

TRIP D: GEOMORPHOLOGY OF THE NORTH MARGIN OF THE APPALACHIAN UPLANDS NEAR SYRACUSE

Ernest H. Muller

<u>Total Miles</u>	<u>Miles from last point</u>	<u>Route description</u>
0.0	0.0	<u>Assembly point:</u> Parking lot, Sheraton Motor Inn Thompson Rd. and New Court St. Carrier Circle, near Thruway Exit 35  <u>Departure time:</u> 8:15 A.M. Sharp! All travel by bus!  Leaving Sheraton Motor Inn, proceed 75° around Carrier Circle and turn right (S) onto Thompson Rd.  Proceed south across lacustrine silt of Iroquois lake plain. In one mile rise onto red till-veneered shale slope.
1.6	1.6	Cross meltwater cross channel utilized as corridor by N.Y. Central R.R., Erie Boulevard and formerly by Erie Canal. Channel is below main Iroquois lake level and augering shows peat and marl over fine sand and clay, underlain by coarse alluvium, suggesting rise of Iroquois waters into meltwater channel, followed by swamp development in poorly drained basin left after Iroquois extinction.
2.0	0.4	Crossing Erie Boulevard at traffic light, proceed S on Thompson Rd. rising onto sharp slope developed on Syracuse Formation.
2.3	0.3	Turn right (W) and in .5 mile angle left (SW) past Lemoyne College campus.
3.1	0.8	Turn right (W) onto Salt Springs Rd. over drumlinized upland developed on thin till over Syracuse shales.
3.7	0.6	Turn left (S) downslope at Catholic school. Cross Genesee Street at traffic light, and turn right (SW) at next corner, onto Meadowbrook Drive. Continuing SW on Meadowbrook Drive, follow meltwater channel to its end in "t-intersection"
5.4	1.7	Turn left (S) onto Buckingham St. In .2 mile, turn right (W) onto Colvin St. Pass red till exposure in truncated drumlin at left (S) of road.
5.9	0.5	At traffic light opposite Manley Field House, turn left (S) onto Comstock St. At 3rd "Stop" street, bear left, joining Jamesville Rd. and continue south.
6.9	1.0	Turn right (W) onto Ainsley Drive. Cross tracks at Loblaws.
7.4	0.5	Turn left (S) onto Brighton Rd. at "t-intersection". On left,

TRIP D (Continued)

Total miles	Miles from last point	Route description
		<p>railroad cut exposes section in Fiddlers Green dolomite which forms floor of flat-bottomed, steep-walled Rock Cut or Railroad Channel leading east from this point. With its threshold at 550-ft. this is one of several major meltwater channels which controlled eastward escape of water from lakes impounded in central New York through valleys, between the northward receding margin of the ice sheet and the plateau divides to the south.</p> <p>In .2 mile rise sharply over scarp developed on Manlius Group, with Elmwood Formation exposed at left near bench edge.</p>
8.0	0.6	<p>Turn right (W) onto N.Y. Rte 173 and 20N, the Seneca Turnpike. Descend to floor of Onondaga trough over strata of Manlius Group. Cross U.S. Rte. 11 (Salina St.) and Onondaga Creek.</p> <p>Near Onondaga Lake, about 3 miles north, the bedrock floor of Onondaga trough is 417 ft. below the surface or about 25-ft. below sea level.</p>
9.3	1.3	<p>Turn left (S) onto N.Y. Rte 80, Valley Drive, at first intersection west of Onondaga Creek.</p>
10.5	1.2	<p>Near Dorwin Springs, road ascends onto gravel bench, dissected and with low constructional topography. At right (W) massive Onondaga Limestone supports narrow benches on the valley wall. At left (E) the gravel bench is about at level of the threshold of Rock Cut Channel on opposite side of the valley.</p>
11.0	0.5	<p>STOP ONE. W. F. SAUNDERS &amp; SONS, INC. GRAVEL PIT Discussion of character and structure of gravel bench in its relationship to Onondaga Trough history.</p> <p>Continue south on N.Y. Rte. 80.</p>
12.3	1.3	<p>Enter Onondaga Indian Reservation. Cross Commissary Creek which dissects end of 560-ft bench.</p>
13.6	1.3	<p>Ascend onto bench at approximately 620 ft. In .4 mile, leave Onondaga Indian Reservation.</p>
14.6	1.0	<p>Turn right (W) following N.Y. Rte 80 on Tanner Rd. at Gwills Corners.</p>
15.1	0.5	<p>Continue west on Johnny Cake Rd., leaving N.Y. Rte 80 at Griffins Corners. Rise to level of 720-ft. bench. Cross Onondaga Hill Rd. then descending toward Nichols Corners, note sand and gravel exposures on left (S).</p>

