

Contrib. : A. S. Warthin Jr.

New York State Geological Association

Field Meeting - 1931

Final Notice, Itinerary and Bibliography

Meet at Fort Ticonderoga, 11 A. M., Friday, May 15.

Lunch at Champlain Monument, Fort Crown Point, 12:50 P. M.
(Each person bring his own lunch).

Headquarters: Lee House, Port Henry. Dinner, lodging and breakfast \$3.00. Make reservations in advance. The Secretary will send the management a statement of the number that expect to come, based on information he has from the different institutions, but each group must write the hotel to insure its own reservations. Port Henry is a place of about 3000 inhabitants.

In case there is an overflow accommodations can be had at The Deer's Head Inn and Cottages, Elizabethtown, N. Y. at \$5.00 per day, including a packed luncheon to eat in the field.

Those staying at the Lee House, Port Henry must make arrangements personally to secure lunches to eat in the field.

Informal dress (field clothes permissible) at dinner.

Topographic sheets: Elizabethtown, Port Henry, Schroon Lake, Paradox Lake, Ticonderoga, North Creek, Bolton, Whitehall, Ft. Ann, Luzerne, Glens Falls.

Supplemental: Ausable, Willsboro.

Write to President Eaton, Department of Geology, Elmira College, Elmira, N. Y. to secure stickers to use on windows of the cars during the trip.

Business to come before Association:

Election of a new secretary
Decision whether to omit meeting in 1932
Decision where meeting to be in 1932 or 1933

Itinerary and Descriptions

General

Friday, May 15.

Meet at Fort Ticonderoga in the forenoon, allowing ample time for the several delegations to inspect the ruins.

Formal gathering for the excursion at 11 A. M. Leader-Dr. R. Ruedemann, state paleontologist. Move along the road to Fort Crown Point, where we will eat lunch near the Champlain monument about 12:30 p. m. The afternoon will be spent in viewing the ruins of Fort Crown Point, studying the fine exposures of the early Paleozoics of the peninsula, and observing en route to Port Henry the glacial deposits and evidences of marine transgression. Messrs. Dale and Hartnagel will discuss the glacial and physical features along the line of march. Arrive at Port Henry late in the afternoon. Headquarters - Lee House. Dinner, Lee House, at 7 p. m.

Detailed

After dinner: (a) Business Meeting. President Eaton in chair. (b) Dr. Ruedemann will explain the sequence of the lower Ordovician strata and their paleontology on the peninsula. These beds dip gently northwest, are 1000' thick and are very fossiliferous. See map, Bull. 138, N. Y. S. Museum.

"Returning to the mainland and continuing toward Port Henry we cross a large area of granitic rocks, a smaller stretch of Granville schists and opposite the old fort a triangular faint mass of Potsdam sandstone on which Port Henry is built. This block is a fault block tilted east and in places deeply eroded so as to expose the underlying pre-Cambrian schists. Such contacts can be observed where West St. crosses a brook, along the lower course of McKenzie Brook near the bridge. The basal conglomerates are followed by reddish sandstones, and then by typical light colored Potsdam sandstones."

En route from Ticonderoga to Mount Hope:

Marine clays: Beekmantown limestone beyond Street Road. On Sawyer Hill east of Buck Mountain and South of Dibble Mountain, Sawyer Hill moraine with elevated cobble beaches on the left of the road. East of Breeds Hill, left of the road, wave-cut cliffs.

"North of Ticonderoga through Mt. Hope the road leads over marine clays. Through Street Road are lacustrine lake bottom clays overlying probably a mass of Beekmantown limestone which lies to the right. Beyond Fork of road we follow line between morainic deposits on the left and marine clays on the right. On Sawyer Hill to the left are some interesting elevated cobble beaches. The road now runs on marine clays down to the lake. Beyond are wave cut cliffs on the side of Breeds Hill left of the road. Where a road leads off to left is a marine delta and at track crossing we cross a large marine delta of Putnam's Creek. As we enter Crown Point Village we may turn left and follow a wave cut cliff on our left. Now turn right and cross the wide delta and Putnam's Creek

and continue toward Port Henry over lake and marine clays. During the glacial period the Champlain valley was first filled with a tongue of ice which retreating left morainic material. In its retreat various lakes at various levels filled the valley, reworking some of the glacial material and leaving lake deposits and shore lines. As the ice retreated farther an arm of the sea entered from the north and extended south to Ticonderoga. These various deposits are seen from Ticonderoga to Westport with additional evidences in the deltas and wave cut cliffs and benches. Many marine fossils and even whale remains have been found in the elevated beaches around Lake Champlain."

Saturday, May 16.

General

Start from hotel at 8:30 a. m.

Study the lower Paleozoics, pre-Cambrian igneous rocks, and faults along the road north of Port Henry for the first two hours. Later, proceed to Mineville (6 miles) where the remainder of the day will be spent in viewing the magnetite mines and ore body.

