

New York State Geological Association

Spring Meeting 1954

Dates: Friday and Saturday, April 30 and May 1

Place: Vassar College, Poughkeepsie, New York

Schedule of Events

Friday, April 30:

Field Trip 1: Metamorphism of Cambro-Ordovician sediments in eastern Dutchess County. Leader: A.S. Warthin, Jr. Assemble on Collegeview Ave., (north boundary of Vassar campus) headed east for departure at 9:15 A.M. Bring lunch. Late arrivals join at intersection of N.Y. 55 and 22 at 2:00 P.M.

Field Trip 2: Tour of No. American Cement Company plant and quarry and Silurian-Devonian sediments on west side of Hudson between Catskill and High Falls, N.Y. Leader: J.H. Johnsen. Assemble at 9:00 A.M. in No. American quarry on west side of 9-W 4.9 miles south of intersection of 9-W and N.Y. 23. Watch for signs. Lunch enroute. Late arrivals join at 1:00 P.M. in large parking area of Hudson Valley Diner on 9-W by-pass .5 mile south of intersection of 9-W and 209.

7:30 P.M. Business meeting in Aula, Vassar College.
Ask for directions at Main Gate on Raymond Ave.

9:00 P.M. Smoker and Geology Open House.

Saturday, May 1:

Field Trip 1: "Hudson River" sediments between Poughkeepsie and Hudson, N.Y. Becraft Mountain. Leader: A. S. Warthin, Jr. Assemble in entrance to Baird State Park on Taconic Parkway, 1 mile north of N.Y. 55 at 8:45 A.M. Bring lunch. Trip ends at Hudson about 4:30 P.M.

Field Trip 2: Igneous rocks and geomorphology of the Highlands. Leaders: K.E. Lowe, W.A. Eames, J.H. Johnsen. Assemble on College Ave. headed west for departure at 8:30 A.M. Bring lunch. Trip ends at Peekskill about 4:30 P.M.

CATSKILL - HIGH FALLS FIELD TRIP

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April 30, 1954

- 00.0 STOP ONE. Tour of North American Cement Company plant and quarry.
On leaving North American, proceed south on U.S. 9-W.
- 12.0 Note Glenerie cherty limestone on left and Esopus shale on right.
- 12.3 Glenerie Falls over Esopus shale on right.
- 16.8 FORK LEFT ON 9-W. Note lower cherty member of Onondaga limestone in cut on both sides of road.
- 17.1 RENDEZVOUS at Hudson Valley Diner parking area after lunch. Restaurants may be found on road between this point and city of Kingston, or in Kingston proper. Time of rendezvous approximately 1:30.
- 19.5 TURN LEFT at traffic light onto Hasbrouck Avenue in Kingston.
- 19.7 TAKE LEFT of three roads onto Delaware Avenue.
- 20.3 TURN RIGHT onto Abruyn Street opposite mouth of abandoned waterlime mine.
- 20.5 TURN RIGHT onto Union Avenue.
- 20.8 STOP TWO. Park cars along road and walk to abandoned quarry in Vleightberg. Upper Silurian and Lower Devonian formations resting with angular unconformity on overturned "Hudson River" shales and sandstones. Relation to Taconic and Appalachian orogeny.
- 21.2 TURN LEFT onto Hasbrouck Avenue.
- 21.3 TURN RIGHT onto East Strand Street (ONE WAY).
- 21.6 Note Normanskill formation on right.
- 21.8 TURN LEFT onto Abeel Street.
- 22.7 Manlius limestone-Coeymans limestone contact on right.

