

# East Killingly Quadrangle Bedrock Geology w/ Explanation and Cross-Sections

George E. Moore, Jr.

Explanation

Map

Cross-Sections

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2833-M

22440

f = fine gr  
c = coarse

Mapped, edited, and published by the Geological Survey  
Control by U.S.S. and U.S. Coast and Geodetic Survey  
Topographic base map, 7.5 minute series, 1:25,000, Revised 1955  
Polyconic projection, 1927 North American datum  
10,000-foot grid  
Connecticut and Rhode Island  
1000-meter (3280-foot) Transverse Mercator grid ticks,  
zone 19, spheroid 1948  
Connecticut Turnpike added 1959

SCALE 1:24,000  
1 2 3 4 5 6 7 8 9 10  
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000  
FEET  
1 2 3 4 5 6 7 8 9 10  
KILOMETERS

CONTOUR INTERVAL 10 FEET  
DATUM IS MEAN SEA LEVEL

ROAD CLASSIFICATION  
Heavy-duty  
Medium-duty  
Light-duty  
Unimproved dirt  
U.S. Route  
State Route

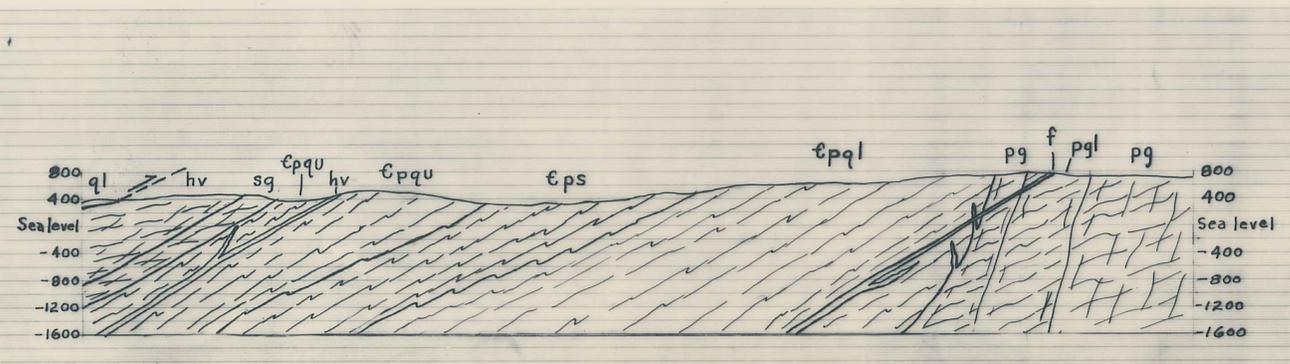
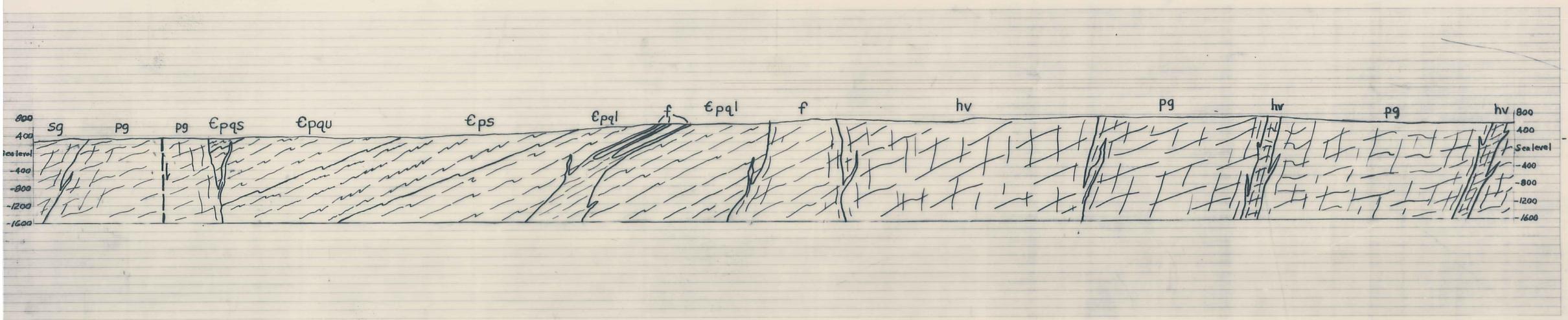
EAST KILLINGLY, CONN.-R. I.  
N4145-W7145/7.5  
1955

Preliminary Bedrock Geologic Map of the East Killingly Quadrangle, Connecticut and Rhode

4/2/68 George E. Moore Jr  
Dept. of Geology  
Ohio State Univ

East Killingly Quad  
Conn - Rhode Island  
George E Moore, Jr.

