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Geological Survey

Generalized descriptions of uranium-bearing veins, pegmatites,
and disseminations in non-sedimentary rocks,
eastern United States

by
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This report is preliminary and has not
been edited or reviewed for conformity
with U.S. Geological Survey standards
and nomenclature

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INTRODUCTION

Uranium in the eastern United States is more abundant than previously believed. This report, which deals with uranium occurrences in non-sedimentary rocks, was prepared as one of the preliminary steps in the U.S. Geological Survey's program to evaluate the uranium resources of the eastern United States. Future work in the program will entail detailed mapping and petrological, chemical, and geophysical studies in the areas of the more promising uranium occurrences. That work should result in the delineation of favorable target areas, and the definition of geological and possibly geochemical environments that are favorable for exploration.

This report summarizes in 17 tables the available data on uranium occurrences in igneous and metamorphic rocks east of the Mississippi River. The word occurrence as used here indicates any showing, however large or small, of primary or secondary uranium minerals. Excluded from the tabulation are those rocks that have reported chemical or equivalent U308 values of less than 0.001 percent. The tables describe the occurrences by name, mineralogy, host, and location. Where appropriate, comments are also included. Directions to various properties are as specific as possible without a field check; some of the data used to construct those directions were collected prior to 1960 and may not reflect existing roads and landmarks. Figures 2 through 23, scaled at 1:1,000,000, can be used as overlays to the U.S.G.S. indices for topographic maps. If the reader knows of omissions in the tables we would appreciate being informed of them.

Analysis of the data presented in figures 1 through 23 and tables 1 through 17 suggests that there have been at least two major episodes of uranium deposition in the eastern United States. In the Precambrian there were apparently five major loci for the introduction and/or dispersion of uranium: northwestern Michigan, northwestern North Carolina; a belt extending from eastern Pennsylvania, across northern New Jersey, to southeastern New York; the northwestern Adirondack Mountains, New York; and the southern Green Mountains, Vermont. During the Jurassic, the White Mountain plutonic series of New England apparently was the source of uranium in that area and provided several loci for its dispersion. A possible third episode of deposition may be related to the several periods of plutonism immediately preceeding the Devonian and ending with the closing of that Period. These times and loci of uranium enrichment should serve as a starting point for exploration.

There are three principal processes that apparently operated to cause the dispersion and/or localization of uranium: metamorphism, plutonism and weathering. These processes formed four broadly defined genetic types of deposits: metamorphic (both regional and contact), igneous, hypogene, and supergene. The classification of any given occurrence is at best difficult and in this report has not been attempted. However, there are in the East representatives of all four types. Exploration will be

- Uranium occurrence
- 4 Several uranium occurrences in small area

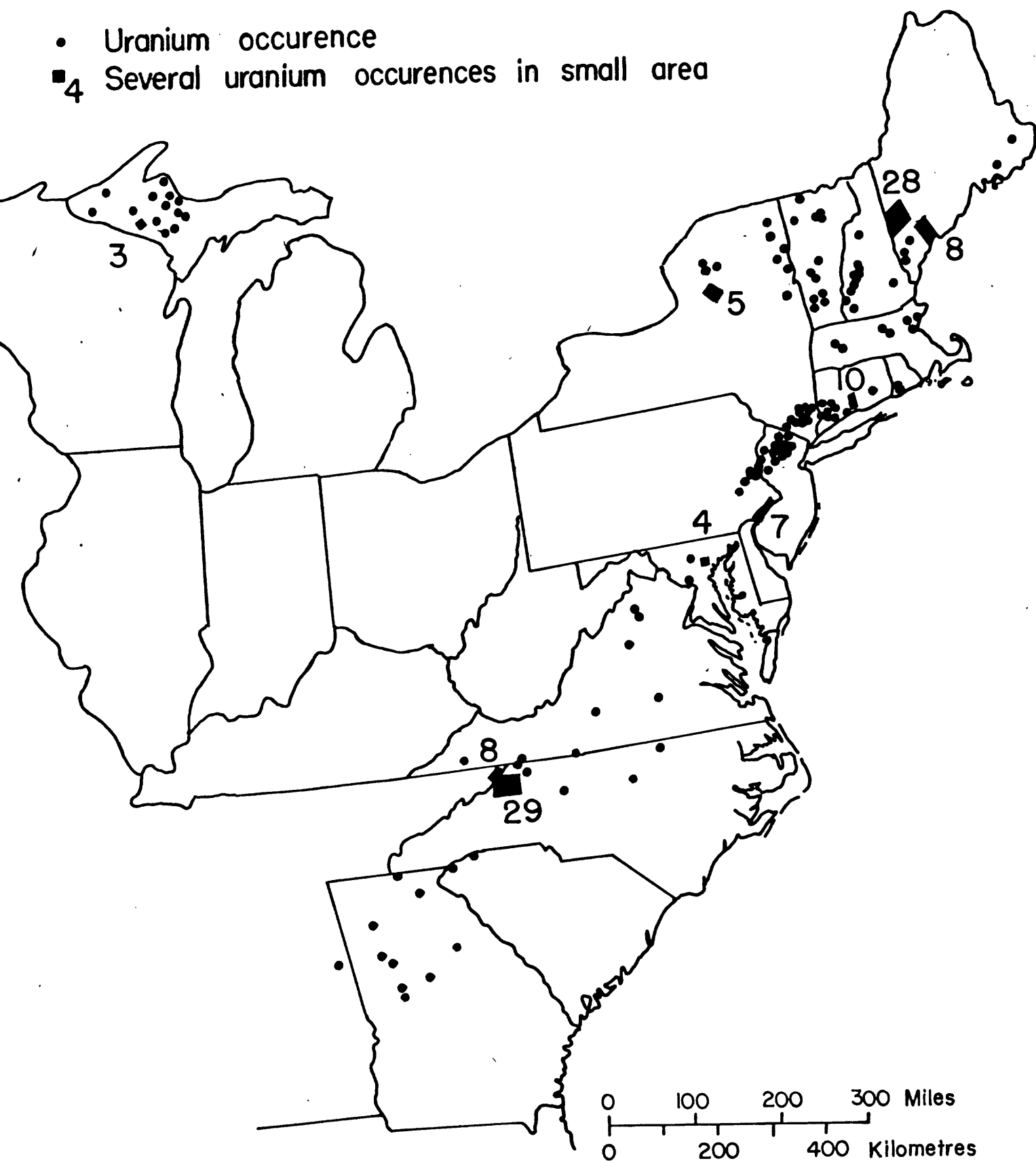


Figure 1. Uranium occurrences in non-sedimentary rocks of eastern United States

greatly aided through the recognition of the genetic type of deposit being sought. The criteria for the recognition of and exploration for hypogene and supergene deposits are relatively well known, but those criteria for igneous and metamorphic deposits are poorly defined. In addition to knowing a region's tectonic and thermal history the following kinds of data are useful in recognizing potentially uraniferous igneous terrains: igneous rock composition (late-stage differentiates with high values of silica, aluminum, and potassium seem to be favorable targets), type of host rock (the magma and associated possibly uraniferous fluids must be contained by the host), mode and depth of emplacement, and local tectonics at the time of emplacement and crystallization. Theoretical, experimental, and empirical data relating to metamorphic deposits are very scarce. Exploration of a metamorphic terrain might proceed from the determination of pre-metamorphic stratigraphy and the identification of possible pre-metamorphic sedimentary and igneous deposits or zones that may have had low-grade concentrations of uranium. The physical and chemical conditions leading to uranium movement and concentration during metamorphism have yet to be defined. The potential for metamorphic uranium deposits, especially in the Precambrian terrains, is probably greater than for any other non-sedimentary type of uranium deposit in the eastern United States.

Table 1--Uranium occurrences in non-sedimentary rocks of Alabama
[for location see figure no. 2]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of informal
1.	Bell Property		Phyllite	The deposit occurs as a thin seam in graphitic phyllite which overlies a mica schist. One sample reported assaying 0.076% U3O8. Average radioactivity is 5 to 7 times background.	Cleburne County. The property is, about 11.2 km northeast from Micaville, across the road from Rock Springs Church, 1.6 km east of Stone Hill copper mine.	WASH-112 1969; US RME-4101 1968.

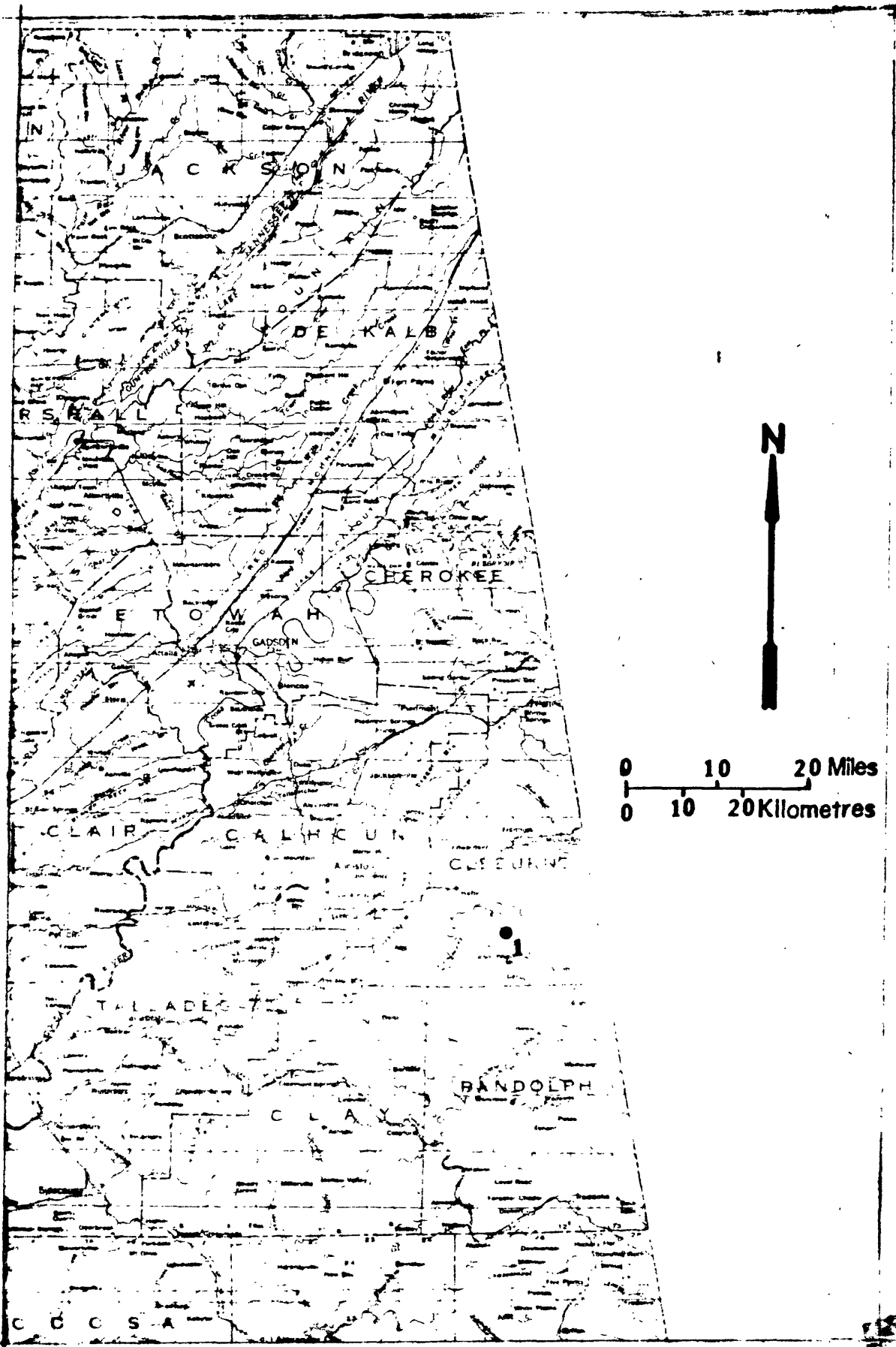


Figure 2. Uranium occurrences in non-sedimentary rocks of Alabama

Table 2--Uranium occurrences in non-sedimentary rocks of Connecticut
[for location see figure no. 3]

Location No.	Mineralogy	Host	Comments	Location	Source of information
1. Bethel	Autunite, gummite, uraninite, uranophane, columbite, cyrtolite, fergusonite	Pegmatite	-----	Fairfield County. From intersection of U.S. 202 and Route 58 (southwest of Danbury), go 2.5 km to Cod Fish Hill Road; turn right and proceed for 1.6 km to intersection; bear left on to Cod Fish Hill Road extension; follow for 1.0 km then take sharp right onto dead end road. Follow path (to right, then to left)	Januzzi, 1959.
2. Branchville	Columbite, cyrtolite, uraninite, gummite, phosphuranylite, torbernite, autunite	Devonian pegmatite	Country rock is an ilmenite-bearing amphibolite which is cut by granite dikes. Age of the pegmatite is 368 m.y.	Fairfield County. Proceed up hill on Portland Ave. from Branchville; take first sharp left onto Peaceable Street; take first left onto Mountain Road; turnoff to quarry is near bottom of next hill. Distance from Branchville to quarry is 0.6 km.	Cameron, et al, 1954; Hess, et al, 1943; Januzzi, 1959.
3. East Village Torbernite		Pegmatite	-----	Fairfield County. Short distance northeast of East Village, on a hill to the north of dirt road just beyond the old canal.	Schairer, 1931.

Table 2--Uranium occurrences in non-sedimentary rocks of Connecticut--Continued
[for location see figure no. 3]

Location No.	Location Name	Mineralogy	Host	Comments	Location	Source of information
4.	Ridgefield	Autunite, columbite, cyrtolite, gummite, torbernite, uraninite	Pegmatite	----	Fairfield County. From the center of Ridgefield turn west on Katonah St.; turn right at end of street; take next left by school on West Mountain Road; turn right on Ramapoo Road, take first dirt road on left and continue until it ends. Continue by foot along old roadway, quarry is on left side of trail.	Januzzi, 1959.
5.	Husband quarries	Torbernite	Pegmatite	Pegmatite occurs in Bolton schist	Hartford County. Northeast of Middletown	Foye, 1922.
6.	Upper Merryall	Autunite, columbite, cyrtolite, gummite, torbernite, uraninite	Pegmatite	----	Litchfield County. From railroad station at New Milford, turn north on Route 129; proceed for 5.8 km; proceed up hill for 3.05 km; bear left at fork and cross small bridge; after 0.6 km take dirt road to right for 1.6 km; pegmatite to left at right bend on road.	Januzzi, 1959.
7.	Woodbury	Autunite, torbernite, uraninite	Pegmatite	----	Litchfield County. From Woodbury, go north on U.S. 6-202 toward Watertown; turn left onto Flanders Road; proceed for 2.6 km; pegmatite is on left side of road at end of dirt driveway by farmhouse.	Januzzi, 1959.

Table 2--Uranium occurrences in non-sedimentary rocks of Connecticut--Continued
[for location see figure no. 3]

Location No.	Mineralogy	Host	Comments	Location	Source of information
8.	Andrews Quarry Uraninite, torbernite, autunite, monazite, molybdenite, columbite	Pegmatite	Pegmatite occurs in the Bolton schist. This may be the same as the Hale Quarry.	Middlesex County. The quarry is located near the town of Portland.	Foye, 1922; Schairer, 1931.
9.	Hale Quarry Autunite, torbernite, monazite, columbite-tantalite, uraninite	Pegmatite	The pegmatite intrudes the Devonian Monson gneiss	Middlesex County. From the junction of U.S. 6A and State Highway 15, proceed northwestward on Highway 15 for 1.0 km to an asphalt road that leads northeastward; proceed along this road for 0.3 km to a woods road. Dumps are 428 m from this point.	Cameron; et al, 1954; Schairer, 1931.
10.	Hazen Property Autunite	Pegmatite	The pegmatite occurs in the Bolton schist.	Middlesex County. The property is located near the town of Haddam (see map, Foye, 1922).	Foye, 1922.
11.	Pelton's Quarry Uraninite, samarskite, bismutite	Pegmatite	The pegmatite occurs in the Glastonbury granite gneiss.	Middlesex County. The quarry is located east of Collins Hill (northeast of Middletown). See map, Foye, 1922.	Foye, 1922; Schairer, 1931.
12.	Rock Landing Quarry Uraninite, columbite, gummite, autunite, torbernite	Pegmatite	----	Middlesex County. The quarry is located near the town of Haddamneck.	Ingerson, 1938.

Table 2--Uranium occurrences in non-sedimentary rocks of Connecticut--Continued
[for location see figure no. 3]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
13.	Strickland Quarry - Cramer Mine		Pegmatite	The pegmatite occurs in the Bolton schist and Monson gneiss (Devonian).	Middlesex County. Follow Route 17A from the center of Portland Village for 1.9 km to an intersection at a monument; turn right and follow hard surfaced road for 1.0 km to west side of Collins Hill. Follow gravel road northeast 0.5 km to mines (Strickland on south, Cramer on north).	Cameron, et al, 1954; Schairer, 1931.
14.	Toll Gate Quarry	Columbite, autunite, torbernite	Pegmatite	The pegmatite occurs in the Bolton schist which contains layers of fine-grained quartzite.	Middlesex County. From the junction of State Routes 9 and 155, drive southeast on State 9 for 0.5 km; at this point follow asphalt town road 146 m east to gravel road running northeastward. Mine is 93 m from here at the end of the gravel road. (4.8 km S. 50 degrees E. of Middletown).	Cameron, et al, 1954; Foye, 1922.
15.	Turkey Hill	Autunite, torbernite	Pegmatite	-----	Middlesex County. The locality is west of the town of Haddam.	Schairer, 1931.
16.	White Rocks	Columbite, microcline, uraninite	Pegmatite	The pegmatite occurs in the Bolton schist.	Middlesex County. White Rocks Ridge is located east of Middletown and south of the river (see map, Foye, 1922).	Foye, 1922.

Table 2--Uranium occurrences in non-sedimentary rocks of Connecticut--Continued
[for location see figure no. 3]

Location No.	Mineralogy	Host	Comments *	Location	Source of information
17.	Southford Columbite, uraninite, Pegmatite autunite, torbernite		The pegmatite intrudes a biotite-hornblende gneiss.	New Haven County. At the second intersection south of the village of Southford, turn west on Route 118; the quarry is 2.1 km from this intersection.	Cameron, et al, 1954; Januzzi, 1959.
18.	Willimantic Uraninite, columbite	Pegmatite	-----	Windham County. The old quarry is located in the northeastern part of the city of Willimantic.	Schrader, et al, 1917.



