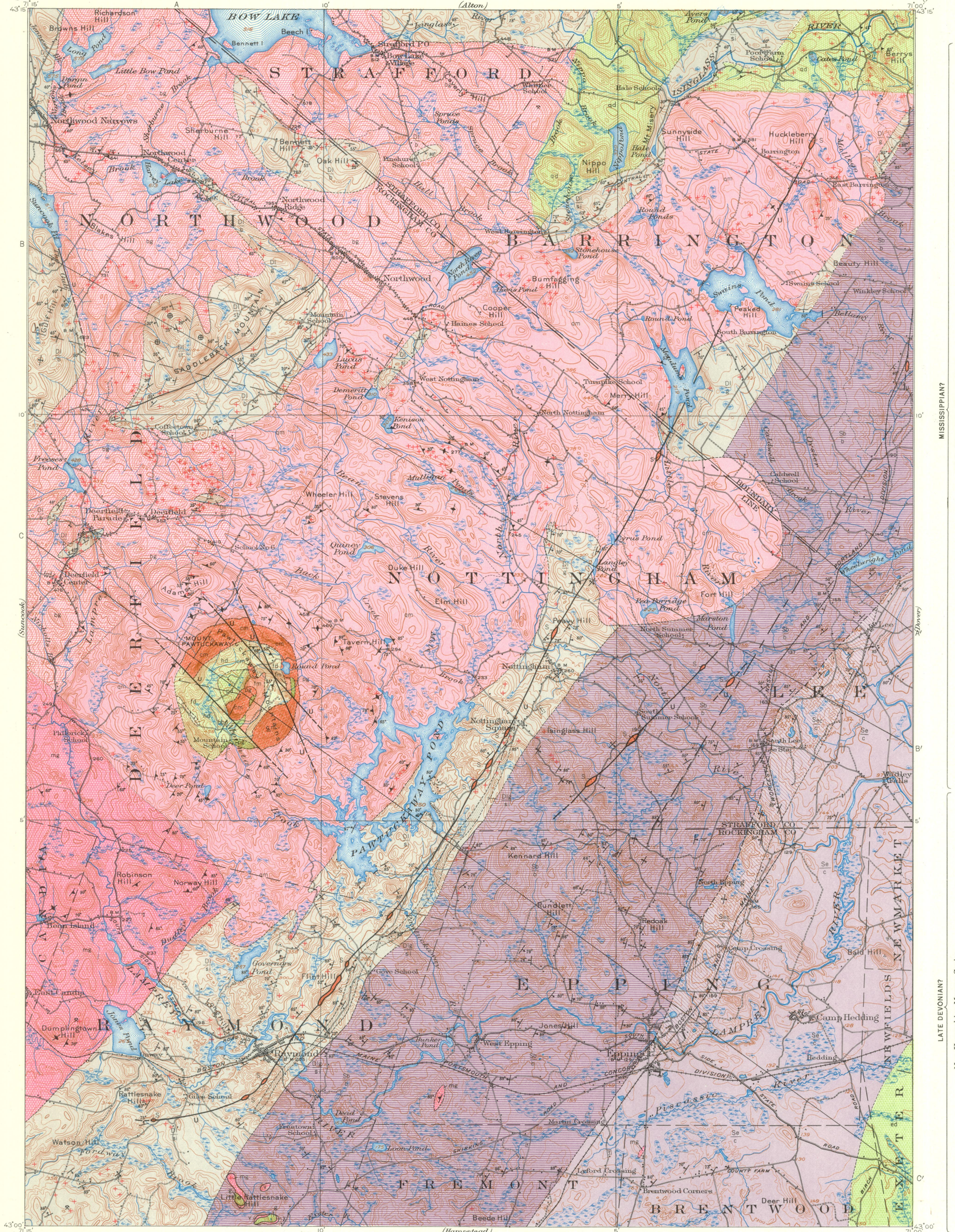
NEW HAMPSHIRE STATE PLANNING AND DEVELOPMENT COMMISSION AND HIGHWAY DEPARTMENT

NEW HAMPSHIRE MT. PAWTUCKAWAY QUADRANGLE



LEGEND

METAMORPHIC AND IGNEOUS ROCKS

MISSISSIPPIAN? — *White Mountain Magma Series*

cm — **Coarse-grained monzonite**

(Course-grained, light-gray to dark-gray monzonite, composed chiefly of oligolase-andesine, orthoclase, microcline, hornblende, biotite, and augite.)

