ART. XXX.—*The Oriskany Sandstone Faunule at Oriskany Falls, New York;*[1] by HARRY N. EATON.

During the course of faunal studies of the Oriskany of central New York it seemed advisable to visit the type locality at Oriskany Falls whence the formational name was derived. As the result of several days' collecting in July, 1919 a faunule was found which is probably representative, and is enumerated below.

Extent and Stratigraphy.

The sandstone outcrops in a bold ledge on the hillside on the northern outskirts of the village of Oriskany Falls at an elevation of about 1080 feet. This hill is a plateau spur pointed southward, broadening out to the north in the southern part of Oneida County; bounded on the east by the valley of Oriskany Creek, and on the west by the valley of Sconondoa Creek. The outcrop is nearly unbroken for a mile northward of the village in the Oriskany Creek valley, and thence northward there are no further exposures owing to the drift cover. On the western side of the hill it can be traced by a line of bowlders, rising gradually to an altitude of 1260 feet to a point about 1¾ miles north of the village of Augusta, in harmony with the gentle southerly dip of the region. On account of the drift cover, the northern boundary of the formation is uncertain, but probably does not lie more than 3½ miles north of Oriskany Falls. The greatest breadth east and west is about 1¾ miles.

The thickness was given by Vanuxem[2] as "about twenty feet," but Brigham's[3] estimate of "about ten feet" is more in accord with the writer's measurements. Vanuxem's error was a natural one to make at the outcrop nearest the village, as at this place a row of large sandstone blocks has been plucked away from the parent ledge and moved a few feet downward so as to give the formation a double apparent thickness.

The Oriskany sandstone at this locality lies directly upon the Helderberg limestone,—or Manlius according

[1] The above paper was read before Section E, A. A. A. S., at St. Louis, Dec. 30, 1919. An abstract was published in Science, new ser., 51, 493, 1920.

[2] L. Vanuxem, Third Ann. Rept. Geol. Survey, Third Dist. N. Y., p. 273, 1839.

[3] A. P. Brigham, The Geology of Oneida County, Oneida Hist. Soc., Trans., 1887-1889, p. 109, 1889.

to Clarke,[4]—and is overlain by the Onondaga limestone. The friable nature of the rock is well known. The upper surface is more quartzitic and darker in color than the lower portions. Dr. Clarke[5] noted the abrupt transition here from the underlying limestone to the superjacent Oriskany sandstone, and spoke of its extent as follows:

"All calcareous beds are here wanting . . . This quality of rock does not occur in any of the eastward exposures of the Oriskany from Albany County to the New Jersey line except for an occasional thin streak without fossils. From Oriskany Falls westward no calcareous beds appear except toward the top of the deposit as the sedimentation grades into that of the Onondaga limestone above. . . .

"The character of the Oriskany deposit in New York from Schoharie County westward may be regarded in a general way as a series of arenaceous lenses (in strike section) connected by thin sheets of quartzitic sandstone. The outcrops at Oriskany Falls and Yawger's woods are such lenticular masses."

Fauna.

Vanuxem[6] lists four common Oriskany brachiopods as numerous in the lower part, and figures another brachiopod, also mentioning the occurrence of a pelecypod. Brigham[7] mentions *Spirifer arenosus* (Conrad) and *Rensselæria ovoides* (Eaton) as being abundant. Both authors note the occurrence of the fossils as interior casts. Clarke[8] lists *Chonostrophia complanata* (Hall), although this species was not found by the writer. The following is the list of species disclosed by the present study:

Spirifer arenosus (Conrad), *S. murchisoni* Castelnau, *Rensselaeria ovoides* (Eaton). *R. ovoides* (Eaton), var. nov.?, *Hipparionyx proximus* Vanuxem, *Meristella lata* (Hall), *M. laevis* (Vanuxem), *Eatonia peculiaris* (Conrad), *Centronella glansfagea* (Hall), *Leptostrophia* (*Stropheodonta*) *magnifica* (Hall)?, *Rhipidomella emarginata* (Hall), *Megalanteris ovalis* Hall?, *Modiomorpha* sp. undet., *Actinopteria* sp. undet., and *Diaphorostoma ventricosum* (Conrad).

Rensselæria ovoides is a common fossil in the main outcrops and boulders. The possible new variety of this

[4] J. M. Clarke, The Oriskany Fauna of Becraft Mountain, Columbia County, N. Y., N. Y. State Museum, Memoir No. 3, p. 78, 1900.
[5] Op cit., p. 78.
[6] L. Vanuxem, Geol. N. Y., part 3, Survey Third Dist., pp. 123-125, 1842.
[7] Op. cit., p. 109.
[8] Op. cit., p. 78.

species has been previously found by the writer at Yawger's Woods, near Union Springs, New York, and its description will be published later. The shell shows possible resorption on the free margin, and is abbreviated accordingly. This fossil is quite similar in appearance to *Meristella lata* and may have been confused with the latter form by Vanuxem.[9] It is the most abundant form.

Spirifer arenosus is very abundant, occurring with shell markings preserved and also as interior casts.

Spirifer murchisoni is less common than *S. arenosus.*

Hipparionyx proximus is not common, and occurs near the top of the formation where the rock is quartzitic, the rotund dorsal valve usually being preserved.

Centronella and *Rhipidomella* are rare.

The identifications of *Leptostrophia* and *Megalanteris* are doubtful and in each case rest upon the interpretation of single specimens.

It is interesting to note that few, if any, of the type specimens of the Oriskany fauna in the state museum at Albany are from Oriskany Falls, showing in what light esteem the early collectors held the Oriskany Falls occurrence.

Correlation.

While correlations may be premature due to the paucity of species, certain comparisons may be of value. *Meristella lævis* is an Helderbergian and Lower Oriskany form. *Centronella glansfagea* is common in the Upper Oriskany and occurs in the Onondaga. It is also plentiful at Yawger's Woods, near Union Springs. *Rhipidomella emarginata* is known in the Helderbergian but has not been reported previously from the Oriskany. (This last statement is based on the probability of *R. emarginata* being a separate and distinct species, as distinguished by the Maryland Survey, and not merely a variety of *R. oblata.*)

Of the ten species identified beyond doubt, 80 per cent is found in Schuchert's[10] list of Lower Oriskany species, and an equal number appears in his Upper Oriskany list. Dr. Schuchert[11] regarded the faunule as of Upper Oriskany age from the small assemblage of fossils reported

[9] Op. cit., p. 125, 1842.

[10] C. Schuchert, Lower Devonic Aspect of the Lower Helderberg and Oriskany Formations, Bull., Geol. Soc. America, **11**, 292-296, 1900.

[11] Op. cit., p. 301.

by Vanuxem. Stauffer's[12] list of the Oriskany fossils of Ontario contains 70 per cent. The writer has found all of them at Yawger's Woods.

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[12] C. R. Stauffer, The Devonian of Southwestern Ontario, Geol. Survey Canada, Mem. 34, 249-251, 1915.