Figure 3. Uranium occurrences in non-sedimentary rocks of Connecticut

Table 3--Uranium occurrences in non-sedimentary rocks of Georgia
[For location see figure no. 4]

Location No.	Mineralogy	Host	Comments	Location	Source of information
1.	Amphlett Mine -----	Pegmatite	The pegmatite occurs in biotite gneiss.	Cherokee County. The mine is located 0.6 km S. 30 degrees E. of Conn Church and 6.9 km S. 86 degrees E. of Ball Ground.	Heinrich, et al, 1953.
2.	Consolidated Uranophane Quarries	Lithonia granite gneiss	Uranophane and an amorphous, probably uranium-bearing, mineral are associated with biotite and a black metallic-appearing mineral. One sample showed 0.011% eu.	DeKalb County. The quarries are located 0.6 km east of State Highway 124 at a point 4.8 km north of Lithonia.	Butler and Chesterman, 1945.
3.	Stone Mountain (Stone Mountain Granite Corp. Quarry)	Granite, pegmatite	Uranophane occurs as coatings on fracture surfaces. Uranium content is 0.012%.	DeKalb County. The quarries are located about 0.8 km southeast of Stone Mountain (east of Atlanta).	Butler and Chesterman, 1945; Furcron, 1955; SINB WASH-1128, (1.) 1969.

1. Abbreviation SINB hereafter Southern Interstate Nuclear Board.

Table 3--Uranium occurrences in non-sedimentary rocks of Georgia--Continued
[For location see figure no. 4]

Location No.	Mineralogy	Host	Comments	Location	Source of information
4.	Comolli Cranite Quarry	Uranophane or torbernite	Paleozoic granite	Uranium mineralization occurs as Elbert County. The disseminations in granite and quarry is located 5.2 km along joints. Maximum N. 53 degrees W. of radioactivity (0.2 mr\hr) is 20 Elberton. times background.	USAEC RME-4104, 1968.
5.	U. M. Poss Feldspar Mine	Secondary uranium minerals	Pegmatite	Secondary uranium minerals occur Greene County. The mine as coatings on fracture is located 6.4 km surfaces and as veinlets and northeast of Union Point. segregations in the pegmatite. WASH-1128, 1959.	Furcron, 1955; SINB
6.	J. R. Parker	Secondary uranium minerals	Pegmatite	Secondary uranium minerals occur Jasper County. The as coatings on fracture locality is 14.4 km south surfaces. of Monticello by way of Ga. 11, near the Barron Fullerton home. Furcron, 1955; SINB WASH-1128, 1969.	
7.	A. H. Moye Mica Mine	Meta-torbernite, meta-autunite, beta-uranophane, soddyite	Pegmatite	Secondary uranium minerals occur Lamar County. The mine as coatings on fracture is located 8.0 km surfaces. Samples assay up to southeast of Barnesville. 0.22% U308. WASH-1128, 1969.	Furcron, 1955; SINB

Table 3--Uranium occurrences in non-sedimentary rocks of Georgia--Continued
[For location see figure no. 4]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
8.	D. B. McGatah	Spessartine, green fluorescent mineral	Precambrian pegmatite, chlorite schist, mica-hornblende schist, gneiss	A vein of radioactive garnet contains from 0.006 to 0.01% eu.	Towns County. Go 0.8 km north of Young Harris on Young Harris-Warne Road; turn onto soil road and proceed for 4.6 km. Prospect is 0.8 km southeast of house.	Furcron, 1955, SINB WASH-1128, 1969; USAIC RME-4104, 1968.
9.	W. E. Adams Mica Mine	Secondary uranium minerals		Secondary uranium minerals occur as coatings on fracture surfaces.	Upson County.	SINB WASH-1128, 1969.
10.	T. J. McConnell Farm	-----	Dike	Dike extends from house to Dukes Creek.	White County. Dike is on Hurst and the McConnell farm, Route 3, Cleveland.	

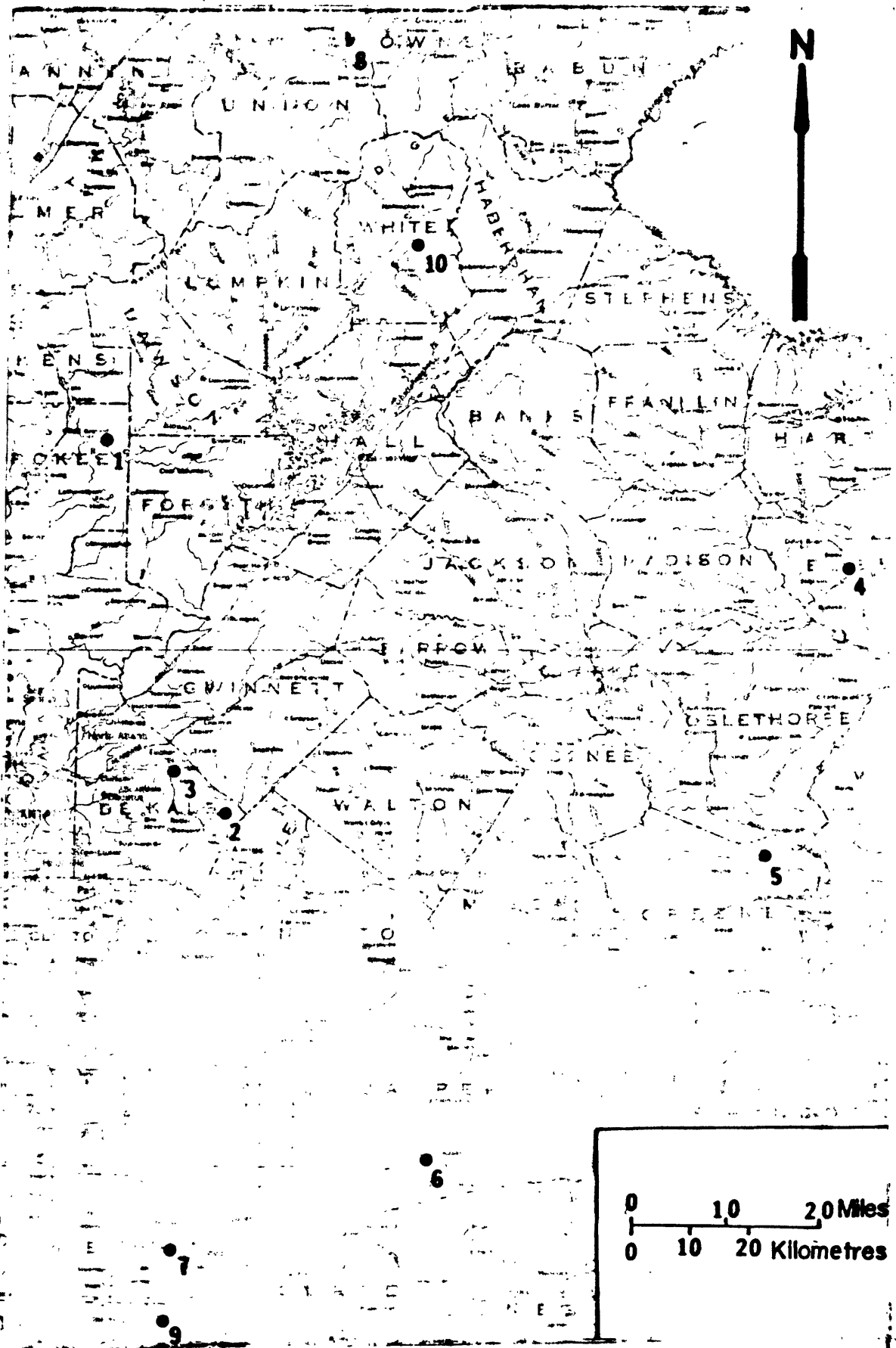


Figure 4. Uranium occurrences in non-sedimentary rocks of Georgia

Table 4--Uranium occurrences in non-sedimentary rocks of Maine
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
1.	Fisher Quarry	Torbernite	-----	-----	Androscoggin County. Auburn Township.	Morrill, 1958.
2.	La Flamme Quarry	Autunite, uraninite	Pegmatite	-----	Androscoggin County. The quarry is located in Minot Township; east of Center Minot. (See map, Morrill, 1958).	The quarry Morrill, 1958.
3.	Mount Apatite	Autunite	Pegmatite	-----	Androscoggin County. Mount Apatite is located about 9.7 km west of Auburn near the road to Minot, and about 3.2 km from Littlefield.	Bastin, 1911; Morrill, 1958.
4.	Phillips Mine	Autunite	Pegmatite	-----	Androscoggin County. The mine is located near the town of Center Minot, 183 m south of the La Flamme Quarry.	Morrill, 1958.
5.	Sturtevant Mine	Uraninite arsenopyrite	-----	-----	Androscoggin County. The mine is located in Minot township, near the town of Center Minot, and near La Flamme Quarry.	Morrill, 1958.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
6.	Freeport Village	Autunite	Pegmatite	-----	Cumberland County. From Freeport Village, go northeast on Main Street (Route 1); turn at the third left from the Post Office and proceed 90 m to road cut (intercept Route 95).	Morrill, 1958.
7.	Road Cut (Route 302)	Autunite	-----	-----	Cumberland County. Road Cut is 2.8 km west of Raymond Village on Route 302.	Morrill, 1958.
8.	Catherine Mountain Prospect	Molybdenite, pyrite	Branite	The mineralization is Silurian or Devonian and occurs as veins, pods, and disseminations. Estimated eu varies from 0.003 to 0.01%.	Hancock County. Prospect is located 0.8 km east of Fox Pond; follow woods road up the north side of Catherine Mountain to the end; thence east-southeast .2-.3 km to the east end of the deposits.	Emmors, 1910; Gabelman, 1968; USAEC RME-4106, 1969.
9.	H. G. Starret Spodumene Quarry	Columbite, tantalite, cyrtolite, autunite, torbernite, uraninite	Pegmatite	-----	Knox County. Prospect is south of Route 1; 0.8 km east of Warren Railroad Station; follow road south along edge of gravel pit 93 m to opening.	Morrill and Hinckley, 1959.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
10.	Bennett Quarry	Autunite, columbite, tantalite	Pegmatite	The pegmatite occurs in a quartz-feldspar-biotite gneiss.	Oxford County. From Perhams' Maine Mineral Store, West Paris, go southeast on Maine 26 through Snow Falls (3.2 km); just beyond Moody Brook turn east and continue past intersection to Paris Hill Village, turn east through village to intersection; go northeast past Mount Mica (.6 km) and Hedgehog Hill (2.6 km) to a brick house (on left, 2.6 km) on knoll east of Basin Falls brook. Turn northwest at this house and drive through Bennett farm to quarry (.4 km).	Cameron, et al, 1954; Wintringham, 1955.
11.	Beryllium Corporation Mine	Torbernite	-----	-----	Oxford County. Go south on the road up the north side of Noyes Mountain, then walk up abandoned road 0.4 km to long cut.	Morrill, 1958.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Mineralogy	Host	Comments	Location	Source of information
12.	Black Mountain Mine Autunite, columbite, gummite, uraninite, uranophane, uranopilite, cyrtolite	Pegmatite	The pegmatite occurs in a sulfide-bearing, interbedded quartz-mica schist and impure micaceous quartzite	Oxford County. From the intersection of U.S. 2 and Maine 120, go north of U.S. 2 towards Rumford for .6 km to Rumford Falls intersection with Maine 108; turn north and continue 2.4 km past intersection with U.S. 2; continue 12.6 km to Roxbury Notch; turn south on dirt Horseshoe Pond Road; continue past North Twin and South Twin Mountains, access road to Swains Notch, and abandoned school house to gravel access road (on the left, 5.8 km) which leads up Black Mountain to quarries.	Bastin, 1911; Cameron, et al, 1954; Wintringham, 1955.
13.	Bumpus Quarry Autunite	Pegmatite	The pegmatite occurs in a fine-grained blotite granite-gneiss.	Oxford County. From Bethel Inn, Bethel, go west on Songo Pond Road (Maine 5) for 0.3 km to Pine Hill crossroads, then south on Maine 5 past Songo Pond to intersection with Maine 35 at Town House (9.5 km); turn southwest for 1.9 km to Bumpus house. Quarry is southeast of house.	Cameron, et al, 1954; Wintringham, 1955.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
14.	Cole Mine	Columbite, autunite	Pegmatite	-----	Oxford County. The mine is located southeast of the peak of Adams Mountain (see map, Morrill, 1958).	Morrill, 1958.
15.	Dunton Pegmatite	Uraninite, gummite, uranophane, autunite, torbernite	Metamorphic pegmatite	The pegmatite occurs in a green schist. Other pegmatites in this group also contain minor uraninite.	Oxford County. The quarry is located on Plumbago Mountain, on the south end of Hall's Ridge; 11.2 km south of Andover and 19.2 km by road west of Rumford.	Bastin, 1911; Hess, et al, 1943; Shainin and Dellvig, 1954; Wintringham, 1955.
16.	Guy Johnson Mine	Autunite, torbernite	Pegmatite	The pegmatite occurs in a medium-grained feldspar-biotite gneiss.	Oxford County. From Hunts Corner go southeast past Cummings Mountain (right) on well-graded road along Sweet Brook to intersection on left (2.6 km); turn east to the farmhouse of Hugh Stearns (on the left, 0.6 km). A poor dirt road leads north to the mine (0.6 km).	Cameron, et al, 1954; Wintringham, 1955.
17.	Harndon Hill	Autunite	Pegmatite	-----	Oxford County. The hill is located in the southwestern corner of Stoneham Township, within 0.4 km of the Stow Township line.	Bastin, 1911; Morrill, 1958.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
18.	Harvard Quarry	Columbite, autunite	Pegmatite	The pegmatite occurs in biotite schist and green gneiss.	Oxford County. From Nobles Corner drive 3.2 km northwest to a crossroad; turn east and proceed 0.2 km to a sharp bend in the road; follow old logging road 0.8 km to quarry.	Cameron, et al, 1954; Wintringham, 1955.
19.	Haper's Ledge Autunite Feldspar Quarry	Autunite	Pegmatite	-----	Oxford County. The quarry is located 2.4 km northeast of South Paris Village and 1.6 km south of Mount Mica.	Morrill, 1956; Smith and Maslowski, 1937.
20.	Lord Hill	Columbite, autunite, torbernite, uraconite, uranophane, gummite	Pegmatite	-----	Oxford County. Lord Hill is located in Stoneham Township (extreme southwestern corner). (See map, Morrill, 1958).	Morrill, 1958.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of Information
21.	Mount Mica Mine	Autunite, columbite, uraninite	Pegmatite	The pegmatite occurs in a quartz-mica schist	Oxford County. From Perham's Maine Mineral Store, West Paris, go southeast on Maine 26 through Snow Falls and crossing Moody Brook; just beyond brook turn east and continue to Paris Hill Village; turn east through village to intersection (0.6 km); then northeast past intersection on left (1.3 km) to an old truck road entering from the left (0.6 km). This road leads north to the pits on either side of the road (0.2 km).	Bastin, 1911; Morrill, 1958; Wintringham, 1955.
22.	Nate Perry Petallite Prospect	Columbite, autunite	-----	-----	Oxford County. Prospect is located on Route 108, 1.6 km east of Moosehorn Garage (Peru Township); go 0.8 km south (up hill). Trench is on hill in back of the old Nate Perry Farm on the east side of Route 108 (Canton to Rumford Highway).	Morrill, 1958.
23.	Nevel Quarry	Columbite, autunite	Pegmatite	The pegmatite occurs in interbedded quartzite and quartz-mica schist.	Oxford County. Follow the access road from the Abbott farmhouse up Hall's Ridge to the quarry (left fork, 1.4 km).	Wintringham, 1955.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
24.	Oak Hill	Autunite, uraconite, uranophane	-----	-----	Oxford County. Oak Hill is located in Lovell Township; southwest of North Waterford. (See map, Morrill, 1958).	Morrill, 1958.
25.	Red Hill Mine	Columbite-tantalite, uraninite	-----	-----	Oxford County. Mine is located in Kumford Township, southeast of South Andover (See map, Morrill, 1958).	Morrill, 1958.
26.	Scotty Mine	Autunite, gummite, uranophane, uraninite	Pegmatite	The pegmatite intrudes gabbro with interbedded quartz-mica schist and micaceous quartzite.	Oxford County. Follow access road from Abbott farmhouse up Hall's Ridge 1.4 km to fork; go right on road which leads generally westward to a ravine (0.4 km); cross ravine and proceed southwest up the eastern slope of Plumbago Mountain for 0.3 km to the mine.	Wintringham, 1955.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
27.	Singlepole Mine	Columbite, autunite, torbernite	Pegmatite	The pegmatite occurs in a mica schist. The pegmatite is cut by a basic dike.	Oxford County. From Perham's Maine Mineral Store, West Paris, go southeast on Maine 26 through Snow Falls and crossing Moody Brook; just beyond the brook turn east and continue past intersection to Paris Hill Village; proceed 1.0 km then turn east through village to intersection (0.6 km); continue southeast (crossing Stony Brook) for 2.2 km to crossroads; continue southeast past Singlepole Mountain to sharp left (3.3 km). A dirt truck road leads east past several farm buildings to house (0.2 km), a trail leads 0.8 km southeast to the quarries on the east knob of Little Singlepole Mountain.	Morrill, 1958; Wintringham, 1955.
28.	Stearns Mine	Uraninite	Pegmatite	The pegmatite occurs in a biotite gneiss.	Oxford County. Mine is located 2.4 km southeast of Hunts Corner; 0.8 km east of farm.	Cameron, et al, 1954; Morrill, 1958; Wintringham, 1955.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
29.	Sugarloaf Mountain - Melrose Prospect	Autunite	Pegmatite	-----	Oxford County. The prospect is 6.4 km northwest of West Stoneham (see map, Morrill, 1958).	Morrill, 1958.
30.	Tamminen Pits	Columbite, uraninite	Pegmatite	The pegmatite intrudes a feldspar-biotite gneiss.	Oxford County. From Greenwood Village go south across bridge over Hicks Pond Brook; bear southwest at intersection with Hayes Hill Road (0.1 km) on North Norway Road past Hicks Pond to intersection with gravel road (4.1 km); turn east past Tamminen house and park at start of trail (on the left, 0.3 km). A poor gravel road leads south to pits.	Wintringham, 1955.
31.	Tiger Bill Mine	Autunite	-----	-----	Oxford County. The mine is about 3.2 km from Greenwood; near the Greenwood Ice Caves (see map, Morrill, 1958).	Morrill, 1958.
32.	Wardwell Quarry	Autunite, torbernite, uraninite, uranophane	Pegmatite	The pegmatite intrudes impure quartz and quartz-biotite schist.	Oxford County. From Hunts Corner go southeast past Cummings Mountain on gravel road along Sweet Brook; then south at intersection (2.6 km) and continue 2.6 km to gravel road on the right which leads 1.6 km to the quarry.	Cameron, et al, 1954; Wintringham, 1955.

