New Hartford Rodgers Bedrock Compilation Sheet 2 (paper)

Map

NOTICE !

Bedrock quadrangle 1:24,000 scale compilation sheets for the Bedrock Geological Map of Connecticut, John Rodgers, 1985, Connecticut Geological and Natural History Survey, Department of Environmental Protection, Hartford, Connecticut, in Cooperation with the U.S. Geological Survey, 1:125,000 scale, 2 sheets. [minimum 116 paper quad compilations with mylar overlays constituting the master file set for geologic lines and units compiled to the State map, some quads have multiple sheets depicting iterations of mapping]. Compilations drafted by Nancy Davis, Craig Dietsch, and Nat Gibbons under the direction of John Rodgers.

Geologic unit designation table translates earlier map unit nomenclature to the units ultimately used in the State publication.

This map set contains unpublished maps, cross- sections, and related information archived by the State Geological and Natural History Survey of Connecticut as part of the Survey Library Collection.

These materials have not been reviewed for accuracy, consistency, or completeness. For many geographic areas, more current information exists, either in published or unpublished form.

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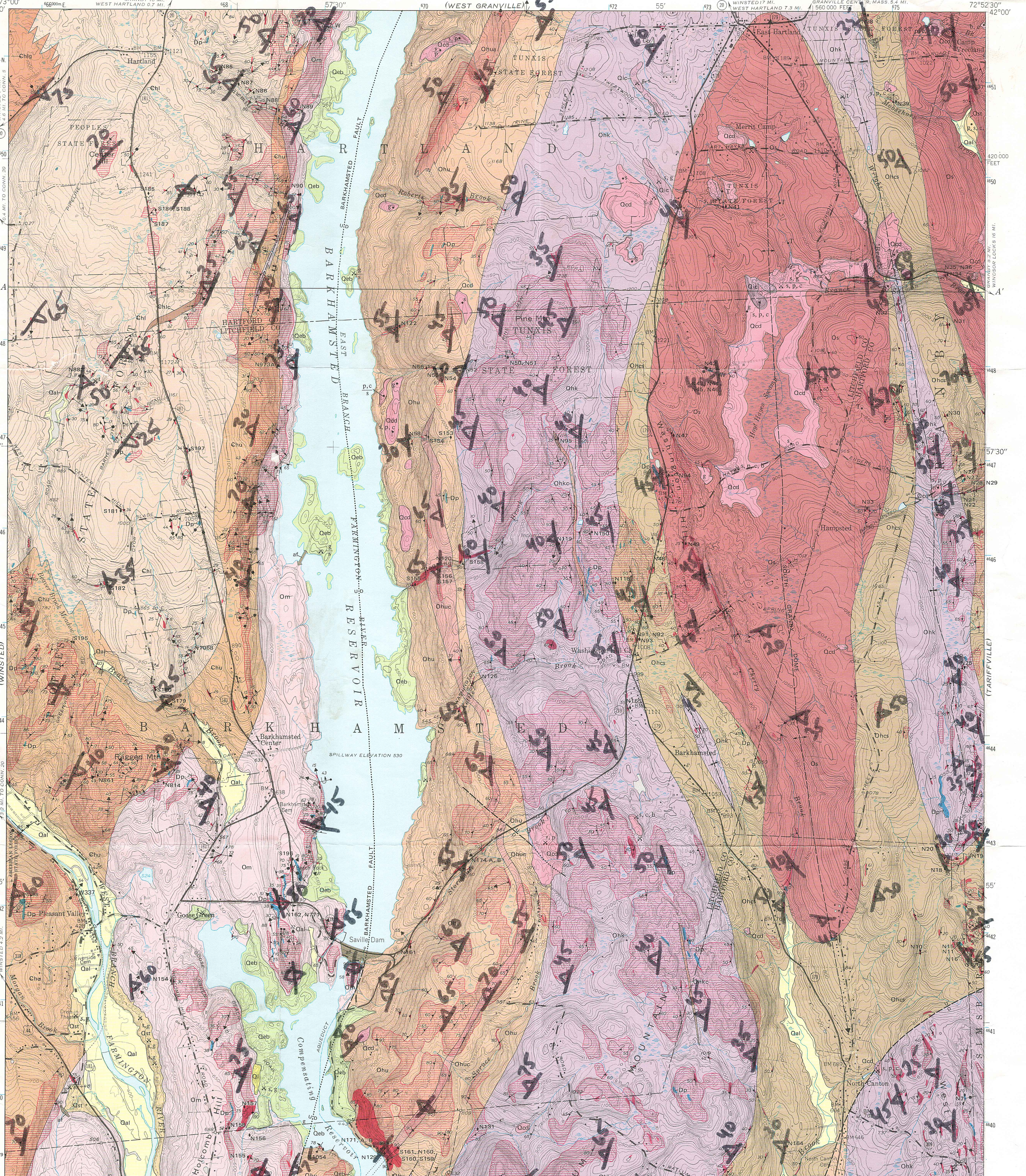
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Prepared in cooperation with the
STATE OF CONNECTICUT
GEOLOGICAL AND NATURAL HISTORY SURVEY

