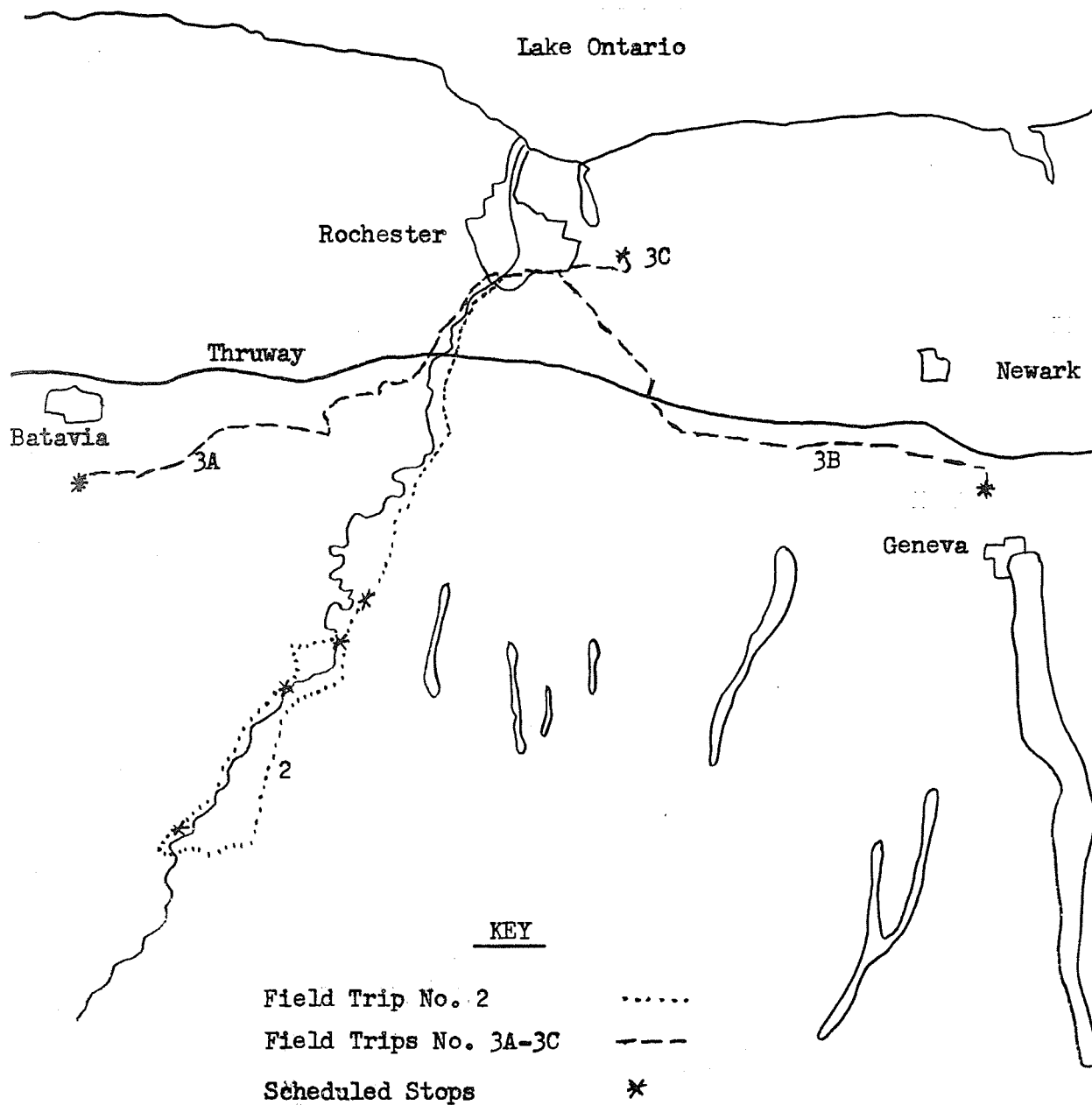


# ROUTES OF FIELD TRIPS NO. 2 AND 3A-3C



FIELD TRIP NO. 2 — Devonian Stratigraphy; History of Genesee River

The route of this trip extends from the U of R River Campus southward, up the Genesee River Valley, about 50 miles to Letchworth State Park and return. The Genesee River will be seen in both its pre-glacial and post-glacial valleys, including the scenic gorge through Letchworth Park and its history reviewed (see pp. 4-8). Middle and Upper Devonian strata (see pp. 26-46) will be seen at four stops, with opportunity for fossil collecting in rocks of the Hamilton group at two of them. One stop will be a visit to the Mount Morris flood control dam.

