seen at nearly all of the exposures of the Cashaqua shale at and above cascades produced by its superior resistance to the erosive power of the streams.

Common Portage fossils occur but sparingly in the lighter bands in the western part of the State, and the black shales have been found to contain very few fossils except plant and fish remains and a few conodont teeth.