GEOLOGIC QUADRANGLE MAP
NEW HARTFORD QUADRANGLE, CONNECTICUT
GQ-1257



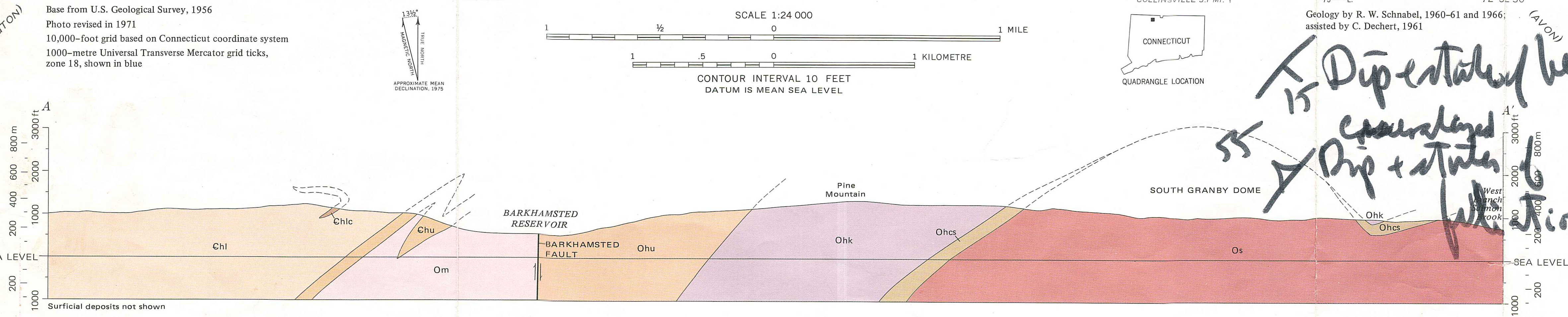
Base from U.S. Geological Survey, 1956
Photo revised in 1971
10,000-foot grid based on Connecticut coordinate system
1000-metre Universal Transverse Mercator grid ticks, zone 18, shown in blue

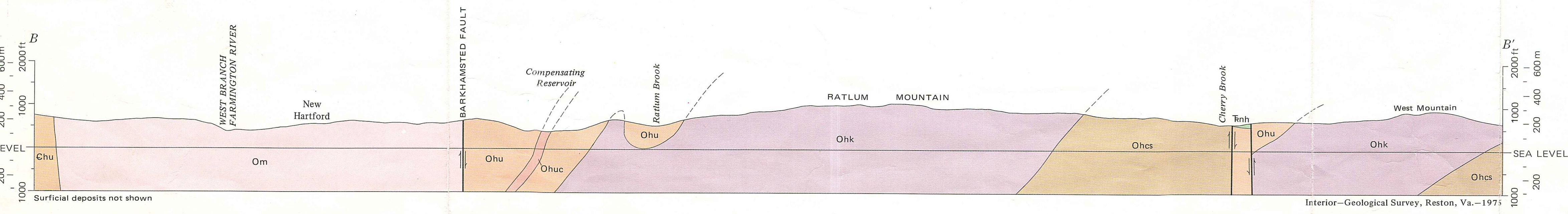
SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