Miles

- 0.0 Zero mileage (headed south) at River Blvd. entrance to main quadrangle of U of R River Campus. Erratic anorthosite boulder opposite entrance, with polished and striated surfaces, bears bronze tablet inscribed with "The Genesee", alma mater of the University of Rochester.
- 0.25 Elmwood Avenue (N.Y. 47). Keep straight, enter Genesee Valley Park.
- 0.7 Bridge over Erie Canal. Junction of canal and Genesee River is 0.25 mile to the west.
- 0.8 Road fork. Bear left.
- 1.1 Road fork. Turn left out of park and then sharply right on East River Rd.
- 2.3 Road swings next to Genesee River. Enter Town of Brighton.
- 3.8 New York Central Railroad crossing and bridge.
- 4.2 Stop sign. Jefferson Rd. (N.Y. 252). Keep straight.
- 4.4 Drumlin to left. Route leaves river bank and crosses drumlin at 4.9 miles. A number of the drumlins in this area have wave-cut northern ends developed while partly submerged in glacial lakes (see p. 49).
- 6.3 Top of drumlin.
- 6.9 Top of drumlin
- 7.9 Pass over New York State Thruway.
- 8.1 N. Y. 253 joins from left (E).
- 8.3 N. Y. 253 leaves to right (W). Keep straight.
- 8.8 Erie Railroad crossing.
- 10.4 Two prominent drumlins to right (SW), one wooded.
- 10.7 Stop sign. Telephone Rd. Bear right.
- 10.8 Stop sign. Scottsville-Rush Rd. (N.Y. 251). Keep straight.

# Miles

- 12.0 Railroad crossing.
- 12.7 Bridge over small stream.
- 12.8 Rush-West Rush Rd. joins from left. Turn right.
- 13.5 Road fork. Bear right.
- 15.7 Meander bend of Genesee River adjacent to road (right). Here route begins to follow pre-glacial valley of Genesee, now with broad flood plain developed on partial filling of glacier-transported debris. Just north of this point, pre-glacial course swung eastward along outcrop belt of soft Upper Silurian shales, and eventually turned northward again in line with present Irondequoit Valley (see pp. 5-8 and map on p. 4). Except for Irondequoit Valley, the pre-glacial valley north of this point is entirely filled with debris and is without surface expression; the course has been fairly accurately traced through water well records.
- 16.1 Enter Town of Avon.
- 16.6 Bridge across stream with outcrops of Onondaga limestone about 150 feet east of road. The Onondaga escarpment has no particular expression at this point because of local prominence of slopes into Genesee Valley.
- 17.1 Road fork. Bear right.
- 17.3 Enter Village of Avon.
- 18.15 Stop. Main St. (U.S. 20, N.Y. 5). Turn right (W). Cross Erie Railroad. Get in left lane for left turn.
- 18.2 Wadsworth Ave. (N.Y. 39). Turn left (S).
- 19.7 Bridge over Conesus Creek, outlet for Conesus Lake.
- 20.0 Begin ascent of east side of Genesee Valley. Good views to west (right) across valley. This is pre-glacial section between Mt. Morris and Avon (see p. 7).
- 24.1 Small bridge across north branch of Jaycox Run (Wheeler Gully). Road bends slightly right. Menteth limestone exposed in low falls immediately left (E) of road, also as one-foot bed at top of cut in stream bend to right. Shales in stream bend are Deep Run member, Ludlowville formation.
- 24.45 Falls, 40 feet high, over one-foot bed of Tichenor limestone about 400 feet west (right) of road.
- 24.7 Park on right (W) at gate opposite white house with white board fence.