Table 4---Uranium occurrences in non-sedimentary rocks of Maine---Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
33.	Witt Hill	Autunite, uranophane	-----	-----	Oxford County. Witt Hill is located southwest of West Paris. (see map, Morrill, 1958).	Morrill, 1958.
34.	Consolidate Feldspar Quarry	Autunite, gummite	Pegmatite	The country rocks are interbedded quartz-muscovite -biotite schists and impure micaceous quartzites.	Sagadahoc County. Go south toward Bay Point from Georgetown Village about 3.2 km along Route 127 to stone house on left. Pass large gravel pit on right, turn right on mine road, take left fork for 273 m to the quarry.	Cameron, et al, 1954; Morrill, 1958.
35.	Consolidate No. 1 Mine	Columbite-tantalite, uraninite	Pegmatite	The pegmatite occurs in interbedded quartz-muscovite-biotite schists and impure micaceous quartzites	Sagadahoc County. The mine is located on Tedford Road, 1.2 km north of the railroad crossing (accessible from Route 24E, from the Topsham- Brunswick Bridge).	Morrill, 1958.
36.	Dr. Brosso Mine	Torbernite	-----	-----	Sagadahoc County. Mine is located in Bowdoinham Township.	Morrill, 1958.
37.	E. P. Thomas Feldspar Quarry	Uranophane	Pegmatite	-----	Sagadahoc County. Go south 2.4 km from Parkers Head Village on Route 209; then 1.6 km to quarry by mine road.	Morrill, 1958.
38.	Fisher Quarry	Columbite, cyrtolite, torbernite	Pegmatite	The pegmatite intrudes a quartz-mica schist	Sagadahoc County. 0.8 km past the Topsham Feldspar Plant turn left onto dirt road and continue for 0.8 km; turn left for 1.2 km to quarry.	Bastin, 1911; Morrill, 1958.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
39.	North Topsham Spar Quarry	Uraninite	Pegmatite	The pegmatite intrudes a quartz-mica schist.	The quarry lies 0.8 km west of Cathame River and 1.6 km south of the Topsham-Bowdoinham Township line.	Eastin, 1911; Morrill, 1958.
40.	Russel Brothers or William Quarry	Columbite, uraninite	Pegmatite	The pegmatite occurs in a medium-grained feldspathic biotite gneiss.	The quarry is accessible from Route 196, along the Androscoggin River and the railroad track; west down Standpipe Hill.	Cameron, et al, 1954; Morrill, 1958.
41.	American Molybdenum Corporation-Cooper Mine	Molybdenite, pyrite	Paleozoic granite and pegmatite pods	The mineralization occurs as veins and disseminations. Estimated eu is as much as 0.01%.	Washington County. Follow Maine 191 4.6 km north of Plantation 14 - Cooper town line to woods road (to the east); turn and continue 43 m to the west end of the pit.	Emmons, 1910; Gabelman, 1968; Trefethen, 1953; USAEC RME-4106, 1969.
42.	Berry Ledge	Autunite, scheelite	Calc-silicate gneiss and quartz-biotite -feldspar schist and gneiss	Scheelite occurs on skarn zones.	York County. Outcrop is on the west edge of Route 5, 4.0 km north of the Limerick town line.	Maine Geological Survey, 1958; Morrill, 1958.

Table 4--Uranium occurrences in non-sedimentary rocks of Maine--Continued
[For location see figures no. 5 and 6]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
43.	Hans Bergöndal Mine	Tyuyamunite, molybdenite, chalcopyrite, sphalerite, pyrrhotite, pyrite, pentlandite	-----	-----	York County. The mine is 1.2 km Morrill, west of New field on Wilson Mountain on the north side of the road.	1958.

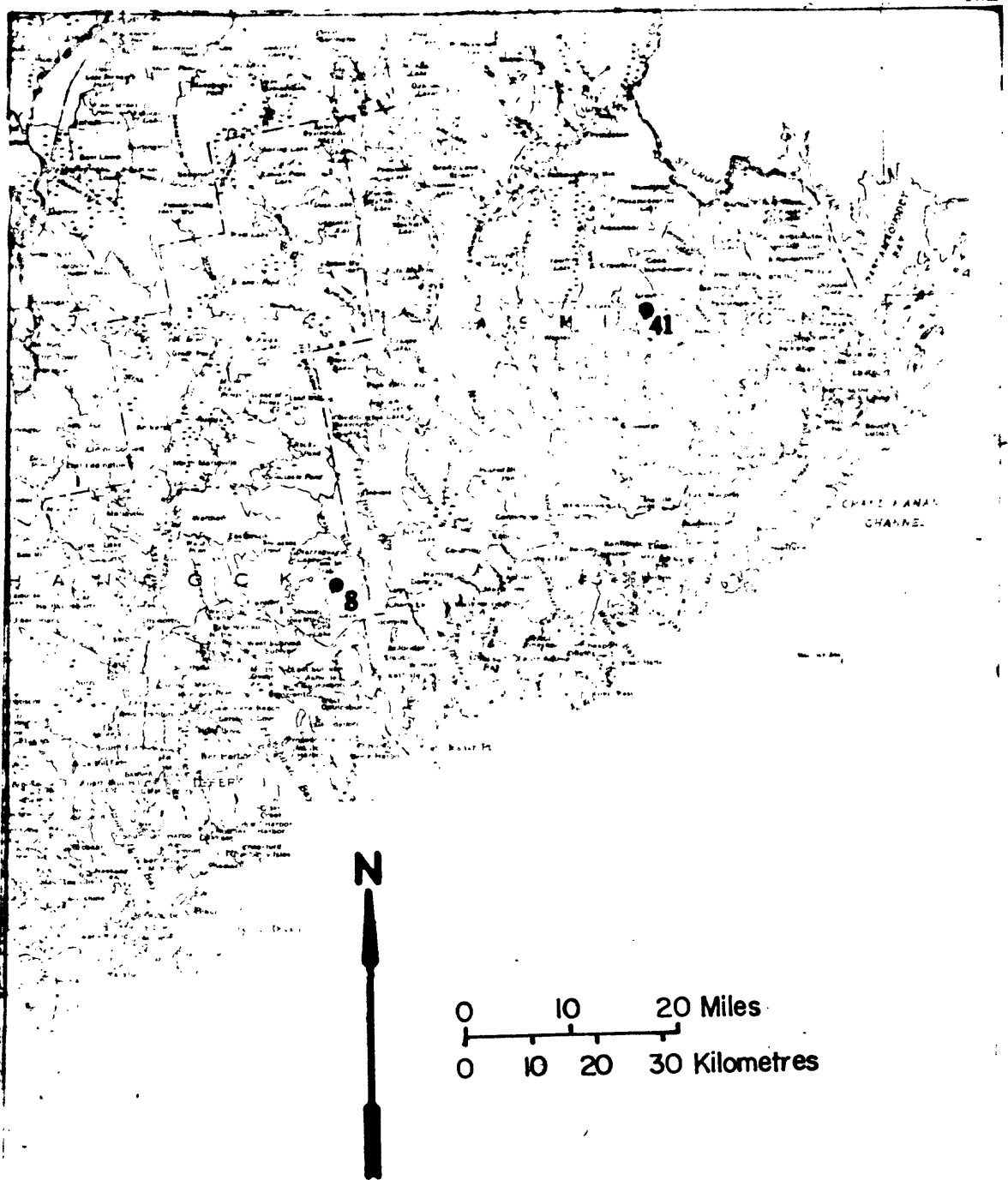


Figure 5. Uranium occurrences in non-sedimentary rocks of eastern Maine

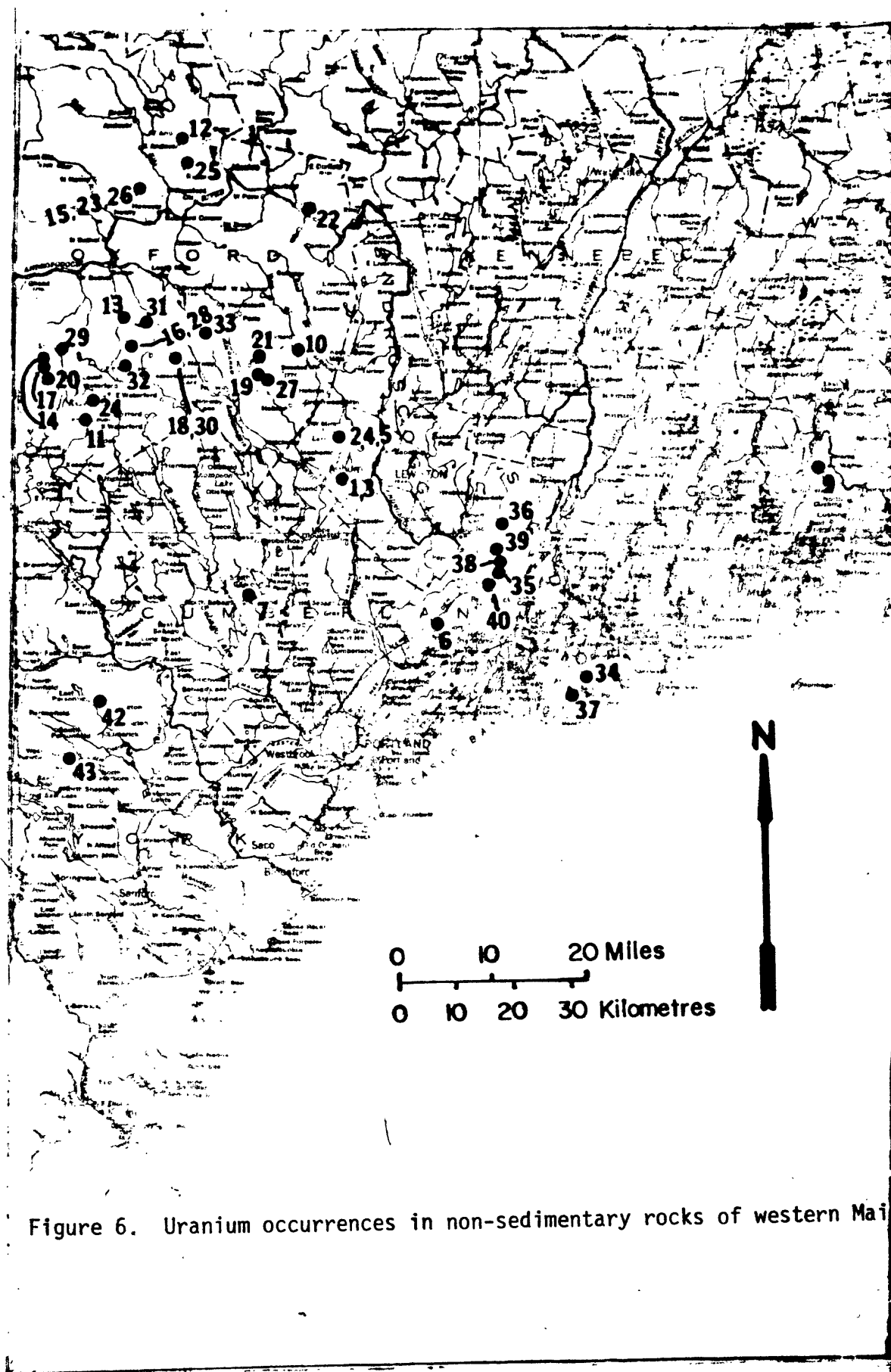


Figure 6. Uranium occurrences in non-sedimentary rocks of western Maine

Table 5--Uranium occurrences in non-sedimentary rocks of Maryland
[For location see figure no. 7]

Location No.	Mineralogy	Host	Comments	Location	Source of information
1.	Falls and Autunite Clipper Mill Roads	Pegmatite	-----	Baltimore County. Located in the city of Baltimore.	Ostrander and Price, 1940; SINB WASH-1128, 1969.
2.	Jones Falls Autunite at the 29th Street bridge	Pegmatite	-----	Baltimore County. Located in the city of Baltimore.	Ostrander and Price, 1940; SINB WASH-1128, 1969.
3.	Jones Falls Torbernite, Gneiss samarskite Quarries	Pegmatite	The pegmatite intrudes Baltimore gneiss.	Baltimore County. Located south of the junction of Stony Run and Jones Falls, between 26th and 28th streets, behind the Pennsylvania Railroad roundhouse, Baltimore.	Ostrander and Price, 1940; SINB WASH-1128, 1969.
4.	Orange Autunite Grove	Pegmatite	-----	Baltimore and Howard Counties. The occurrence is at Orange Grove	Ostrander and Price, 1940;

Table 5--Uranium occurrences in non-sedimentary rocks of Maryland--Continued
[For location see figure no. 7]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
5.	Wright Quarry	Autunite	Pegmatite	The pegmatite occurs in hornblende geniss.	Baltimore County. The locality is near the rear of Johns Hopkins University in Wyman's Park near the banks of Stony Run, in Baltimore.	Ostrander and Price, 1940; SINB WASH-1128, 1969.
6.	Cherry Hill Titaniferous Claim	magnetite	Precambrian pyroxenite	Magnetite, which occurs as replacement disseminations, is radioactive. The pyroxenite has been serpentinized.	Harford County. The claim is about 0.95 km east of the junction of Grier Road and Cherry Hill Road, about 151 m south of Cherry Hill Road, and 0.8 km northeast of the village of Cherry Hill.	Gabelman, 1968; Pearre and Heyl, 1960; SINB WASH-1128, 1969; USAEC RME-4103, 1968.
7.	Kensington Mica Mine	Microcline, hatchedolite, autunite	Pegmatite	-----	Montgomery County. The mine is located on Northwest Branch about 3.2 km north of Burnt Mills.	Shannon, 1926; SINB WASH-1128, 1969.

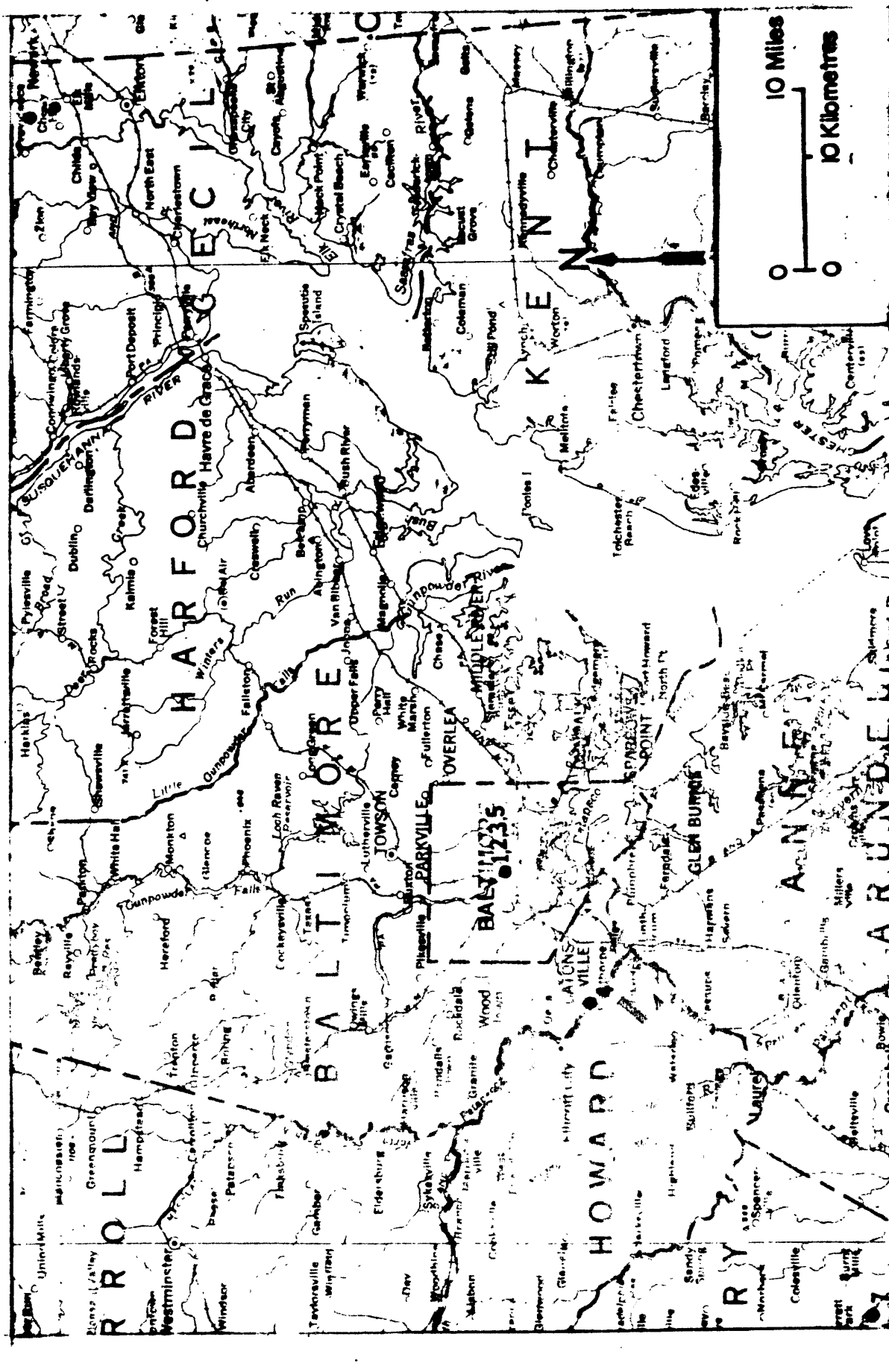


Figure 7. Uranium occurrences in non-sedimentary rocks of Maryland

Table 6---Uranium occurrences in non-sedimentary rocks of Massachusetts
[For location see figures no. 8 and 9]

Location No.	Location Name	Mineralogy	Host	Comments	Location	Reference
1.	Cape Ann (Granite Quarries)	Cyrtolite, allanite, fergussonite, thorite, gadolinite	Pegmatites	Carboniferous pegmatites occur in the alkaline Quincy granite, also associated with syenitic rocks of the Cape Ann batholith.	Essex County.	Clapp, 1921; Hess, et al, 1943.
2.	Loudville Lead Mine	Galena, barite, fluorite, pyromorphite, wulfenite, sphalerite	Granite and pegmatite	A galena-barite vein has anomalous radioactivity as great as 25 times background.	Hampshire County. South for 0.3 km from general store at Loudville; right turn at junction for 0.3 km to Gateway farm. Walk about 500 m east to North Branch of Manhan River.	Gabelman, 1968; USAEC RME-4106, 1969.
3.	West Chesterfield (Chesterfield Hollow)	Columbite, microcline, autunite	Pegmatite	Autunite has apparently formed from the alteration of zircons.	Hampshire County.	Julien, 1878; Hess, et al, 1943.
4.	Blueberry Mountain	Allanite, orangeite, thorite, cyrtolite	Pre-carboniferous dedham granodiorite and pegmatites	The granodiorite contains hornblende and magnetite.	Middlesex County. Blueberry Mountain is located in the town of Woburn; a quarry is located on the southern slope.	Billings, 1941; Richmond, 1937.