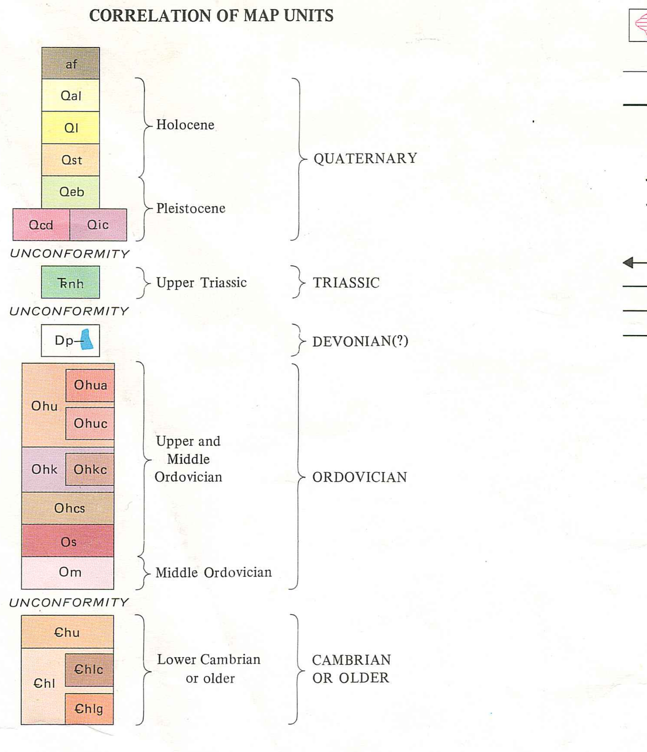
QUADRANGLE LOCATION

Geology by R. W. Schnabel, 1960-61 and 1966; assisted by C. Dechert, 1961





CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

A thin, discontinuous layer of windblown silt and sand, generally mixed with underlying glacial deposits, is present but not shown over most of the quadrangle.

Swamp deposits of Pleistocene to Holocene age are not mapped separately; they are shown by the standard map symbol for swamps on the topographic base map. Small, thin swamp deposits, now dry, were observed in many low-lying areas where the standard symbol is lacking, but they are not shown separately. The swamp deposits are composed of partly to nondecomposed organic matter mixed with varying proportions of sand, silt, and gravel. Locally, they contain minor amounts of peat.

Till deposits of Pleistocene age cover areas not covered by other Pleistocene and Holocene deposits where bedrock is not exposed. The till consists of brown to grayish-brown nonsorted, nonstratified clay, silt, sand, and gravel with proportions of grain sizes varying from place to place. Thickness of till is highly variable; a maximum thickness of 28 metres (90 ft) was observed in cuts along streams flowing westward into the Barkhamsted Reservoir. Hard, compact fissile till was observed in a few places north of Hoyt Hayes Swamp and on Sawmill Brook.

af ARTIFICIAL FILL – Material transported and deposited by man. Only very large areas mapped

Qal ALLUVIUM (HOLOCENE) – Stream deposits composed of gravel, sand, silt, clay, and organic debris. Generally light brown to dark yellowish brown. Extremely variable in thickness and lateral extent. Occurs along most valleys; shown only where thick or laterally extensive

Ql LANDSLIDE DEPOSITS (HOLOCENE) – A small deposit composed partly of large angular bedrock fragments and partly of till. Overlies stratified drift deposits (Qeb) west of Compensating Reservoir

Qst STREAM TERRACE DEPOSITS (HOLOCENE) – Gravel, sand, and silt containing minor amounts of clay deposited in terraces along the West Branch of Farmington River and Moosehorn Brook. Generally light brown to grayish orange. Pebble to cobble gravel most common in upper 30 to 60 cm (1–2 ft). Terraces along the West Branch of Farmington River average about 15 metres (50 ft) above the level of the alluvial surface, and probably represent alluvial deposits graded to an earlier, higher base level

Qeb ICE-CONTACT STRATIFIED DRIFT DEPOSITS ALONG THE VALLEY OF THE EAST BRANCH OF FARMINGTON RIVER (PLEISTOCENE) – Well-sorted stratified drift deposits displaying abundant collapse structures. Mostly sand and silt, and a few thin gravel layers. Light-grayish-orange to pale-orange kame terrace deposits formed between ice and the valley wall. In general deposits are coarser grained near the north quadrangle boundary and become finer grained to the south

Qcd ICE-CONTACT STRATIFIED DRIFT (PLEISTOCENE) – Isolated, high-level deposits of stratified sand, silt, and gravel containing minor amounts of clay. Generally light yellowish orange to grayish orange. Many deposits preserve collapse structures. Deposits include kames and kame terraces. Locally, as at Hoyt Hayes Swamp, may overlie glaciolacustrine deposits not shown on map

Qic ICE-CHANNEL DEPOSITS (PLEISTOCENE) – Isolated, high-level deposits of gravel, sand, and silt formed as glaciofluvial deposits in open channels in the ice, or in tunnels in or under the ice. Generally light yellowish orange to grayish orange. Commonly coarse grained with relatively high proportion of pebble gravel