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17.1	2.0	At Nichols Corners, turn right onto Cedarvale Rd. Just before turning note red clay till in stream bank at left (S). Proceeding NW on Cedarvale Rd. follow Cedarvale meltwater channel. Note constructional topography due to deposition from stagnant, debris-littered ice on slope at right (NE).
19.0	1.9	Turn left (S) onto Amber Rd. and proceed across gravel bench at 680 ft. msl, with sharp rise to bench above 800 ft. msl on right.
19.6	0.6	STOP TWO. CEDARVALE SAND AND GRAVEL CO. Composition and structure of the gravel bench in relationship to Cedarvale Channel and Onondaga Trough history.  Proceed south on Amber Rd. at base of scarp of highest bench, then rising to 800-ft. level with view to right (N) across the gently sloping surface of coarse gravel bench of the previous stop.
21.0	1.4	Continuing on Amber Rd. turn sharply south and continue ascent. Note flat-topped mesa-like delta remnant on left (E) at 800 ft. msl. near South Onondaga.
22.1	1.1	On right (W) note head of sizable meltwater channel, the Navarino Channel by which glacial meltwaters escaped southward into basin of Otisco Lake. Continue through area of moderate constructional topography deposited by stagnant ice. Note Navarino Channel paralleling Amber Rd.
23.1	1.0	Turn left (E) onto U.S. Rte. 20, Cherry Valley Turnpike, at Navarino.
24.9	1.8	At Joshua Corners, on right (SW) note level swampy area at head of minor meltwater channel which contributed to complex Amber delta deposited into a predecessor of Otisco Lake, 3 miles SW.
26.0	1.1	Turn right (S) at Lords Corners, onto Lords Hill Rd., N.Y. Rte. 80. Ascend over Hamilton section, near summit passing biohermal zone in Spafford Shale, rich in rugose corals, overlain at top by Owasco shale. When not tar-concealed by Highway Department these gullies afford fine collecting.  Descend and cross open, marshy east-west valley. To left (E), Fall Ck. flows to Rattlesnake Gulf. To right (W) stagnant ice features comprise divide between Otisco and Onondaga drainage basins.
29.5	3.5	Continue south through Otisco on N.Y. Rte. 80.

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<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
31.5	1.0	Continuing on N.Y. Rte 80, bear left onto Skaneateles-Hamilton Turnpike toward Vesper.  Descend SE along trough-like glacial furrow occupied by headwaters of Onondaga Creek.
34.0	2.5	Continue SE on N.Y. Rte 80 through Vesper. Cross Onondaga Creek. Enter complex Tully moraine belt where minor ridges project into this tributary trough with curvature convex to the northwest. At Fellows Falls, Onondaga Creek drops with hanging and barbed juncture into Onondaga trough, in this area called Tully Valley. To the left ahead (NE) local relief exceeds 1250 ft. from upland to trough floor on proximal (northern) flank of massive Tully (Valley Heads) moraine. The abrupt proximal border and gently graded distal slope of this moraine is characteristic of valley-blocking moraine loops of this system in central New York.  Seismic refraction profiles suggest that the unconsolidated valley fill in mid-trough opposite Fellows Falls may be 400 to 500 ft. thick with the bedrock floor at 300 to 400 ft. msl.
35.6	1.6	Leave N.Y. Rte. 80. Continue south along west wall of Onondaga trough. On right Moscow shale exposed in trough wall. On left, Tully moraine with strong kame and kettle topography. Southward the kames diminish in relief and grade into kame terrace. Crooked Lake at left occupies a compound kettle.
37.9	2.3	Turn left (E) across kettle-dotted outwash plain. Stagnant ice of the Tully ice tongue extended about one mile south of this route to an "advance Valley Heads" position, before receding 3 miles north to the massive "main Valley Heads" position. The position of this moraine complex has been ascribed to bedrock topographic control at the former drainage divide. Seismic data at Tully Lake suggest depth to bedrock of about 225 ft.
39.2	1.3	Turn right at "t-intersection"
40.0	0.8	STOP THREE. GREEN LAKE (TULLY LAKES) Examination of features and materials of pitted outwash plain. Discussion of significance in terms of Valley Heads and Onondaga trough glacial history.  Proceed east toward Tully.
40.5	0.5	Cross N.Y. Rte. 281 and continue east across outwash plain.
41.0	0.5	Turn left (N) onto U.S. Rte. 11 toward Tully. Continue