Table 6--Uranium occurrences in non-sedimentary rocks of Massachusetts--Continued
[For location see figures No. 8 and 9]

Location No.	Mineralogy	Host	Comments	Location	Reference
5.	Leominster Columbite, autunite	Pegmatite	Pegmatites occur in gray, sericitic, locally graphitic, schists and gneissoid, porphyritic, highly biotitic granite.	Worcester County. Located at the foot of Long Hill in Leominster.	Billings and Wolfe, 1944; Hess, et al., 1943.
6.	Rollstone Hill (McCaulliff Quarries) Allanite, columbite, autunite	Pegmatite	Pegmatite occurs in a muscovite-biotite-microcline granite.	Worcester County. Quarries Billings, are located on Rollstone Hill in Fitchburg (western outskirts).	Billings, 1941; Hitchen, 1925.



Figure 8. Uranium occurrences in non-sedimentary rocks of eastern Massachusetts

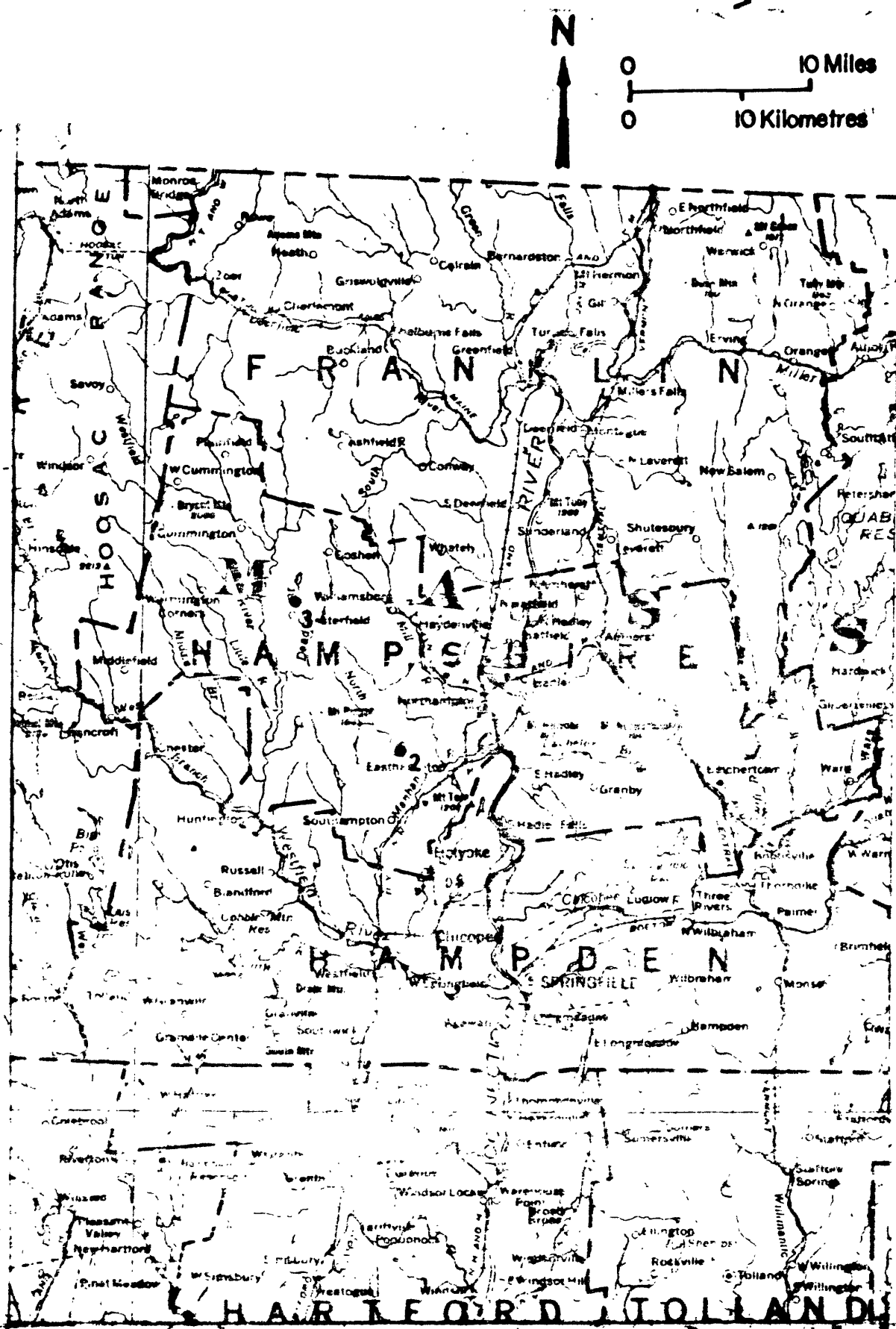


Figure 9. Uranium occurrences in non-sedimentary rocks of western Massachusetts

Table 7--Uranium occurrences in non-sedimentary rocks of Michigan
[For location see figure no. 10]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
1.	Graphite Quarry	Meta-torbernite, magnetite	Precambrian kaolinized dike	The dike cuts graphitic slate (Michigamme Formation). The entire dike is abnormally radioactive and meta-torbernite crystals coat slickensided surfaces. The dike contains 0.005 to 0.037% U. The slate contains about 0.004% U. Select samples contain more than 0.12 U.	Baraga County. From the corner of Main and Broad Streets, L'Anse, proceed south on Broad Street and south on U.S. 41. After 5.6 km take the road to the left for 7.2 km; turn left onto logging road and proceed for 2.4 km to quarry.	Butler, et al, 1962; Gabelman, 1968; Vickers, 1955, 1956.
2.	Huron River	Pitchblende, secondary uranium minerals, pyrite, copper, tennantite, bornite, chalcocopyrite	Precambrian Michigamme slate	The mineralization is associated with a calcite-cemented brecciated quartz vein. Pitchblende occurs in small lenses which contain about 1% U.	Baraga County. On the East Branch of the Huron River (sec. 1, T. 51N., R. 30W.).	Butler, et al, 1962; Gabelman, 1968; Vickers, 1953a, 1956.
3.	Isham	Marcasite, hydrous iron oxides	Precambrian granite	Hematite filled fractures have locally high radioactivity. Select samples assay about 0.11% U. Fresh-appearing hematite vein did not contain appreciable uranium.	Dickinson County. (sec. 7, T. 42N., R. 28W.)	Vickers, 1956.

Table 7--Uranium occurrences in non-sedimentary rocks of Michigan--Continued
[For location see figure no. 10]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
4.	Leith and Isham #2 claim	Pyrite	Precambrian biotite schist	Locally sericitized schist xenolith in Archean granite has a fracture zone with maximum radioactivity of 17 times background. An assay shows 0.007% U308.	Dickinson County. The claim is 6.4 km northwest of Feich. Gabelman, 1968; USAEC RME-150, 1968; Vickers, 1953a.	Butler, et al, 1962; Gabelman, 1968; USAEC RME-150, 1968; Vickers, 1953a.
5.	Erickson property	Uranophane	Precambrian granite	Uranophane is associated with calcite and coats fracture surface. The granite assayed 0.004% U308. (Presumably the sample assayed also contained uranophane).	Gogebic County. (S.E. 1/4, NE 1/4, sec. 10, T. 6N., R. 43W.)	Vickers, 1956.
6.	Anderson property (Wiggins property)	Yellow-brown uranium-bearing mineral, iron oxide	Precambrian granite	Foliated granite has xenolithic layers and masses of amphibolite and zones of coarse pegmatite. Radioactivity of the whole rock is 2 to 3 times background.	Iron County. (SE 1/4, sec. 35, T. 45N., R. 32W.)	Gabelman, 1968; USAEC RME-150, 1968; Vickers, 1956.
7.	Buck Mine	Pitchblende, base-metal sulfides	Black slate	Mineralization is localized along a shear zone in the slate near the contact with the oxidized iron formation.	Iron County. The mine is located near Casplan.	Vickers, 1956.

Table 7--Uranium occurrences in non-sedimentary rocks of Michigan--Continued
[For location see figure no. 10]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
8.	McCutcheon Creek	Rutherfordine, primary (?) uranium minerals	Granite, granite gneiss	Primary (?) uranium mineral concentrations occur in granite gneiss. Rutherfordine coats fracture surfaces. Both the granite and granite gneiss are abnormally radioactive.	Iron County. (sec. 35, T. 45N., R. 32W.)	Vickers, 1954a.
9.	Sherwood Mine	Uraninite, pyrite, chalcocypirite, galena, sphalerite	Precambrian graphitic slate, oxidized cherty iron-formation	Mineralization occurs as narrow discontinuous lenses in the iron-formation near the contact with the slate. Uraninite also occurs as soft masses associated with hematite and carbonaceous slate. Assays range from 0.001 to 0.513% U308.	Iron County.	James, et al, 1968; Vickers, 1956.
10.	Wauseca Mine	Hematite, jarosite	Black slate	Radioactive zones occur in fault gouge. One sample assayed 0.012% U308.	Iron County. (sec. 23, T. 43N., R. 35W.).	Vickers, 1956.
11.	Greens Creek	Meta-torbernite, bassettite	Upper Huronian bleached carbonaceous and quartzose slate	Samples assay as high as 0.68% U308. Unaltered slate contains from 0.004 to 0.009% U308. Meta-torbernite occurs as disseminations. Uranium appears to be concentrated in carbonaceous pellets and seams.	Marquette County. (sec. 19, T. 46N., R. 26W.).	Vickers, 1954b, 1956.

Table 7--Uranium occurrences in non-sedimentary rocks of Michigan--Continued
[For location see figure no. 10]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
12.	Gwinn district (Francis Mine)	Pitchblende	Precambrian slate, oxidized iron formation, magnetite vein, gneiss, granite	Radioactive iron ore from drill cores contains 0.08 to 0.12% U308. Pitchblende occurs along minute chlorite-filled fractures. Associated granite assayed 0.004% U308.	Marquette County.	Butler, et al, 1962; Gabelman, 1968; Vickers, 1954b, 1956.
13.	M & G Mine	Meta-autunite	Precambrian oxidized iron formation, gneiss	Small concentrations are associated with oxidized iron formation and quartz veins, but the highest radioactivity is associated with a fine-grained altered diabase dike. Eu values range from 0.000 to 0.034%. See also page 62, Vickers, 1956.	Marquette County.	Butler, et al, 1962; Gabelman, 1968; Vickers, 1956.
14.	Sargent uranium prospect	-----	-----	The prospect occurs in a shear zone. Eu varies from 0.006 to 0.008%.	Marquette County. The prospect is 9.3 m southeast of State Highway 95 at a point 3.2 km north of the railroad crossing in Republic (W 1/2 NW 1/4, sec. 32, T. 47N., R. 29W.).	USAEC RME-150, 1968.

Table 7--Uranium occurrences in non-sedimentary rocks of Michigan--Continued
[For location see figure no. 10]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
15.	Voelker prospect	-----	Precambrian pegmatite, fine-grained granite, gneisses	Highest radioactivity is restricted to a biotite-chlorite- feldspar shear (?) zone. Eu varies from 0.004 to 0.016%.	Marquette County. From Palmer, proceed south on Michigan Route 35 for 8.0 km; take a left on a dirt road and proceed 1.6 km; take right fork and continue to the edge of the river. The prospect is 93 m east across the river (East Branch, Escanaba River).	USAEC RME-150, 1968.
16.	Burke property	Uraniferous jasper, uranophane, uraninite (?)	Keweenawan sandstone, Precambrian granodiorite dike (Killarney granite series)	The most radioactive zone occurs near the contact of the sandstone and the dike. Mineralization occurs in bleached, highly silicified sandstone (vein?). Maximum radioactivity is 0.5 mr/hr (0.25% eu).	Ontonagon County. Go 2.4 km east from the outskirts of Bergland on State Highway M-28 to an old logging road (left); proceed on this road for approximately 1.6 km, stay on road to the left all the way to deposit located on small hill.	USAEC RME-150, 1968.

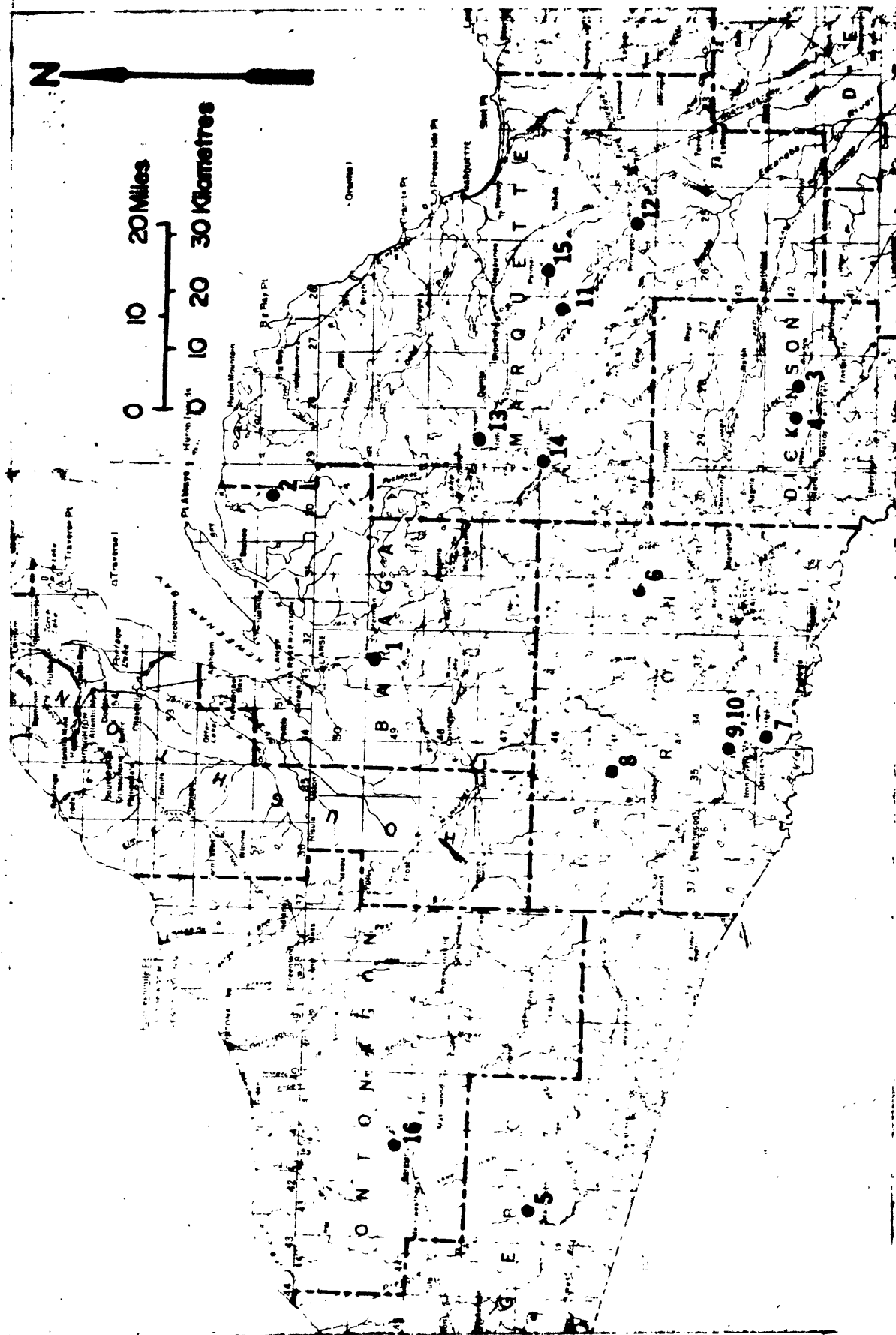


Figure 10. Uranium occurrences in non-sedimentary rocks of Michigan

Table 8--Uranium occurrences in non-sedimentary rocks of New Hampshire
[For location see figure no. 11]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
1.	Golding-Keene Mine	Uraninite, uranophane	Pegmatite	-----	Cheshire County. No precise location is recorded, but it is probably located near Alstead.	Meyers, 1941.
2.	New Hampshire Mica and Mining Co. quarry	Autunite	Pegmatite	-----	Cheshire County. The quarry is located about 2.9 km north-northeast of Gilsum.	Megathlin, 1928; Meyers, 1941.
3.	Conway Granite	-----	-----	a. Uraninite has been reported (no published reference) within the contact zone of the Conway Granite at the Basin (Route 3A, White Mountain National Forest). b. Analyses of various phases of the Conway plutonic rocks show uranium contents as great as 26 ppm.	Coos and Grafton Counties.	Brimhall and Adams, 1939; Butler, 1956, 1957, 1961, 1975; Reskovic and Trundle, 1967; This report.

Table 8--Uranium occurrences in non-sedimentary rocks of New Hampshire--Continued
[For location see figure no. 11]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
4.	Carpenter Mica Mine	Autunite, torbernite	Pegmatite	-----	Grafton County. From Grafton go southwest for 3.7 km to Robinson Corner. Follow the right fork northeast, passing two left forks, for 3.2 km to a crossroad. Turn left, proceed 1.5 km to a right fork. Go right for 0.3 km to the next right fork, take the right fork and continue to the end of the road. The mine is about 200 m northeast of the roadcut.	Cameron, et al, 1954.
5.	E. E. Smith Mica Mine	Autunite, columbite-tantalite	Pegmatite	Pegmatite intrudes the Kinsman quartz monzonite (Devonian) and the Littleton Formation.	Grafton County. From the village of Alexandria take the road that leads past Tenney School up the valley of Patten Brook for 3.1 km, turn right on a gravel road, proceed for 1.3 km to the mine.	Cameron, et al, 1954; Page and Larrabee, 1962.
6.	Palermo Mine	Gummite, uranophane, autunite	Pegmatite	-----	Grafton County. Go south from North Groton for 0.4 km, turn right and proceed 1.6 km to a fork. Follow the right branch for 1.3 km to Palermo mines.	Cameron, et al, 1954; Verrow, 1941.

Table 8--Uranium occurrences in non-sedimentary rocks of New Hampshire--Continued
[For location see figure no. 11]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
7.	Ruggles Mine	Uraninite, autunite, gummite, uranophane, torbernite	Pegmatite	The pegmatite intrudes the Devonian Littleton Formation. Uranium minerals are associated with late-stage quartz segregations and veins within the pegmatite.	Grafton County. Proceed west from Route 4 in Grafton Center for 2.3 km to the mine access road. Turn north on the access road for approximately 2.4 km to the mine.	Cameron, et al, 1954; Meyers, 1941; Shaub, 1937, 1938.
8.	Danburg Mica Mine	Autunite	Pegmatite	The pegmatites intrudes the Devonian Kinsman quartz monzonite.	Merrimack County. From the village of Alexandria take the road that leads west-northwest past Tenney School and then up the Patten Brook valley for 3.1 km, just beyond the cemetery a logging road turns south; follow this for about 3.9 k to the mine.	Cameron, et al, 1954.
9.	Sunapee occurrence	Renardite, torbernite	Late Devonian Concord Granite	The uranium minerals occur primarily on a near vertical east-west trending joint set that appears to be related to a carbonate-bearing lamprophyre. Within the mineralized zone (about 5 m wide) most fractures have shows of the uranium minerals.	Merrimack County. From the northwestern most New London, N. H. exit on Interstate 89 proceed southeast for approximately 300 m to a deep road cut in the Concord Granite.	Chapman, 1953; This report.

