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

NEW HAMPSHIRE
(GRAFTON COUNTY)
FRANCONIA QUADRANGLE

LEGEND

METAMORPHIC AND IGNEOUS ROCKS

cg — **Conway granite**
(Coarse to medium-grained pink biotite granite, composed of microperthite, quartz, oligoclase, and biotite; locally green)

mo — **Mt. Osceola granite**
(Coarse to medium-grained green granite, composed of microperthite, quartz, and oligoclase; dark minerals, wherever fresh, are hastingsite, hedenbergite, and fayalite, but are usually altered to chlorite and secondary biotite. Locally pink)

mg / mgl — **Mt. Garfield porphyritic quartz syenite**
(Coarse to medium-grained porphyritic quartz syenite, usually green; phenocrysts chiefly microperthite, with some quartz and some hastingsite, hedenbergite, and fayalite; groundmass is the same. Locally (mgl) inclusions of the Mt. Lafayette granite-porphyry are abundant. Both mineralogically and chemically this rock is very similar to the Albany porphyritic quartz syenite, but the former is coarser grained than the latter)

ml / mls — **Mt. Lafayette granite-porphyry**
(Medium-grained gray, red, or green granite-porphyry with phenocrysts of quartz, microperthite, and a little oligoclase, with some hastingsite, hedenbergite, and fayalite; groundmass is the same. Locally (mls) intimately associated with medium-grained porphyritic syenite)

s — **Syenite**
(Fine-grained, gray, porphyritic syenite composed of microperthite, oligoclase, biotite, pyroxene, and hornblende)

qd — **Quartz diorite**
(Coarse gray quartz diorite, composed mainly of andesine, hornblende, quartz, and a little orthoclase)

di — **Diorite**
(Medium-grained, dark-gray diorite, composed of andesine, biotite, chlorite, and pyroxene)

mv — **Moat volcanics**
(Rhyolite, rhyolite porphyry, andesite, and rhyolite tuff and breccia)

YOUNGER THAN LOWER DEVONIAN, EITHER LATE DEVONIAN OR LATE CARBONIFEROUS

UNCONFORMITY

sg — **Scrag granite**
(Coarse to medium-grained pink granite, composed of potash feldspar and quartz, wth small amounts of oligoclase, biotite, and muscovite; very low in dark minerals)

ib — **Intrusive breccia**
(The "Franconia breccia" of Hitchcock. Consists of angular fragments of the Kinsman quartz monzonite and older schists in a matrix of fine-grained, gray granite. Fragments are generally angular, vary in size from a few inches to several feet. Matrix composed of quartz, microperthite, oligoclase, orthoclase, and biotite)

big — **Bickford granite**
(Medium-grained and porphyritic white to gray granite, composed of quartz and orthoclase, with some oligoclase, microcline, biotite, and muscovite)

phg — **Priest Hill granite**
(Fine-grained gray biotite gneiss, composed of potash feldspar and quartz, with some oligoclase, biotite, and muscovite)

kqm — **Kinsman quartz monzonite**
(Medium to coarse-grained gray quartz monzonite, composed of quartz, oligoclase-andesine, potash feldspar, biotite, and muscovite; locally there are phenocrysts of potash feldspar from one to two inches long; rock locally foliated)

bg — **Bethlehem granodiorite gneiss**
(Medium to fine-grained gray granodiorite, composed of quartz, oligoclase-andesine, potash feldspar, biotite, and a little muscovite; usually foliated and strongly granulated)

New Hampshire Magma Series — Post-folding
Contemporaneous with folding

LOWER DEVONIAN? — Dt / Dti — **Talford schist**
(Quartz-mica schist, biotite schist, and sillimanite schist. Probably to be correlated with the Littleton formation, but this relationship has not yet been proved. In southern and central part of the quadrangle these schists are intricately injected by younger granites in the form of dikes, sills, and lit-par-lit injections (Dti))

LOWER DEVONIAN — Dl / Dla — **Littleton formation**
(Mica schist and garnet schist, with some amphibolite (Dla))

UNCONFORMITY

UPPER ORDOVICIAN? — Oam — **Ammonoosuc volcanics**
(Amphibolite and fine-grained biotite gneiss)

White Mountain Magma Series

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 Quaternary deposits systematically)

METAMORPHIC ZONES

Grubenmann-Niggli classification; shown below formation symbol thus: Dl / k

m-mesozone (middle grade)

k-katazone (high 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 beds

Strike and dip of foliation and schistosity

Strike of vertical foliation and schistosity

CRW / MB

SECTION A–A′

SECTION C–C′

SECTION D–D′

SECTION B–B′

SECTION E–E′

SECTION F–F′

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

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

APPROXIMATE MEAN DECLINATION, 1929

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
1935

Geology by Marland Billings and Charles R. Williams, assisted by Samuel Bowditch, Henry Dill, C. Wroe Wolfe, and Allen Waldo. Geology surveyed in 1932, 1933, and 1934 under auspices of the Division of Geological Sciences, Harvard University, with the aid of grants from the Shaler, Milton, and Holden Funds.

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