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<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
		through Tully on North Street. Leave outwash plain and ascend onto upland developed on Ithaca and Sherburne Formations.
43.9	2.9	Enter distal margin of Tully moraine. For next 2 miles constructional topography is strong, diminishing gradually on proximal edge of moraine.
46.7	2.8	Join U.S. Rte 11 and continue north into Lafayette.
48.4	1.7	At traffic light in Lafayette, turn right (E) onto U.S. Rte 20, Cherry Valley Turnpike. In .2 mi. turn left (N) onto Lafayette Rd. The gently curving, partly drift-filled trough of Butternut Creek is visible ahead on right, with U.S. Rte 20 swinging across at Big Bend.
		Crossing the upland, bedrock ridges, such as Irish Hill on right (E) are streamlined, gently molded and parallel to lineation of drumlins a few miles to the north.
53.6	5.2	Pass Bull Hill Rd. Drumlins on left (W) are composed of bouldery, lime-rich lodgment till. Alignment is N5W, as compared to N30W in outskirts of Syracuse. Artificially impounded Jamesville Reservoir on right (NE) ahead.
55.4	1.8	Bear right at fork onto Barker Hill Rd.
55.9	0.5	STOP FOUR. HORSESHOE OR LOOP CHANNEL Consideration of nature of Smoky Hollow and the Loop umlaufberg, and of their significance with respect to late Cary glacial recession.
		Continue north on Barker Hill Rd. Descend onto terrace that blocks upstream end of the Loop. Roadcut at the terrace edge exposes rhythmically laminated lake sediments. The eastern arm of the Loop contains kame gravels.
56.7	0.8	Cross Smoky Hollow, part of a major meltwater channel with bedrock floor just below 800 ft. msl. Sharply incised into non-resistant Hamilton shales, this outlet may have controlled drainage of impounded waters in Onondaga trough at level of highest delta in Cedarvale Channel. Note that drumlin on right (E) is truncated by wall of Smoky Hollow, indicating that channel cutting postdated final drumlin moulding. Continue north on Barker Hill Rd.
57.4	0.7	Turn right (E) in Southwood. Descend from drumlinized Hamilton upland onto channeled Onondaga bench.
58.1	0.7	Join N.Y. Rte 173, Seneca Turnpike and continue east.

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<u>Total miles</u>	<u>Miles from last point</u>	<u>Route description</u>
58.3	0.2	Turn left (N) into Clark Reservation State Park.  STOP FIVE. CLARK RESERVATION STATE PARK Examination of features due to erosion by glacial meltwater, solution by underground water and joint control as developed near Green Lake and along south wall of Rock Cut Channel. Discussion of significance in terms of interpreted history of glacier recession.  Return to N.Y. Rte 173 and turn left (E) toward Jamesville. On left (N) of road note deep channel leading east from Green Lake to Butternut trough.
60.0	1.7	Cross tracks and turn left (N) onto Jamesville Rd. which parallels Butternut Creek. Below falls, in .2 mi. Butternut Creek exposes type Fiddlers Green dolomite.
61.2	1.2	At fork bear right, continuing N on Jamesville Rd. Descend to floor of Butternut trough. Cross Butternut Creek and the eastern or outlet end of Rock Cut Channel is visible on left (W), notched by narrow post-glacial Rams Gulch.
61.8	0.6	Recross Butternut Creek on alluvial plain at approximate level of Iroquois Lake which may have inundated lower end of valley as a consequence of isostatic upwarp northward. Rise onto trough wall and proceed north.
63.6	1.8	Turn right (E) onto Genesee Turnpike.
63.8	0.2	Turn left (N) at traffic light onto Erie Boulevard. In about a mile note exposed Syracuse formation in new excavations on left (SW) of road.
65.5	1.7	Turn right (N) at traffic light, onto Thompson Rd. and proceed north to Carrier Circle.
67.6	2.1	Arrive Sheraton Motor Inn, Carrier Circle; Thompson Rd. at New Court St.