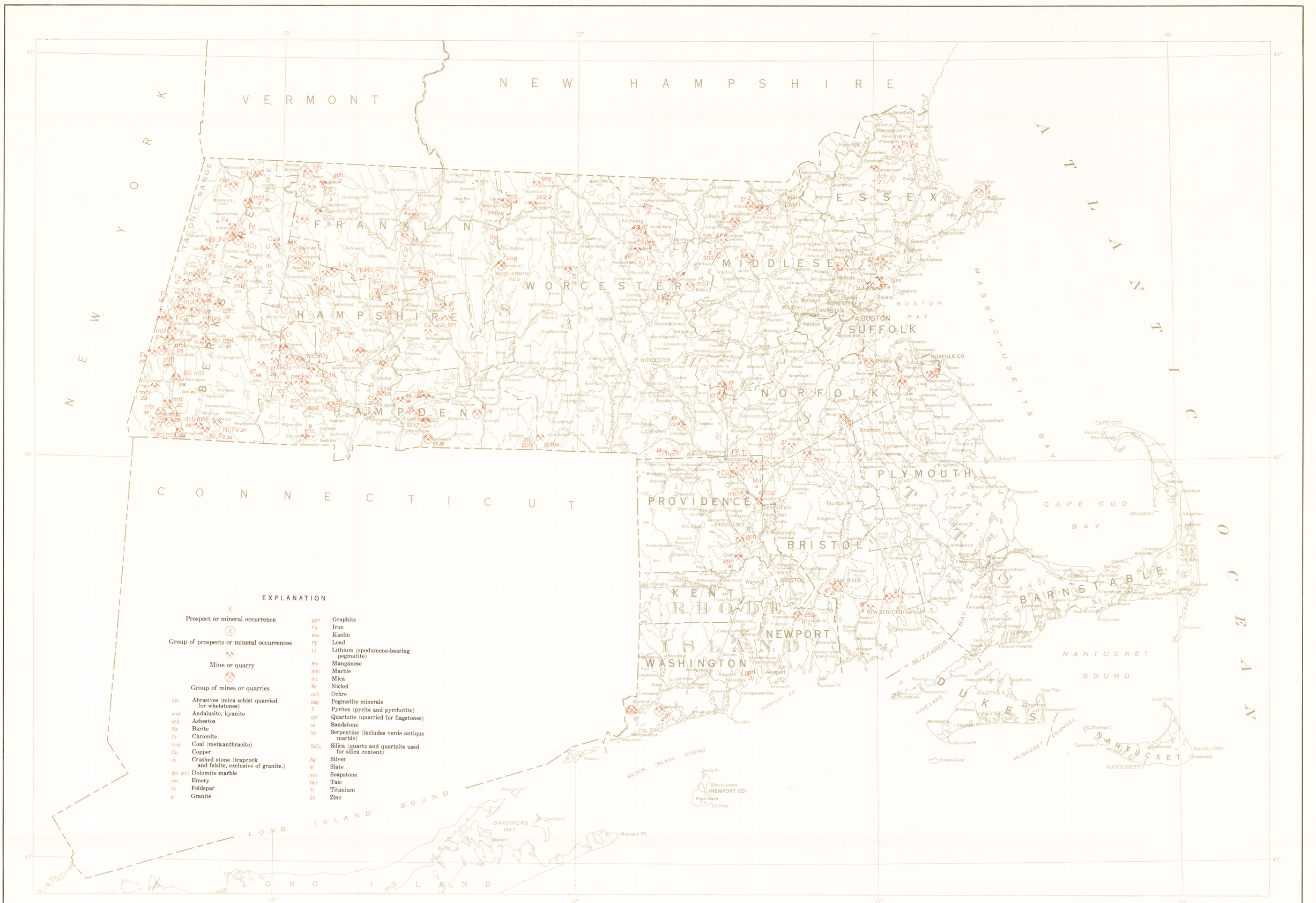
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
THOMAS B. NOLAN, DIRECTOR

PREPARED IN COOPERATION WITH
THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS JOHN A. VOLPE, COMMISSIONER
THE STATE OF RHODE ISLAND
DEVELOPMENT COUNCIL

