

TRIP B: GEOMORPHOLOGY OF ONEIDA BASIN AND SOUTH SLOPE OF THE TUG HILL PLATEAU

Ernest H. Muller, James S. Street and Jesse L. Craft

<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
0.0	0.0	<p><u>Assembly point:</u> Parking lot, Sheraton Motor Inn Thompson Rd. and New Court St. Carrier Circle, near Thruway Exit 35.</p> <p><u>Departure time:</u> 8:15 A.M. Sharp! All travel by bus!</p> <p>Leaving Sheraton Motor Inn, proceed 75° around Carrier Circle and turn right (S) onto Thompson Rd.</p>
1.0	1.0	Turn left (E) before tracks. In .2 mi. bear right (SE) following N.Y. Rte. 290. Rise onto drumlinoid with veneer of red till.
2.2	1.2	Continuing on N.Y. Rte. 290, cross overpass and descend to level of Iroquois lake plain at 410 ft. msl.
4.1	1.9	Continuing on N.Y. Rte. 290, rise onto Fremont Hill, a drumlinoid that was an island in Iroquois Lake. Strand features are mapped at the 435 and 420 ft. levels. Cemetery on right (S) as road returns to lake plain is at the 430-ft. level. Cross alluvial flats of Limestone Creek.
6.0	1.9	Cross abandoned feeder of Erie Barge Canal and rise from Iroquois lake plain onto intensely scoured scarp developed on Syracuse fm. Excellent exposures of Syracuse fm in railroad cut, off route .4 miles SW.
6.1	0.1	At "t-intersection", turn left (E) to continue on N.Y. Rte. 290. Route parallels Erie Canal, with Iroquois lake plain on left and scoured, thinly veneered slopes on right.
8.3	2.2	Turn right (S) in Green Lakes State Park. Bear right, through administration area; follow winding road upslope to end.
9.6	1.3	<p>STOP ONE. GREEN LAKES STATE PARK</p> <p>Examination of notched Green Lake channel and Round Lake plunge pool. Discussion of meltwater channels, plunge pool development, interrupted plunge pool migration and limnology of Green Lake. See text, p.31.</p> <p>Return to park entrance</p>
10.9	1.3	Turn right (E) onto N.Y. Rte 290. Embayed mouth of Green Lake channel debouched into Lake Iroquois at right.
12.1	1.2	Turn left (N) onto Kirkville Rd. Descend across weak 435 ft. strand at curve in road. Cross abandoned Erie Canal and continue north through Kirkville on littoral sand and gravel.

TRIP B (Continued)

<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
14.5	2.4	Cross N.Y. Thruway overpass affording broad view of nearly level Iroquois lake plain. Pine Plains lie ahead right.
15.0	0.5	Cross Fyler Settlement Road. Continue north on Kirkville Rd.
16.2	1.2	Turn right (E) onto Chestnut Ridge Rd. at Pecks Corners. East of first cross-road note yellow-brown sandy soil and irregular low relief of dune and blow-out complex related to strandline of late phase of Lake Iroquois which lies parallel and just north of the route for the next 3 miles. Dune configuration suggests dominant effective winds from the west-northwest.
17.9	1.7	Follow road in 90° curve to the right (S), then turn left (E) immediately at "t-intersection" to continue east on Chestnut Ridge Rd. through sand dune complex that borders Pine Plains on the south and Canastota mucklands on the north.
20.8	2.9	Turn left (N) onto Chittenango-Lakeport Plank Rd., In .2 mi. descend about 20 ft. across strand that marks Cicero stage of Lake Iroquois (Coon, 1960). Surface of Canastota muckland is approximately at 385 ft. msl.
21.9	1.1	STOP TWO. SKY-HIGH FARMS (Smith-Coulter Co., Inc.) Peat, marl and bottom sediments of Cicero stage of Lake Iroquois, illustrating succession in filling of post-glacial embayment. Pulmonate gastropods in marl.  Proceed north on Plank Road across Canastota muckland.
24.2	2.3	Turn right (E) onto Lake Rd. in Lakeport. For next 7 miles, Oneida Lake is on left at 369 ft. msl, while a broad swell, elongate east-west, rises to the south of the route. Although it is virtually without bedrock exposure, this rise is considered to be an eastward extension of the Lockport cuesta.
31.3	7.1	Turn left (N) onto N.Y. Rte. 13 across Oneida Lake plain. Cross Oneida Creek and continue on minor beach ridge, one of several at 375 ft. msl. that indicate steadily prograding east shore of Oneida Lake.
33.0	1.7	Turn left at entrance to Verona Beach State Park.
33.3	0.3	STOP THREE. VERONA BEACH STATE PARK. Rest stop. Summary of Iroquois lake history and Oneida basin geomorphology as encountered en route and at previous stops.  Return to N. Y. Rte. 13.