Table 8--Uranium occurrences in non-sedimentary rocks of New Hampshire--Continued
[For location see figure no. 11]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of Information
10.	Parker Mountain Mica Mine	Autunite, columbite	Pegmatite	The pegmatite intrudes the Devonian Littleton Formation	Strafford County. From Center Strafford follow the old Rochester-Dover road, which forks left from Route 202A, for about 4 km to an abandoned road on the right; turn right and proceed 0.6 km to the mine.	Cameron, et al, 1954; Meyers, 1941; Page and Larrabee, 1962.
11.	Acworth	-----	-----	-----	Sullivan County. No precise location is recorded, but the locality is probably near Acworth.	Megathlin, 1928; Meyers, 1941.
12.	Globe Mica Mine	Autunite	Pegmatite	-----	Sullivan County. From Springfield go north 3.1 km to the old Enfield turnpike. Proceed southeast on the turnpike for 4.2 km to a logging road which runs 0.8 km to the mine.	Cameron, et al, 1954.

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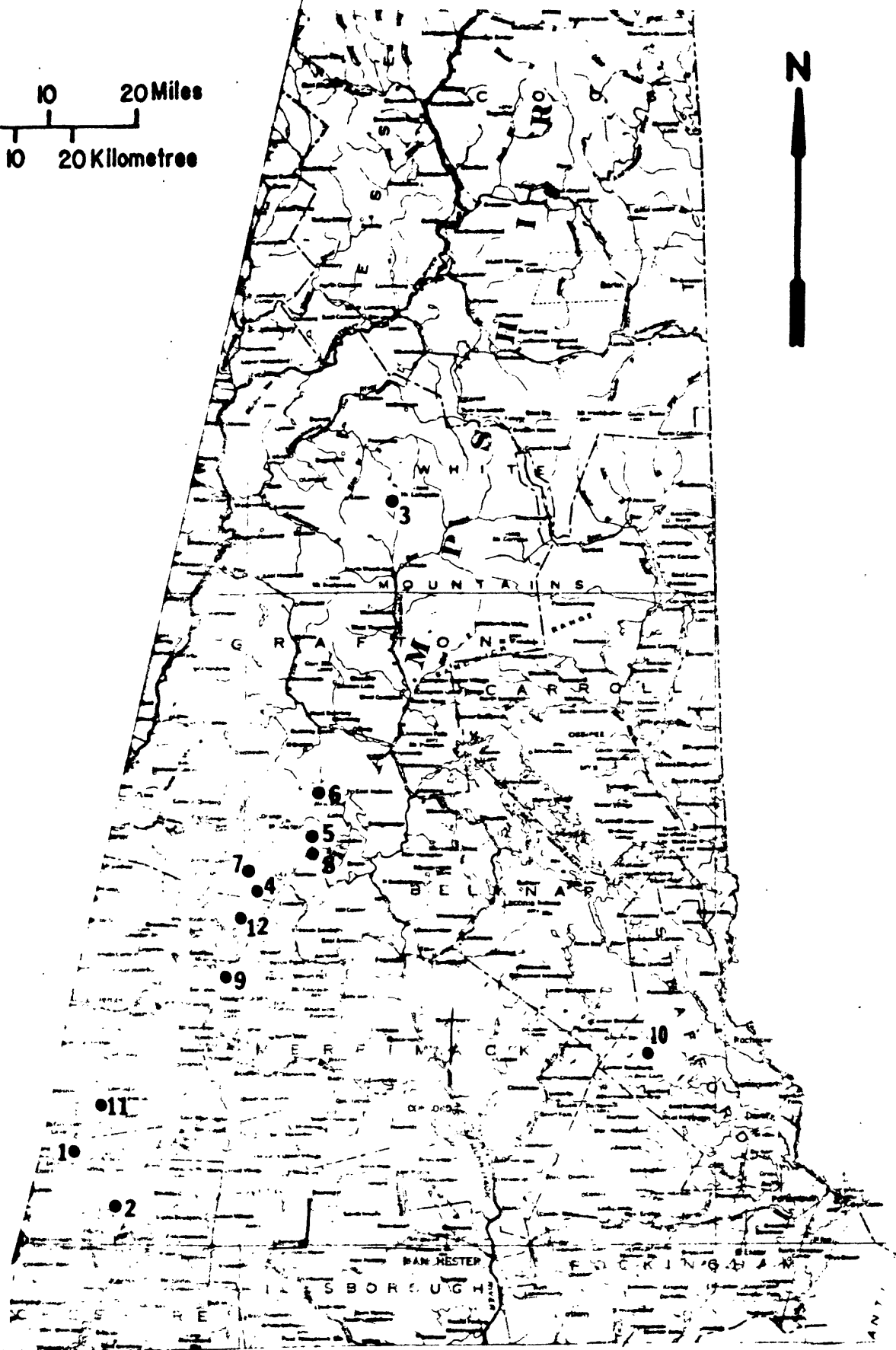


Figure 11.-Uranium occurrences in non-sedimentary rocks of New Hampshire.

Table 9--Uranium occurrences in non-sedimentary rocks of New Jersey
[For location see figure no. 12]

Location No.	Name	Mineralogy	Host	Comments	Location	Reference
1.	Mulligan Quarry	-----	Cambrian Kittatinny limestone	Sample from quarry assayed 0.068% U308. Surface anomaly continues in fields beyond quarry. Radioactivity is associated with fractures and to a lesser extent with a 10 cm thick layer of black limestone.	Hunterdon County. Located on the west bank of the Raritan River at Clinton.	Gabelman, 1968; Butler and others, 1962; McKeown and Klemic, 1953c; USAEC RME-4106, 1969.
2.	Bowling Green Mountain	Uraninite	Precambrian Byram pegmatitic granite	Uraninite is disseminated in the pegmatitic granite. An assay shows 0.62% U308. Maximum radioactivity is 20 times background.	Morris County. From intersection of route 15 and Longwood Valley Road north 9.7 km; left at Rudi's Tavern for 1.6 km to Bowling Green Mountain. Guide required.	USAEC RME-4106, 1969; Gabelman, 1968.
3.	Hackelbarney Iron Mine	Uraninite, magnetite, pyrite, pyrrhotite	Precambrian Pochuck Formation biotite schist	Uraninite apparently occurs as pods or disseminations in the biotite schist. Grab sample assayed 0.17% U308. Maximum radiation is about 40 times background.	Morris County. At intersection of Route 24 and Black River Bridge turn south on State Park Road for 1.1 km to Neilsen's house. Ask directions.	Gabelman, 1968; USAEC RME-4106, 1969; McKeown and Klemic, 1953c.

Table 9--Uranium occurrences in non-sedimentary rocks of New Jersey--Continued
[For location see figure no. 12]

Location No.	Mineralogy	Host	Comments	Location	Reference
4.	Hibernia Pond Uraninite, magnetite area	Precambrian gneiss	Maximum radiation is about 15 times background.	Morris County. At Hibernia Post Office turn right onto Green Pond Road; go 0.6 km to Snake Hill Road, turn left and go 0.6 km to a gravel road; turn left and go 0.5 km to the open pit.	Gabelman, 1968; USAEC RME-4106, 1969.
5.	Kord No. 3 Uraninite, molybdenite, iron oxides	Precambrian Byram gneiss	Chip sample assayed 2.2% U308. Maximum radioactivity is 175 times background. Average radioactivity 30 times background. Radioactivity concentrated in a vein 10 to 15 cm thick.	Morris County. From the Riverdale Circle on Route 23 go for 1.6 km to Riverdale Auto Wreckers. The occurrence is located 100 m north near the Algonquin Gas Transmission line.	Gabelman, 1968; USAEC RME-4106, 1969.
6.	Riverdale prospect Uraninite, magnetite	Precambrian gneiss	-----	Morris County. No specific location listed.	Butler and others, 1962; Gabelman, 1968.
7.	Scrub Oaks Mine Doverite, bastnesite, xenotime, chevkinite, monazite, magnetite	Precambrian granite gneiss, hornblende gneiss, and pegmatite	Rare-earth minerals are in coarse-grained magnetite ore and in pegmatite associated with the ore. 11 samples of ore and gangue average 0.009% U; 0.062% Th, and 1.51% REE. Maximum U content is 0.026%.	Morris County. On north side of Route 46 on Mine Hill 3.2 km west of Dover.	Klemic and others, 1959a; Gabelman, 1968; USAEC RME-4106, 1969.

Table 9--Uranium occurrences in non-sedimentary rocks of New Jersey--Continued
[For location see figure no. 12]

Location No.	Mineralogy	Host	Comments	Location	Reference
8.	Stratis (1) Uraninite	Precambrian, Byram pegmatitic granite	Uraninite is disseminated in pegmatitic granite. A selected sample of which assays 0.8% U308. Maximum radioactivity is 50 times background.	Morris County. From Burchard Field on Route 15, right on Long Wood Field Road, north for approximately 4.8 km to point where power transmission lines cross valley. Property is located on top of Bowling Green Mountain, 300 m northeast of power line superstructure.	USAEC RME-4106, 1969.
9.	Old Centennial (Squire) Mine Uraninite, magnetite, pyrite	Precambrian gneiss	Chemical analysis shows 0.94% U308. Maximum radioactivity is 70 times background.	Passaic County. From Greenwood Lake Post Office north 2.1 km on Route 513; right on Warwick Pike for 1.9 km; right at Gulf Station, go 3.2 km; right at ESSO Station, 0.16 km, then right onto dirt road to mine.	Gabelman, 1968; USAEC RME-4106, 1969.
10.	Ringwood Mine Uraninite, magnetite	Precambrian gneiss	The field report states that the highest radioactivity (about 30 times background) is along a minor fault. A specimen of hornblende gneiss donated by Frank Markewicz has discrete layers of magnetite and uraninite. The specimen came from the now demolished ore house.	Passaic County. West on Route 17 from Sloatsburg, N.Y., for 7.5 km, mines are north of Ringwood Avenue.	Butler and others, 1962; Gabelman, 1968; USAEC RME-4106, 1969; This report.

Table 9--Uranium occurrences in non-sedimentary rocks of New Jersey--Continued
[For location see figure no. 12]

Location No.	Name	Mineralogy	Host	Comments	Location	Reference
11.	Andover Mine	Uraninite, magnetite, autunite, uranophane, malachite	Precambrian, Pochuck Formation gneiss, meta volcanics	Uranium mineralization is at places associated with a hematite stained siliceous granite. An assay shows 0.32% U308. Maximum radioactivity is 80 times background. There are two Andover deposits. The older workings show the anomalous radioactivity.	Sussex County. About 2.8 km north-northeast of Andover.	Gabelman, 1968; McKeown and Klemic, 1953c; USAEC RME-4106, 1969; This report.
12.	Cranberry Lake (Rutherford tract) (Charlotte Mine)	Uraninite, thorite, magnetite, pyrite	Precambrian gneiss, pyroxenite, pegmatite	Uranium (ore) zone parallels the contact between pegmatite and pyroxenite. Chemical analyses show the following uranium values: 2.9, 3.1, and 1.8%.	Sussex County. South 3.2 km from Andover to South Shore Road of Cranberry Lake; right for 0.16 km; left for 1.8 km; left for 0.32 km; walk 1000 m east to mine.	Butler and others, 1962; Gabelman, 1968; Haji-Vassiliou and others, 1974; USAEC RME-4106, 1969; Wood, 1967.
13.	Gross (Stanhope)	Uraninite, magnetite	Precambrian hornblende gneiss and pegmatite	Chemical analysis shows 0.17% U308.	Sussex County. From the Stanhope Post Office 0.16 km east to Route 206; 7.1 km north on Route 206, right on secondary road (just past Cranberry Lodge) for about 1 km to a small cabin. Occurrence is on west side of hill.	Gabelman, 1968; USAEC RME-4106, 1969.

Table 9--Uranium occurrences in non-sedimentary rocks of New Jersey--Continued
[For location see figure no. 12]

Location No.	Name	Mineralogy	Host	Comments	Location	Reference
14.	Drake Claim	Uraninite	Precambrian pegmatitic granite	Chemical analyses show 0.12 and 0.03% U ₃ O ₈ .	Warren County. West one block from Hope Post Office; left 4.8 km; left on dirt road 0.48 km; 250 m east to cliff face.	Gabelman, 1968; USAEC RME-4106, 1969.
15.	Edison Quarry	Uraninite, magnetite, pyrrhotite, pyrite, graphite, galena	Precambrian Franklin limestone	Uranium minerals occur in a contact metamorphic zone. Maximum radioactivity is about 10 times background.	Warren County. About 21 km northeast of Phillipsburg.	Gabelman, 1968; McKeown and Klemic, 1953c.
16.	Phillipsburg prospect	Uraninite(?)	Precambrian Franklin marble, gneiss and schist	Large area on Marble Mountain has a radioactivity anomaly of 2 to 4 times background. This is the northwest extension of the geology that underlies Chestnut Hill, Northampton County, Pa.	Warren County. About 1.6 km north of Phillipsburg.	Gabelman, 1968; McKeown and Klemic, 1953c; USAEC RME-4106, 1969.

Table 9--Uranium occurrences in non-sedimentary rocks of New Jersey--Continued
[For location see figure no. 12]

Location No.	Name	Mineralogy	Host	Comments	Location	Reference
17.	Rock Products Co. quarry (Royal Green Quarry?)	Uraninite, pyrite, graphite, molybdenite, sphalerite, galena	Precambrian serpentinite	Uraninite associated with pyrite in serpentinite. An assay shows 0.78% U3O8. This is probably the Royal Green Quarry mentioned by Montgomery, 1957.	Warren County. About 3.2 km north of Phillipsburg along road which parallels the Delaware River. Quarry is on the east side of the road.	Butler and others, 1962; Gabelman, 1968; McKeown and Klemic, 1953c; Montgomery, 1957; USAEC RME-4106, 1969.

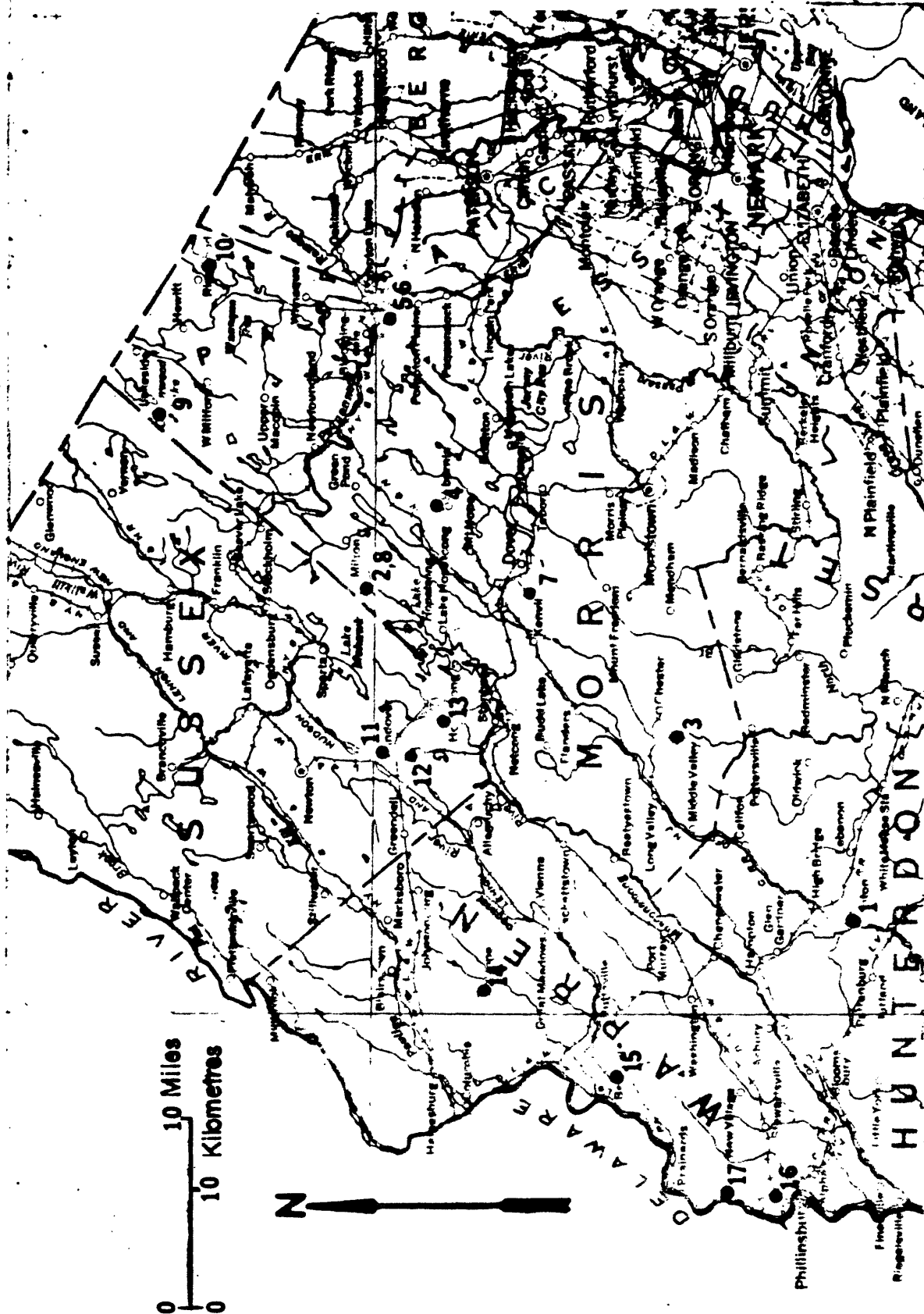


Figure 12. Uranium occurrences in non-sedimentary rocks of New Jersey

Table 10--Uranium occurrences in non-sedimentary rocks of New York
[For location see figures no. 13,14 and 15]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
1.	Ellis Ore Pits	Thorite, magnetite	Precambrian Lyon Mountain granite gneiss, feldspar-pyroxene rock	Maximum radioactivity is 0.12% eu.	Clinton County. The locality is 1.6 km northeast of Dannemora.	McKeown and Klemic, 1953c.
2.	Rutgers Mine	Magnetite, apatite, zircon	Precambrian Lyon Mountain granite-gneiss, pink syenite gneiss, plagioclase syenite gneiss	Radioactivity is apparently associated with apatite and zircon. This is similar to the Mineville occurrence. Magnetite ore from the dumps shows 0.005 to 0.01% eu. Numerous schlieren of pyroxene skarn are associated with the gneisses.	Clinton County. The mine is about 8 km north of Ausable Forks.	McKeown and Klemic, 1953c.
3.	Lawrence Prospects	Magnetite	Pegmatite	Black radioactive grains occur in the pegmatite.	Essex County. The prospects are located on Sugar Hill about 2.4 km southwest of Crown Point.	McKeown and Klemic, 1953c.
4.	Lodge Hill Road Cut	Pyrite	Granite gneiss	A silicified portion of the gneiss is radioactive (0.01% eu).	Essex County. The road cut is 3.2 km southwest of Westport.	McKeown and Klemic, 1953c.