fm — **Fine-grained monzonite**

(Fine-grained, dark-gray to blue-gray monzonite, composed chiefly of oligoclase, orthoclase, microcline, biotite, hornblende, and augite.)

pd — **Porphyritic diorite**

(Coarse-grained, porphyritic diorite, composed of hornblende phenocrysts 2 to 5 cm. long, set in a white granular groundmass composed of oligoclase, biotite, orthoclase, and augite.)

hbd — **Hornblende-biotite diorite**

(Medium-grained, gray diorite, composed of oligoclase, biotite, hornblende, orthoclase, and augite.)

fd — **Foliated hornblende diorite and diabase**

(Foliated hornblende diorite: foliated, coarse-grained, dark-gray diorite, composed of andesine-labradorite, hornblende, biotite, augite, and olivine. Diabase: coarse-grained, dark-gray diabase with ophitic texture, composed of andesine-labradorite, hornblende, biotite, augite, and olivine.)

hd — **Hornblende diorite**

(Coarse-grained, dark-gray to black diorite, composed of andesine, hornblende, biotite, augite, and olivine.)

pg — **Porphyritic gabbro and augite diorite**

(Porphyritic gabbro: medium-grained, black porphyritic gabbro with phenocrysts of augite up to 1.5 cm. in diameter set in a groundmass composed of labradorite, augite, hornblende, biotite, and olivine. Augite diorite: medium-grained, black diorite, composed of zoned plagioclase ranging from oligoclase to andesine, augite, hornblende, and biotite.)

v — **Volcanic rocks**

(Rhyolite: bluish-gray, dense rhyolite that weathers white. Quartz latite: bluish-gray quartz latite with phenocrysts of orthoclase and plagioclase. Keratophyre: bluish-gray keratophyre with phenocrysts of oligoclase up to 0.2 cm. long. Andesi dark-gray to blue andesite. Breccia: breccia composed of angular fragments, 1.0 to 2.5 cm. in diameter, composed of andesite, rhyolite, and schist set in a rhyolite matrix.)

g — **Gabbro and monzonite**

(Gabbro: coarse-grained gabbro, composed of white laths of labradorite-bytownite, with interstitial augite, olivine, and magnetite. Hypersthene gabbro: coarse-grained hypersthene gabbro, composed of labradorite, augite, magnetite, hypersthene, and biotite. Monzonite: coarse-grained hypersthene monzonite, composed of orthoclase, microperthite, oligoclase, and hypersthene.)

LATE DEVONIAN? — *New Hampshire Magma Series*

+ — **Pegmatite**

(Composed chiefly of perthite with some muscovite, biotite, and quartz.)

mg — **Microcline granite**

(Pink to light-gray, massive to foliated, medium-grained to coarse-grained granite, composed of pink microcline, quartz, muscovite, and biotite.)

bg — **Binary granite**

(White to light-gray, medium-grained to coarse-grained, massive to faintly foliated granite and quartz monzonite, composed of microcline, orthoclase, oligoclase, quartz, biotite, and muscovite.)

qm — **Quartz monzonite**

(Light-gray to dark-gray, medium-grained to coarse-grained, massive to foliated quartz monzonite and granodiorite, composed of orthoclase, microcline, oligoclase, quartz, biotite, and in some specimens, hornblende.)

qd — **Quartz diorite**

(Dark-gray, fine-grained to medium-grained, massive to faintly foliated rock, composed of oligoclase-andesine, quartz, biotite, and hornblende.)

ed — **Exeter diorite**

(Dark-gray to black, coarse-grained, massive, locally porphyritic diorite, gabbro, and quartz diorite, composed of andesine or labradorite, augite, hornblende, and a little biotite and quartz.)

SILURIAN? — LOWER DEVONIAN

Dl / Dlg / Dl — **Littleton formation**

(Zone b: gray phyllite and quartzite, with some mica schist and mica-quartz schist. Zone g: mica schist, mica-garnet schist, and quartzite. Zone st: mica schist, mica-garnet schist, mica-garnet-staurolite schist, and quartzite. Zone si: mica schist, mica-garnet schist, mica-sillimanite schist, and quartzite. Dlg, Gove member: chiefly silvery mica schist, some mica-staurolite schist, mica-sillimanite schist, and quartzite.)

