

LEGEND
 SEDIMENTARY, IGNEOUS, AND
 METAMORPHIC ROCKS

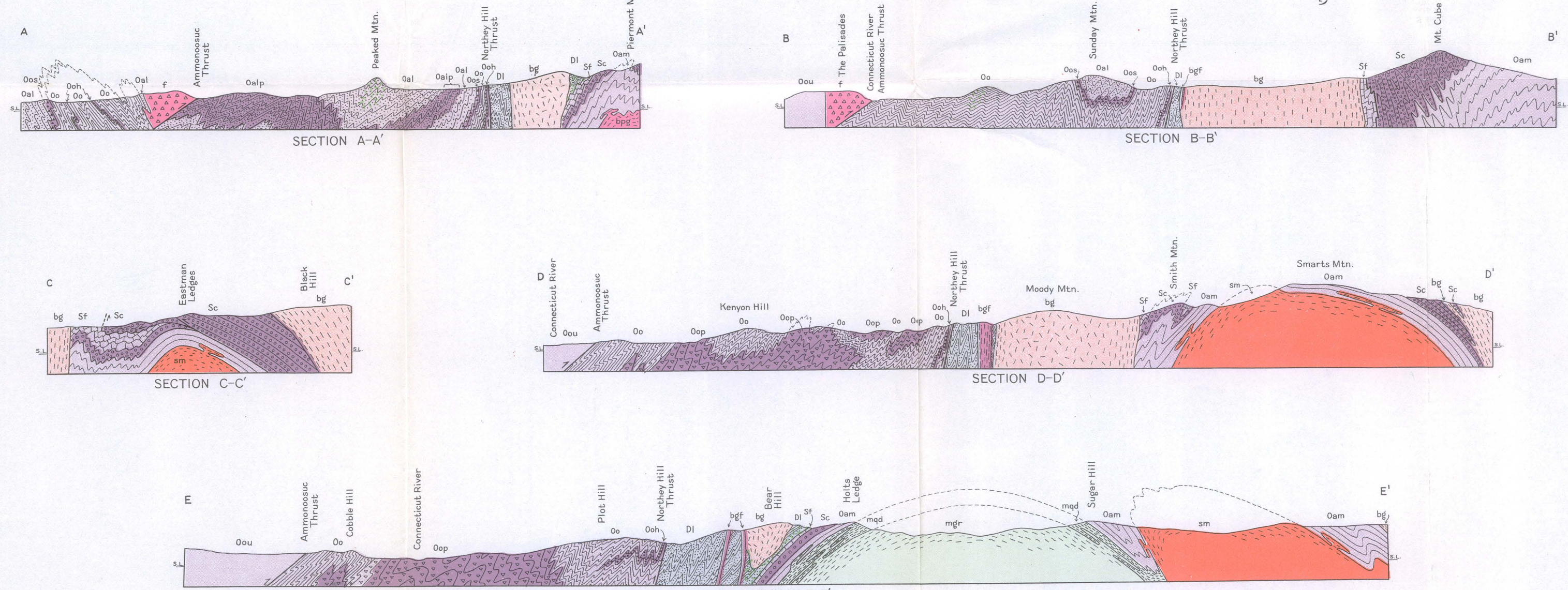
- Haverhill granodiorite**
 (Medium-grained, white or gray granodiorite, locally weakly foliated; composed of quartz, calcic oligoclase, microcline, biotite, and muscovite.)
- Bethlehem gneiss**
 (Medium- to coarse-grained gray orthogneiss composed of quartz, oligoclase or andesine, microcline, biotite, and muscovite, commonly with phenocrysts of microcline; usually quartz monzonite, locally granodiorite or granite.)
- Bethlehem gneiss—fine-grained phase**
 (Fine- to medium-grained gray gneiss, composed of quartz, oligoclase or andesine, microcline, biotite, and muscovite; usually quartz monzonite, locally granodiorite or granite.)
- Area where basic dikes and sills are abundant**
 (Fine- to medium-grained, light-gray, weakly foliated, commonly porphyritic, composed of hornblende, andesine, and locally biotite.)
- Baker Pond gneiss**
 (Fine-grained, gray gneiss, composed of andesine, quartz, microcline, biotite, and epidote, locally with abundant microcline, largely quartz monzonite with some granodiorite. Border phase, bfg; dark greenish gray, quartz monzonite, composed of oligoclase, quartz, microcline, biotite, potash feldspar, quartz, and epidote.)
- Smarts Mountain granodiorite**
 (Fine- to medium-grained, light-gray, weakly foliated granodiorite, composed of oligoclase, quartz, microcline, biotite, and a little magnetite.)
- Mascoma group**
 (Fine- to medium-grained, white, gray, or pink granitoid rocks, generally well foliated, composed of oligoclase or andesine, quartz, microcline, and biotite, locally hornblende, mica, quartz, clastic mgt., siliceous granodiorite; mcm, quartz monzonite; mg, granite.)
- Littleton formation**
 (Zone m: quartz-mica schist, garnet-mica schist and staurolite schist. Does not appear in zone 1. D₁ areas intruded by dikes and sills of Bethlehem gneiss, fine-grained phase.)
- Fitch formation**
 (Zone m: Arsenaceous marble, calcareous quartzite, quartzite, quartz conglomerate, calcareous biotite schist, mica schist, and lime-silicate granulites. Does not appear in zone 1.)
- Clough formation**
 (Zone m: quartz-mica schist, garnet-mica schist, and quartz conglomerate, and a little kyanite and staurolite schist. Does not appear in zone 1.)
- UNCONFORMITY**
- Fairlee quartz monzonite**
 (Medium- to coarse-grained, greenish gray or pinkish quartz monzonite, locally strongly foliated; composed of bluish quartz, microperthite, unresorbed plagioclase, and green, saussureite biotite.)
- Ammonoosuc volcanics**
 (Zone m: fine-grained basaltic gneiss, amphibolite and amphibole gneiss. Does not appear in zone 1.)
- Lower part of Ammonoosuc volcanics and upper part of Albion formation, which are present elsewhere, are missing in this area due to the Northey Hill thrust.**
- Albion formation**
 (Zone m: thin-bedded quartzite, garnetiferous quartz-mica schist and mica schist. Vermont member, Oal, consists of bluish gray quartz-mica schist, and staurolite schist, and basal beds of fine conglomerate in part of volcanic origin. Zone 1: thin-bedded quartzite, argillaceous quartzite and light gray slate. Present member, Oal, does not appear in zone 1.)
- Orfordville formation**
 (Zone m: black to dark-gray mica schist, quartz-mica schist, epidote-biotite schist, locally staurolite schist or black schist, granitic quartzite. Zone 1: massive or thinly bedded, fine-grained biotite gneiss of volcanic origin in upper part. Sunday Mtn. volcanic member, Oos, consists chiefly of fine- to medium-grained amphibolite, with some fine-grained biotite gneiss and black, graphitic quartzite. Hardy Hill quartzite member, Ooh, consists of gray to white, massive quartzite and quartz conglomerate. Where the Hardy Hill is very thin or absent, the horizon is shown by a dash-dot line. Paul Pond volcanic member, Oop, consists of amphibolite, amphibole gneiss, calcic amphibole gneiss, fine-grained biotite gneiss and gray quartz-mica schist. Zone 1: dark gray slate. Sunday Mtn. volcanic member, Oos, consists of schistose greenstone. Hardy Hill quartzite member, Ooh, consists of greenish gray quartz conglomerate with sericitic matrix. Paul Pond volcanic member, Oop, consists of green chlorite-sericite schist. In Vermont, west of the Ammonoosuc Thrust, rocks of large-scale type, Oos, believed to be part of the Orfordville formation, have not been differentiated.)