TRIP B (Continued)

<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
33.6	0.3	Turn left (N) onto N.Y. Rte 13. Proceed across Oneida lake plain. Relief is less than 15 ft. for several miles to the east and the deepest part of the lake is only 55 ft. deep. This plain and basin occupy the structurally controlled lowland on the Clinton Group.
34.9	1.3	Cross Erie Canal at Fish creek between Verona Beach and Sylvan Beach. In April, 1963, wind-driven shore ice rammed across the beach and against roller-coaster in amusement park at canal outlet into Oneida Lake.
37.2	2.3	Begin rise from Oneida lake plain across Iroquois nearshore and strand deposits. Medina-Clinton contact concealed and not established as having any relation to the shore scarp.  At the "Sand Bar" on right, a low cut exposes 3 ft. of red-brown sand and silt over 8 ft. (base concealed) of red to red-brown rhythmically-laminated, but not varved, clay and silt.  A well 1.5 miles southeast was drilled through 250 ft. of unconsolidated sediment reported to be dominantly lacustrine. The hole bottomed at 125 ft. msl without reaching bedrock.
37.6	0.4	Turn right (E) on N.Y. Rtes 13 and 49 along a minor drift bench. Borrow pits dominantly expose ablation drift. Iroquois lake plain extends many miles east-west on right along trend of non-resistant Clinton Group.
39.2	1.6	Turn left (N) in Vienna, following N.Y. Rte 13. Cross moraine divide between Oneida and Fish Creek basins.
41.9	2.7	Turn right (E) then immediately turn left into McConnellsville on Blennes Corner Rd. Cross West Branch Fish Creek. Pass Harden furniture plant and proceed north across remnant of Williamstown outwash plain.
43.1	1.2	Turn left (W) onto paved road at "t-intersection".
43.5	0.4	STOP FOUR. G. W. BRYANT SAND PIT Examination of structures in stagnant ice deposits; discussion of aspects of sand and gravel industry.  Return east to "t-intersection"
43.9	0.4	Turn left (N) onto Blennes Corner Road. Proceed north following shallow meltwater channel incised into stratified drift of kame and kettle complex.

TRIP B (Continued)

<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
46.0	2.1	Turn left (W) at Blennes Corner onto N.Y. Rte 69. Proceed toward Camden.
49.8	3.8	Cross West Branch Fish Creek, enter Camden and proceed west on Church Street to 2nd Street. Park and proceed to Camden Methodist Church.
50.1	0.3	LUNCH STOP. Camden Methodist Church, served in Walker Memorial by Women's Guild.  Return east on Church St., leaving Camden. Cross West Branch Fish Creek and bear right (SE) on N.Y. Rte. 69.
52.4	2.3	Turn left onto former highway right of way, then in .1 mi. turn left (N) onto Tillinghast Rd.
52.6	0.2	STOP FIVE. CAMDEN WIRE COMPANY ESKER Examination of composition and structure as exposed in transverse and longitudinal sections of a small esker. Significance of "pseudo-anticlinal" structure in transverse section.  Continue north on Tillinghast Rd.
54.0	1.4	Turn right (E) onto Pond Hill Rd. Continue across stagnation features marking progressive decay and wastage of the late Cary Oneida ice lobe. Climb sharply to higher bench. At top of rise note boulder gravel exposed in road cut. Poorly sorted glacial drift is thick and bedrock is unimportant as a control of local relief in this area.
54.8	0.8	STOP SIX. MACK POND KETTLE CLUSTER Examination of topographic and hydrographic relationships in a compact cluster of kettles and crevasse ridges at edge of the Pond Hill terrace.  Proceed east on Pond Hill Rd. Cross shallow marginal meltwater drainage line before rising sharply.
56.7	1.9	Turn right (SE) onto N.Y. Rte. 285, Military State Rd. Proceed into Taberg and cross East Branch Fish Creek.
58.8	2.1	Turn left onto N.Y. Rte. 69, Military State Rd. toward Rome. In one mile note swampy area on left which is at head of one of a series of eastward draining meltwater channels.  Just before road enters shallow cut, cemented cobble gravel can be seen in overgrown cut 200 yds south of road. Leaving roadcut, descend on Rte. 69 over 30 ft. scarp which appears to be wave-cut.

