

Contrib. : A.S. Warthin, Jr.

THIRD ANNUAL MEETING  
NEW YORK STATE GEOLOGICAL ASSOCIATION  
AT  
VASSAR COLLEGE

POUGHKEEPSIE, N.Y.

MAY 6-7, 1927

Program carried out regardless of the weather. Come prepared.  
Daylight Saving Time used. One hour faster than Eastern Standard Time.

Friday forenoon- Arrival on the Campus. Register at Alumnae House  
and secure reservations.

12:30 P.M. Complimentary luncheon at the Alumnae House, given by Vassar  
College.

1:30 P.M. Start from Alumnae House for the afternoon field trip across  
the eroded Taconics to South Dover.

7:00 P.M. Informal dinner at Alumnae House.

8:30 P.M. Discussion of the geology of the region. Living room of  
Alumnae House.

Saturday

8:30 A.M. Start on all day field trip from Alumnae House. Everyone to  
bring his own lunch. A box lunch will be provided if lunch  
order is purchased before 2:00 P.M. Friday.

For the convenience of those taking trains, a stop will be  
made on the way out, at the New York Central station, where bag-  
gage can be checked until the return to Poughkeepsie. Members  
using the West Shore R.R. should take their luggage with them.

The party will see some of the Varve clays of the Hudson  
valley, and the following formations - Hudson River slates,  
Shawangunk, High Falls, Binnewater, the Waterlimes, and the  
lower Devonian.

The route will be Poughkeepsie, Highland, New Paltz, Rosen-  
dale, High Falls, Binnewater and Kingston. At the last named  
place members will be able to take the West Shore R.R. if  
desirable.

Please be prompt. Every effort will be made to carry out the schedule  
on time.

The use of the auto buses will be complimentary.

The topographic maps to be used are, for Friday, Poughkeepsie,  
Rhinebeck, Millbrook and Clove; for Saturday, Poughkeepsie,  
Newburgh, Rosendale. These maps will be on sale at headquarters.

Reservations - T.M. Hills Vassar College Poughkeepsie, N.Y.

Please make advance reservations for:

- 1 Number of seats in the buses.
- 2 Number of lunch and dinner reservations.
- 3 Rooming accommodations at Alumnae House.

Prices

- \$3.75 one in room with bath shared with adjoining room.
- 3.25 two " " " " " " " "
- 2.00 single cubicle
- 1.25 dormitory bed - 12 beds to a dormitory.
- .50 or 1.00 breakfast
- .75 box lunch
- 2.00 dinner.

FRIDAY AFTERNOON MAY 6, 1927.

1. Cars will start promptly at 1:30, and after each stop, as the trip is a long one.
2. Maps needed: Poughkeepsie, Clove, Millbrook, Rhinebeck.
3. Reconnaissance embracing the Pre-Cambrian Fishkill Mountains and the eroded Ordovician Taconics.

The formations that will be seen are as follows:

- 4 Hudson River Slate
- 3 Wappinger Limestone
- 2 Poughquag Quartzite
- 1 Pre-Cambrian

En route:

Note the flat terraces, first on the campus, then at New Hackensack (five miles out), Fishkill Plains (eight miles out), and other places.

Note the variable character of the Wappinger limestone and Hudson River slates as seen at the numerous exposures along the whole trip. The first outcrop of Wappinger limestones 1.5 miles east of the College is a typical upfaulted block. A fossiliferous exposure will be visited at Stop 8. Seven miles from the College (at Stop 1) the beveled outcrop of Hudson River slate is typical for the vicinity of Poughkeepsie.

Stop 1: Seven miles.  
Hudson River slates.

En route:

Twelve miles from the College, at Emmadine Farms, is a good view of the Pre-Cambrian Fishkill Mountains. The road from this point to Poughquag follows the northern boundary of these highlands. The Cambrian quartzite outcrops at Poughquag and extends as outcrops (or in the fences) for a mile to the east. It is not fossiliferous at this point. Between Poughquag and Stop 2 the road crosses Pre-Cambrian gneisses.

Stop 2: Twenty-four miles.

Hudson River formation. Compare degree of metamorphism with the slates of Stop 1. Note new minerals developed.

En route:

From Pawling northward the route follows the Harlem valley, a depression cut in the Cambro-Ordovician marbles, and bounded on the east and west by ranges of Hudson River schist. Does the general accordance of summit levels of the marble hills and the discordant dips in the marble suggest Tertiary baseleveling? The Cretaceous baselevel is represented by the tops of the bounding ranges.

At 31 miles the road swings to the side of the valley and exposes the schists of the east wall.

