

Final Announcement

NEW YORK STATE GEOLOGICAL ASSOCIATION
Hotel Utica, Utica, New York.
Friday May 10 and Saturday May 11.

ALL TIME IS EASTERN DAYLIGHT SAVING

In a previous announcement it was stated that a detailed itinerary would be sent out at this time but because of mailing costs it would seem best to give these to the members at the time of registration. The trips will cover the features mentioned in the previous announcement and the following formations will be seen: Pre-Cambrian, Little Falls Dolomite, Lowville, Black River, Trenton, Utica, Frankfort, Oneida, Saquoit, Clinton, Vernon, Camillus and Manlius. There is one addition in the optional trips for Saturday afternoon. Through the kindness of Mr. Virgil Clymer of the Howe Caverns those attending the meetings may make a trip, without cost, through these beautiful caverns, on the afternoon of May 11.

The trips will leave the Hotel Utica as previously announced; 10:00 A.M. on Friday and 8:30 A.M. on Saturday. Those members arriving late on Friday may join the trip at Tal-a-gue-ga Park just east of Little Falls where the party will have lunch at 1:00 P.M.

At the Banquet on Friday evening the following men will speak:
Prof. O. D. Engeln - Geomorphology of the Mohawk Valley.

Prof. Marshall Kay - Paleozoics of the Mohawk Valley

Prof. H. L. Alling - The Pre-Cambrian of the Little Falls area.

The Banquet will cost \$1.25 per person and will be followed by a complimentary dance in the Hotel Utica.

There will be no registration fee for the meetings but a charge of \$.75 per person will be made for a set of topographic maps, on which the routes and stops of the trips will be indicated, and for the mimeographed itinerary and the description of the outstanding features of the region.

In order that we may have some idea of the number attending the meetings it would be greatly appreciated if the following questions would be answered on the enclosed post card and returned to the secretary immediately.

1. Whether or not you are attending?
2. If attending how many students or others will be with you?
3. How many expect to attend the banquet?
4. Will it be necessary for us to arrange transportation for any members of your party?

RESUME OF HISTORY OF DRAINAGE AND LARGER GEOMORPHIC FEATURES OF
THE MOHAWK VALLEY

- I Paleozoic
A. Events A.S. WARTHIN, JR.
1. Uplift of land and origin of consequent Susquehanna River system with headwaters in the Adirondacks or to the north in Canada.
B. Geomorphic Effects
1. Southerly flowing consequent streams.
- II Mesozoic
A. Events
1. Erosion and weathering
B. Geomorphic Effects
1. Further development of drainage system.
- III Tertiary
A. Events
1. Beheading of headwaters of Susquehanna by subsequent Mohawk, a tributary of the Hudson.
2. Development of Ontario River system flowing west into Mississippi embayment.
3. Drainage of all central and western New York flowed north and passed out by the Ontario River to the Mississippi system.
B. Geomorphic Effects
1. Divide at Little Falls
2. Mohawk flowing east and Ontario River flowing west.
3. Southward migration of Allegheny cuesta due to northward flowing tributaries and weathering.
- IV Pleistocene
A. Events
1. Obliteration of the river systems by ice sheet and depression of land causing reduced gradients. Gradual release of land surface from the ice by melting of the glaciers.
2. Glacio-Lacustrine
a. Lake Herkimer (1st Stage) Straight of ice connecting the Ontario and Hudson ice lobes with waters from the melting ice escaping at first into the Otsego-Susquehanna valley via Summit Pass, at an elevation of 1360 feet.
b. Lake Herkimer (2nd Stage) Continued melting of ice straights and lessening of water caused Lake Herkimer to seek a lower outlet via the Unadilla-Susquehanna outlet at Cedarville to the east - elevation 1220 feet. Lake Schoharie - Shrinkage of Hudsonian lobe permitted earlier escape of waters along north and east face of Helderberg escarpment west of Albany and the later escape across the divide between Schoharie and Hudson valleys at Delanson at an elevation of 840 feet - correlating sand plains of 1220 to 820 feet.
Lake Amsterdam and minor lakes, Oriskany and Saquoit - Further shrinkage of Hudson Lobe permitted overflow of water about Rotterdam salient, west of Schenectady at 800 to 300 feet. Delta plain in Rome 860 to 400 feet. Utica airport at 600 feet elevation.