CATSKILL-HIGH FALLS FIELD TRIP

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- 30.0 Gravel pit on right in delta deposits of high-level stage of Rondout Creek. (Lake Albany stage?).
- 30.4 Note lime kilns on right. Quarries in Manlius limestone on top of ridge locally called Fly Mountain.
- 31.0 STRAIGHT AHEAD.
- 32.4 Note Esopus shale on right with slaty cleavage.
- 32.5 TURN LEFT onto Route 32. GO SLOW.
- 32.7 BEAR RIGHT off Route 32.
- 32.8 TURN SHARP RIGHT. Drive with care! Winding road.
- 33.2 From this point on, note many abandoned lime kilns. Industry died out in early 1900s.
- 33.4 TURN SHARP LEFT.
- 34.6 Duffy's Cave on left. Abandoned cement mine in Rondout limestone. Now used for growing mushrooms.
- 35.2 TURN RIGHT.
- 36.3 TURN LEFT just across unguarded railroad crossing.
- 36.7 SLOW. Stop at side of road but do not leave cars. Kilns of Century Cement Company, the only remaining natural cement operator in the area.
- 37.2 STOP. TURN RIGHT along Rondout Creek and abandoned course of Delaware and Hudson Canal.
- 37.7 Multiple abandoned mines in Rosendale and Rondout waterlimes on right. Some used for mushrooms.
- 38.3 VERY SLOW in crossing bridge. Observe anticline in Manlius and Coeymans limestones on right. Assymetrical to east which is unusual for the area.
- 40.3 STOP THREE. High Falls, New York. Section includes Shawangunk conglomerate through Cobleskill limestone.

RETURN TO POUGHKEEPSIE.

Rock Section along Rondout Creek at High Falls, N. Y.

Rondout Formation		Feet
Glasco Member	Dark-gray, fine-grained massive limestone forming ledge at top of falls beneath concrete retaining wall. Moderately fossiliferous, including the conspicuous chain coral <u>Halysites</u>	4
Rosendale Member	Dark-gray to grayish-black, fine-grained, thick-bedded argillaceous dolomitic limestone extending nearly to base of the falls. No fossils noted in highest 15 feet; many corals in lowest portion. Has been mined elsewhere in vicinity for natural cement rock	27
Binnewater Formation	Grayish-white quartzitic sandstone in upper part with bedding surfaces frequently exhibiting well-developed ripple marks, grading downward into alternating bed of buff, gray and greenish-gray fine-grained sandstone with some shale interbeds. Exposed at base and at foot of falls and along road to powerhouse	32-35
High Falls Formation	Three subdivisions at this locality.	
Upper Member	Dark-gray to green shales, becoming red shale at base; some bedding surfaces mud-cracked	31
Middle (Powerhouse) Member	Dark-gray, slightly arenaceous limestone to dolostone, fine-grained; forming small falls at powerhouse	11
Lower Member	Red and green shales, some bedding surfaces with mud cracks; pyrite in green shales to base of exposure	39
	Total High Falls Fm. about 85 feet.	
Shawangunk Formation	Brown and tan-stained, often grayish weathering, white or near white, well-cemented milky quartz pebble conglomerate and quartzite. Thickness at this locality from borings	270
*****UNCONFORMITY*****		
Martinsburg Formation	Dark-gray shale and siltstone	

METAMORPHISM OF SEDIMENTS IN DUTCHESS CO.

N. Y. State Geol. Assoc., April 30, 1954

- 0.0 Park on Collegeview Ave. (north boundary of Vassar Campus), headed toward the east.
- 0.02 Turn left at corner, go 3 blocks and turn right on N. Y. 55.
- 0.3 Outcrops of Snake Hill-facies shale along road for one mile.
- 1.5 Road crosses fault block of Wappinger ls.
- 2.0 New Haven Ry. underpass.
- 2.5 BEAR RIGHT on Noxon Road.
- 6.3 SLOW for hill and curves.
- 7.3 STOP 1. Normanskill slates of green eastern facies, crumpled in chevron folds.
- 8.0 TURN left on LaGrangeville Rd.
- 8.4 Pass under Taconic Parkway, noting 14-year old stalactites hanging under arch.
- 9.7 SLOW! Sharp left and right turns.
- 10.1 STOP, then turn left on N. Y. 82.
- 11.5 Turn right at traffic light on N. Y. 55.
- 12.1 SLOW, BUT DO NOT STOP. The pod of vein quartz on right is developed along a fault which dragged a small block of Wappinger ls. to surface here.
- 14.5 Gravel pit on left in kame terrace.
- 15.0 STOP 2. Black pyritic and marcasitic phyllites, graphitic in places. Mohawkian age.
- 15.7 STOP 3. Black marble. Mohawkian age, gradational between clastic and carbonate sequences.
- 15.9 STOP 4. Anticline of low-rank marble; calcitic part is Mohawkian (Balmville), dolomitic part is Canadian (Rochdale) in age.