Ꞧnh NEW HAVEN ARKOSE OF NEWARK GROUP (UPPER TRIASSIC) – Pale-reddish-brown to moderate-reddish-brown arkosic sandstone, siltstone, and conglomerate. Exposed only in the valley of Cherry Brook

IGNEOUS AND METAMORPHIC ROCKS

In the following descriptions of bedrock units, minerals are listed in order of decreasing abundance as determined from field observations of many exposures; individual samples within a given unit show differences in abundance from exposure to exposure. Minerals in parentheses are present in some, but not all, exposures of the appropriate rock type

Dp PEGMATITE (DEVONIAN?) – Light-yellowish-gray, very light-gray and light-pinkish-gray, medium- to very coarse-grained quartz-plagioclase-(microcline)-(muscovite)-(biotite)-(garnet)-(tourmaline) pegmatite and granitic rocks. Most bodies are white feldspar-quartz-mica rocks; pink feldspar is sparse. Individual bodies range from a few cm (a few inches) to several tens of metres (several hundred feet) in maximum dimension in a given exposure. No attempt was made to correlate bodies across areas of nonexposure. Bodies are highly irregular both in plan and cross section, and are both concordant and discordant. Nearly all bedrock outcrops show one or more pegmatite or granitic bodies; only some of the larger bodies are shown

HARTLAND FORMATION (UPPER AND MIDDLE ORDOVICIAN)

Ohu Upper member – Heterogeneous unit of quartz-plagioclase-muscovite-biotite-garnet-(kyanite)-(sillimanite)-(staurolite)-(graphite) schist and granular schist, hornblende-plagioclase-(garnet)-(quartz) amphibolite and quartz-plagioclase-(clinozoisite)-(calcite)-(epidote)-(sphene) granulite. Most common rock type is medium-grained, light-brown to light-gray, thinly layered friable quartz-plagioclase-muscovite-garnet schist; other rock types occur as thin layers within the schist. Distinguished from underlying units by characteristic friable "sandy" texture in quartzo-feldspathic layers. Basal contact marked by sudden increase in size and abundance of kyanite megacrysts in underlying schist. About 1,520 metres (5,000 ft) thick in quadrangle. Top not exposed

Ohua Amphibolite zone – Medium-grained very dark-gray to black hornblende-plagioclase-(garnet)-(quartz) amphibolite in layers within schist of upper member (Ohu). Amphibolites are of two types: One type is a "plum pudding" amphibolite in which euhedral moderate-reddish-brown to dark-reddish-brown garnets 6–13 mm (0.25–0.5 inch) in diameter are set in a fine-grained layered matrix of hornblende and plagioclase. The other type is a "salt-and-pepper" amphibolite in which white crystals of plagioclase and quartz 1–2 mm (0.04–0.08 inches) long are set in a finer grained matrix of hornblende crystals. In addition, other grains of plagioclase and quartz are segregated into distinct layers. Mapped as a separate zone only where amphibolite layers occur in more than 50 percent of the outcrops. About 300 metres (1,000 ft) maximum thickness

Ohuc Coticule zone – Fine-grained, light-pink to light-pinkish-gray quartz-garnet-(muscovite)-(garnet) granofels (coticule) in layers 3–75 mm (0.13–3 inches) thick within schist of upper member (Ohu). Coticule layers found only in this zone and comprise less than 25 percent of zone. About 300 metres (1,000 ft) maximum thickness

Ohk Kyanite-sillimanite schist member – Coarse-grained to very coarse-grained, medium- to dark-gray, locally rust-stained quartz-plagioclase-byotite-muscovite-(kyanite)-(sillimanite)-(garnet)-(staurolite)-apatite-tourmaline-magnetite schist. Locally contains as much as 30 percent kyanite in blades as much as 30 cm (12 inches) long. Moderate-red to dark-reddish-brown subhedral to euhedral garnets common throughout unit. Indistinct layering marked by local increases in abundance of individual minerals. A very distinctive map unit distinguished from adjoining units by coarse grain size and abundance of megacrysts of kyanite and garnet. Averages about 1,200 metres (4,000 ft) thick

Ohkc Calc-silicate gneiss – Fine- to medium-grained pale-olive to black diopside-epidote-plagioclase-hornblende-sphene calc-silicate gneiss. Well bedded parallel to layering and schistosity of enclosing kyanite-sillimanite schist (Ohk). Forms two discontinuous lenses at approximately the same stratigraphic position in the enclosing schist. Poorly exposed, mapped between exposures on the basis of abundance of angular fragments in the till. About 15 metres (50 ft) thick