MINERAL INVESTIGATIONS
RESOURCE MAP MR-4



EXPLANATION

X — Prospect or mineral occurrence

(X) — Group of prospects or mineral occurrences

Mine or quarry

Group of mines or quarries

abr	Abrasives (mica schist quarried for whetstones)
and	Andalusite, kyanite
asb	Asbestos
Ba	Barite
Cr	Chromite
coal	Coal (metaanthracite)
Cu	Copper
cs	Crushed stone (traprock and felsite, exclusive of granite.)
dol mbl	Dolomite marble
em	Emery
fls	Feldspar
gr	Granite
gph	Graphite
Fe	Iron
kao	Kaolin
Pb	Lead
Li	Lithium (spodumene-bearing pegmatite)
Mn	Manganese
mbl	Marble
mc	Mica
Ni	Nickel
och	Ochre
peg	Pegmatite minerals
S	Pyrites (pyrite and pyrrhotite)
qzt	Quartzite (quarried for flagstones)
ss	Sandstone
sp	Serpentine (includes verde antique marble)
SiO_2	Silica (quartz and quartzite used for silica content)
Ag	Silver
sl	Slate
sos	Soapstone
talc	Talc
Ti	Titanium
Zn	Zinc

This map is part of a regional study of the resources of New England, and has been compiled from published sources and from information in the files of the U. S. Geological Survey. The suggestions of many geologists familiar with the two States are incorporated in the map.

Mines, quarries, prospects, and mineral occurrences shown on the map are listed by counties together with the source or sources of information. Map symbols are keyed to the locality lists by a numbering system that is independent for each county. When a group symbol includes localities in two adjacent counties the number given is listed under both counties. Where source material permits, some of the invididual localities that are included in a single group or district are listed in the text; such lists, however, are not to be considered all inclusive but merely representative of the mines and quarries in the area covered by and adjacent to the symbol. Some localities described only in older literature may not be accurately located on the map because descriptions are indefinite or town boundaries have been shifted. Names of those known to be only approximately located are followed by asterisks in the locality lists.

Mineral raw materials, or commodities, worked or occurring at each locality are indicated by abbreviations on the map; where a single locality includes multiple commodities, no more than two principal ones are indicated. Byproducts are not shown.

The mineral occurrences and prospects located on the map have not proved commercial. Only the best known of all the occurrences reported in the literature are shown. No attempt has been made to show all granite quarries; instead, one reference (Dale, 1923a) has been used almost exclusively. Since 1925, only one of the metal mines that are located—the Betts manganese mine—has been active, and operations there were brief and small scale. Relatively few of the quarries shown were active in 1955. Periods of activity and present condition of workings are not indicated on the map.

In this report, "marble" indicates recrystallized carbonate rocks used for their lime content as well as for building and crushed stone; "dolomite marble" is specified where enough information is available. "Crushed stone" is limited to traprock quarries and felsite quarries and does not include crushed stone produced from granite quarries. Other dimension- and crushed-stone quarries are classified according to rock type, such as granite, sandstone, quartzite, and serpentine. Pegmatite localities where only one or two mineral commodities have been or may be significant are designated as feldspar, mica, or lithium minerals. Elsewhere the inclusive term "pegmatite minerals" is used.

LOCALITIES AND SOURCES OF INFORMATION

MASSACHUSETTS

Berkshire County

1. Hoosac Marble Co. quarry (Dale, 1923b, pl. 1)
2. Williamstown marble quarries (Dale, 1923b, pl. 1)
3. Adams marble quarries (Dale, 1923b, pl. 1)
4. Bliss (Mason and Bliss) iron mine (Chute, 1945)
5. Bennett iron prospect (Chute, 1945)
6. Cheshire silica quarries (U. S. Geol. Survey files)*
7. Jagger iron mine (Chute, 1945)
   Cheshire marble quarries (Dale, 1923b, pl. 1)
8. Colby (Sherman) iron mine (Chute, 1945)
9. Windsor Bush copper mine (Weed, 1911, p. 34)
10. Cummington soapstone quarry (Emerson, 1899, p. 100; Emerson, 1895, p. 54)
11. marble quarry (Dale, 1923b, pl. 2)
12. Shaker iron mine (Chute, 1945)
13. Branch iron mine (Chute, 1945)
14. Pittsfield Lime and Stone Co. quarry (Dale, 1923b, pl. 2)
15. Lovelace iron mine (Chute, 1945)
16. Richmond brown iron ore district (Chute, 1945)
    - Andrews mine
    - Bacon mine
    - Truman Andrews mine
    - Werden mine
    - Cheever mine
    - Dixon mine
    - Cook mine
    - Carr mine
    - Cone mine
    - Klondike mine