Leaders - Dr. D. H. Newland and Dr. H. Ries.

The party will disband by mid-afternoon to allow an early start for home.

For those remaining over night at Port Henry, an optional trip from Port Henry to Westport (10 miles) may be offered. Leaders - Messrs. Ruedemann and Hartnagel. See detailed statement.

Details of Stops

Stops in forenoon near Port Henry and north:

- 1- Where West Street crosses a brook in southern part of town and along the lower course of McKenzie Brook, unconformity between pre-Cambrian schists and gneisses,
- 2- In the northern part of town at railroad tunnel, exposure of Beekmantown (?) limestone with a two-foot layer of quartzite, also edgewise conglomerate. A normal fault occurs here with a throw of about two feet.
- 3- Northward from #2 along road, a scarp on the west meeting road represents a fault of large dimensions between pre-Cambrian on the west and lower Paleozoic on the east. Granville marble with amphibolite inclusions; both in Grenville schists and gneisses. The southern end of the outcrop shows evidences of faulting. Note abandoned iron mine along road on right.
- 4- Proceeding along road, Potsdam sandstone on west side of road going down hill to Mullin's Bay.

5- Following state highway north, turn west at Stevenson cemetery on the Mullin's Brook-Mineville road. Basic anorthosite and related types in bed of brook at small waterfall and below. A more likely place to find anorthosite and gabbro will be on Hammond Brook, about three miles north of the cemetery, along the state road.

"From Port Henry we drive over Grenville schists and gneisses to the village of Mineville where we enter an extensive area of syenite underlying all the village and surroundings except for a mass of gabbro on the eastern side of Barton Hill. The syenite of the Adirondacks was earlier either classed as gneiss or as anorthosite. Its real nature as an intrusive syenite was first noted near Loon Lake station, than at Ticonderoga. It is a massive dark green rock intrusive into the Grenville. It consists chiefly of greenish orthoclase and emerald green pyroxene. This syenite is a southeastern portion of an immense batholith covering 50 square miles."

"At Mineville are the large magnetite mines of Witherbee Sherman & Co. and the Port Henry Iron Co. producing over 1,000,000 tons of high grade ore yearly. The ores consist of pinching and swelling bands or lenses of granular ore which have been folded into intricate ore bodies. The ore bodies lie in gneissic syenites, the overlying beds being acidic, the underlying being basic phases of the same magma. The relation of the gabbro on Barton Hill to the ore is obscure. The majority of students of the area believe the ores to be banded segregations of the syenite which were subsequently folded and crumpled. A few authors believe both the gneisses and the ore bodies represent highly metamorphosed sedimentary beds. The whole problem is extremely difficult. It is best discussed in N. Y. Museum Bulls. 138 and 119. The ore consists of 83% magnetite, 9% apatite and the rest quartz-pyroxene, etc. This gives a carload average of 60% Fe. Magnetic concentration is carried on in large mills at Mineville eliminating some phosphorus and sulphur and raising the iron content. Both open cut and underground mining is employed."

"After crossing Mill Brook in Port Henry the road follows thru Grenville gneiss with occasional patches of Grenville crystalline limestone for about 3 miles. Just beyond the steamboat landing and before reaching Graig Harbor there is an interesting fault block of Beekmantown limestone penetrated by the railroad tunnel. This mass is extensively quarried as a source of flux, having taken the place of Grenville limestones which can also be seen near Millbrook, interbedded with hornblende schists. The Beekmantown is siliceous and dolomitic. We next cross masses of syenite and in going down steep grade toward Mullin Bay are in a fault block of Potsdam sandstone. From Mullin Brook to beyond Beaver Brook we are in Trenton limestone, the next 2 miles in Chazy limestone. Thence the road follows in Beekmantown limestones to the outskirts of Westport which village lies in the Potsdam. Along this course from Crown Point to Westport rock exposures are not common the

rocks being mostly covered by the clays and sands of the higher levels of Lake Champlain, including the nonmarine Lake Albany beds and the lower less extensive marine beds of the Champlainian Sea."

Sunday, May 17.

General

There appear to be two options for those who remain in Port Henry over Saturday night.

- A) Dr. H. L. Alling may organize a party to visit the graphite mine at Chilson on the Schroon Lake road, west of Fort Ticonderoga.
- B) Dr. N. C. Dale may take a party if there be sufficient demand across the Champlain bridge from Fort Crown Point to Chimney Point, Vermont to study the western flank of the Green Mountain range, etc.

Registrations to Date

Mount Holyoke	2
Pensselaer Polytechnic	4
Union	6
Vassar	16
Univ. of Buffalo	6
Univ. of Rochester	20
Univ. of New Hampshire	2
Barnard	10
Cornell	20
Lafayette	2
Individuals	4

O. D. von Engeln
Secretary 1930-31

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