## STOP 1 - Jaycox Run.

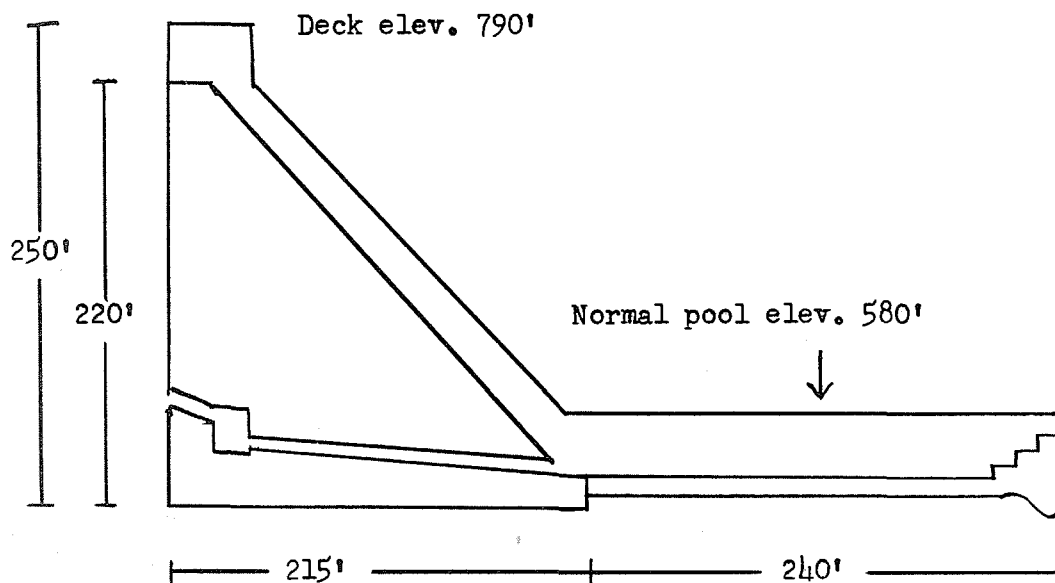
Section exposed in stream bed 0.25 mile west of road is as follows:

Moscow formation	feet
Menteth limestone member - impure limestone, makes low falls . . . . .	1
Ludlowville formation	
Deep Run shale member - calcareous shale and thin argillaceous limestones . . . . .	11
Tichenor limestone member - crinoidal limestone, fallmaker . . . . .	1
Wanakah shale member - calcareous shale with thin lime- stones and prominent 1-foot limestone bed about 10 feet from top . . . . .	49

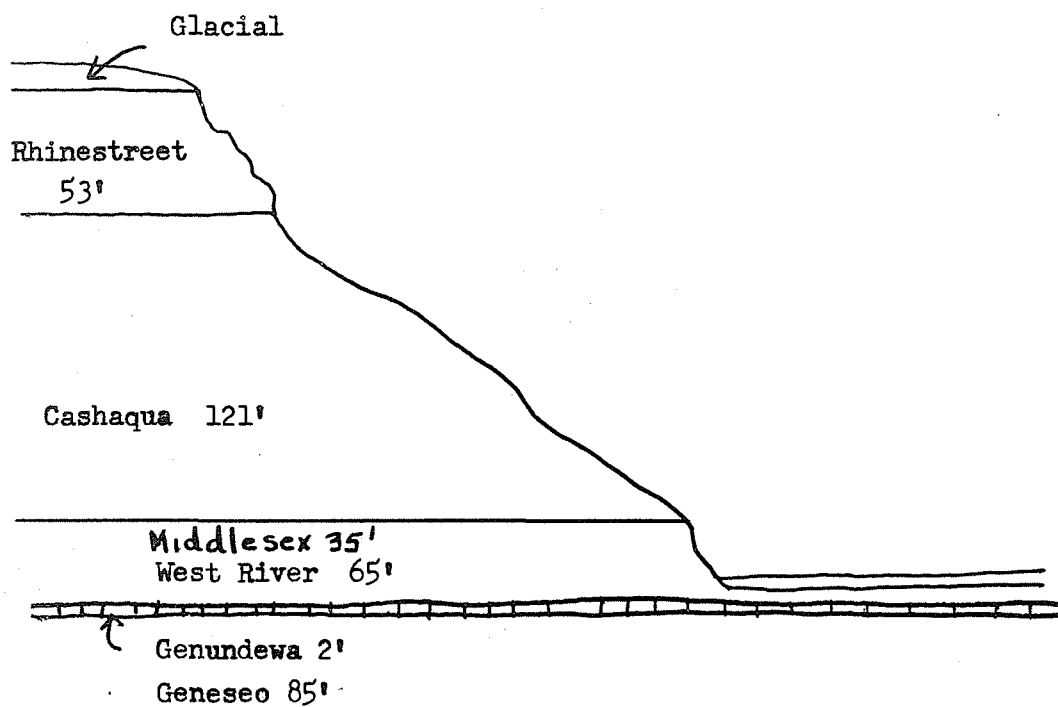
Excellent fossil collecting in Deep Run shale and shales of Wanakah member. Crinoid columns conspicuous in Tichenor limestone; this is one of the "Encrinal" layers of early reports. See pp. 31-38 for stratigraphic details and faunal lists.