- 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)
- Strike and dip of bedding, including inverted and normal strata
 - Strike of vertical beds
 - Strike and dip of foliation and schistosity
 - Strike of vertical foliation and schistosity
 - Horizontal foliation and schistosity
 - Overthrust side of thrust faults
 - Mines, prospects, and quarries mostly abandoned

NEW HAMPSHIRE Magma Series
 YOUNGER THAN LOWER DEVONIAN, PROBABLY LATE DEVONIAN
 OLIVERIAN Magma Series
 DEVONIAN
 Lower
 Middle
 Lower or Middle
 Late Ordovician?
 PROBABLY ORDOVICIAN
 Upper Ordovician?
 Middle Ordovician?
 Middle Ordovician?

METAMORPHIC ZONES
 Shown below formation symbol thus: m

- l—low grade
- m—middle grade



GEOLOGIC MAP AND STRUCTURE SECTIONS OF THE NEW HAMPSHIRE PORTION OF THE MT. CUBE QUADRANGLE

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

Geology by Jarvis B. Hadley, assisted by Charles S. Denny, John T. Hack, Walter S. White, and Robert A. Williams. Directed by Ma'land Billings. Geology surveyed in 1934 and 1935, under the auspices of the Division of Geological Sciences, Harvard University, with the aid of grants from the Milton Fund. Published 1938.

Scale 1:50,000
 1" = 1 Mile
 1" = 1600 Feet
 Contour interval 20 feet
 Datum is mean sea level