Lake Amsterdam with tributary lakes. - Black River water still tributary to Mohawk valley lakes with two tributary lakes known as Lansing Kill and Sacandaga.

3. Glacio-Fluvial

- a. Glacio-Mohawk - 900 feet to extinction. Free drainage of Mohawk from Lake Vaunxaum (original and restored stages) at Rome, Lake Vaunxaum occurring between Rome and the Ontario ice lobe to the west. Divide at Little Falls moved to Rome in the later part of this stage. Initiation of Niagara Falls and Lake Erie.
- b. Iro-Mohawk - 440 at Little Falls, 380 at Amsterdam, 360 at Schenectady. Life from the Iro-Mohawk extended from the time the ice left the Rome district to the time when it abandoned the Ontario Basin. It all carried all the precipitation of the Ontario Basin as well as all the waters of the melting ice, leaving 100 feet of glacial deposits over the Rome divide. Present Mohawk gradient - Rome 420 feet - Schenectady 210 feet (i.e. a fall of 2.3 feet per mile).

V. Recent - Continued erosion and modification of drainage systems.

PART OF GEOLOGIC SECTION FOR NEW YORK STATE

(From Guidebook 4, XVI Intnat. Geol. Cong.)

System	Series	Stage or formation
Silurian	Cayugan	Manlius ls. Rondout waterlime Cobleskill dol. Salina beds: Bertie waterlime Camillus Vernon Pittsford
	Niagaran	Guelph dol. Lockport dol. Clinton beds Oneida cgl.
	Medinan	Albion Queenston sh.
Ordovician	Cincinnatian	Oswego ss. Lorraine beds Pulaski sh Frankfort sh. Utica sh.
	Mohawkian	Trenton Black River beds Amsterdam Watertown Leray Lowville ls.
	Chazyan	Chazy ls.
Canadian	Canadian	Beekmantown Tribes Hill Schaghticoke
Ozarkian	Ozarkian	Little Falls dol. Hoyt ls. Theresa Potsdam
Cambrian	Acadian	Stissing ls Georgia beds Poughquag qtzite.
Pre-Cambrian	Keweenawan	Late pre-Cambrian trap dikes
	Algoman	Anor.-sy.- gran. complex
	Laurentain	Early pre-Cambrian intrs.
	Granville	Met. sediments

The majority of the formations listed above will be seen on the trips.

ITINERARY FOR NEW YORK STATE GEOLOGY ASSOCIATION THROUGH
MOHAWK VALLEY.

FRIDAY, MAY 10, 1935

(Letters refer to features on topographic map which can be seen from cars without stopping. Numbers are stops for the entire group.)

- .0 Assemble in front of Ramp Garage, 105 West Oriskany Street. Drive east.
- 0.1 Cross Genesee St. onto Oriskany St. East. Pass Hotel Martin on right and immediately take right fork onto Jay St.
- 0.2 Drive east on Jay St. eight blocks, and just after passing Brandegee School on left.
- 1.0 Turn right onto Kossuth Ave. Drive south 6 blocks on Kossuth Ave. and
- 1.4 Turn diagonally left onto Albany St. Continue on Albany St.
- 2.3 Cross Culver Ave. (Parkway), State Armory at right, onto narrow macadem road, Albany St. (Stone Quarry Road). Note series of glacial lateral channels on hillside ahead.
- 2.9 Frankfort formation on right; lateral channels on left.
- 3.0-3.3 a Lateral channels on left.
- 3.4 Bad turn (left), take left fork onto Brockway Road - b Utica shale.
- 4.0-4.4 c Oneida, Saquoit (Lower Clinton) ripple marked and cross bedded.
- 7.2 Turn left at Frankfort signboard.
- 7.6 Sign for Frankfort Gorge.
- 8.5 Sharp right turn down steep hill. Use second gear.
- 8.7 Hairpin left turn into Frankfort Gorge. Route 171.
- 9.1 Stop 1. Frankfort, Oneida and Saquoit sections.
- 10.7 Frankfort on both sides of Moyer Creek.
- 12.4 Enter Frankfort on Route 171.
- 12.9 Traffic light, turn right on Route 5 S.
- 14.5 Enter Ilion.
- 15.3 At Elks Hall turn right on West St. Route 51.
- 16.7 Keep straight ahead, avoiding left fork, and enter Ilion Gorge.