- 26.7 Currently operating shaft of Retsof mine of International Salt Company visible to west across valley.
- This is reportedly the largest salt mine in the world. A single 9-foot layer of rock salt (in the Camillus facies of the Salina) is being mined at a level 1000 feet below the surface at the shaft. The face now being worked is about  $2\frac{1}{2}$  miles from the shaft. An area about 15 miles in circumference has been mined by the room and pillar system, leaving about 60% of the salt in pillars. Mining began in 1885 at a shaft 3 miles south of Retsof (see mileage 78.3). The shaft at Retsof was opened in 1920.
- 26.9 Enter Village of Geneseo.
- 27.3 Bear left onto Main St. at caution blinker.
- 27.8 South St. (U.S. 20A). Turn right (W).
- 27.9 N.Y. 63. Turn left. After turn, good overlook of valley to west.
- 28.7 Road fork. Keep straight on N.Y. 63; U.S. 20A and N.Y. 39 leave to right.
- 29.3 Fall Brook to right (W). Lower end of valley will be Stop 4, this trip. Falls is over Genundewa limestone at base of West River formation (see p. 41).
- 30.7 Breech in west wall of Genesee Valley, visible in right (W) distance across valley and just to right of water tower and smokestack, is debouchure of post-glacial Genesee from Mt. Morris canyon (see p. 7).
- 31.6 Road fork. Bear right on N.Y. 408. Sign pointing to Mt. Morris.
- 32.1 Bridge over Canaseraga Creek, the misfit stream presently occupying wide Dansville Valley (see p. 5). Route here begins to cross wide flat

Diagrammatic Cross Section of Mt. Morris Dam



Stratigraphic Section in Gorge Wall at Dam Site



Middlesex black shale — black shale with a few thin beds of gray shale; resistant, conspicuous blocky jointing; fossils very rare . . . . .

Miles

floor of this valley, originally cut by pre-glacial Genesee, then deepened by ice-gouging and partly filled with rock debris and lake deposits.

- 33.6 Delaware, Lackawanna and Western Railroad.
- 33.9 Route climbs from valley floor; cross railroad. Enter Mt. Morris.
- 34.1 Main St. (N.Y. 36). Turn left, then right again, following N.Y. 408.
- 36.0 Side road, sign to Mt. Morris Dam. Turn right.
- 37.1 Overlook of Mt. Morris canyon to left.
- 37.8 Sharp left turn.
- 37.9 Circle at dam overlook and turn into parking area.