I



by George E. Moore Jr.

Geologic Cross-sections East Killingly Quadrangle Connecticut and Rhode Island

1:50,000

Thy  
/ / /



The Ohio State University

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125 South Oval Mall  
Columbus, Ohio 43210  
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January 3, 1980

Mr. Maurice H. Pease, Jr.  
U.S. Geological Survey  
150 Causeway St., Room 1304  
Boston, Mass. 02114

Dear Mike:

I think the East Killingly material is in shape for submission for open file status, so I am sending the following to you:

- 1 Mylar sheet showing bedrock geology
- 1 Mylar sheet showing structural data
- 1 Mylar sheet with cross-section
- 1 Map explanation consisting of 6 typed <sup>pages</sup> ~~papers~~.

If you agree that this material is ready for open-file report, will you please send it on to the proper office.

I'm sorry that I was so very slow on this; I plan to work on a text to accompany the maps and submit it all for a G.Q. map.

With best wishes.

Sincerely,

George E. Moore, Jr.

GEM/ch

EXPLANATION

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Gabbro

Grayish-black to grayish-purple coarse-grained post-tectonic gabbro with well-developed primary flow structure; platy crystals of dark plagioclase and pyroxene, with some biotite, amphibole, olivine, and ilmenite and many euhedral prisms of yellowish apatite as much as 3 mm long

f

Fine-grained granite and aplite

Pink to light-gray fine-grained granite and aplite; commonly shows moderately - to well-developed foliation and lineation expressed by narrow streaks of biotite flakes, some is nearly massive. Dominantly quartz and feldspar, with minor biotite, muscovite, magnetite, garnet, and other accessory minerals

sg

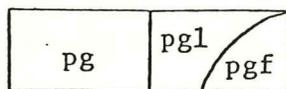
Scituate Granite Gneiss

Pinkish-gray to flesh-colored medium- to coarse-grained granite gneiss; in most places this rock shows a weak to moderate foliation that appears to be a primary flow structure, a moderate to strong metamorphic cleavage, and a strong lineation; characterized by oval splotches of biotite commonly 20 to 40 mm long; dominantly quartz, approximately equal amounts of pink microcline and white plagioclase, and biotite; locally porphyritic with phenocrysts of pink microcline as much as 20 mm long

hv

Hope Valley Alaskite Gneiss

Flesh-colored to pinkish-gray medium- to coarse-grained alaskite gneiss; structure similar to that in the Scituate Granite Gneiss except that the lineation is shown by flattened rod-shaped aggregates of quartz; flesh-colored microcline, white plagioclase, smoky quartz, and 1-4 percent biotite are the more abundant minerals; locally sub-porphyritic, grades into the Scituate Granite Gneiss

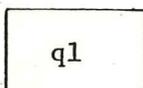


Ponaganset Gneiss

pg; light to dark gray fine- to coarse-grained porphyritic and porphyroblastic to even-grained gneiss, commonly with a weakly- to moderately-developed foliation that appears to be a primary flow structure and a moderately- to strongly-developed metamorphic cleavage as well as a strongly developed lineation expressed by oval splotches of biotite. Highly sheared and granulated in many places. Composed of varying amounts of microcline and plagioclase, quartz, 5-10 percent biotite, and minor hornblende, muscovite, and other accessories.

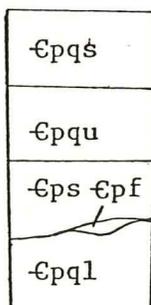
pgl; medium-grained flesh to pinkish-gray facies, lighter in color than pg because of less biotite.

pgf; fine- to medium-grained light-gray facies similar to pg but lacks microcline porphyro blasts and phenocrysts



Quinebaug Formation

ql; lower member. Medium- to fine-grained medium gray, dark gray, and black quartz-feldspar-biotite-hornblende-epidote gneiss and schistose gneiss



Plainfield Formation

-εpqs; quartzite and schist. Medium-grained very light gray, blue-gray, and greenish-gray thin-bedded to slabby quartzite, micaceous quartzite, and quartz-muscovite schist that locally contains biotite, calcite-dolomite, and pyrite. Bedding, foliation, and lineation generally well-developed; pods and sills of vein quartz are abundant locally. The hard quartzite, mostly in beds 2 to 10 feet thick, forms most of the outcrops, and the relative amount of schist is unknown