- 17.3 d Frankfort formation.
- 18.2 Oneida and Frankfort contact.
- 19.2 Stop 2. Cross bedded hematitic Saquoit beds.
- 20.6 Tufa deposit on left.
- 20.7 Stop 3. Vernon on right across creek.
- 21.3 Camillus with tufa.
- 23.4 Cedarville, left turn onto Route 51.
- 23.5 Stop 4. Right on Route 51. Entering Cedar swamp, outlet of second stage of Lake Herkimer. (Cedarville Col) Elevation 1220 feet, Cedarville to Unadilla River.
- 24.9. Cross Unadilla River and turn around post on left. Return along Route 51 to Cedarville.
- 26.4 At gas station turn right uphill through drumlin area. East-west trend of drumlins due to influence of Mohawk Valley ice tongue.
- 30.3 e Columbia Center. At four corners take left up steep hill cutting through drumlin area.
- 31.6 Manlius Stop 5.
- 31.9 Go straight ahead and then left at irregular four corners avoiding dirt road on right and along Steels Creek Road.
- 32.7 Notice drumlin area on right. Spinnerville Gorge.
- 33.1 Camillus on right.
- 33.3 End of road turn right.
- 33.4 Avoid dirt road on left.
- 33.6 Turn left.
- 34.5 Oneida formation.
- 35.9 Turn right on Route 51.
- 36.6 Turn right (fork) Route 51.
- 36.9 Traffic light. Straight ahead on Route 51.
- 37.5 Turn right on Route 5 S. through Remington Arms plant.
- 37.6 Straight ahead down Mohawk Valley. Old Erie Canal on left.
- 38.2 Straight through Mohawk.
- 38.8 Old Schermahorn Tavern of early pre-Revolutionary times. Walter Butler of Cherry Valley Massacre.

- 39.5 Take left under railroad bridge and then right on Route 5 S. Barge canal on left.
- 40.3 Lake Amsterdam clays and gravels.
- 41.1 Crossing Lake Amsterdam plain with Iro-Mohawk Gorge on left.
- 41.6 Fort Herkimer church on left used as a fort during French and Indian, also Revolutionary wars.
- 42.2 Marker of General Herkimer's birthplace, hero of Battle of Oriskany.
- 43.6 Kame terraces and Fairschild beaches on right.
- 44.0 f Jacksonburg quarry - Black River (Lowville) and Trenton (?)
- 44.9 Fine view of Little Falls Gorge on left.
- 45.6 Four corners, turn left on Route 167.
- 45.8 Quarry and Little Falls dolomite. Geodes with dolomite, calcite and asphalt.
- 47.2 Stop 6. Quarry and Little Falls dolomite.
- 47.3 Cross railroad.
- 47.4 Turn right to avoid bridge over Barge Canal. Stop 7. Park below Parachial School on right and below left turn. Observe unconformity between pre-Cambrian and uppermost Cambrian on Little Falls dolomite in West Shore R.R. cut.
- 47.5 Turn left and cross barge canal bridge.
- 47.6 Turn right over Mohawk River bridge.
- 47.7 Cross New York Central tracks and turn sharp right along Route 5.
- 48.1 At Catholic church on right turn right on Route 5.
- 48.3 Warning, bad hill, curve and two dangerous underpasses. Mohawk River on right with Moss Island., beyond which is the highest single lock in North America, a part of the barge canal system.
- 48.6 Stop 8. Lunch - Tal-a-que-ga Park. Potholes. Return west on Route 5 through underpasses and turn on first right up a steep hill.
- 49.2 Take second right.
- 49.6 Stop 9. Park at baseball field for examination of dike in syenite 1/2 mile to the southeast.
- 49.7 First right on Route 167 along Little Falls dolomite and syenite unconformity.
- 50.5 Stop 10. Manheim fault escarpment and depressed block.

General Herkimer's homestead and monument across valley.