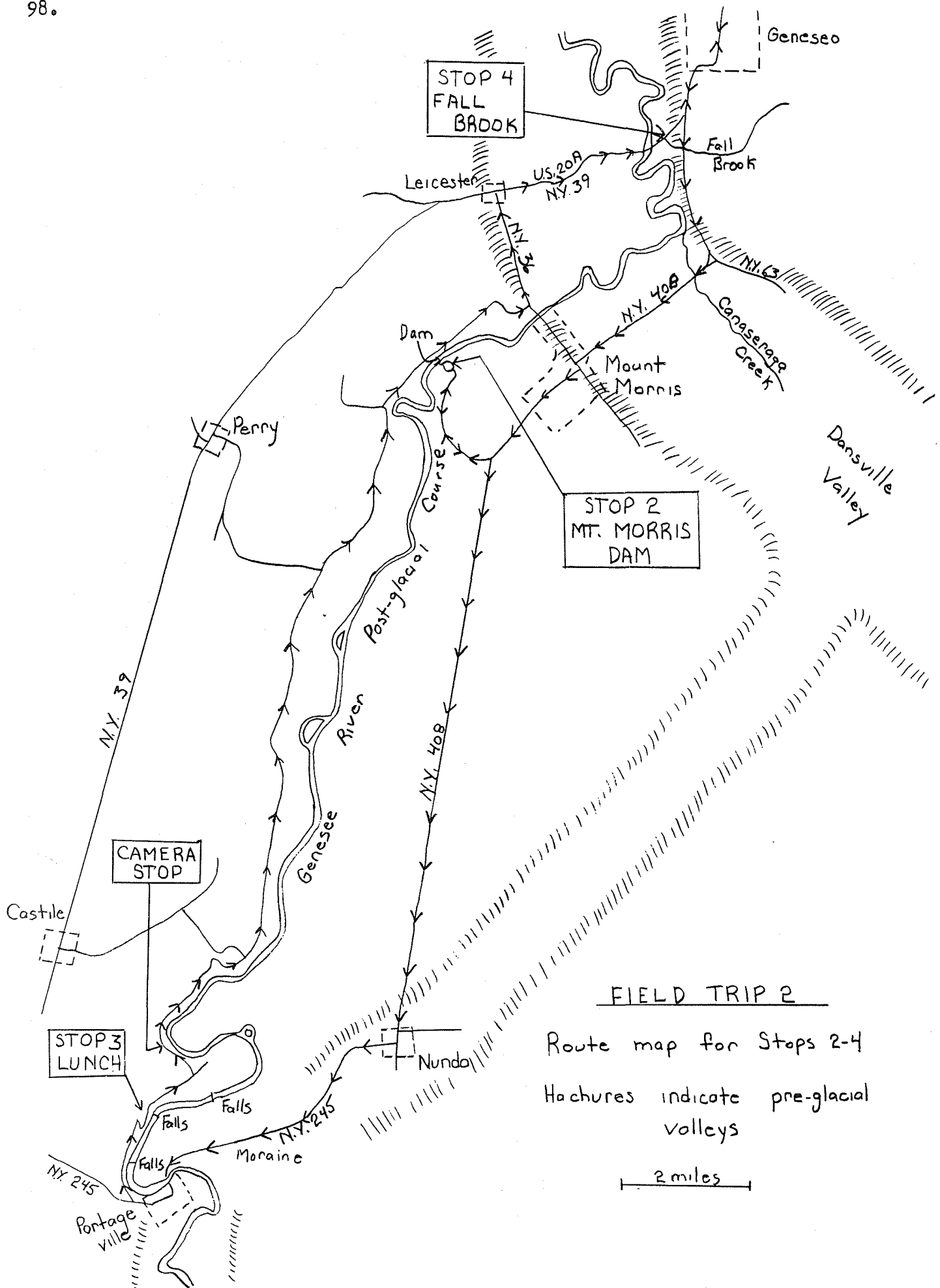
STOP 2 — Mt. Morris Dam

Built by Corps of Engineers, completed 1951. Purpose: flood control. Concrete construction using filler of crushed Onondaga limestone from General Crushed Stone Company quarries at LeRoy (20 miles north) and sand from glacial lake delta just north of gorge (see mileage 73.8). Total length of dam: 1028 feet, length of spillway: 550 feet. Drainage area above dam: 1077 sq. mi., maximum reservoir area: 3300 acres. Capacity at spillway elevation: 337,000 acre feet. The base of the dam rests upon the Genundewa limestone at the base of the West River shale (see p. 41). The section exposed in the gorge is as follows:

	<u>feet</u>
Glacial cover	
Rhinestreet black shale — laminated, fine-grained shale, making buttresses at gorge rim . . . . .	53
Cashaqua formation — gray-green shales and thin siltstones, easily weathered and making the long slope of the gorge wall . . . . .	121
West River shale — dark, thin-bedded shale at foot of gorge, only part exposed . . . . .	65

The Rhinestreet and Cashaqua and the contact between the two are excellently exposed in the cuts of the road leading down to the deck of the dam.