Table 10--Uranium occurrences in non-sedimentary rocks of New York--Continued
[For location see figures no. 13, 14 and 15]

Location No.	Mineralogy	Host	Comments	Location	Source of information
5.	Mineville district Magnetite, apatite	Syenite, gneiss	Most radioactivity is restricted to the "Old Bed" horizon which is rich in rare-earth- bearing apatite. An analysis of apatite shows 0.032% U, 0.15% Th and 11.14% REE.	Essex County. The locality is near the village of Mineville.	McKeown and Klemic, 1953a,c, 1956; Narten and McKeown, 1952.
6.	Adirondack Uranium No. 1 Thorite, magnetite	Precambrian granite	Chemical analyses of "lenses of magnetite injecting granite" show values ranging from 0.03 to 0.2% U308.	Lewis County. Go north from the bridge at Lyons Falls for 7.5 km; take a left at the junction and proceed 3.9 km; take left at the junction and proceed 0.5 km to a dirt road; take a right and go 200 m.	USAEC RMF-4106, 1969.
7.	Plato No. 1 Uraninite, pyrite	Precambrian granitic gneiss	Uraninite and pyrite occur as irregular streaks and lenses. Maximum radioactivity is about 35 times background.	Lewis County. Go north from the bridge at Lyons Falls for 6.4 km to junction; take a right and proceed for 0.8 km. Prospect is located 1 km due south of the town of Greig.	Gabelman, 1968; USAEC RME-4106, 1969.

Table 10--Uranium occurrences in non-sedimentary rocks of New York--Continued
[For location see figures no. 13, 14 and 15]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
8.	Shaneeey No. 1	Thorite, uraninite	Precambrian hornblende pegmatite	Maximum radioactivity is about 60 times background.	Lewis County. Go north from the bridge at Lyons Falls for 2.4 km to a dirt road; take a left and proceed 0.4 km to mine workings.	Gabelman, 1968; USAEC RME-4106, 1969; This report.
9.	Stennbrickner Farm	Uraninite, pyrite, magnetite, sphalerite, fluorite	Precambrian gneiss, amphibolite, pegmatite	Maximum radioactivity is about 15 times background. Radioactivity is generally but not always associated with pegmatite. Uraninite is sometimes included in hornblende crystals.	Lewis County. South on Route 12 from blinker in Port Leyden for 3.1 km; 100 m east to the outcrop. USGS Bench mark K184 is located on the south end of the outcrop.	Howard University Field Camp, 1974; USAEC RME-4106, 1969; This report.
10.	Stiles Farm No. 1	-----	Pegmatite	Maximum radioactivity is about 40 times background.	Lewis County. Go north from Glenfield 0.8 km to Stiles Farm; take a right at railroad tracks then left for 340 m.	USAEC RME-4106, 1969.
11.	Bear Mountain localities	Uraninite, monazite	Precambrian hornblende pegmatites, amphibolites, granitic gneisses	There are four areas of abnormal radioactivity. 30 samples have values ranging from 0.001 to 0.065% U308 and from 0.005 to 0.48% Th02.	Orange and Rockland Counties. See McKeown, 1951.	Butler, et al, 1962; McKeown, 1951.

Table 10--Uranium occurrences in non-sedimentary rocks of New York--Continued
[For location see figures no. 13, 14 and 15]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
12.	Clove Mine	Magnetite, uraninite	Precambrian Pochuck Formation hornblende gneiss	Maximum radioactivity is about 10 to 20 times background. Chemical analysis shows 0.14% U.	Orange County. The mine is about 0.8 km southeast of the east shoot of Round Pond and about 2.4 km south of Monroe.	USAEC RME-4106, 1969.
13.	Miles Standish Mine	Uraninite, magnetite, pyrite	Precambrian Pochuck Formation, gneiss, pegmatite	Shattered zones in the footwall of the magnetite body contain the most radioactivity. Maximum radioactivity is about 25 times background. A chemical analysis shows 0.5% U308.	Orange County. In Warwick go south from intersection of Route 17A and South Street extension 3.1 km; left on Cascade Park Road 6.5 km; left on private road 8.1 km to cabin.	Engineering and Mining Journal, 1957; USAEC RME-4106, 1969.
14.	Raynor Mines	-----	-----	Chemical analysis shows 0.34% U308. The nature of the sample and details of the analysis are not recorded. This may be the old Taylor Iron Mine.	Orange County. The mines are located on Taylor Mountain, Warwick Township, 3.2 km from the railroad on a mining road.	
15.	Carmel A	Monazite, pyrite, graphite	Precambrian gneiss, quartz veins	Maximum radioactivity on the outcrop is 0.006% eu, but a grab sample of float assayed 0.094% U308 and 1.04% ThO2.	Putnam County. The road cut is on Route 301, 7.2 km east of Route 9.	McKeown, 1951.
16.	Carmel B	Magnetite	Precambrian pegmatite, quartzite, gneiss	Pegmatite estimated at 0.004% eu. Biotite segregations within pegmatite estimated at 0.01% eu.	Putnam County. The road cut is on Route 301, 5.6 km west of Carmel.	McKeown, 1951.

Table 10--Uranium occurrences in non-sedimentary rocks of New York--Continued
[For location see figures no. 13,14 and 15]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
17.	Cattel Estate (Denning Hill)	Uraninite, allanite, pyrite	Precambrian Canada Hill Formation, granite, gneiss, pegmatite	Radioactivity is apparently associated with hornblende pegmatite similar to that at the Phillips mine. This occurrence is close to the contact between the Pochuck and Canada Hill Formations. 22 m of drill core show an average grade of 0.055% U308.	Putnam County. Go north from the intersection of Routes 90 and 403 for 5.18 km; take a right and proceed 2.4 km; turn right on a dirt road up Denning Hill and proceed 0.8 km.	Schrieber, 1958; USAEC RME-4106, 1969.
18.	Fields	-----	-----	Chemical analysis shows 1.17% U308. The nature of the sample and details of the analysis are not recorded.	Putnam County. The locality is near Taconic State Parkway and C. Fahnestock Parkway boundary.	
19.	Nelson Pond Area	Uraninite, uranophane, meta-autunite	Precambrian pegmatite intrusive into quartzo-feldspathic gneiss and granite	Assays of samples from the most promising outcrops range from 0.18 to 0.49% U308. The uraninite is apparently restricted to biotite-rich pegmatites and the uranophane and meta-autunite to tourmaline-rich pegmatites.	Putnam County. The Nelson Pond Area is a rectangle about 1340 m wide and is bounded on the north by Route 301 and on the south by Nelson Pond.	Schreiber, 1958.

Table 10--Uranium occurrences in non-sedimentary rocks of New York--Continued
[For location see figures no. 13, 14 and 15]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
20.	Phillips Mine	Uraninite, magnetite, pyrrhotite, pyrite, chalcopyrite, hematite	Precambrian hornblende pegmatite, hornblende gneiss	Uraninite is associated with hornblende pegmatite and hornblende gneiss. Drilling (500 m) of less than half the surface anomaly proved about 10,000 kg U3O8. This is the Boomer Estate property mentioned in USAEC, RME-4106.	Putnam County. The mine is accessible by a dirt road south from Manitou Road (mountain Road) which connects Routes 9 and 9D about 2.4 km northeast of Bear Mountain Bridge.	The mine is Klemic, et al, 1959b; USAEC RME-4106, 1969; Walthier, 1955; This report.
21.	Benson mines	Torbernite, allanite, magnetite	Precambrian granite gneiss, pegmatite	Radioactivity is concentrated in the "disseminated garnet zone" and reaches a maximum of 0.019% eu. This may be Gabelman's Star Lake occurrence.	St. Lawrence County. The mines are 3.2 km east of Star Lake on Route 3.	Gabelman, 1964; McKeown and Klemic, 1953; Narten and McKeown, 1952.
22.	McLear Pegmatite	Uraninite	Precambrian pegmatite	The pegmatite intrudes marble of the Grenville Series.	St. Lawrence County. The locality is 6.4 km north 47 degrees 45 minutes east from Richville Station.	Shaub, 1940.
23.	Talcville	Uraninite, allanite, molybdenite, pyrite	Precambrian pegmatite	Pegmatite intrudes Grenville limestone. A grab sample contains 0.043% U and 0.02% Th.	St. Lawrence County. The inactive talc mine is 0.3 km northwest of Talcville bridge.	Narten and McKeown, 1952; This report.

Table 10--Uranium occurrences in non-sedimentary rocks of New York--Continued
[For location see figures no. 13,14 and 15]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
24.	Lake George	-----	Precambrian pegmatite, granite	An assay of the pegmatite shows 0.013% U and 0.03% ThO ₂ . The granite contains 0.002% U and 0.001% ThO ₂ .	Warren County. The road cut is located 5.1 km north of the junction of Routes 9 and 9N on Route 9.	Narten and McKeown, 1952.
25.	Baylis Quarry	Uraninite, uranophane, torbernite, gummite, autunite	-----	-----	West Chester County. Proceed southwest on Route 22 from Bedford Village to the Old Greenwich Road. Turn left and continue for approximately 1 km. Turn left onto Oliver Road and continue to the first dirt road on the right. Follow the dirt road to the quarry.	Januzzi, 1959.
26.	Camp Smith	Uraninite, molybdenite	Precambrian gneiss, hornblende-biotite gneiss	Uraninite occurs in the granitic gneiss and along fractures cutting both the granitic and hornblende-biotite gneisses.	Putnam County. Road cut is on the Camp Smith property on the east side of Routes 6 and 202 approximately 1 km west of the junction with Route 9.	Zodac, 1939; This report.
27.	Canor No. 1	Magnetite	Precambrian pegmatitic granite	Small intrusive zone of radioactive material. Five grab samples assayed 0.12% U308. Maximum radioactivity is about 40 times background.	Westchester County. Take Albany Post Road out of Peekskill, left at Jack Road, 0.4 km up hill beyond abandoned house.	USAEC RME-4106, 1969.

Table 10--Uranium occurrences in non-sedimentary rocks of New York--Continued
[For location see figures no. 13,14 and 15]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
28.	Wachter No. 1	Uraninite, oxidized uranium minerals	Precambrian pegmatite	Maximum radioactivity is approximately 100 times background.	Westchester County. Take Albany Post Road out of Peekskill, left at Jack Road 0.8 km to Wachter home. Site is on hill behind home.	USAEC RME-4106, 1969.

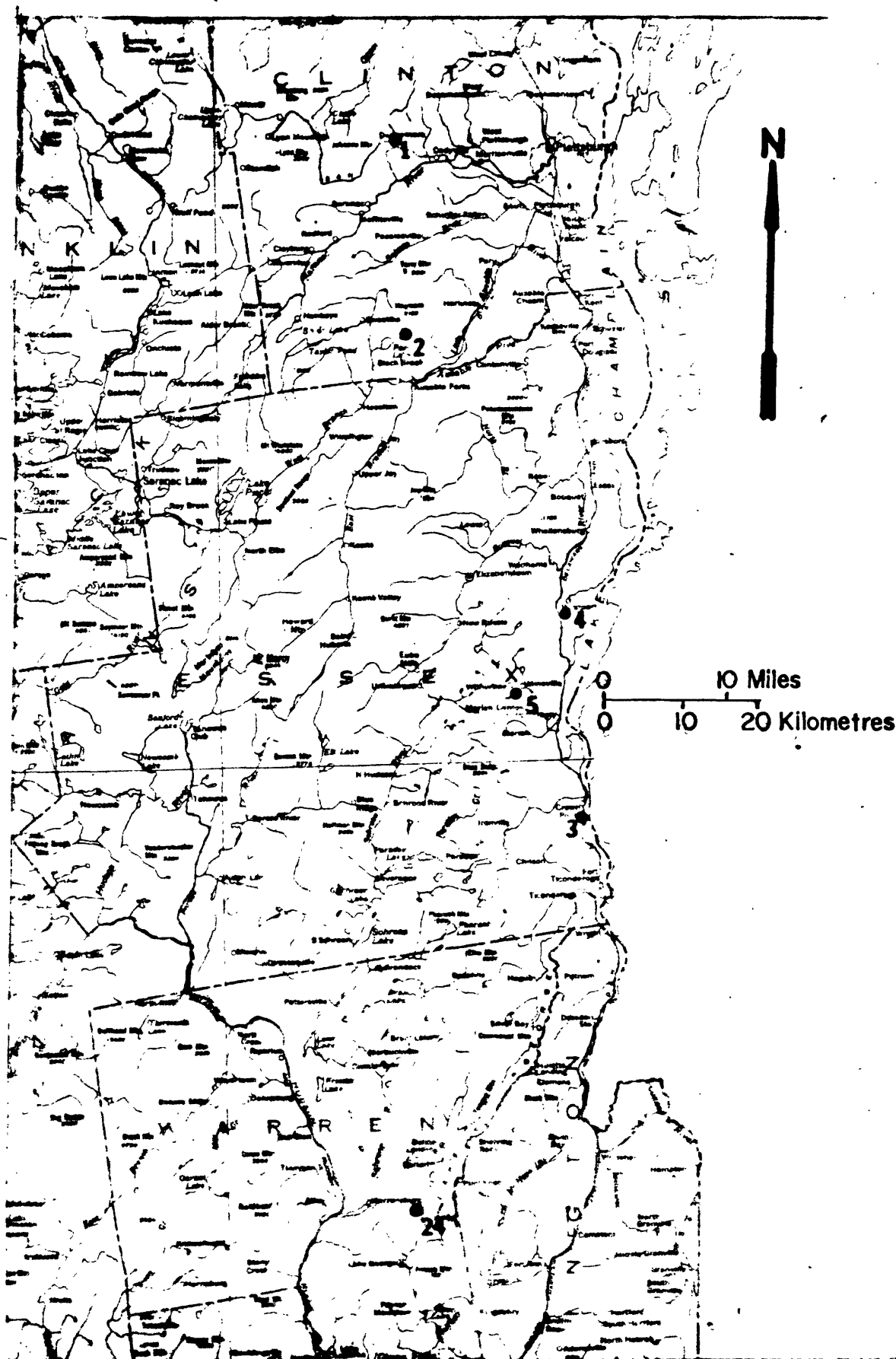


Figure 13. Uranium occurrences in non-sedimentary rocks of northeastern New York

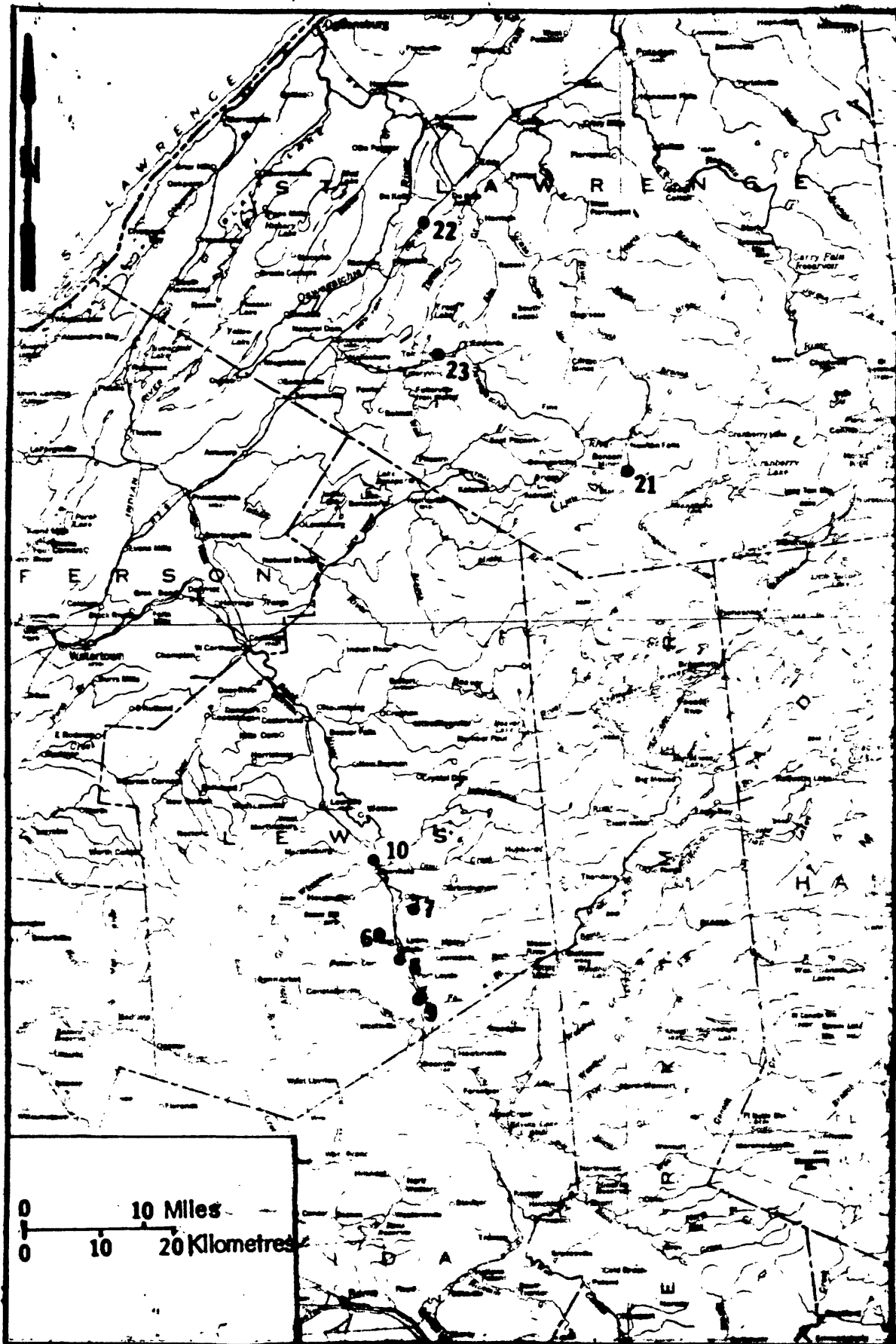


Figure 14. Uranium occurrences in non-sedimentary rocks of north-central New York