Berkshire County (continued)

17. Belden and Lenox iron mines (Chute, 1945)
18. marble quarries (Dale, 1923b, pl. 2)
19. Cheshire quartzite flagstone quarries (Emerson, 1899, p. 100)*
20. marble quarry (Dale, 1923b, pl. 2)
21. Lee dolomite marble quarries (Dale, 1923b, pl. 2)
22. prospect NW. of Stockbridge (Smith, 1920, p. 41)
23. West Stockbridge brown iron ore district (Chute, 1945)
    - Goodrich mine and Moffat mine
    - Leet (Richmond) mine
    - Hudson (Chauncey Leet) mine
    - Potter (Pomeroy) mine
    - Maple Hill prospect
24. West Stockbridge marble quarries (Dale, 1923b, pl. 2)
25. West Stockbridge marble quarries (Dale, 1923b, pl. 2)
26. Alford marble quarries (Dale, 1923b, pl. 2)
27. Tremper iron mine (Chute, 1945)
28. Great Barrington quarries (Dale, 1923b, pl. 3)
29. Joyce quarry (Dale, 1923b, pl. 3)
30. Sheffield marble quarries (Dale, 1923b, pl. 3)
31. Sheffield marble quarries (Dale, 1923b, pl. 3)
32. Spurr iron prospect (Chute, 1945)
33. Sheffield marble quarries (Dale, 1923b, pl. 3)
34. Ashley Falls Marble Co. quarry (Dale, 1923b, pl. 3)
35. Cathole quarry (Dale, 1923b, pl. 3)
36. Cleveland iron mine (Emerson, 1899, p. 63-65)
37. Hotchkiss mine (Emerson, 1899, p. 62-63)
38. Newall granite quarry (Dale, 1923a, p. 281-282)
39. Hudson and Chester granite quarry (Dale, 1923a, p. 279-281)
40. Hinsdale asbestos mine (L. W. Currier, 1955, written communication)*

Bristol County

1. Mansfield coal mines (Ashley, 1915, pl. 1)
2. Fall River granite quarries (Dale, 1923a, pl. 23)
3. Dartmouth granite quarry (Dale, 1923a, pl. 23)
4. Sullivan granite quarries (Dale, 1923a, pl. 23)

Essex County

1. Newburyport lead-silver district (Clapp and Ball, 1909)*
2. Georgetown mineral paint mine (Sears, 1905, p. 233)*
3. Rockport granite quarries (Dale, 1923a, pl. 23)
4. Peabody-Lynnfield granite district (Dale, 1923a, pl. 23)
5. Saugus bog iron deposit (Sears, 1905, p. 234)*

Franklin County

1. Rowe talc quarries (Ladoo, 1923)
2. graphite occurrence NW. of Heath (Quinn, 1945a)
3. Davis pyrite mine (Quinn, 1945a, pl. 1)
4. Mary Louise mine (Quinn, 1945a, pl. 1)
5. Hawks (Mt. Peak) mine (Quinn, 1945a, pl. 1)
6. Hawley iron mine (Quinn, 1945b, pl. 1)
7. Turners Falls copper occurrences (Willard, 1952; Hitchcock, 1835, p. 71-72)
8. Trap Rock Ledge (Willard, 1952)
9. Whately-Conway lead veins (Nash, 1827; Emerson, 1898b)
10. Whateley-Williamsburgh lead veins (Nash, 1827; Emerson, 1898b) ✓
11. Leverett mines (Emerson, 1898b) ✓
12. pegmatite south of Orange (Billings, 1941, fig. 7)
13. Barber Hill and Pitt Hill quarries (Hadley, 1949)
14. Tully Mtn. soapstone quarries (Hadley, 1949)

Hampden County

1. chromite prospect north of Chester (Emerson, 1898b)

Hampden County (continued)