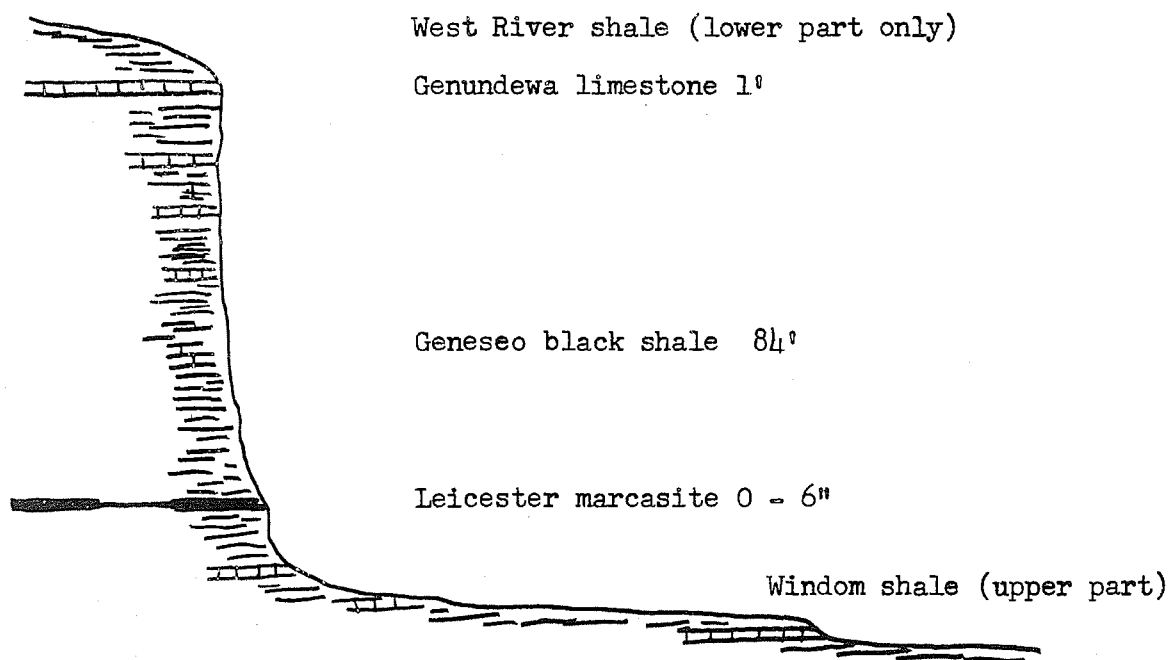
- 39.9 N.Y. 408. Turn right.
- 42.2-42.6, 45.0 To the southeast (left front) can be seen the broad Dansville Valley extending into the distance and, to the right of it, in front of the high ground, the Nunda Valley which was cut by the pre-glacial west



<u>Miles</u>	branch of the Genesee and is now occupied by misfit Keshequa Creek. See pages 4-7.
45.2	N. Y. 258 joins from left (E).
47.0	Begin descent into Nunda Valley.
48.2	Pennsylvania Railroad.
49.0	Enter Village of Nunda.
49.05	N.Y. 245 joins from left.
49.4	Stop sign. Portage St. Turn right, following N.Y. 245.
50.6	Keshequa Creek, misfit stream to left of route.
51.1- 51.7	Locks of abandoned canal constructed to carry river traffic from Portageville to Mt. Morris via the Nunda Valley, around post-glacial gorge section of present Genesee River. Canal operated 1852-1877. Lock walls are constructed of Nunda sandstone (see p. 45); typical gray-green flagstone blocks.
51.8	Begin to ascend morainal dam which blocked Genesee from pre-glacial Nunda Valley. Route crosses moraine from here to Portageville.
52.2	Road fork, Junction N.Y. 351. Bear right on N.Y. 245.
54.3	Pass under Erie Railroad.
54.6	Descend slope of Portageville moraine into pre-glacial Genesee Valley. Good view of valley to left (S).
55.2	Bridge over Genesee River. River elevation 1100 feet.
55.3	Enter Village of Portageville. Turn right on N.Y. 245.
55.5	Railroad overpass. To north (R) Genesee River can be seen where it leaves broad pre-glacial valley and enters narrow post-glacial gorge section.
55.6	N.Y. 19A joins from left. Turn right, following N.Y. 245.
55.9	Portageville entrance to Letchworth State Park. Turn right (N).
56.3	Erie Railroad bridge across gorge. Uppermost of three falls in gorge just north of bridge (height 71 feet) fallmaker in basal Nunda sandstone (see p. 7). Roadcut exposures are Nunda.
56.9	Side road. Sharp right turn down hill.
57.1	Parking area. LUNCH STOP. - <b>Stop 3.</b>
	This flat area is a small terrace bench between the middle and upper falls. The middle falls, highest of the three in Letchworth Park, drops 107 feet. Fall maker is resistant layer in Gardeau formation (see p. 45). The lower falls will not be visited.