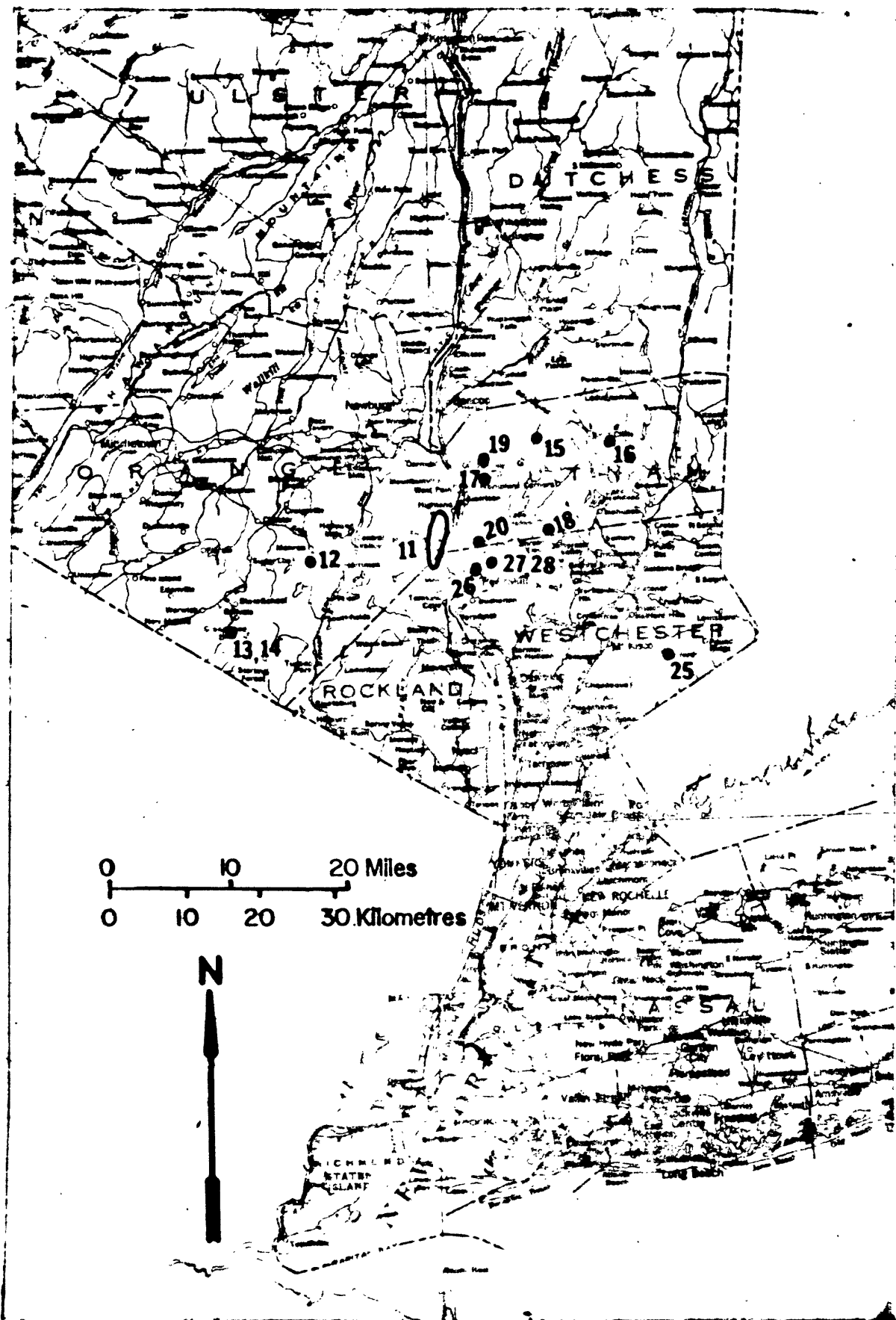


Figure 15. Uranium occurrences in non-sedimentary rocks of southeastern New York

Table 11--Uranium occurrences in non-sedimentary rocks of North Carolina
[for location see figure no. 16]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
1.	Rocky Face Quarry	Magnetite, iron stain	Precambrian gneissic granite	No uranium minerals are visible. Maximum radioactivity is 17 times background (0.70 mr\hr).	Alexander County. The quarry is at the foot of Rocky Face Mountain.	USAEC RME-4105, 1968.
2.	Jefferson area	Allanite, gadolinite	Precambrian hornblende gneiss and schist	Samples taken from pegmatites and magnetite concentrations in gneiss assayed from 0.067% to 0.28% U308.	Ashe County. Localities in Gabelman, 1968; the vicinity of Jefferson. Stow, 1955a.	
3.	Joe Woods Magnetite Prospect	Magnetite	Precambrian sheared granite and schist	An altered peridotite dike and small pegmatite stringers occur in the area. Magnetite occurs as pods and lenses. One hot spot in the pegmatite read 6 times background.	Ashe County. The prospect is 12.1 km west of Mouth of Wilson, Virginia.	USAEC RME-4105, 1968.
4.	Drury #2 Wilderness	Secondary uranium minerals	Precambrian metabasalt (probably the Linville meta-dabase).	Secondary uranium minerals occur on fracture surfaces. Maximum radioactivity (10 mr\hr) is 33 times background.	Avery County. The prospect is on the northeastern side of Marks Mountain near Barkhouse Creek. The area is accessible by Forest Service Road No. 37.	USAEC RME-4105, 1968.

Table 11--Uranium occurrences in non-sedimentary rocks of North Carolina--Continued
[for location see figure no. 16]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
5.	Fishing Club No. 1	-----	Pegmatite	The pegmatite intrudes Precambrian granite. Maximum radioactivity (0.5 mr\hr) is 5 times background.	Avery County. Follow Route 19E 1 km. from Elk Park post office; turn left on Route 194 and proceed for 1.8 km; prospect is on the south bank of the stream at a broken dam site.	USAEC RME-4105, 1968.
6.	Harper Creek; Yellowbrick Property	Uraninite, secondary uranium minerals	Precambrian granite and schist (Wilson Creek gneiss)	A 1 cm thick vein of uraninite which cuts the lineation of a quartzose gneiss extends for 5 m across the stream bed. Fracture zones in the schist have the highest radioactivity (17.0 mr\hr). Assays range from 0.032 to 0.50% U308.	Avery County. Follow Route 221 southwest from Blowing Rock to Blue Ridge Parkway; then southwest to Forest Service Road No. 4. Proceed 9.7 km southeast to North Harper's Creek Trail. Follow trail 1.6 km to fork of North Harper's Creek (Shatley Fork).	Bryant and Reed, 1966; SINB WASH-1128, 1969; Stow, 1955a; USAEC RME-4105, 1968; Walker and Osterwald, 1963.
7.	Laws Farm	Altered ferro-magnesian minerals	Pegmatite	The pegmatite intrudes Precambrian granite. Maximum radioactivity (1.0 mr\hr) is about 33 times background.	Avery County. Follow Route 19E south from Elk Park post office for 1 km; turn left on Route 194 and proceed for 1.4 km; turn right on John Greer road (dirt) and proceed for 323 m to outcrop on road bank.	USAEC RME-4105, 1968.

Abbreviation SINB hereafter refers to Southern Interstate Nuclear Board.

Table 11--Uranium occurrences in non-sedimentary rocks of North Carolina--Continued
[for location see figure no. 16]

Location No.	Mineralogy	Host	Comments	Location	Source of information
8.	Lost Cove Creek #1 Limonite stain	Precambrian chlorite schist (Cranberry Formation)	No uranium minerals are visible. The average radioactivity is 0.2 mr/hr and the maximum (3.0 mr/hr) is 43 times background. One assay shows 2.0% U308.	Avery County. Prospect is at the eastern end of Long Ridge, southwest of the junction of Lost Cove Creek and Grogg Prong. Accessible by Forest Service Road No. 4 and foot path.	Bryant and Reed, 1966; USAEC RME-4105, 1968; Walker and Osterwald, 1963.
9.	Lost Cove Creek #2 Yellow and green secondary uranium minerals, uraninite	Precambrian migmatitic, graphitic schist (Cranberry Formation)	Secondary minerals occur in the intruding quartz-feldspar material and in the intruded schist. Uraninite fills joints in sheared pegmatites in phyllonite zones. Two samples assayed 0.9% and 0.25% to U308. Maximum radioactivity is about 25 times background.	Avery County. This locality is in the same vicinity as Lost Cove Creek No. 1.	Bryant and Reed, 1966; USAEC RME-4105, 1968.
10.	Road Cut (U.S. 19E)	Precambrian Cranberry granite, pegmatite	Average radioactivity is 2 times background and maximum (0.1 mr/hr) is 10 times background.	Avery County. Road cut is 3.1 km west of Elk Park on U.S. Highway 19E; another cut is located 1.4 km from Elk Park on 19E.	USAEC RME-4105, 1968.

Table 11--Uranium occurrences in non-sedimentary rocks of North Carolina--Continued
[for location see figure no. 16]

Location No.	Mineralogy	Host	Comments	Location	Source of information
11.	Calliente Claim (also Sitting Bear Claim; Gray Bull Claim)	Precambrian granite gneiss and mica schist	Maximum radioactivity (1.0 mr\hr) is 40 times background. Assays range from 0.033 to 0.14% U308.	Burke County. Go southwest from Blowing Rock on U.S. 221 to Blue Ridge Parkway, then southwest to Route 181; turn southeast and proceed for 11.3 km to prominent high road cuts on northeast side of road.	USAEC RME-4105, 1968.
12.	Drury No. 1 Torbernite (not visible on outcrop)	Precambrian schist	Maximum radioactivity (0.18 mr\hr) is 3 times background.	Burke County. Follow Route 181 north from Morganton post office for 33.8 km. Prospect is 457 m north of Route 181.	USAEC RME-4105, 1968.
13.	Patton No. 1 Iron oxides	Precambrian altered, leached mica schist	No uranium minerals are visible. One assay shows 0.023% U308. Maximum radioactivity (0.80 mr\hr) is 16 times background.	Burke County. Follow Route 181 north 14.5 km from Morganton post office to Table Rock Road; turn and proceed for 3.5 km; turn right on dirt road and proceed for 0.7 km; turn left and proceed 4.3 km to radioactive area.	USAEC RME-4105, 1968.

Table 11--Uranium occurrences in non-sedimentary rocks of North Carolina--Continued
[for location see figure no. 16]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
14.	Rattlesnake	Torbernite	Precambrian schist, granite	Torbernite occurs as coatings on slickensided surfaces. Maximum radioactivity (0.15 mr\hr) is 3 times background.	Burke County. Follow Route 181 from Morganton post office north for 34.5 km to Steel Creek Road. Follow Steel Creek Road approximately 4.0 km to prospect.	USAEC RME-4105, 1968.
15.	Road Cut (N.C. 181)	-----	Precambrian gneiss, schist and phyllite (cranberry granite)	Maximum radioactivity (1.0 mr\hr) was observed in schistose and shear zones. Similar readings are reported in an area 8.0 km long and several km wide.	Burke County. The radioactive area crosses N.C. Highway 181 about 11.2 km south of Blue Ridge Parkway.	Stow, 1955a.
16.	Upper Creek No. 1	Minor sulfides	-----	Minor shear zones contain lenses of radioactive material. No uranium minerals are visible. Maximum radioactivity (0.80 mr\hr) is 20 times background.	Burke County. Prospect is located 0.8 km due north of Winding Stairs Knob.	USAEC RME-4105, 1968.

Table 11--Uranium occurrences in non-sedimentary rocks of North Carolina--Continued
[for location see figure no. 16]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
17.	Boone II	Pyrite, magnetite, torbernite (not visible)	Precambrian granite	A coarse-grained granite has been intruded into a large fracture in porphyritic quartz-feldspar gneiss (Blowing Rock gneiss). Maximum radioactivity (1.0 mr\hr) is 12 times background.	Caldwell County. Follow Route 321 south from Blowing Rock fire house for 4.7 km. Outcrop is on the west side of the highway.	USAEC RME-4105, 1968.
18.	Craig Creek No. 1	-----	Precambrian hornblende-chlorite schist	No uranium minerals are visible. Maximum radioactivity (1.0 mr\hr) is about 14 times background.	Caldwell County. Follow Route 181 north from Morganton post office for 27.7 km; turn right on road to Mortimer and proceed for 7.1 km; follow foot trail north for 805 m to Craig Creek.	USAEC RME-4105, 1968.
19.	Nigger Trussel Branch No. 1	Metatorbernite	Precambrian hornblende-chlorite schist	Maximum radioactivity (1.0 mr\hr) is 20 times background.	Caldwell County. Follow Route 181 north from Morganton post office for 27.7 km; turn right on road to Mortimer and proceed for 8.7 km to Nigger Trussel Branch. Follow stream northwest for 153 m to outcrop.	USAEC RME-4105, 1968.

Table 11--Uranium occurrences in non-sedimentary rocks of North Carolina--Continued
[for location see figure no. 16]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
20.	Farmington area	Autunite, columbite	Pegmatite	-----	Davie County. Follow N.C. 801 east from Farmington for 3.2 km, turn north on paved road and proceed for 0.6 km. Mine is 0.6 km east of paved road on farmroad. A second locality is reached by following the unpaved road an additional 1.3 km, then east on a dirt road for 2.3 km to second bridge. The third locality is 2.8 km northeast of the second.	Conley, 1958; SINB WASH-1128, 1969.
21.	Bess Mine	Uraninite	-----	-----	Gaston County. The mine is just east of the Cleveland-Gaston County line road; 4.8 km south of Cherryville.	Conley, 1958; SINB WASH-1128, 1969.
22.	Deer Park Mine	Monazite, uraninite, gummite, uranophane	Precambrian pegmatite	The pegmatite occurs in Carolina gneiss and mica schist and is associated with an alaskite body.	Mitchell County. The mine is 161 m east of Penland in the horseshoe bend of the North Toe River.	Conley, 1958; Olson, 1952; SINB WASH-1128, 1969.

Table 11--Uranium occurrences in non-sedimentary rocks of North Carolina--Continued
[for location see figure no. 16]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
23.	English Knob Mine	Pitchblende, gummite, torbernite, samarskite, autunite, monazite, columbite, cyrtolite	Pegmatite	-----	Mitchell County. The mine is on the east side of the road from Spruce Pine to Ingalls, 0.6 km from the Mitchell-Avery County line.	Conley, 1958; SINB WASH01128, 1969.
24.	Flat Rock Mine	Uraninite, gummite, uranophane, cyrtolite, autunite	Pegmatite	Pegmatite intrudes the Precambrian Carolina gneiss and mica schist.	Mitchell County. The mine is located 1.6 km N. 22 degrees E. from Penland.	Murdock, 1950; Slaughter and Clabaugh, 1944.
25.	Mokinney Mine	Samarskite, autunite, torbernite, columbite, bornite, covellite, chalcocopyrite, sphalerite	Pegmatite	Pegmatite intrudes mica schists and gneiss. No radioactive minerals were observed in place.	Mitchell County. The mine is located 2.6 km south of the Old 20 mine (locality 26).	Conley, 1958; Slaughter and Clabaugh, 1944; SINB WASH-1128, 1969.
26.	Old 20 Mine	Cyrtolite, uraninite, autunite, torbernite, gummite	Pegmatite	-----	Mitchell County. The mine is located 8.0 km southwest of Spruce Pine on the west side of the road to Little Switzerland.	Conley, 1958; SINB WASH-1128, 1969.

Table 11--Uranium occurrences in non-sedimentary rocks of North Carolina--Continued
[for location see figure no. 16]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
27.	Pete Crest Farm	"Uranium minerals"	Pegmatite	-----	Mitchell County. The prospect is 0.5 km south of Carver's Gap on N.C. Route 261 across from the sign "Pete Crest Farm".	Conley, 1958; SINB WASH-1128, 1969.
28.	Pine Mountain Mine	Allanite, autunite, torbernite	Pegmatite	The pegmatite is associated with an alaskite body.	Mitchell County. The mine is located 1.6 km north of Minpro.	Olson, 1952; SINB WASH-1128, 1969.
29.	Knight Mine	Allanite, uraninite, autunite, uranophane	Pegmatite	Pegmatite occurs in biotite-quartz schist (Precambrian Carolina gneiss).	Rockingham County. The mine is located 4.8 km west of Price and 9.6 km southwest of Ridgeway, Va. and can be reached from Ridgeway by U.S. 220 and Va. 692 and 691.	Griffitts, et al, 1953.
30.	Fanny Gouge Mine	Pitchblende, autunite	Pegmatite	One assay shows 0.003% U308.	Yancey County. The mine is located 4.4 km southeast of Micaville.	Conley, 1958; Slaughter and Clabaugh, 1944; SINB WASH-1128, 1969.
31.	Green Mountain	Gummite, autunite	Pegmatite	-----	Yancey County.	SINB WASH-1128, 1969.

Table 11--Uranium occurrences in non-sedimentary rocks of North Carolina--Continued
[for location see figure no. 16]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
32.	Pig Pen Road No. 1	-----	Pegmatite	Pegmatite intrudes Precambrian gneissic granite. Maximum radioactivity (0.40 mr\hr) is 13 times background.	Yancey County. Follow Route 197 west from Burnsville to Pig Pen Road; turn right and proceed for 1.3 km to farmhouse. Prospect is here.	USAEC RME-4105, 1968.
33.	Ray Mica Mine	Columbite, monazite, autunite	Pegmatite	-----	Yancey County. The mine is located on Hurricane Mountain, 4 km south-southeast of Burnsville.	Conley, 1958; SINB WASH-1128, 1969.
34.	Yancey Cyanite Mine	-----	Kyanite-garnet-mica schists, gneiss, rare pegmatite stringers	An assay of the garnet concentrate shows 0.055% U308.	Yancey County. The mine is located 6.4 km south of Burnsville on Little Celo Mountain.	Murdock, 1950; Slaughter and Clabaugh, 1944.