- 52.3 Leave concrete taking right fork for Manheim Center.
- 52.8 Cross railroad and bridge taking left fork. Lake Amsterdam plains.
- 53.3 Straight through four corners.
- 54.2 Avoid bridge.
- 54.5 Stop 11. Ingham Mills. Black River and Trenton formation on East Canada Creek. Good collecting.
- 55.8 Upper Amsterdam plains.
- 56.6 Falls of East Canada Creek on left.
- 57.5 Through the Green Comfy Slipper factory to North Main St. Dolgeville. Turn left, then again onto VanBuren St.
- 58.2 Stop 12. Take left turn and park. Walk to power house down East Canada Creek. Notice post Ordovician or post Carbonaceous folding and faulting in Dolgeville shale.
- 58.3 Turn left at Faville Ave. and then straight ahead.
- 58.7 Turn right on Main St. Route 167.
- 59.2 Turn left on Route 29.
- 59.3 Turn right on Route 29.
- 61.9 Salisbury Center. Left turn - Route 29.
- 64.0 Quarry in Little Falls dolomite (Little Falls "Diamonds")
- 67.4 Barto Hill triangulation point. Panoramic view.
- 69.3 West Canada Creek Valley.
- 70.3 Stop 13. Trenton and Black River series with meta Bentonite.
- 70.5 Little Falls dolomite.
- 71.6 Middleville. Route 28 left turn. Cross bridge over West Canada Creek and railroad.
- 72.0 Little Falls dolomite on right.
- 73.2 Kame. Follow West Canada Creek Valley down to the Mohawk Valley.
- 76.5 Avoid right fork at sign - Herkimer.
- 79.2 Bear right through Herkimer Route 28 and 5. Traffic light. Straight ahead. Follow Route 5.
- 83.1 Information Bureau. Avoid right fork. Follow Route 5 to Oriskany St.

ITINERARY FOR THE NEW YORK STATE GEOLOGICAL ASSOCIATION

WHEATSTONE GULF - TRENTON FALLS TRIP SATURDAY, MAY 11, 1935.

A.S. WARTHIN, JR.

Note: The trip will terminate at Trenton Falls about 12:30 P.M. Unfortunately there are no accommodations for lunch at Trenton Falls and it is suggested that each person bring his own lunch, especially if he wishes to spend more time collecting at Trenton Falls, or plan to have a late lunch (1:00 or 1:30 P.M.) in Utica or some other nearby town after adjournment of the trip. Sandwiches may be obtained in any of the coffee shops adjacent to the Hotel Utica.

Leave Utica - 8:00 A.M.

Head cars west and set speedometer to zero in front of Ramp garage.

0.0 Ramp garage - west on Oriskany St.

0.7 Take right fork on 5 S.

3.0 Whitesboro.

4.7 Take right on 12 C crossing N.Y.C. R.R. tracks, Mohawk River and barge canal. Note recent flood plains of the river.

5.5 Take left at Carey's Corners on Route 49.

5.8 Utica shale on right.

6.5 Marcy State Hospital. Note that you are now on the Lake Amsterdam plains - elevation 520 ft. Also note extent of this plain.

7.4 Utica airport on Lake Amsterdam plains.

14.2 City of Rome, the site of the present divide between Hudson River and Lake Ontario - St. Lawrence River systems. At Ft. Stanwix, now the Rome Club, the first American flag was flown in battle. Continue through city and turn right at North James St. on Route 46.

16.3 Straight ahead on Route 46.

18.8 Take right fork for Delta and Boonville Gorge.

19.6 Right on concrete.

20.6 Stop I. Delta dam on left and Utica shale on right. Ancient valley below Delta was blocked with moraine and present Mohawk has been compelled to cut "palisades" on east side.

23.9 Valley of Lansing Kill Creek and upper Mohawk, the course of waters flowing from Port Leyden Lake through the Boonville outlet to Northwestern. Valley from Northwestern to the north is pre-glacial.