-εpqu; upper quartzite. Medium- to fine-grained white, light-gray, light blue-gray, and yellowish-gray hard quartzite, locally with a trace to 5 percent muscovite and brown biotite-phlogopite, much of which is concentrated along bedding planes; and interbeds of medium-grained shiny medium-gray to dark-gray quartz-muscovite-biotite schist and light-gray to greenish-gray

quartz-actinolite (or tremolite) schist and actinolitic quartzite with as much as 40 percent actinolite in some beds. Some interbeds weather punky and perhaps contained a carbonate mineral. The quartzite typically is in units 2 to 10 feet thick, and the schist in units only a few inches thick but some are as much as 15 feet thick. Lenses of white vein quartz locally form as much as 15 percent of a bed. The quartzite is well-bedded, lineation is commonly strong

-Cps; schist, with interbedded quartzite. Mostly medium- to coarse-grained silvery-gray, medium-gray, and dark gray quartz-biotite-muscovite schist that contains different amounts of the minerals epidote, pink calcite, actinolite, tremolite, hornblende, pyrite, graphite, feldspar, and garnet, any of which can be abundant locally. The more calcareous beds weather to a punky vuggy rock. The schist grades into and is interbedded with fine- to medium-grained light-gray, blue-gray, and greenish-gray quartzite that can contain any of the minerals listed above. In many places the schist contains abundant flattened ellipsoidal masses of medium- to coarse-grained light-gray to white quartz, commonly about 1 by 4 by 12 inches in dimensions but locally as much as 8 by 20 by 40; these are believed to represent chert concretions. In other places the schist contains ellipsoidal bodies of fine- to medium-grained quartz that look like stretched pebbles, and some that are quartz and quartzite boudins resulting from stretched and broken thin beds of quartzite and thin quartz veins

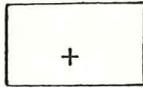
-Cph; fine- to medium-grained dark gray to greenish-black hornblende-feldspar schist, some contains 5 to 10 percent biotite, and some beds and lenses as much as 1 inch thick are mostly biotite

-Cpql; lower quartzite. Fine- to medium-grained light gray, blue-gray, greenish-gray, and white thin- to thick-bedded quartzite, some containing minor biotite-phlogopite, muscovite, actinolite-tremolite, and chlorite. Bedding, foliation, and lineation commonly well-developed; locally cross-bedded and channeled. Grades into or interbedded with thin beds of medium-grained silvery gray quartz-muscovite-biotite schist and schistose quartzite that locally contain actinolite-tremolite, chlorite, and calcite. Some of the calcareous beds weather rusty and punky

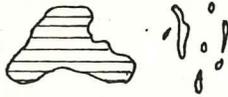
gs

#### Gneiss and schist

Coarse- to fine-grained light- to dark-gray quartz-feldspar-biotite gneiss and schistose gneiss, locally containing hornblende and garnet, and medium-grained medium- to dark-gray biotite-quartz-feldspar schist.



Boulder concentration locality  
used in determination of the map unit.



Bedrock outcrops

Solid color represents individual outcrops, ruled areas represent individual outcrops or groups of closely spaced outcrops



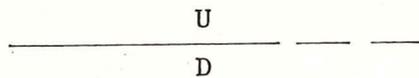
Contact

Dashed where approximately located



Thrust fault

Dashed where approximately located; sawteeth on upper plate. Dip of the fault shown where it could be measured



High angle fault

Dashed where approximately located; U, upthrown side, D, downthrown side



Strike and dip of bedding

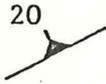
Dot indicates top of beds determined from cross bedding or channeling



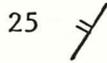
Strike and dip of primary flow structure  
Inclined and vertical



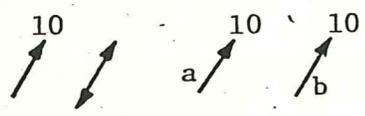
Strike and dip of metamorphic cleavage  
Inclined and horizontal



Strike and dip of parallel bedding and cleavage

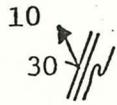


Strike and dip of shear zone and cleavage in the shear zone



Bearing and plunge of lineation

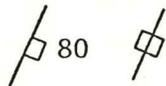
Inclined, horizontal. Mineral showing lineation not specified. a, lineation shown by actinolite; b, lineation shown by biotite.



Strike and dip of axial plane of minor fold, bearing and plunge of hinge of the fold, and pattern of the fold, where known.



Attitude of minor fold, as above, with cleavage parallel to the axial plane of the fold



Strike and dip of joint  
Inclined, vertical

Symbols for bedding, flow structure, cleavage, lineation, and minor folds can be combined

Intersection of two or more symbols is at point of observation



Quarry or mine

All are stone quarries, mostly inactive, except for the 'Foster Gold Mine' in Foster, Rhode Island, on the northeast side of Cucumber Hill

*George E. Moore, Jr.*