TRIP B (Continued)

<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
61.7	2.9	<p>Turn left in Lee, onto Lee Valley Rd. Cross Sash Factory Creek in swampy swale, the downslope continuation of meltwater channel seen on left 2.5 miles earlier. The right angle bend between channel segments suggests a subglacial meltwater escape-way.</p> <p>On right (S), shallow meltwater channelway parallels road, curving eastward at about 520 ft. msl.</p>
64.2	2.5	Bear left at fork toward Lee Center, leaving Lee Valley Rd.
64.7	0.5	<p>Bear left at "Stop" sign, continuing north on Mill St. toward Lee Center. Cemented cobble gravels exposed on left (W) in about .4 mile.</p> <p>Entering Lee Center, cross swampy meltwater channel with small pond on left and cannery on right. Channel alignment continues east from Lee Center as an obvious meltwater channel segment, but at slightly higher elevation than floor of the swampy channel segment that enters Lee Center from the west. Apparently segmentation of marginal drainageway resulted from development of a subglacial escapeway downslope, now occupied by Canada Creek and Mill Road south of Lee Center.</p>
65.6	0.9	<p>Turn right (E) in Lee Center, onto Lee Center Rd. Pass Sulphur Springs Rd. Exposures of Whetstone Gulf shale on left indicate probable source of sulfur as being from decomposition of pyrite.</p> <p>Rise sharply and proceed east across outwash bench. Pass between Rome Reservoirs and angle across bench to Stokes.</p>
68.0	2.4	Turn left (N) onto N.Y. Rte 26, Turin Rd. at Stokes Corner. Begin rise across Quaker Hill, the southeastern tip of the Tug Hill Plateau developed on rocks of the Lorraine Group.
68.7	0.7	Minor bench and northward rise are remnants of former ice-walled meltwater channel that is better developed about a mile west, and trends eastward toward Mohawk Valley.
72.6	4.6	<p>Cross West Branch Mohawk River at village of West Branch.</p> <p>Continuing north on N.Y. Rte. 26, rise onto diffuse moraine that trends north-south, with best development of constructional topography west of the route between Ava and West Leyden. This is the first moraine of the Black River lobe encountered on this trip. The larger Oneida glacial lobe dominated and outlasted the Black River ice in this interlobate area in the lee of the Tug Hill nunatak.</p>

TRIP B (Continued)

<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
78.9	6.3	In West Leyden, jog right with N.Y. Rte 26 to cross East Branch Mohawk River. Take second right onto N.Y. Rte 294, Upper Rd., toward Boonville.
82.8	3.9	At Redmond Corner, intersection with Webster Hill Road, continue eastward and begin to descend toward Boonville. Note increase in abundance of field boulders. In about a mile pass through area of minor stagnant ice features.
85.5	2.7	Enter Boonville. In .3 mile turn left (N) onto Summit St. then turn right (E) at first corner, onto Schuyler St. Proceed through Boonville. Directly after crossing tracks, turn left (N) onto N.Y. Rte 12.  Rte. 12 parallels the Black River Canal, built in 1855 to link navigable reaches of the Black River north of Lyons Falls with the Erie Canal at Rome. With a total of 109 locks in 35 miles the canal crossed a divide 700 feet above the Erie Canal. The substantial remains of a dozen or so locks are seen between Boonville and Sugar River which was crossed by aqueduct.
88.6	3.1	STOP SEVEN. SUGAR RIVER AT BOONVILLE QUARRY. E. G. DeLia and Sons, Inc. Examination of stratigraphic section in quarry and of solution features along Sugar River.  Return south on N.Y. Rte. 12.
91.7	3.1	Turn right (W) across tracks on Schuyler St. into Boonville. At west side of triangle turn left (S) onto N.Y. Rte 46, Post Rd. toward Rome.
93.3	1.6	Continuing on N.Y. Rte. 46, descend 30-ft into broad flat-bottomed, rock-floored channel across ledge that controlled outflow from proglacial Port Leyden Lake through the Lansing Kill or Boonville Gorge. Continue south in channel, crossing diagonally to east side, thence back to west side to parallel the old Black River Canal.
95.0	1.7	Shale bluff in roadcut on right indicates erosivity of rock into which the Boonville Gorge is cut. From Boonville to this point the gorge has become progressively more constricted. At left where Lansing Kill enters from the east side of the valley, post-glacial notching accounts for abrupt deepening of the gorge.
97.7	2.7	STOP EIGHT. BOONVILLE GORGE STATE PARK. PIXLEY FALLS. Rest stop. Consideration of significance of Lansing Kill Gorge.  Continue south toward Rome on N.Y. Rte. 46.