Ohcs Calc-silicate zone – Dominantly medium-grained brownish-gray to medium-gray quartz-plagioclase-muscovite-(garnet)-(kyanite)-(graphite) schist. Zone characterized by fine- to medium-grained light-greenish-gray quartz-plagioclase-clinozoisite-epidote-microcline-calcite granular calc-silicate rocks and by fine- to medium-grained dark-greenish-gray to black hornblende-biotite-garnet-(plagioclase) amphibolite in thin beds and lenses. Bedding is rarely preserved in schists; calc-silicate rocks and amphibolites are commonly thinly laminated parallel to contacts. Layers of calc-silicate and amphibolite are parallel to schistosity in enclosing schist. Zone thins from about 800 metres (2,500 ft) in southern part of quadrangle to 0 metres (0 ft) in northern part

Os STRAITS SCHIST (UPPER AND MIDDLE ORDOVICIAN) – Medium-grained medium-brownish-gray quartz-plagioclase-muscovite-biotite-garnet-(kyanite)-(sillimanite)-graphite-(tourmaline)-(apatite) schist. Locally contains pods and lenses of garnet-rich and epidote-rich amphibolite. Very similar to schists in overlying Ohcs unit of Hartland Formation but characteristically has coarse flakes of muscovite along planes of schistosity. Also, fine-grained graphite is common along planes of schistosity giving plumbaginous luster. Locally shows well-developed graded beds 25–100 mm (1–4 inches) thick. Upper 860 metres (3,000 ft) present in quadrangle; base not exposed

Om MORETOWN FORMATION (MIDDLE ORDOVICIAN) – Fine-grained medium-gray to medium-light-gray quartz-plagioclase-biotite-(muscovite)-(garnet) schist containing thin beds of fine-grained light-green and black hornblende-epidote-plagioclase amphibolite. The characteristic feature of this formation is schist containing 3–6 mm (0.13–0.25 inch) layers of granular quartz and feldspar separated by paper-thin laminae of biotite and muscovite; the "pinstripe" texture of Cady (1956). Amphibolites are also delicately laminated with very thin light-green epidote-rich layers alternating with black hornblende-rich layers. Basal contact marked by amphibolite that is continuous across quadrangle and rarely exceeds 15 metres (50 ft) in thickness. A maximum of about 1,500 metres (5,000 ft) is exposed

HOOSAC FORMATION (LOWER CAMBRIAN OR OLDER)

Ꞓhu Upper member – Fine- to medium-grained light- to medium-gray (light-brown to moderate-red on weathered surface) quartz-biotite-plagioclase-muscovite-(garnet) schist. Characterized by muscovite flakes about 3 mm (0.13 inch) in diameter oriented at diverse angles to the foliation. Commonly finely laminated. Ranges from 0 to about 900 metres (0 to about 3,000 ft) in thickness

Ꞓhl Lower member – Fine- to medium-grained light- to medium-gray (pale-yellowish-brown to grayish-orange on weathered surfaces) quartz-biotite-plagioclase-muscovite-(garnet) schist. Characteristic rind of brownish-weathered rock 12–25 mm (0.5–1 inch) thick on most natural exposures. Many beds contain porphyroblasts of plagioclase feldspar as much as 6 mm (0.25 inch) in diameter. Locally contains beds of rock with large mica flakes similar to upper member (Ꞓhu). Contact between units is gradational and difficult to define. Maximum of about 1,800 metres (6,000 ft) is exposed

Ꞓhlc Calc-silicate gneiss unit – Fine- to medium-grained light- to medium-greenish gray quartz-plagioclase-diopside-clinozoisite-epidote-microcline-opaque minerals-garnet-sphene calc-silicate gneiss. 0–60 metres (0–200 ft) thick

Ꞓhlg Gneiss and granular schist unit – Fine- to medium-grained, medium- to very light-gray quartz-plagioclase-biotite-(garnet)-(muscovite)-(microcline)-(kyanite)-(sillimanite)-(staurolite)-(tourmaline)-opaque minerals-(apatite) gneiss and granular schist. Locally plagioclase forms abundant porphyroblasts about 3 mm (0.13 inch) in diameter

BEDROCK EXPOSURES – Solid areas denote continuous or nearly continuous exposures; ruled pattern denotes areas of abundant closely spaced small exposures

CONTACT – Gradational or approximately located; dotted where concealed

FAULT – Dashed where approximately located; dotted where concealed. U, upthrown side; D, downthrown side