Sb — **Berwick formation**

(Zone b: black, gray and green phyllite with biotite occurring both as porphyroblasts and in groundmass; quartz-mica schist; quartzite; actinolite-quartz granulite; actinolite granulite; biotite-actinolite schist; actinolite amphibolite. Zone g: similar to rocks in Zone b, but some of them contain garnet.)

Sec / Se — **Eliot formation**

(Zone c: dark-gray, light-gray and green phyllite; quartz-sericite schist; quartzite; calcareous phyllite. Zone b: dark-gray, light-gray, and green phyllite with biotite porphyroblasts; quartz-mica schist with biotite porphyroblasts; quartzite; actinolite-biotite granulite. Sec, Calef member: chiefly black phyllite; some green quartz-chlorite phyllite.)

METAMORPHIC ZONES

Shown below formation symbol thus: Dl/g

c - chlorite zone
b - biotite zone
g - garnet zone
st - staurolite zone
si - sillimanite zone

CONTACTS

Accurate

Approximate and diagrammatic due to poor exposures

Indefinite as sharp contact is lacking

SPECIAL SYMBOLS

50° — Strike and dip of bedding

Strike of vertical beds

Horizontal bedding

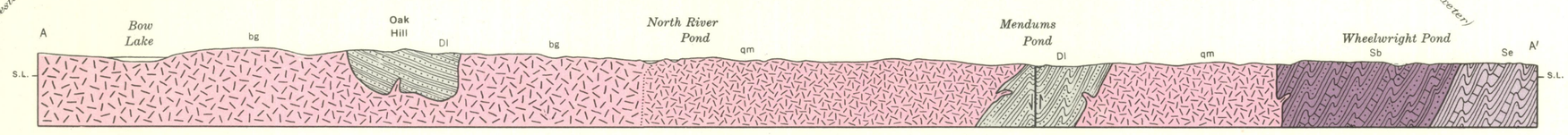
50° — Strike and dip of foliation of igneous and metamorphic rocks

Strike of vertical foliation of igneous and metamorphic rocks

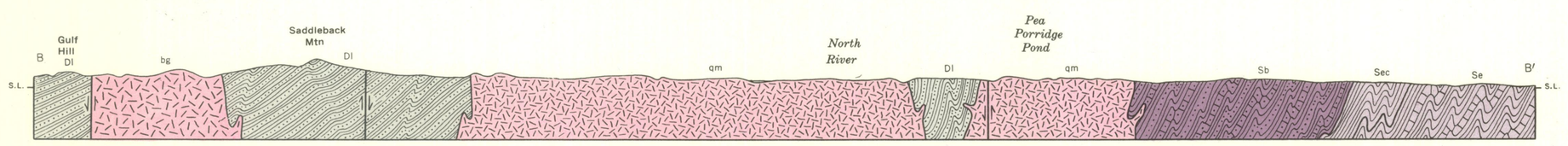
FAULT
"U" indicates upthrown side

S — Silicified zone

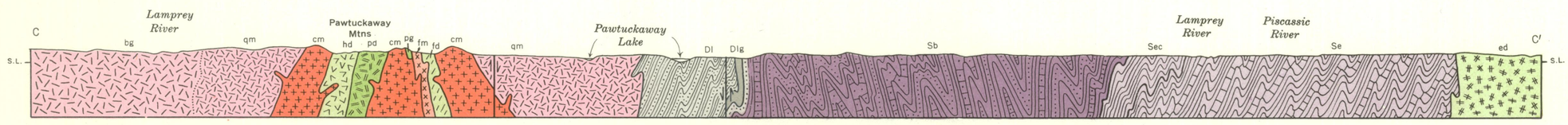
Quarries, mostly abandoned



SECTION A-A′



SECTION B-B′



SECTION C-C′

GEOLOGIC MAP AND STRUCTURE SECTIONS OF THE MT. PAWTUCKAWAY QUADRANGLE, NEW HAMPSHIRE

Topographic base by the U. S. Geological Survey in cooperation with the War Department.

Geology by Jacob Freedman assisted by T. Botinelly. Directed by Marland P. Billings. Geology surveyed in 1940, 1941, and 1946. Published in 1950.