

Marlborough Rodgers Bedrock Compilation Sheet (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.

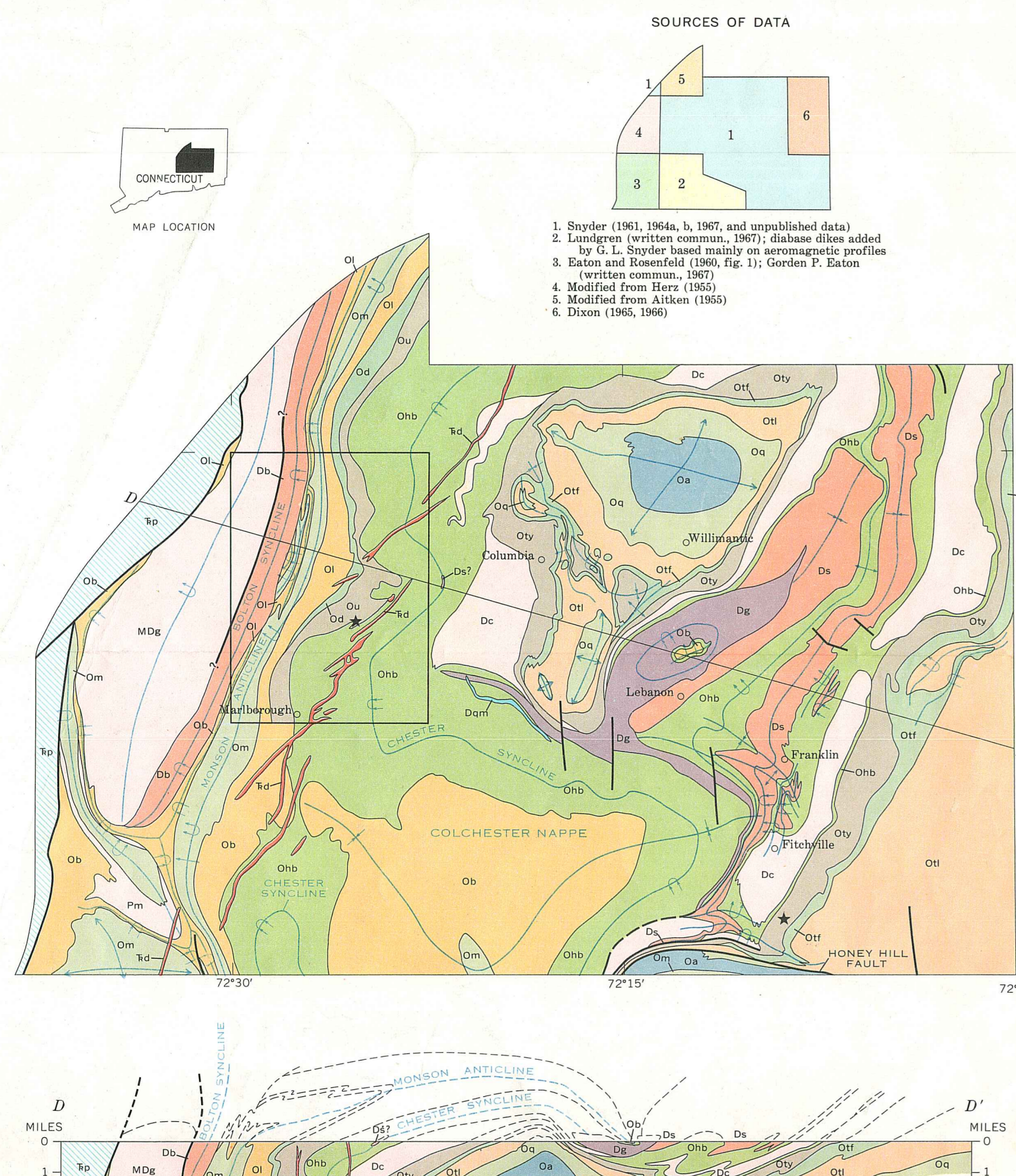
Geologic unit designation table translates earlier map unit nomenclature to the units ultimately used in the State publication.