2. Chester emery mines (Apfel, 1944a)
3. quartz veins south of Chester (Emerson, 1898b)
4. Chester-Blandford State Forest pegmatite quarries (Billings, 1944)
5. pegmatite quarry (Emerson, 1898b)
6. soapstone quarry (Emerson, 1898b)
7. pegmatite quarries north of Blandford (Billings, 1941, fig. 8)
   Blandford Center kaolin deposit (Emerson, 1898b)
8. Blandford soapstone quarry (Emerson, 1898b)
9. Granville soapstone quarry (Emerson, 1898b)
10. Westfield serpentine quarries (Emerson, 1898b)
11. trap quarry (Emerson, 1898b)
12. trap quarry (Emerson, 1898b)
13. sandstone quarry (Emerson, 1898b)
14. sandstone quarry (Emerson, 1898b)
15. sandstone quarry (Emerson, 1898b)
16. sandstone quarry (Emerson, 1898b)
17. Springfield sandstone quarries (Emerson, 1898b)
18. East Longmeadow sandstone quarries (Emerson, 1898b)
19. Flynt granite quarries (Dale, 1923a, pl. 23)
20. Cozzens graphite prospect (Apfel, 1944b)
21. Westfield kyanite deposit (U. S. Geol. Survey files)

Hampshire County

1. Middlefield serpentine (Hitchcock, 1835, p. 40; Emerson, 1917, map)*
2. Betts (Taconic) manganese mines (Quinn, 1945b, pl. 1)
3. Packard manganese occurrence (Quinn, 1945b, pl. 1)
   Frizzell manganese prospect (Quinn, 1945b, pl. 1)
4. B. Shaw's whetstone quarry (Emerson, 1898b)
5. pegmatite quarries (Emerson, 1898b)
6. pegmatites near West Chesterfield (Emerson, 1898b)
   Clark Ledge pegmatite (Emerson, 1898b)
7. McKinney Ledge and South Worthington pits (Billings, 1941, fig. 8)
8. Loudville mine (Emerson, 1898b)
   Southampton lead mine (Nash, 1827; Emerson, 1898b)
9. Hatfield mine (Emerson, 1898b).
10. Whateley-Williamsburgh lead veins (Nash, 1827; Emerson, 1898b) ✓
11. Mt. Tom sandstone quarry (Emerson, 1898b)
12. Ward granite quarry (Dale, 1923a, pl. 23)
13. Pelham asbestos quarry (Emerson, 1898a, p. 47-54)
14. traprock quarry (L. W. Currier, 1955, written communication)
15. Middlefield soapstone prospects (U. S. Geol. Survey files)

Middlesex County

1. Barker Hill granite quarry (Dale, 1923a, pl. 23)
2. Oak Hill granite quarries (Dale, 1923a, pl. 23)
3. Graniteville granite quarries (Dale, 1923a, pl. 23)
4. Shaker granite quarry (Dale, 1923a, p. 308-309)
5. Oak Hill andalusite occurrences (Jahns, 1942)
6. North Acton granite quarries (Dale, 1923a, pl. 23)
7. copper prospect (Currier and Jahns, 1952, p. 107)
8. Dracut nickel mine, Nickel Mine Hill (Dennen, 1943)
9. Blueberry Mtn. crushed-stone quarry (Richmond, 1937)
10. Milford granite district, Worcester and Middlesex Counties (Dale, 1923a, p. 341)
11. Chelmsford-Westford granite district (L. W. Currier, 1956, oral communication)

Norfolk County

1. Sheldonville prospect (Warren and Powers, 1914, p. 473-474)
2. Curry granite quarry (Dale, 1923a, pl. 23)
3. Stoughton granite quarries (Chute, 1950)
   Messer granite quarry (Dale, 1923a, p. 315)

Norfolk County (continued)

4. Quincy granite district (Dale, 1923a, p. 315-335)
5. Tiffany granite quarry (Dale, 1923a, pl. 23)

Plymouth County

1. seam-face quarries (Dale, 1923a, p. 336-339)