## Fall Brook — Diagrammatic Section



Miles

- 57.4 Good view of middle falls as route ascends hill.
  - 57.6 Rejoin main road through park. Keep right.
  - 57.8 Roadcut outcrops of Nunda sandstone. Bronze tablet to James Hall.
  - 57.9 Side road and Civil War obelisk.
  - 58.6 Park administration building to right. Bear left at road fork ahead.
  - 59.3 Gorge overlook. Camera stop. Gorge wall is Gardeau formation.
  - 61.2 Wolf Creek.
  - 61.8 Side road to Wolf Creek entrance.
  - 68.3 Side road to Smoky Hollow entrance.
  - 70.0 Road cut to right exposes glacial lake sands.
  - 71.5 Sharp curve to left.
  - 71.7 Junction. Turn sharply right.
  - 72.9 North overlook of Mt. Morris Dam is to right.
  - 73.8 Excavations in small delta built into glacial lake filling Genesee Valley (elev. about 800 feet). Some of sand for dam concrete obtained here.
  - 74.3 Sharp right turn.
  - 74.6 N.Y. 36. Turn left (N). Genesee River leaves gorge section and re-enters wide pre-glacial valley 0.25 mile south of this point. Road route now follows along west edge of valley to Leicester.
  - 76.0 Pass over Delaware, Lackawanna and Western Railroad.
  - 77.0 Stop sign. U.S. 20 and N.Y. 39. Turn right. Village of Leicester.
  - 77.2 In east bank of stream (Little Beards Creek) a quarter-mile north of here is type section of Moscow formation of Hamilton group.
  - 78.3 Sharp right turn in Cuylerville. To left, after making turn, can be seen abandoned shaft head buildings of the International Salt Company mine. Only a small ventilator shaft operates here now; active shaft is about 3 miles to the north.
- Route now crosses flat floor of broad Genesee Valley.
- 79.9 Genesee River.
  - 80.3 Park just past abandoned buildings on right.

STOP 4 — Fall Brook.

This is the type section of the Genesee black shale (village of Genesee just to the north) and also affords excellent exposures of the overlying Genundewa and West River and the underlying Leicester marcasite and Windom shale members of the Moscow formation. See pages 35, 39.

The more calcareous layers of the Windom are richly fossiliferous; some large concretions occur. The Moscow-Genesee contact is marked by the thin but unusual Leicester marcasite which has a Hamilton fauna described as dwarfed or interpreted to consist of small fossils as a result of sorting (Loomis, 1903; Tasch, 1953). Where the lenses of Leicester are absent, the contact is marked by iron staining. The conspicuous laminated bedding and smooth jointing of the Genesee contrast with the less regular structures of the Windom. The Genesee is almost unfossiliferous. Large blocks of the fall-making Genundewa limestone show its characteristic lithology; most blocks are replete with the pteropod (?) Styliolina fissurella.

- 80.6 Genesee black shale with limestone bands and layers of concretions in road cuts.
- 80.8 Junction N.Y.63. Turn left. Route from here back to U of R campus follows course of start of this trip from 0.0 to 28.7 miles.
- 81.0 Road fork. Keep straight. N.Y. 63 leaves to left (W).
- 81.6 Right turn.
- 81.7 Main St., Genesee. Turn left, following N.Y. 39.  
Continue on N.Y. 39 to Avon.
- 91.3 Main St., Avon (U.S. 20, N.Y. 5), Turn right; get in left lane for left turn after crossing railroad.
- 91.35 Turn left at foot of hill.
- 96.7 Curve to right. Then turn left.
- 98.7 Stop sign. Scottsville-Rush Rd. Keep straight.
- 98.8 Road fork. Bear left on East River Rd.
- 105.3 Stop sign. Jefferson Rd. (N.Y. 252). Keep straight.
- 107.2 Road swings away from river bank.
- 108.1 Stream bridge.
- 108.25 Turn left into Genesee Valley Park. Bear right.
- 108.8 Erie Canal bridge.
- 109.2 Elmwood Av. (N.Y. 47). Keep straight.
- 109.5 Quadrangle entrance, River Campus

END OF TRIP 2