STATE OF NEW HAMPSHIRE, HIGHWAY DEPARTMENT
FREDERIC E. EVERETT, COMMISSIONER AND STATE ENGINEER

NEW HAMPSHIRE
CARDIGAN QUADRANGLE

(Mt Cube) (Rumney) (Plymouth)

72°00' 55' 50' 71°45'
43°45' 43°45'

43°30' 43°30'
2 370 000 YARDS

72°00' 1 090 000 YARDS 55' (Mt Kearsarge) 50' 71°45'

(Sunapee) (Meriden) (Newport) (Peacock)

WILLIAMS & HEINTZ CO., WASH., D. C.

LEGEND

METAMORPHIC AND IGNEOUS ROCKS

Intrusive breccia
(Angular fragments of schist, quartz monzonite, and granite embedded in a matrix of fine-grained Concord granite; large aggregations of garnet are present; fragments vary in size from a few inches to several feet.)

Concord granite
(Fine-to coarse-grained, light-gray granite, weathering brown, composed of potash feldspar, oligoclase, quartz, biotite, and muscovite; locally gneissic.)

Pegmatite
(Coarse, interlocking crystals of feldspar, quartz, biotite, and muscovite, ranging in size from a few inches up to several feet in length; feldspar is generally microcline, orthoclase, and rare albite; feldspar crystals 15 feet long have been observed in the Ruggles mine; black tourmaline, garnet, beryl, apatite, montmorillonite, and the rare uranium minerals, as well as rare lithium-manganese phosphates, and metallic sulphides are among the accessories. There are many pegmatites too small to be shown on the map.)

Kinsman quartz monzonite
(Medium-to coarse-grained, gray, quartz monzonite, composed of quartz, oligoclase-andesine, potash feldspar, biotite, and muscovite; large phenocrysts of potash feldspar, up to 6 centimeters in length, are a conspicuous feature of the rock, as well as knots and stringers of quartz and feldspar; foliation is generally well developed.)

Bethlehem gneiss
(Medium-to coarse-grained, gray granodiorite or quartz monzonite, composed of andesine, quartz, biotite, microcline, and a little muscovite; generally highly foliated; locally contains small phenocrysts or stringers of light-colored minerals.)

Smarts Mountain group
(Fine-grained, white to gray, weakly foliated quartz diorite and granodiorite; composed of oligoclase, quartz, biotite, hornblende, and microcline.)

Littleton formation
(Zone h: green to gray quartzite, mica schist, quartz-mica schist, sillimanite schist, and garnet schist.)

UNCONFORMITY

Ammonoosuc volcanics
Zone m: amphibolite and micaceous quartzite.)

YOUNGER THAN LOWER DEVONIAN, PROBABLY LATE DEVONIAN
New Hampshire Magma Series
Post-folding
End of folding
Oliverian Magma Series
Pre-folding
DEVONIAN
Lower
PROBABLY ORDOVICIAN

METAMORPHIC ZONES

Shown below formation symbol thus: Dl/m

m-middle grade

h-high grade

CONTACTS

Accurate

Approximate and diagrammatic due to poor exposures

Indefinite as sharp contact is lacking

SPECIAL SYMBOLS

(Dip and strike symbols representing only a small percentage of the field observations)

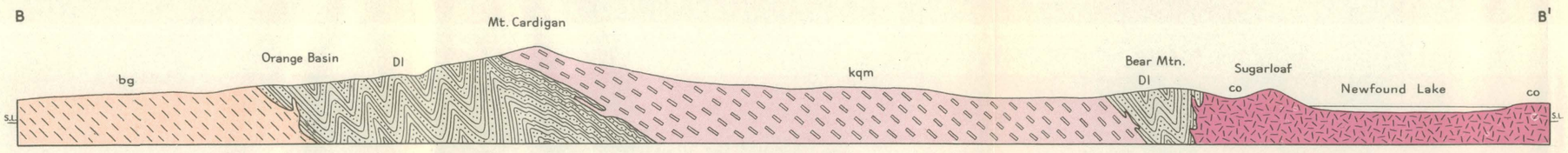
75° Strike and dip of foliation and schistosity. In general, the bedding, if present, is parallel to the schistosity

Strike of vertical foliation and schistosity

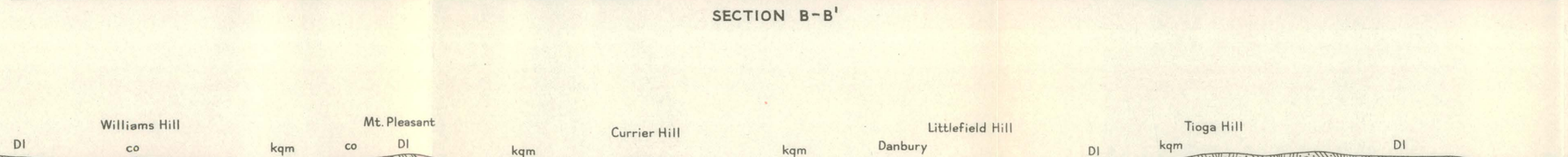
D, Downthrow side of probable fault

Mines, prospects, and quarries, many abandoned

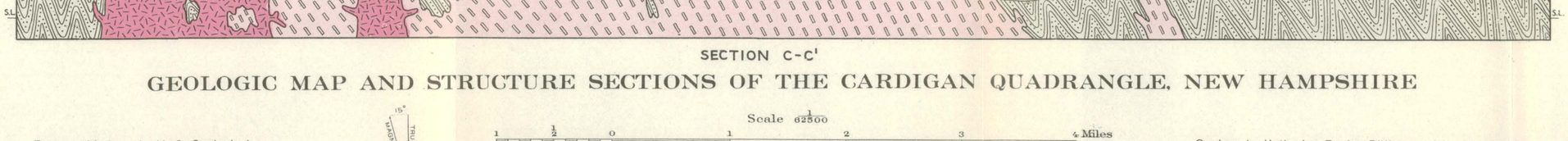
SECTION A-A'



SECTION B-B'



SECTION C-C'



GEOLOGIC MAP AND STRUCTURE SECTIONS OF THE CARDIGAN QUADRANGLE, NEW HAMPSHIRE

Topographic base by U. S. Geological Survey, surveyed in cooperation with the State of New Hampshire.

15° MAGNETIC NORTH TRUE NORTH
APPROXIMATE MEAN DECLINATION, 1927

Scale 1/62500

1 0 1 2 3 4 Miles
5000 0 5000 10000 15000 20000 Feet
1 0 1 2 3 4 5 Kilometers

Contour interval 20 feet
Datum is mean sea level

Geology by Katharine Fowler-Billings and Louise Kingsley
Geology surveyed in 1935 and 1936. Published 1940.
Map edited by Marland Billings.