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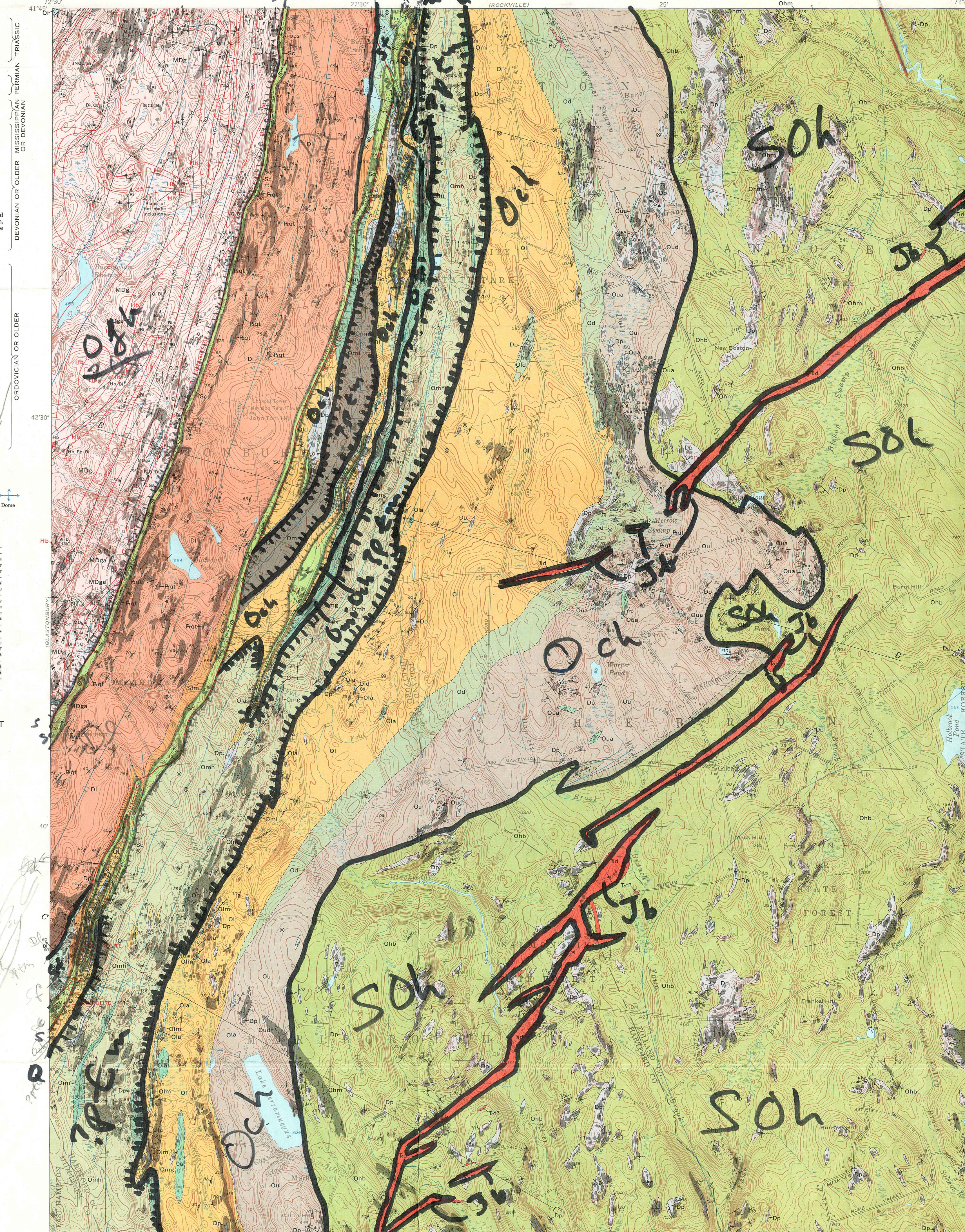


GEOLOGIC INDEX MAP SHOWING GEOLOGIC SETTING OF MARLBOROUGH QUADRANGLE (OUTLINED)

