



**LEGEND**  
 SEDIMENTARY, IGNEOUS AND METAMORPHIC ROCKS

**YOUNGER THAN LOWER DEVONIAN, EITHER LATE DEVONIAN OR LATE CARBONIFEROUS**  
 New Hampshire Magma Series

- sg: Scrag granite (Medium to coarse-grained pink granite, composed of potash feldspar, quartz, oligoclase, biotite, and muscovite; very low dark minerals)
- rt: Remick tonalite (Medium-grained gray tonalite composed of oligoclase, quartz, and biotite)
- bg: Bethlehem granodiorite gneiss (Medium to fine-grained gray granodiorite, composed of quartz, oligoclase-muscovite, potash feldspar, biotite, and a little monzonite, usually foliated and strongly granoblastic)
- Area where basic dikes and sills are abundant (Zone c: altered basic igneous rocks now composed of albite-epidote, chlorite, and sericite. Although the original dikes and sills are not abundant enough to be represented by a special symbol, they do occur here and are composed of amphibole, oligoclase-andesine, and biotite)
- mtc: Moulton diorite (Medium-grained dark gray diorite, composed mainly of monzonite material such as oligoclase, hornblende, epidote, chlorite, and carbonate)

**LOWER DEVONIAN**

- Di: Littleton formation (Zone a: slate and sandstone, with chlorite schist (Dlc), mica-schist (Dli), and micaceous sandstone conglomerate (Dvc); Zone b: mica schist, quartz-mica schist, quartz schist, and chlorite schist, with interbedded mica-schist, mica schist, mica schist, and amphibolite (Dlc), and amphibolite (Dli))

**SILURIAN**  
 Middle

- Sf: Fitch formation (Zone a: limestone, marble, slaty dolomite, calcareous slate, arenaceous limestone, calcareous sandstone, impure quartzite, arkose, quartz conglomerate, and gray slate; Zone b: marble, actinolite marble, actinolite-biotite schist, biotite-chlorite schist, arenaceous marble, arkose, and mica schist)

**Lower or middle**

- Sc: Clough conglomerate (Quartz conglomerate and quartzite. Outcrops in this quadrangle in zone e only)

**LATE ORDOVICIAN ?**  
 Post-Partridge, pre-Cloagh

- h: Highlandcroft granodiorite (Chiefly a medium-grained granodiorite, composed of quartzite, quartzite, microcline, arkose, quartz, and biotite. Some diorite and quartz diorite also present)

**PRE-SILURIAN, PROBABLY ORDOVICIAN**

- Op: Partridge formation (Black slate, with thin-bedded quartzite, slate, and siliceous material at base. Outcrops in this quadrangle in zone e only)
- Oav: Ammonoosuc volcanics (Zone a: andesite, basalt, breccia, and volcanic conglomerate, chlorite schist, chlorite-schist, and biotite gneiss; Zone b: andesite, basalt, breccia, and biotite gneiss, amphibolite, amphibolite conglomerate, mica schist, and micaceous quartzite)
- Oal: Albion formation (Zone a: quartzite, argillaceous quartzite, green slate, and light slate; Zone b: quartzite, micaceous quartzite, and mica schist)

**BED ROCK NOT EXPOSED**

- d: Glacial drift and alluvium (Shown only where exceptionally thick and extensive. No attempt has been made on this map to show the secondary deposits systematically)

**METAMORPHIC ZONES**  
 Grubenmann-Niggli classification; shown below formation symbol thus:

- e-epizone (low grade)
- m-mesozone (middle grade)

**CONTACTS**

- Accurate
- Approximate and diagrammatic due to poor exposures
- Indefinite as sharp contact is lacking

**SPECIAL SYMBOLS**  
 (Dip and strike symbols represent only a small percentage of the field observations)

- Strike and dip of bedding, including inverted and normal strata
- Strike of vertical strata
- Strike and dip of foliation and schistosity
- Strike of vertical foliation and schistosity
- Overthrust side of thrust faults

**Silicified fault zone**

**Mines, prospects, and quarries, mostly abandoned**

**GEOLOGIC MAP AND STRUCTURE SECTIONS OF THE NEW HAMPSHIRE PORTION OF THE LITTLETON QUADRANGLE**

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