- 16.5 SLOW for left turn at foot of hill.
- 16.9 Note early-blooming flowers on wall of house on left.
- 18.9 TURN right up hill at traffic circle.
- 19.6 Chloritoid schist along road. Specimens will be available at a later stop.
- 21.2 STOP, BUT STAY IN CARS. Observe to the SW the even summits of the Hudson Highlands, developed on Precambrian gneisses at about 1500'. The level area where you are now parked at 1200' may represent an inheritance from the same erosion surface, here at lower elevation because of the less resistant schists involved.
- 21.8 SLOW! STEEP GRADE AND HAIRPIN TURNS. Second gear recommended until 22.4.
- 22.8 STOP 5. Garnet-staurolite schist, with so much original and introduced quartz that it gives the general appearance of a gneiss.
- 25.5 SLOW past exposures of high-rank marble, and over rough railway crossing in Wingdale.
- 26.0 and 26.1 TWO STOP SIGNS. Straight ahead at first, then turn left on N. Y. 55 at second sign.
- 26.7 BEAR LEFT off route 55 at foot of hill.
- 27.0 FORK RIGHT.
- 27.4 TURN RIGHT across bridge over Tenmile River.
- 28.2 STOP 6. Park cars and walk 0.3 mi. into South Dover marble quarry. High-rank dolomitic marbles of Cambrian? age, which have been used for building stone, magnesium production and filler in paint pigments.

POUGHKEEPSIE TO HUDSON TRIP

N. Y. State Geol. Assoc., May 1, 1954

Assemble at Baird State Park, off Taconic Parkway 1 mile north of N. Y. 55. Drivers drop passengers at sign on entrance drive, pay 50¢ fee at toll booth, and turn left to park. Save parking ticket for 50¢ refund if you leave in 30 minutes.

- 00.0 STOP 1. Red and green slates of eastern Normanskill (Mt. Merino member) facies, on entrance drive of Baird Park. After examination leave via entrance drive.
- 00.7 TURN left (north) on Taconic Parkway; same slates for next 9 miles.
- 10.6 TURN left on Hollow Road, and reform caravan line.
- 11.1 TURN left.
- 12.5 TURN right.
- 12.8 FORK left.
- 12.9 STOP 2. Dark slates of Upper Mt. Merino (western facies) or lower Austin Glen age.
- 15.8 TURN left. Outcrops of Austin Glen slate and graywacke for next 2.5 miles.
- 19.4 TURN left.
- 20.3 Take center road through settlement.
- 20.5 STOP 3. Cyclically banded Mt. Merino (western) slate. This lithology occurs at various levels. Turn right on route 9-G.
- 24.6 TURN right on blacktop road.
- 25.1 STOP 4. South-plunging anticline of intraformational ls. conglomerate. At or near base of Normanskill.
- 25.3 SLOW, CARS TURN AROUND.
- 26.4 TURN right on route 9-G.
- 28.3 TURN right off 9-G, then left at 28.5 miles
- 29.0 STOP 5. Shale and graywacke of Austin Glen facies of Normanskill.

- 30.6 TURN right at traffic light in Rhinebeck on Route
9, reforming line at fairground entrance at 31.5.
- 33.1 Straight ahead at traffic light.
- 36.1 Straight ahead at traffic light in Red Hook.
- 38.8 TURN right off route 9.
- 40.6 Fork left, then right at 42.0
- 43.5 Cross bridge and turn right.
- 44.1 Fork right in settlement.
- 46.1 STOP 6. Ruedemann's (1942, fig. 58) "boudinage"
structure in "Nassau" slate. Turn cars.
- 48.6 Fork right in Elizaville.
- 51.7 Turn left in Manorton.
- 53.6 STOP, then cross route 9 at Blue Stores.
- 59.4 STOP 7. Deepkill siliceous slate and chert.
- 61.4 STOP 8. Silurian ls. resting unconformably on
Schodack shale at SW corner, Becraft Mountain.
Proceed north on route 9.
- 64.2 Turn right at traffic lights here and at 64.6.
- 65.0 STOP street, then turn right at end of cemetery.
Manlius beds are visible in cemetery, and you
pass Coeymans and New Scotland climbing hill to:
- 65.7 STOP 9. Jones quarries, principally in Becraft ls.