SMALL FAULT OBSERVED IN OUTCROP – Showing dip
- Inclined
- Vertical

FOLDS – Showing approximate trace of axial surface
- Anticline, showing plunge
- Syncline
- Overturned anticline
- Overturned syncline

PLANAR AND LINEAR FEATURES

Where two symbols for planar or linear features are combined, their intersection marks the point of observation. Where three or more are combined, the point of observation is the intersection of symbols for planar features

STRIKE AND DIP OF BEDS – Ball on symbol indicates top of bed known from sedimentary features. Position of 90 on vertical bed symbol indicates direction of known(?) top
- Inclined
- Vertical
- Overturned

TREND OF CRUMPLED BEDS

STRIKE AND DIP OF ESSENTIALLY PARALLEL BEDDING AND SCHISTOSITY – Ball on symbol indicates top of bed known from sedimentary features. Position of 90 on vertical bed with ball indicates top
- Inclined
- Vertical
- Overturned

STRIKE AND DIP OF SCHISTOSITY – Relation to bedding not apparent in outcrop
- Inclined
- Vertical

TREND OF CRUMPLED SCHISTOSITY
- Inclined
- Vertical

AXIAL PLANE OF INCLINED FOLIATION – Schistosity developed parallel to axial planes of small folds

JOINTS
- Inclined
- Vertical

BEARING AND PLUNGE OF AXIS OF SMALL FOLD OR CRINKLE
- Inclined
- Horizontal

ROCK SAMPLE LOCALITY – Showing number. Symbol in conjunction with attitude symbol indicates sample was taken at locality of attitude

ABANDONED QUARRY

PITS
- Active
- Abandoned
- Test

Letter symbol indicates type of material obtained from pit; superposed symbols indicate superposition of material in pit
- g – gravel of mixed sizes
- b – boulders
- c – cobbles
- p – pebbles
- s – sand
- t – till
- T – compact fissile till

W WEATHERED BEDROCK

INTRODUCTION

The New Hartford quadrangle is in northern Connecticut about 50 km (30 mi) east of the New York State line. Bedrock in the quadrangle consists of consolidated metamorphic, igneous, and sedimentary rocks ranging from Cambrian to Triassic in age. Surficial deposits are represented by a relatively thin mantle of unconsolidated material of Pleistocene and Holocene age.

BEDROCK GEOLOGY

PRE-TRIASSIC ROCKS

In the New Hartford quadrangle, the pre-Triassic rocks consist of high-grade metasedimentary and metavolcanic rocks ...

TRIASSIC ROCKS

SURFICIAL GEOLOGY

STRUCTURAL GEOLOGY

METAMORPHISM

AEROMAGNETIC CORRELATIONS

ECONOMIC GEOLOGY

REFERENCES

REGIONAL CORRELATION OF BEDROCK UNITS IN THE NEW HARTFORD QUADRANGLE

SYSTEM	West-Central Massachusetts Osberg and others (1971); Hatch (1969)	New Hartford quadrangle (this report)	Northwest Connecticut: Stanley (1964)[1]	Schnabel and Eric (1965)[1]
TRIASSIC	New Haven Arkose	New Haven Arkose	New Haven Arkose; dolerite	Newark Group
DEVONIAN(?)	Granite, pegmatite, and quartz	Pegmatite	Granitic rocks	Pegmatite
DEVONIAN TO SILURIAN	Goshen Formation			
ORDOVICIAN	Ultramafic rocks; Hawley Formation; Moretown Formation	Hartland Formation: Upper member; Kyanite-sillimanite schist; Calc-silicate zone; Straits Schist; Moretown Formation	Ultramafic rocks; Hartland Formation; Straits Schist; Collinsville Formation; Taine Mountain Formation	Unit a; Unit b; Unit c; Unit d; Sweetheart Mountain Member; Bristol Member; Whigville Member; Scranton Mountain Member; Wildcat Member
ORDOVICIAN AND CAMBRIAN	Rowe Schist			
CAMBRIAN OR OLDER	Hoosac Formation	Hoosac Formation	Hoosac Formation	

[1] Stratigraphic sequence is my interpretation of correlation of units, see Stanley (1968) and Hatch and Stanley (1970) for other interpretations
[2] Correlations shown represent modification of original report based on more recent investigations

GEOLOGIC MAP OF THE NEW HARTFORD QUADRANGLE, NORTHWESTERN CONNECTICUT

By
Robert W. Schnabel
1975

Interior—Geological Survey, Reston, Va.—1975