## Ansonia 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.

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1965

Stratigraphy, structure, and regional metamorphism.—The Straits, Southington Mountain, and Derby Hill Schists, the Maltby Lakes Volcanics, and the Wepawaug Schist form a sequence of metasedimentary and metavolcanic rocks of Paleozoic age, which, in Middle to Late Devonian time, was tightly folded, intruded by magmas of felsic to intermediate composition, and subjected to progressive regional metamorphism ranging in grade from chlorite to kyanite (Fritts, 1962a, 1962b). The principal structure formed in this quadrangle at that time is a major syncline, the trough of which is occupied by the Wepawaug Schist. This fold, here called the Wepawaug syncline, plunges north-northeastward and also underlies parts of the adjacent Naugatuck, Mount Carmel, New Haven, Woodmont, and Milford quadrangles. The absence of the Maltby Lakes Volcanics along the western limb of the syncline is interpreted as evidence that this formation had an eastward dip at the time the Wepawaug Schist was deposited uncon-

A gradual westward increase in metamorphic grade of the rocks of pre-Triassic age coincides with a westward increase in the complexity of geologic structure. In the southeastern part of the quadrangle, the metamorphic grade of the rocks is low and geologic structure is rather simple. Foliation there, in general, is parallel or nearly parallel to bedding in metasedimentary rocks, although small tight folds are found in some outcrops of even the least metamorphosed rocks. Foliation, however, is not necessarily parallel to the boundaries of metavolcanic rocks such as the pyroclastic schist of the Maltby Lakes Volcanics. Farther west, near the axial plane of the Wepawaug syncline and along the western limb, the rocks have undergone more intense deformation, and in some places mappable nearly isoclinal folds have formed. Thus in the southwestern part of the Ansonia quadrangle, the long tongue of Wepawaug Schist projecting southward into the Derby Hill Schist near the Housatonic River is in the trough of a minor nearly isoclinal syncline along the western limb of the Wepawaug syncline. Although it is possible that other minor folds underlie the valley of the Housatonic farther south, this hypothesis cannot be proved owing to a lack of outcrop. In the adjacent Milford quadrangle, however, several similar folds have been mapped (Fritts, 1965). In general, foliation in the metasedimentary and metavolcanic rocks exposed west of the Wepawaug River in both areas is nearly parallel to the axial planes of the major and minor folds, and obviously crosses stratigraphic boundaries near the axial planes of the

The principal structural feature of Triassic age in the mapped area is the Mixville fault. This fracture forms the western boundary of the Newark Group of Late Triassic age for more than 11 miles in the Mount Carmel and Southington quadrangles (Fritts, 1963). The rocks east of the fault have been downthrown, but the throw is not known to be more than a few hundred feet and a horizontal component of displacement cannot be proved. The fault probably cuts off the Derby Hill Schist near Bethany Lake in the Mount Carmel quadrangle, although the disappearance of the Derby Hill Schist there also could be explained by the fact that it is overlain unconformably by the Wepawaug Schist. Nevertheless the fault is believed to continue southwestward at least as far as the dam at Lake Chamberlain in the southwest corner of the Mount Carmel quadrangle, where there is a marked discordance in attitudes of foliation (bedding) in the Wepawaug Schist. In the Ansonia quadrangle, the position of the fault is less certain and is based mainly on an apparent discontinuity in the garnet and biotite isograds mapped in the Wepawaug Schist. However, the discontinuity, which is in an area where bedrock is largely covered by glacial drift, could be explained as merely an abrupt change in the direction of the isograds. It also is possible that the fault extends into the Milford quadrangle, perhaps beneath the drift-filled valley of the Wepawaug River, but there is no indisputable evidence of a structural discordance in the southern part of the Ansonia quadrangle, and the geologic structure in the Milford quadrangle can be explained without this fracture. The fault, therefore, has not

Igneous activity.—The Allingtown Metadiabase, Prospect Gneiss, Ansonia Gneiss, Woodbridge Granite, pegmatite, and Buttress Diabase are intrusive rocks that represent at least three episodes of igneous activity. The Allingtown Metadiabase probably was emplaced at about the time rocks of similar composition comprising parts of the Maltby Lakes Volcanics were extruded. Bodies of Prospect Gneiss, Ansonia Gneiss, and Woodbridge Granite, on the other hand, probably were emplaced after initial folding of the Wepawaug Schist and older metasedimentary rocks but before the climax of progressive regional metamorphism in Devonian time. Emplacement of pegmatite and quartz veins accompanied this metamorphism. Dikes of Buttress Diabase were emplaced during or after tilting and faulting of the Newark Group of Late Triassic age, part of which is exposed in the adjacent

Fritts, C. E., 1962a, Age and sequence of metasedimentary and metavolcanic formations northwest of New Haven, Connecticut, in Short papers in geology, hydrology, and topography: U.S. Geol. Survey Prof. Paper 450-D, p. D32-D36. \_\_1962b, Bedrock geology of the Mount Carmel and Southington quadrangles, Connectiuct: U.S. Geol. Survey open-file report 644, 213 p.; same report, Univ. Michigan Ph. D. thesis, available on microfilm from University Micro-

\_1963, Late Newark fault versus pre-Newark peneplain in Connecticut: Am. Jour. Sci., v. 261, no. 3, 268-281. \_\_\_\_\_1965, Bedrock geologic map of the Milford quadrangle, Fairfield and New Haven Counties, Connecticut:

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