26.1 Frenchville.

- 26.6 Note high level terraces.
- 32.9 Black River Canal on right.
- 38.0 Boulder trains on left.
- 39.1 High kame - 220 ft. - Boonville sand pit.
- 40.9 Straight ahead on Route 12 through square in Boonville, Stop 2 will be made just north of Boonville. Outlet for Port Leyden Lake water. Elevation 1130 ft. Within two miles to the west change to Port Leyden sheet which shows Black River valley on right marking approximately the great unconformity between the Pre-Cambrian of the Adirondacks and the Ordovician limestone. Site of Black Lake, hanging deltas and limestone controlled terraces.
- 45.1 Sugar River. Quarry on south side of road in lower Ordovician limestone.
- 48.1 Tug Hill Plateau on left composed entirely of Ordovician rocks, Oswego sandstone on top, with lower Lorraine (Whetstone Gulf Formation) in plateau proper.
- 51.8 Turin. Note terraces on right between Tug Hill Plateau and Black River. These are made in lower Ordovician limestone.
- 57.6 Take left at Whetstone Gulf Inn, for Whetstone Gulf.
- 57.8 Stop 3. Good collecting. Note types of weathering and erosion. If stream is too high for fording park cars and walk up the gulf. Return to Boonville via same route i.e. No. 12.
- 75.2 Boonville. Take left at park, then right beyond square on Route 12.
- 76.2 Cross Black River Canal.
- 76.3 Note stratified glacial sands of Black Lake or Port Leyden Lake. Note kame on right which was past in Boonville Gorge.
- 77.9 Note pre-Cambrian composition of fences.
- 78.1 Lower Ordovician limestone.
- 82.4 Alder Creek - gateway to Adirondacks and bottom of Lake Forestport. Continue on Route 12.
- 86.6 Glacial outlet for Lake Forestport.
- 89.6 Remsen - Lake Forestport outlet. Note lower Ordovician limestone at base of falls.
- 90.2 - 91.1 Deposits due in part to outlet waters from Lake Forestport and in part to Lake Schoharie deposits.
- 90.7 Take right road.
- 92.5 Prospect. Point of diversion of West Canada Creek from its pre-glacial course to the Mohawk at Holland Patent to present post-glacial one via Trenton Falls Gorge. Straight ahead and keep left to bridge over West Canada Creek and park near Prospect

Park headed so that you will be ready to take right road to east of West Canada Creek.

- 92.3 Stop 4. Walk back across bridge and by trail near west end of bridge over to ledges of Upper Trenton passing high level pothole in limestone. Spurs represent the downthrow side of reverse fault, the middle Trenton having been faulted up over the upper Trenton. Note fault breccia near fault zone and open syncline to south of bridge on west side of stream. Also zigzag course from falls to bridge, undoubtedly due in part to diversion brought about by damming effect of moraines and fault control. 1/4 to 1/2 mile to southwest is a large road metal quarry in middle Trenton.
- 93.9 Straight ahead over dirt road.
- 94.1 Turn right.
- 94.9 Stop 5. (Optional) The former Rust place and home of Charles D. Walcott, one time director of U. S. Geological Survey and Smithsonian Institution. 1/4 mile down railroad tracks and beyond first culvert on south side of stream one may see one of Dr. Walcott's trilobite quarries.
- 95.1 Steep hill. Use second gear.
- 95.8 Turn right.
- 96.0 Stop 6. Sherman Falls formation of the Trenton on right bank of stream. Good collecting. Cross West Canada Creek and turn sharp right through hydro-electric power station.
- 96.5 Bear right up along hydro-electric road. Stop 7. View of high falls and general nature of gorge. Note joint plane control of stream and water falls.
- 97.1 Stop 8. Adirondack R.R. and bridge over West Canada Creek. Note intraformational folding in Trenton half way up in formation between the dam and spillway.
END OF TRIP.
Return to Route 12 over same road to hydro-electric plant.
- 98.0 Pass intersection of road over West Canada Creek, continuing straight ahead.
- 99.0 Slight jog to right and continue straight across Route 28, continuing on unnumbered road.
- 99.2 Feeder for barge canal follows old pre-glacial course of West Canada Creek along Nine Mile Creek.
- 99.9 Turn left on Route 12 for Utica.
- 103.2 South Trenton.
- 107.2 Top of Deerfield Hill. Excellent view of Mohawk Valley and City of Utica.
113. Utica.

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