FIELD EXCURSION TO HUDSON HIGHLANDS-BEAR MOUNTAIN REGION

New York State Geological Association

Saturday, May 1, 1954

- 0.0 Assemble on College Avenue facing west for departure at 8:30 A.M. Daylight time.
- 1.0 Turn right on South Cherry Street.
- 1.3 Left on Church Street and follow Church to Mid-Hudson Bridge.
- 2.3 Entrance to Mid-Hudson Bridge. TOLL 25¢.
- 3.2 Graywackes and slates in Austin Glen member of Normanskill formation. Note dip to WEST which is unusual in this area. These same beds may be seen all the way to Newburgh.
- 4.2 Go three-fourths of the way around traffic circle and head south on U.S. 9-W.
- 19.0 Entering Newburgh. Go straight through on 9-W.
- 21.2 Crossing surface of delta of Moodna Creek built into post-glacial high level stage of Hudson River. Observe Storm King Gorge ahead.
- 25.3 Right then quick left through underpass. Proceed to Cornwall.
- 26.2 Bear right at fork.
- 27.1 School on left.
- 27.4 Turn right on road to Storm King School. SLOW! Prepare to stop.
- 27.6 STOP 1. Highlands border thrust. Precambrian Storm King granite thrust over badly shattered Ordovician Hudson River phyllite. Discussion of tectonic border of Highlands.
- 27.8 Bear left at fork and continue up road to Storm King School.
- 29.4 Turn left on 9-W. BE CAREFUL CROSSING NORTHBOUND TRAFFIC LANE!
- 29.9 View of Highlands.
- 31.1 KEEP TO LEFT! Prepare to make dangerous turn across traffic into parking area at Crow's Nest. Space in area limited so pack close.
- 31.5 STOP 2. Crow's Nest. Looking southeast. Geomorphology of Hudson gorge, West Point terrace, Schooley level, etc. Large hornblende xenoliths in pegmatitic phase of Storm King granite and major intrusive contact.

LEAVE AREA ONE BY ONE AS TRAFFIC PERMITS AND REASSEMBLE AS INDICATED BELOW.

HUDSON HIGHLANDS -- BEAR MOUNTAIN

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- 33.0 SLOW! Turn right on N. Y. 293.
- 33.1 Bear left. REASSEMBLE ALONG HERE.
- 38.3 STOP 3. Natural Bridge south end of Popolopen Lake. Presumed Paleozoic inlier with white marble and some curious meta-sediments. Spinel dike.
- 40.3 SLOW! SHARP LEFT on U.S. 6. Entering Palisades Interstate Park.
- 43.8 Lunch. Park in picnic grounds. Parking fee 50¢ per car.
- 44.2 Bear right at Long Mountain traffic circle on new Palisades Interstate Parkway.
- 44.9 Turn right in entrance to Anthony Wayne recreation area.
- 45.0 STOP 4. Pegmatite sill intruding Highlands gneiss. Pegmatite and gneiss cut by dikes.
- Continue on around through Anthony Wayne recreation area (under construction) and return to Long Mountain traffic circle.
- 46.0 Bear right at Long Mountain circle.
- 46.4 Note dikes in road cut on right.
- 46.6 Bear right on Bear Mountain Drive around south end of Bear Mt.
- 47.5 SLOW! Prepare to turn left across traffic up Perkins Memorial Drive.
- 47.6 Turn left on Perkins Memorial Drive.
- 48.2 STOP 5. Excellent exposure of lower contact of Storm King granite synclinal pluton with Highlands complex. Phenomena of both granitization and granite intrusion.
- 50.3 STOP 6. Top of Bear Mountain. Linear and platy flow structures in Storm King granite. Triassic lowland and Manhattan prong visible on clear day. Exfoliation.

This is last scheduled stop. Members will proceed individually to destination. Return to foot of Bear Mountain, turn left and proceed to Bear Mountain Inn and U.S. 9-W. Take your choice of north or south. Bear Mountain Bridge entrance at traffic circle on 9-W half mile north of intersection of Bear Mountain road with 9-W. Thanks for your participation and cooperation.