TABLE 1.—POSSIBLE CORRELATIONS OF FORMATIONS IN THE EASTERN AND WESTERN PARTS OF EASTERN CONNECTICUT

Formations in western part of eastern Connecticut	Formations in eastern part of eastern Connecticut	
	Correlation possibility A	Correlation possibility B
Littleton Formation equivalent of Eaton and Rosenfeld (1960) (Lower Devonian by correlation)	Scotland Schist (Lower Devonian or older by inference from radiometric age)	
Fitch Formation equivalent of Eaton and Rosenfeld (1960) (Middle Silurian by correlation)	Quartzite at Franklin (Lower Devonian or older by inference from radiometric age)	
Clough Formation equivalent of Eaton and Rosenfeld (1960) (Lower Silurian by correlation)		
Hebron Formation (Ordovician or older by inference)	Hebron Formation (Ordovician or older by inference)	Hebron Formation (Ordovician or older by inference)
Brinfield Schist (Middle (?) Ordovician or older by correlation with Tatnic Hill Formation; Middle Ordovician by correlation with the Partridge Formation)	Tatnic Hill Formation (Middle (?) Ordovician or older by inference from radiometric age)	Tatnic Hill Formation (Middle (?) Ordovician or older by inference from radiometric age)
Middletown Gneiss (Middle (?) Ordovician or older by stratigraphic position)	Quinebaug Formation (Middle (?) Ordovician or older by stratigraphic position)	Quinebaug Formation (Middle (?) Ordovician or older by stratigraphic position)
Monson Gneiss (Middle (?) Ordovician or older by stratigraphic position)	Alaskaite Gneiss (Middle (?) Ordovician or older by stratigraphic position)	Alaskaite Gneiss (Middle (?) Ordovician or older by stratigraphic position)
	Implications of correlation possibility A:	Implications of correlation possibility B:
	1) There is no Fitch Formation equivalent in the eastern part of eastern Connecticut.	1) There are no equivalents of the Littleton Formation, Fitch Formation, or Clough Formation in the eastern part of eastern Connecticut.
	2) The quartzite at Franklin is approximately equivalent to the quartzite of the Clough Formation equivalent.	2) The unconformity beneath the Clough Formation is younger than the Scotland Schist, and therefore younger than the quartzite at Franklin.
	3) Any unconformity between the quartzite at Franklin and the Hebron Formation or between the Scotland Schist and the Hebron Formation where the quartzite is absent is probably equivalent to the pre-Clough equivalent or pre-Littleton equivalent unconformities.	3) Any unconformity between the quartzite at Franklin and the Hebron Formation or between the Scotland Schist and the Hebron Formation where the quartzite is absent must be older than the pre-Clough equivalent unconformity.
	4) The gabbro of Lebanon, dated by Zartman and others (1965, p. 8) as 385 m.y. to 425 m.y., should be restricted to 385 m.y. to 400 m.y., or Early Devonian. This is based on Kulp's (1963) age of the Silurian-Devonian boundary as 405 m.y. and the fact that the gabbro of Lebanon intrudes Scotland Schist, as shown on the geologic index map. This conclusion is essentially unaffected by the new data on the Silurian-Devonian boundary shown by Bettino and Fullagar (1965); their data, however, might tend to restrict the age of the gabbro even more.	4) The age range of the gabbro of Lebanon is not restricted by more than the limits imposed by the data of Zartman and others (1965).
	5) The tiny lens of "possible Scotland" schist in the western part of the Columbia quadrangle (see geologic index map, section D-D', and Snyder, 1967) is probably not Scotland. If this lens were Scotland and therefore a Littleton equivalent, then Littleton equivalent rocks lie unconformably above a fold structure containing Littleton equivalent rocks in its core, a structural and stratigraphic improbability. Therefore, possibility A indicates that this lens of schist is most likely an interlayer in the Hebron Formation.	5) The Scotland Schist can easily be involved in the folding which produced the Columbia quadrangle. Therefore, the tiny lens of "possible Scotland" schist in the western part of the Columbia quadrangle could indeed be Scotland.
	6) The "second generation" folds in the Fitchville quadrangle mentioned earlier would be "third generation." The three generations of folding are: 1) Colchester stage and all the folds covered with Schlarf and Schist; 2) Fitch syncline and folds related to drag on the Honey Hill fault.	6) The "second generation" folds in the Fitchville quadrangle could indeed be second generation. The two generations of folding are: 1) Colchester stage and all the folds covered with Schlarf and Schist; 2) Fitch syncline and folds related to drag on the Honey Hill fault.

Note that correlation possibilities A and B both exclude a Hebron-Fitch equivalent, a correlation previously permitted. However, present observations indicate that the two formations are lithologically distinct and separate and are separated by a major unconformity as well as an episode of folding. At present, the age of the Hebron Formation can only be determined from its stratigraphic position. It is younger than the Tatnic Hill Formation and older than the Scotland Schist or the Clough equivalent and is therefore assigned an Ordovician or older age.



Bedrock geologic map
BEDROCK GEOLOGIC AND MAGNETIC MAPS OF THE MARLBOROUGH QUADRANGLE, EAST-CENTRAL CONNECTICUT
By George L. Snyder
1970