TRIP B (Continued)

<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
98.8	1.0	Five combines -- a flight of 5 adjacent locks on Black River Canal.
103.9	5.1	Mohawk River enters Boonville Gorge from west with development of multiple terraces now incised by both Lansing Kill and Mohawk River.
105.7	1.8	Village of Northwestern. Continue S on N. Y. Rte. 46.
108.5	2.8	Village of Westernville, on right, near apex of delta built by meltwater stream through Boonville Gorge as it debouched into small lake impounded on southwest by the moraine at Rome. The Mohawk River subsequently incised a channel that swung diagonally across the valley from Westernville leaving the terrace remnants at 550-560 ft. msl., slightly above the level of Delta Reservoir.
112.7	4.2	Delta Reservoir Dam on right (W) of route. Mohawk River, incising its channel into delta and outwash deposits swung diagonally across valley from site of former village of Delta, to intrench itself at this point into Utica shale that walled the inherited bedrock valley. The steep-walled, 80-ft. deep gorge, known as The Palisade, provides a suitable dam-site for the broad, deep bedrock valley directly to the northwest is blocked by the late Cary recessional moraine at Rome. Construction of the dam in 1911 and impounding of the reservoir inundated the village of Delta, which survives only in the name of the reservoir. Through this gorge also passed the Black River Canal, traces of which can be seen beside the road directly up-valley from the dam.
113.5	0.8	State Fish Hatchery on right (W) side of road.
114.5	1.0	Bear left, continuing on N.Y. Rte. 46 at juncture with Elmer Hill Rd. Proceed south into Rome. Griffiss Air Force Base is at left (E) across Mohawk River, after Rte. 46 has become Black River Boulevard.
117.8	3.3	Follow highway signs to N.Y. Rte. 365, bearing right at intersection, then crossing N.Y. Rte 69 to turn sharply left onto N.Y. Rte 365 south out of town.
118.5	0.7	Cross overpass over N.Y. Central R.R. and Erie Canal in middle of narrowing Iroquois lake plain. Less than 2 miles east is the highest elevation on the Erie Canal east of the Finger Lakes and the eastern end of the Iroquois plain. The Mohawk River having strayed from its westward-leading ancestral valley at The Palisade, has built an alluvial fan into the plain at this narrowest point. Flowing across this fan the Mohawk

TRIP B (Continued)

<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
		might as easily have drained westward, instead of eastward following the abandoned Iroquois outlet channel.
119.0	0.5	Continuing on N.Y. Rte 365, bear right onto dual highway at intersection.
120.3	1.3	Pass entrance to Rome State School and rise obliquely across low slope of Iroquois strand.
124.2	3.9	Shallow meltwater channel with threshold about 20 ft. above Iroquois strand is parallel to N.Y. Rte 365 for about 1 mile on right (NW).
127.3	3.1	Village of Verona on right (NW).
128.8	1.5	Cross N.Y. State Thruway. Continue SW on N.Y. Rte 365.
132.2	3.4	Continue on N.Y. Rte 365, leaving N.Y. Rte 365A.
133.1	0.9	Turn right (W) onto N.Y. Rte. 5 in village of Oneida Castle.
135.9	2.8	Continue west on N.Y. Rte. 5, through Five Corners. Cross Cowaselon Creek which has cut a narrow flood plain into valley-choking glacial drift. Borrow pits at left (S), west of Cowaselon Creek, are opened in kame delta complex.
136.7	0.8	Village of Wampsville, location of Madison County Court House.
140.0	3.3	Continue west on N.Y. Rte 5, following juncture with N.Y. Rte 13 in outskirts of Canastota. Samuel Champlain, French explorer fought a skirmish with Oneida Indians at village site, 6 miles south, during penetration southward from St. Lawrence settlements in 1615.
146.3	6.3	Continue west, leaving N.Y. Rte 5. at intersection with Tuscarora Rd. in north edge of Chittenango. Cross Chittenango Creek at level of Iroquois Lake Plain.
148.6	2.3	Angle right at "slanting t-intersection", returning onto N.Y. Rte. 5, Genesee Turnpike.
149.8	1.2	In Mycenae, enter Pools Brook meltwater channel. For 3 miles, N.Y. Rte. 5 utilizes the low grade of this deep, transverse gorge cut by impounded pro-glacial meltwaters escaping east from Limestone Valley. Constructional topography extending into the west end of this channel indicates that principal erosion by meltwater preceded final melting of stagnant ice at channel-head near Fayetteville.

TRIP B (Continued)

- 153.9 4.1 Continue west on N.Y. Rte. 5, through Fayetteville. Descend to floodplain of Limestone Creek at level of Iroquois Lake Plain.
- 156.1 2.2 At juncture with High Bridge Rd. continue west on Rte. 5. Descend to cross floodplain of Butternut Creek.
- 157.2 1.1 Turn right (N) onto Erie Blvd. In about a mile, new construction has opened exposures in Syracuse formation on left.
- 158.9 1.7 Turn right (N) at traffic light, onto Thompson Rd. Proceed north to Carrier Circle.
- 161.0 2.1 Arrive Sheraton Motor Inn, Carrier Circle; Thompson Rd. and New Court St.