SATURDAY MAY 7, 1927

ALUMNAE HOUSE 8:30 A.M.

All day trip. Bring lunch. The maps that will be of service are, Poughkeepsie, Newburgh, and Rosendale. Follow the route carefully.

The formations that will be seen are as follows.

- 13 Pleistocene Varve clays
- 12 New Scotland Limestone (?)
- 11 Kalkberg "
- 10 Coeymans "
- 9 Manlius "
- 8 Rondout " Upper Waterlime
- 7 Cobleskill "
- 6 Rosendale " Lower Waterlime
- 5 Wilbur "
- 4 Binnewater Sandstone
- 3 High Falls Shale
- 2 Shawangunk Conglomerate
- 1 Hudson River Slate

Stop 9. Pennock Clay Pit.

What is the arrangement of colors? The cause of the colors? Texture or degree of "fatness"? Porosity? In regard to the bedding planes - thickness? continuity of layers? Can the layers of a block from the east side be matched with those of one from the west side?

If these variations or Varves represent seasonal changes, about how many years are represented by the section? A soil-auger boring shows that these clays extend to at least six feet below the pit floor.

Describe the jointing of the clays. Is there more than one system of joints? How deep do they extend? Are inclined joint planes ever formed in clays or soft sediments?

Stop 10. New York Central Station.

Hand baggage can be checked until your return. There is a good exposure of crumpled slates in the cut at this point.

Stop 11. Highland Station, under the High Bridge.

How do the slates compare with those east of Poughkeepsie, in composition, degree of folding, slaty cleavage, competency of beds, size of folds and number of metamorphic minerals?

En route:

Note the irregular surface of the Walkill Valley (Shenandoah-Tertiary) base level, and compare with the Shawangunk-Cretaceous base level as represented by the Sky Top ridge west of the road between New Paltz and Tillson. The Sky Top tower on top of the Shawangunk Mountain is near the famous summer resort at Lake Mohonk. It will be visible throughout most of the trip. Orient yourself by it,

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Stop 12. Walkill Valley.

Note carefully the character of the slates at this point so that you will be sure to recognize them later in the day.

Note the eastern front and also the crest of the Shawangunk mountains.

En route

How do you explain the course of the Walkill River at the covered bridge?

Note the flat-topped sandy terrace on which Tillson is located. It is a part of the Hudson River system of terraces (Lake Albany) which were developed during a post-glacial depression. Portions of these terraces will be seen from various points during the day.

Stop 13. Railroad Station at Rosendale.

Orient yourself with compass or map, then determine the structure of the Shawangunk. If it is younger than the Hudson River slates of the Walkill Valley, how can you make the dip on the eastern side of the railroad agree with this fact? Does the idea you formed regarding the eastern face of the Shawangunk Mts. bear out your explanation?

Where would you expect to find the Shawangunk if you followed it northward across the railroad bridge?

Stop 14. Bottom of Hill at Rosendale.

Be sure you recognize the thin-bedded Manlius, and the Kalkberg with its black flint nodules. More accessible sections will be seen at other points.

En route

Many interesting exposures will be passed which will be examined on the return trip.

Stop 15. High Falls.

Explain the presence of the Shawangunk conglomerate at the water's edge. It is overlain by the High Falls shales. Color, composition, structure? Is the structure due to thrust? Direction?

The Binnewater, a quartzitic, thin-bedded, green and red, sandstone overlies the High Falls.

The Wilbur lies on top of the Binnewater. It is a dark grey or mottled limestone, six to eight feet thick.

The Wilbur is succeeded by the Rosendale, which is the lower waterlime of the Rondout Valley.

What is the cause of the falls?

Stop 16. Anticline.

What are the formations? Is there slaty cleavage? What is the age of the stream? Its physiographic name?

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Stop 17. Lunch Cave Section

Locate the Binnewater, Wilbur, Rosendale, Cobleskill, Rondout, Manlius, Coeymans and Kalkberg.

How many Waterlimes are present? How do you explain the position of their outcrops?

Draw a cross-section showing the stratigraphy and structure of the Big Cave region from the Shawangunk outcrop in the road 200 yards east of the Caves, northeastward to the top of the hill.

From the top of the hill above the caves note the fingering of the anticlinal ridges, the terraces to the northeast and southwest, and the Cretaceous baselevel.

Sky Top tower and the Mohonk House are visible.

En route

At Binnewater Station the drivers will take the cars around to the Fourth Lake. The remainder of the party will follow the interesting section of the railroad, to the Fourth Lake.

Draw a cross section along the railroad that will explain any structural or stratigraphic discrepancies.