Suffolk County

1. Black Ann Hill felsite quarry (Dale, 1923a, p. 339-340)

Worcester County

1. Beryl Hill quarry (Billings, 1941, fig. 5)
2. pegmatite quarry (Billings, 1941, fig. 5)
3. Pearl Hill area (Billings, 1941, fig. 3)
4. Rollstone Hill granite quarries (Dale, 1923a, pl. 23)
5. Pine Hill and Monoosnoc Hill pegmatite group (Billings, 1941, fig. 3)
6. Leavitt granite quarry (Dale, 1923a, pl. 23)
7. Rocky Hill and Long Hill spodumene-bearing pegmatites (Billings, 1941, fig. 3; Billings and Wolfe, 1944)
8. slate quarry at Lancaster (Merrill, 1908, p. 186)*
9. Sterling siderite and smithsonite occurrence (Hitchcock, 1835, p. 62)
10. Milford granite district, Worcester and Middlesex Counties (Dale, 1923a, p. 341)
11. Milford granite district (Dale, 1923a, p. 341)
12. Blanchard granite quarries (Dale, 1923a, pl. 23)
13. lead-zinc occurrence south of Uxbridge (Jackson, 1840, p. 73 and map)
14. Sturbridge (Lead Mine Hill) graphite mine (Apfel, 1944b)
15. Hubbardston copperas mine (Hitchcock, 1835, p. 63)*
16. Petersham soapstone quarries (U. S. Geol. Survey files)*
17. Bolton marble "limerock" quarries (L. W. Currier, 1955, written communication)*

RHODE ISLAND

Newport County

1. Portsmouth metaanthracite mines (Ashley, 1915, pl. 1)

Providence County

1. Diamond Hill (Warren and Powers, 1914, p. 437)
2. Iron Mine Hill (Warren and Powers, 1914, p. 437)
3. Copper Mine Hill prospects (Quinn, Ray, and Seymour, 1948, p. 21)
4. Sneech Pond manganese prospects (Quinn, Ray, and Seymour, 1948, p. 21)
5. Limerock marble quarries (Quinn, Ray, and Seymour, 1948, p. 21)
6. Valley Falls mine (Ashley, 1915, pl. 1)
7. Fenners Ledge mine (Ashley, 1915, pl. 1)
8. Cranston mine (Ashley, 1915; Quinn and Springer, 1954)

Washington County

1. Westerly granite quarries (Dale, 1923a, p. 404, 408-415)
2. Charlestown granite quarries (Dale, 1923a, p. 404, 415-418)
3. Tower Hill graphite occurrence (Jackson, 1840, p. 89 and map)

