STATE OF CONNECTICUT
GEOLOGICAL AND NATURAL HISTORY SURVEY
JOE WEBB PEOPLES, DIRECTOR

QUADRANGLE REPORT NO. 21
Plate 1

Open Report

EXPLANATION

pe

Younger Granites

+ indicates location of dikes of fine-grained granite (Westerly type). (pe): Coarse-grained pink granite pegmatite consisting of quartz, oligoclase, microcline (partly ingraphic intergrowth with quartz), and biotite. Black Hall-type containing large biotite crystals is present in nearly all bedrock exposures in (pg) in the Lyme dome so it is not mapped separately.

h

Hebron Formation

Greenish gray calc-silicate gneiss

Obm | Otc, Otg, Otm, Ot

Brimfield Formation[1]

Obm: *Rust-stained migmatitic biotite schist containing abundant garnet and/or sillimanite. Minor diopsidic amphibolite present.*

Tatnic Hill Formation[1]

Ot: *Undifferentiated Tatnic Hill includes all of the following units mapped separately east of the Connecticut River.*

Otm: *Gray to rust-stained migmatitic biotite schist containing abundant garnet and/or sillimanite.*

Otg: *Light-gray biotitic quartz-feldspar gneiss containing numerous thin layers of amphibolite.*

Otc: *Greenish gray calc-silicate gneiss and gray garnetiferous quartz-biotite gneiss.*

Ivoryton Group

Om

Monson Gneiss

Light- to dark-gray, medium-grained, plagioclase-quartz-biotite-hornblende gneiss with layers of greenish-black amphibolite and pink or white alaskite.

nm

New London Gneiss

Medium-grained equigranular quartz-plagioclase-microcline gneisses containing evenly disseminated biotite and magnetite-ilmenite interleaved with thin layers of pink alaskite and black amphibolite. Difficult to separate from layered Monson Gneiss.

sga, sgba, sgm, sgb

Sterling Plutonic Group

sga: *Gray to pink foliated alaskite consisting of quartz, plagioclase, microcline, and less than 2 percent mafic minerals (biotite, hornblende, magnetite-ilmenite, and garnet). Most masses of alaskite have a biotitic facies not mapped except in area NE of Rogers Lake indicated by symbol (sgba). Alaskite in Plainfield schist (ps) commonly contains nodules of quartz-sillimanite aggregate indicated by symbol ○○○*

sgb: *Gray to pink biotite granite gneiss characterized by patchy distribution of mafic minerals (biotite and hornblende), variable but generally coarse grain size, and variable composition.*

sgm: *Mixed granitic units poorly exposed in Lyme dome but known to consist of (sga), (sgb), and migmatitic feldspathic gneiss of the Plainfield Formation and the Mamacoke Formation.*

m

Mamacoke Formation

Gray quartz-feldspar-biotite gneiss, some containing nodules of quartz-sillimanite aggregate.

pq, p, ps, pg, m+p+sg

Plainfield Formation[2]

pq: *Well bedded gray to white quartzite.*

p: *Biotite-sillimanite schist, amphibolite, garnetiferous gneiss, and gneiss containing nodules of quartz sillimanite aggregate.*

ps: *Biotite-sillimanite schist and gneiss commonly containing nodules of quartz-sillimanite aggregate.*

pg: *Gray biotitic quartz-feldspar gneiss containing many layers of schist and amphibolite not mapped separately. Extensively dissected by Black-Hall-type granite.*

pa: *Black amphibolite.*

m+p+sg: *Area of no outcrop underlain by Plainfield Formation and possibly both Mamacoke and Sterling.*

[1] Brimfield Formation and Tatnic Hill Formation are believed to be sedimentary facies equivalents occurring on opposed limbs of the Hunts Brook syncline.

[2] Plainfield Formation divided informally into lower, middle, and upper units. Dot-dash lines mark approximate upper and lower boundaries of the middle unit. ○○○○ symbol indicates outcrop in which nodules of quartz-sillimanite aggregate are conspicuous.

Contact

Dashed where approximately located, dotted where gradational or inferred in areas of no outcrop. Dash-dot line indicates approximate limits of the middle unit of Plainfield.

PLANAR FEATURES

70 Inclined — Vertical — Horizontal

Strike and dip of foliation. Bedding and foliation almost everywhere parallel.

60 Inclined — Vertical

Strike and dip of prominent joints.

LINEAR FEATURES

30

Bearing and plunge of lineation

MINOR FOLDS

20

Plunge and bearing of crenulations or isoclinal folds

MAJOR FOLDS

Anticline — Syncline

Trace of axial plane of overturned fold.

Trace of axial plane of Lyme dome

MINERAL ISOGRAD

sillimanite-muscovite

sillimanite-orthoclase

Muscovite is present in rocks on the sillimanite-muscovite side of the isograd; sillimanite and orthoclase are present in rocks on the sillimanite-orthoclase side of the isograd and muscovite is absent.

Base map by U.S. Geological Survey

Control by USGS, USC&GS, USCE and Connecticut Geodetic Survey

Topography by planetable surveys 1938-1939
Revised 1958

Hydrography compiled from USC&GS charts 214 (1957) and 215 (1957)

Polyconic projection. 1927 North American datum
10,000-foot grid based on Connecticut coordinate system

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GEOLOGIC MAP OF THE OLD LYME QUADRANGLE, CONNECTICUT

Bedrock Geology by Lawrence Lundgren, Jr., in 1961, 1964, and 1965
Assisted by Howard R. Pratt in 1961

UTM GRID AND 1958 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 3.5 FEET

CONNECTICUT
QUADRANGLE LOCATION

OLD LYME, CONN.
N4115—W7215/7.5

Williams & Heintz Map Corporation, Wash., D.C. 20027