

thick in Fogelsonger's quarry at Williamsville and in Quinn's quarry 2 miles farther east, but decreases rapidly to 3 feet a short distance beyond. The bed is recognizable continuously toward the east along the Helderberg escarpment to Albany county, varying in thickness but maintaining the same general character, and is quarried all along this line of outcrop, furnishing a large amount of building and dimension stone of fine quality.

The succeeding beds, which contain a large proportion of chert, are also quarried extensively, furnishing excellent material for road making and concrete. Some layers in the upper beds are again almost free from chert at certain localities.

The lower Onondaga limestone beds are well exposed on the west side of Niagara river at Black Rock and slightly on its east side; also in Forest Lawn cemetery; also extensively in the Buffalo Cement Co.'s quarries and thence northeastward to Fogelsonger's quarry and Williamsville. Larger exposures of the middle and upper part of the formation may be seen in quarries in the region extending on both sides of Fillmore avenue from Leroy avenue to Delevan and from Leroy avenue to Worcester place and along Delevan avenue to Dutton; also in Cutter & Bailey's quarry at the intersection of Bailey avenue and the New York Central Railroad.

Beyond the limits of this quadrangle extensive exposures embracing the entire section of this formation are found in the vicinity of Leroy, Genesee co.; Phelps, Ontario co.; Union Springs, Cayuga co. Marcellus, Onondaga Valley, Jamesville and Manlius, Onondaga co. and at other localities still farther east in the State.

The average thickness of the Onondaga limestone in 12 wells in this vicinity according to driller's records is 168 feet. In the carefully kept record of the Lackawanna Steel Co.'s well on Smoke's creek 1904, it is given as 162 feet. It is somewhat less in the eastern part of the quadrangle. At the Livonia salt shaft in Livingston county it is 136 feet; in the deep well at Ithaca, 78 feet; in Onondaga county, 65 feet; at Clarksville, Albany co., 85 feet and at Countryman hill, 100 feet.

This formation is exceedingly rich in remains of animal life but it is frequently quite difficult to obtain good specimens. There have been found in it 3 species of fish; 39 of crustaceans, mostly trilobites; 13 of cephalopods; 3 of pteropods; 38 of gastropods; 15 of lamellibranchs; 48 of brachiopods; many bryozoans and corals and a few crinoids. Some of the more common fossils are: the trilobites *O-d-o-n-t-o-c-e-p-h-a-l-u-s s-e-l-e-n-u-r-u-s* and *P-h-a-*