LITERATURE CITED

Apfel, E. T., 1944a, Emery deposits near Chester, Mass.: Massachusetts Dept. Public Works—U. S. Geol. Survey Co-op. Geol. Project Inf. Circ. (unpubl.), map.
Apfel, E. T., 1944b, Graphite deposits near Sturbridge, Mass.: Massachusetts Dept. Public Works—U. S. Geol. Survey Co-op. Inf. Circ. 6 (mimeo.), map.
Ashley, G. H., 1915, Rhode Island coal: U. S. Geol. Survey Bull. 615, 62 p., map.
Billings, M. P., 1941, Pegmatites of Massachusetts: Massachusetts Dept. Public Works—U. S. Geol. Survey Co-op. Geol. Project Bull. 5, 22 p., maps.
Billings, M. P., 1944, Mica deposits in the Chester-Blandford State Forest: Massachusetts Dept. Public Works—U. S. Geol. Survey Co-op. Geol. Project Inf. Circ. 2 (mimeo.), p. 3-6, map.
Billings, M. P., and Wolfe, C. W., 1944, Spodumene deposits in the Leominster-Sterling area, Mass.: Massachusetts Dept. Public Works—U. S. Geol. Survey Co-op. Geol. Project Inf. Circ. (mimeo.), map.
Chute, N. E., 1945, The brown iron ore district of Berkshire County, Mass.: Massachusetts Dept. Public Works—U. S. Geol. Survey Co-op. Geol. Project open-file rept., maps.
Chute, N. E., 1950, Bedrock geology of the Brockton quadrangle, Mass.: U. S. Geol. Survey, Geol. Quadrangle Map GQ 5.
Clapp, C. H., and Ball, W. G., 1909, The lead-silver deposits at Newburyport, Mass., and their accompanying contact zones: Econ. Geology, v. 4, p. 239-250.
Currier, L. W., and Jahns, R. H., 1952, Geology of the "Chelmsford granite" area, *in* Guidebook for field trips in New England, Geol. Soc. America, p. 107.
Dale, T. N., 1923a, The commercial granites of New England: U. S. Geol. Survey Bull. 738, p. 278-355, 403-418, maps.
Dale, T. N., 1923b, The lime belt of Massachusetts and parts of eastern New York and western Connecticut: U. S. Geol. Survey Bull. 744, 71 p., maps.
Dennen, W. H., 1943, A nickel deposit near Dracut, Mass.: Econ. Geology, v. 38, p. 25-55, map.
Emerson, B. K., 1895, A mineralogical lexicon of Franklin, Hampshire, and Hampden Counties, Mass.: U. S. Geol. Survey Bull. 126, 180 p.
Emerson, B. K., 1898a, Geology of old Hampshire County, Mass.: U. S. Geol. Survey Monograph 29, 790 p., maps.
Emerson, B. K., 1898b, Description of the Holyoke quadrangle, Mass.-Conn.: U. S. Geol. Survey Geol. Atlas, folio 50, 8 p.
Emerson, B. K., 1899, The geology of eastern Berkshire County, Mass.: U. S. Geol. Survey Bull. 159, 139 p.
Emerson, B. K., 1917, The geology of Massachusetts and Rhode Island: U. S. Geol. Survey Bull. 597, 289 p., map.
Hadley, J. B., 1949, Bedrock geology of the Mount Grace quadrangle, Mass.: U. S. Geol. Survey Geol. Quadrangle Map GQ 3.
Hitchcock, Edward, 1835, Report on the geology, mineralogy, botany, and zoology of Massachusetts, 2d ed., pt. 1, Economical geology: Amherst, p. 25-81.
Jackson, C. T., 1840, Report on the geological and agricultural survey of the State of Rhode Island, 312 p., map, Providence.
Jahns, R. H., 1942, Occurrence of andalusite in Massachusetts: Massachusetts Dept. Public Works—U. S. Geol. Survey Co-op. Inf. Circ. (mimeo.), map.
Ladoo, R. B., 1923, Talc and soapstone: U. S. Bur. Mines Bull. 213, p. 109-111.
Merrill, G. P., 1908, Stones for building and decoration, New York, John Wiley & Sons, 3d ed.
Nash, Alanson, 1827, Notices of the lead mines and veins of Hampshire County, Mass.: Am. Jour. Sci., 1st ser., v. 12, p. 238-270, map.
Quinn, A. W., 1945a, Geology of the Charlemont-Heath area, Massachusetts: Massachusetts Dept. Public Works—U. S. Geol. Survey Co-op. Geol. Project open-file rept., map.
Quinn, A. W., 1945b, Geology of the Plainfield-Hawley area, Massachusetts: Massachusetts Dept. Public Works—U. S. Geol. Survey Co-op. Geol. Project open-file rept., map.
Quinn, A. W., and Springer, G. H., 1954, Bedrock geology of the Bristol quadrangle and vicinity, R. I.-Mass.: U. S. Geol. Survey Geol. Quadrangle Map GQ 42.
Quinn, A. W., Ray, R. G., and Seymour, W. L., 1948, Bedrock geology of the Pawtucket quadrangle, R. I.-Mass., pt. 1, *in* The geology and ground-water resources of the Pawtucket quadrangle, R. I.: Rhode Island Indus. Comm., Geol. Bull. 3, p. 20-22, map.
Richmond, W. E., Jr., 1937, Paragenesis of the minerals from Blueberry Mountain, Woburn, Mass.: Am. Mineralogist, v. 22, no. 4, p. 290-300.
Sears, J. H., 1905, The physical geography, geology, mineralogy, and paleontology of Essex County, 418 p., Salem, Mass., Essex Inst.
Smith, P. S., 1920, Sulphur, pyrites, and sulphuric acid: U. S. Geol. Survey, Min. Res. U. S., 1917, pt. 2, p. 19-62.
Warren, C. H., and Powers, Sidney, 1914, Geology of the Diamond Hill-Cumberland district in Rhode Island-Massachusetts: Geol. Soc. America Bull., v. 25, p. 435-476, map.
Weed, W. H., 1911, Copper deposits of the Appalachian States: U. S. Geol. Survey Bull. 455, 166 p.
Willard, M. E., 1952, Bedrock geology of the Greenfield quadrangle, Mass.: U. S. Geol. Survey Geol. Quadrangle Map GQ 20.

Base map by Topographic Division
U. S. Geological Survey, 1948

MINERAL DEPOSITS AND OCCURRENCES IN MASSACHUSETTS AND RHODE ISLAND, EXCLUSIVE OF CLAY, SAND AND GRAVEL, AND PEAT

Compiled by
Nancy C. Pearre

Scale 1: 500 000
10 0 10 20 30 40 Miles

1956

Compiled from published sources and information in the files of the U. S. Geological Survey

MINERAL INVESTIGATIONS
RESOURCE MAP MR-4

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C. MR 2942
For sale by U. S. Geological Survey, price 50 cents