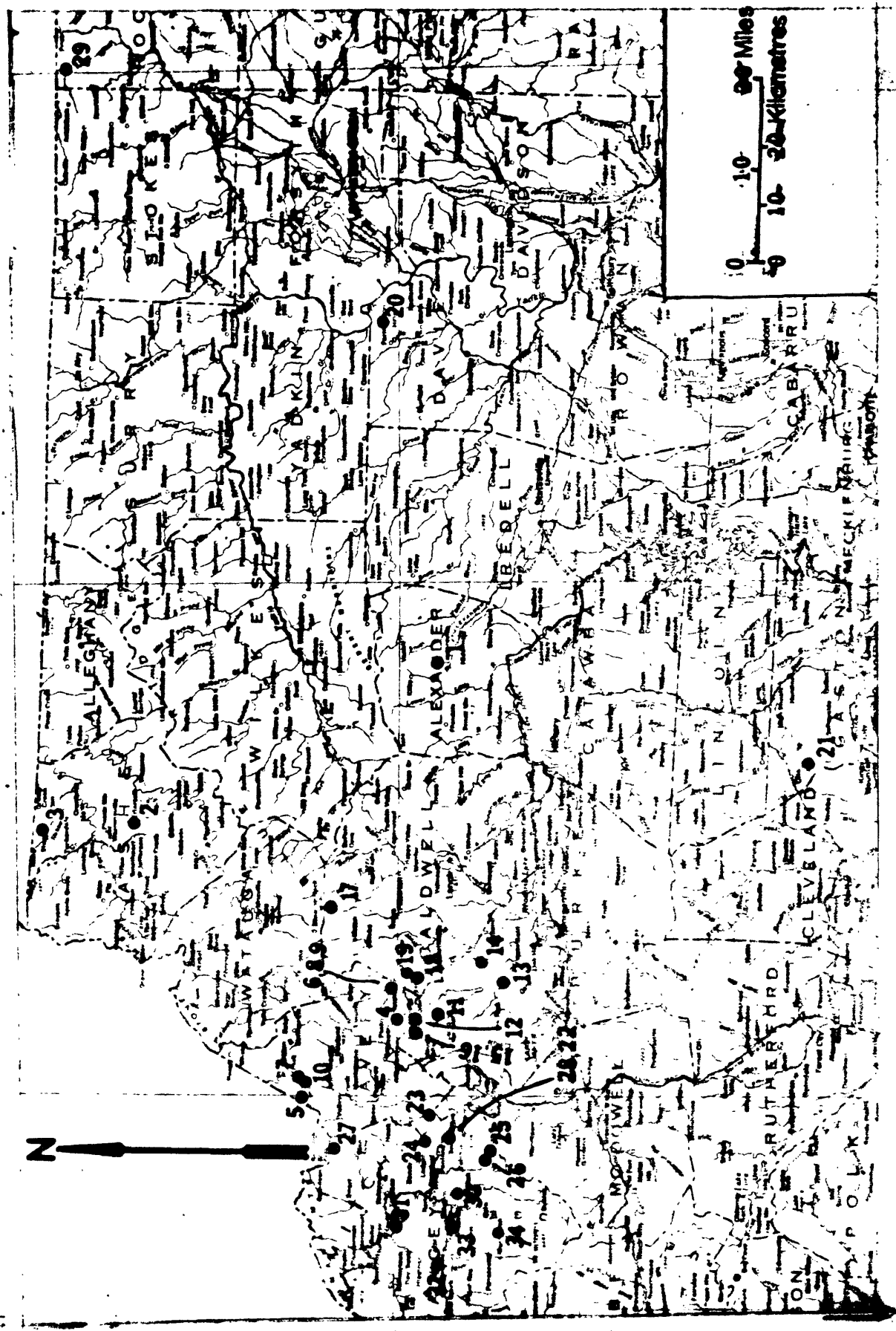


Figure 16. Uranium occurrences in non-sedimentary rocks of North Carolina

Table 12--Uranium occurrences in non-sedimentary rocks of Pennsylvania
[For location see figure 17]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
1.	Rohrbach Prospect	Uraninite(?), magnetite, ilmenite	Pegmatite(?)	This prospect is an abandoned iron mine. Chemical analyses of as much as 0.21% U3O8 have been reported. The probable host (pegmatite) intrudes fine grained ilmenite-magnetite ore, hornblende gneiss, and microcline gneiss. Gamma-ray spectrometric analysis of a split sample from 8 m long channel sample showed 12.6 ppm U, 85.3 ppm Th and 4.6% K. The channel sample was taken from a deeply weathered wall of the old strip mine and the results should not be considered representative of the uranium content of fresh rock.	Berks County. At bridge in Lobacksville, take the southeast secondary road for 5 km; turn right on dirt road for about 0.8 km to open-cut iron mine. Locality is near Pikesville in the Boyertown Quadrangle.	Butler, et al, 1962; McCawley, 1961; USAEC RME-4103, 1968; This report.
2.	Crozer's Quarry	Uraninite, gummite, autunite, torbernite	Granite gneiss, pegmatite	-----	Delaware County. The quarry is on the east side of Chester Creek about 0.4 km southwest of Chester Station, B. and O. Railroad.	Gordon, 1922.
3.	Deshong's Quarries	Gummite, autunite, torbernite	Pegmatite	-----	Delaware County. Quarries are on the east side of Ridley Creek about 0.8 km west of Leiperville.	Gordon, 1922.

Table 12--Uranium occurrences in non-sedimentary rocks of Pennsylvania--Continued
[For location see figure 17]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
4.	Dickinson's Mill (Haverford)	Uraninite, gummite, autunite	Wissahickon gneiss, pegmatite	-----	Delaware County. Locality is a cut on the Philadelphia and Western Railroad right of way, about 0.8 km north of City Line Avenue.	Gordon, 1922.
5.	Leiper's Quarry (Avondale)	Uraninite, gummite, uranophane, autunite, torbernite, molybdenite, magnetite, ilmenite, pyrite, chalcocopyrite	Granite gneiss, pegmatite	-----	Delaware County. Quarry is located on the east side of Crum Creek, 0.8 km south of the Darby-Media Trolley Line, Avondale.	Gordon, 1922
6.	Peter Green's Farm	Uraninite, molybdenite, pyrite, chalcocopyrite	Wissahickon gneiss, pegmatite	-----	Delaware County. Located south of Chester Creek, 0.4 km west of Upland Station, West Chester Branch of the P.B. and W. Railroad. Pits are in the meadow.	Gordon, 1922.
7.	Vera Cruz	Uraninite, molybdenite	Granite gneiss, pegmatite	-----	Lehigh County. The quarry is along the P. and R. Railroad right of way 0.8 km south of Vera Cruz Station.	Gordon, 1922.

Table 12--Uranium occurrences in non-sedimentary rocks of Pennsylvania--Continued
[For location see figure 17]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
8.	College Hill Reservoir	Uraninite	Precambrian Franklin Limestone	This occurrence is similar to Quarry "L".	Northampton County.	Montgomery, 1957.
9.	Quarry "L"	Uraninite, thorogummite, minor galena, chalcocopyrite, pyrite	Precambrian Franklin Marble	Uraninite occurs in phlogopite-rich serpentine horizons within the marble. A 3 meter long channel sample assayed 0.1% U ₃ O ₈ ; and a gamma-ray spectrometric analysis of a split from a 3.5 meter channel sample showed 503 ppm U, 390 ppm Th, and 1.5% K.	Northampton County. Quarry is Smith, II, located on the west side of Bushkill Gap (through Chestnut Hill), 610 meters N. 18 degrees W. of the 13th Street exit of Route 22, Easton.	Quarry is Smith, II, 1976; This report.
10.	William's Quarry	Thorite, thorianite, uraninite, thorogummite, autunite, uranophane, boltwoodite	Precambrian pegmatite, Franklin marble (serpentine)	Primary uranium and thorium minerals are found in both the pegmatite and serpentinized portions of the Franklin marble. Mineralization is spotty and difficult to find.	Northampton County. Quarry is Butler, et al 1962; 0.6 km north of Easton on the northwest side of U.S. Route 611.	Butler, et al 1962; McKeown and Klemic, 1953; Montgomery, 1957, 1969; Stewart, 1951; USAEC RME-4103, 1968; Wells, et al, 1933.

Table 12--Uranium occurrences in non-sedimentary rocks of Pennsylvania--Continued
 [[For location see figure 17]]

Location No.	Location Name	Mineralogy	Host	Comments	Location	Source of information
11.	Fairmount Water Works	Uraninite, molybdenite, ilmenite, pyrite, chalcocopyrite, gummite, autunite, torbernite	Wissahickon gneiss, pegmatite	-----	Philadelphia County. Bluffs are on the west side of the Schuylkill River, north of Spring Garden Street Bridge, opposite the old Fairmount Water Works.	Gordon, 1922.
12.	McCreas Quarry	Autunite, torbernite, gummite, uranophane, allanite, pyrite, bornite	Wissahickon gneiss, pegmatite	-----	Philadelphia County. The quarry is located at the intersection of Germantown Avenue and Mermaid Lane, Mount Airy.	Gordon, 1922.

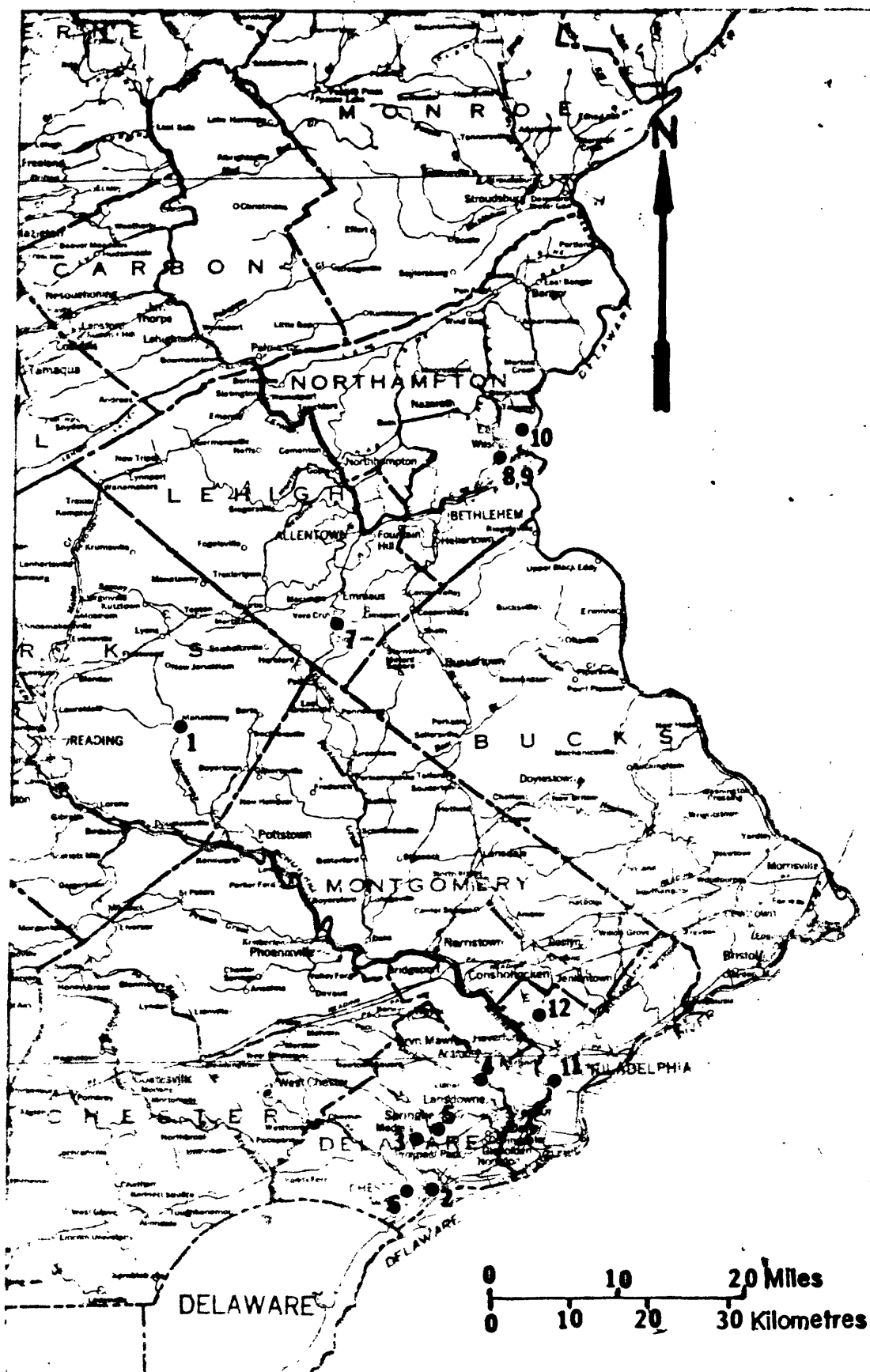


Figure 17. Uranium occurrences in non-sedimentary rocks of Pennsylvania

Table 13--Uranium occurrences in non-sedimentary rocks of Rhode Island
[For location see figure 18]

Location No.	Name	Mineralogy	Host	Comments	Location	Reference
1.	Cajoot Lead Mine	Autunite, graphite	-----	-----	Washington County. Located on Tower Hill (South Kingston), 1.6 km south of Route 138, west of Middle Bridge Road, go west to dump, others on hilltop.	Morrill and Winslow, 1969.
2.	Old Graphite Mine	Autunite, galena(?)	-----	-----	Washington County. Located on Tower Hill.	Morrill and Winslow, 1969.



Figure 18. Uranium occurrences in non-sedimentary rocks of Rhode Island

Table 14--Uranium occurrences in non-sedimentary rocks of South Carolina
[For location see figure no. 19]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
1.	Oil Camp Creek No. 1	Torbernite(?), molybdenite, pyrrhotite	Precambrian Carolina gneiss	Biotite granite occurs as lenses in the gneiss. Maximum radioactivity (0.70 mr\hr) is 23 times background.	Greenville County. The prospect is located at the headwaters of Oil Camp Creek, 1.6 km below Caesar's Head lookout tower on Route 276.	SINB WASH-1128, 1969; USAEC RME-4105, 1968.
2.	John O'Leary Tract	Iron oxides	Precambrian highly altered biotite gneiss	Lenses of iron-stained, kaolinized gneiss have a maximum radioactivity (1.5 mr\hr) about 15 times background. One sample assayed 0.16% U308.	Oconee County. Go north on Route 28 in West Union, S. Car. for 19 km; turn left on Route 271 for 7.4 km to a dirt road; proceed 1.8 km on the dirt road; take left at junction and proceed for 3.2 km. Site is on a knoll near a bend in the road.	SINB WASH-1128, 1969; USAEC RME-4105, 1968.

Abbreviation SINB hereafter refers to Southern Interstate Nuclear Board.

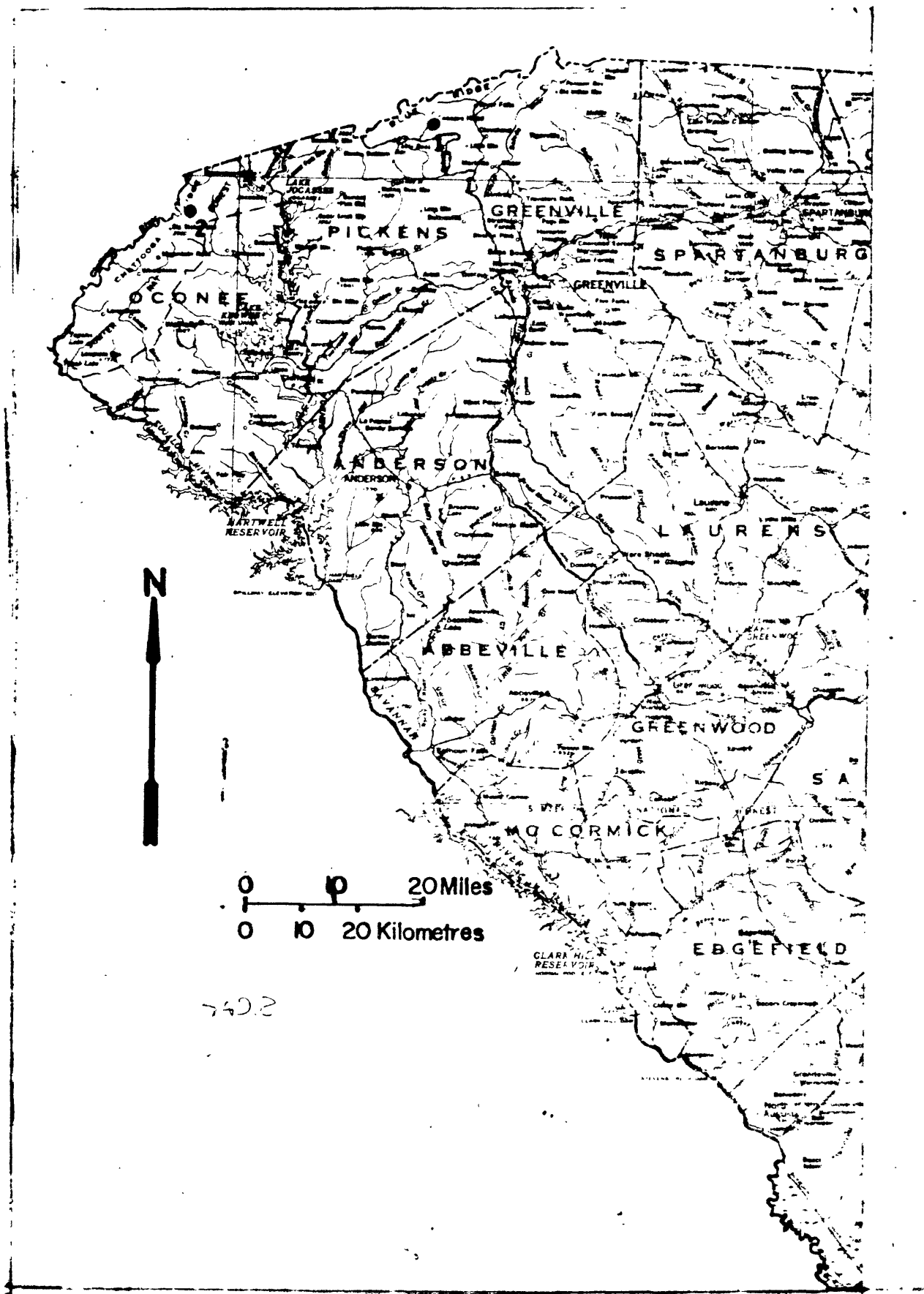


Figure 19. Uranium occurrences in non-sedimentary rocks of South Carolina

Table 15--Uranium occurrences in non-sedimentary rocks of Tennessee
[For location see figure no. 20]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
1.	Big Flats Branch	-----	Cranberry granite	Analyses range from 0.057% to 0.22% U308.	Carter County. The locality is on Big Flats Branch on the Doe River.	Stow, 1955a.
2.	Dennis Cove	-----	Pegmatite	Readings range from 4 to 10 times background (0.06 mr\hr).	Carter County.	SINB WASH-1128, 1969.
3.	Gladys Roberts	-----	Pegmatite	Radioactivity ranges from 0.035 to 0.40 mr\hr, but this is probably due to thorium.	Carter County.	SINB WASH-1128, 1969.
4.	Goodman-Nave	-----	Pegmatite(?)	Radioactivity ranges from 0.012 to 0.39 mr\hr.	Carter County.	SINB WASH-1128, 1969.
5.	Row Branch	Uraninite and base metal sulfides	-----	Analyses range from 0.021 to 0.12% U308 (Cranberry granite).	Carter County.	Butler, et al, 1962; SINB WASH-1128, 1969; Stow, 1955a.
6.	Wallnut Mountain prospect	Uraninite, thorium and rare earth minerals	Granite	The mineralization occurs as a vein in the granite.	Carter County	Butler, et al, 1962; Gabelman, 1968.
7.	Pearson	Uranothorite	Pegmatite	-----	Johnson County.	SINB WASH-1128, 1969.
8.	Carden	Samarskite	Pegmatite or vein (?)	Radioactivity ranges from 0.04 to 0.10 mr\hr.	Unicoi County.	SINB WASH-1128, 1969.

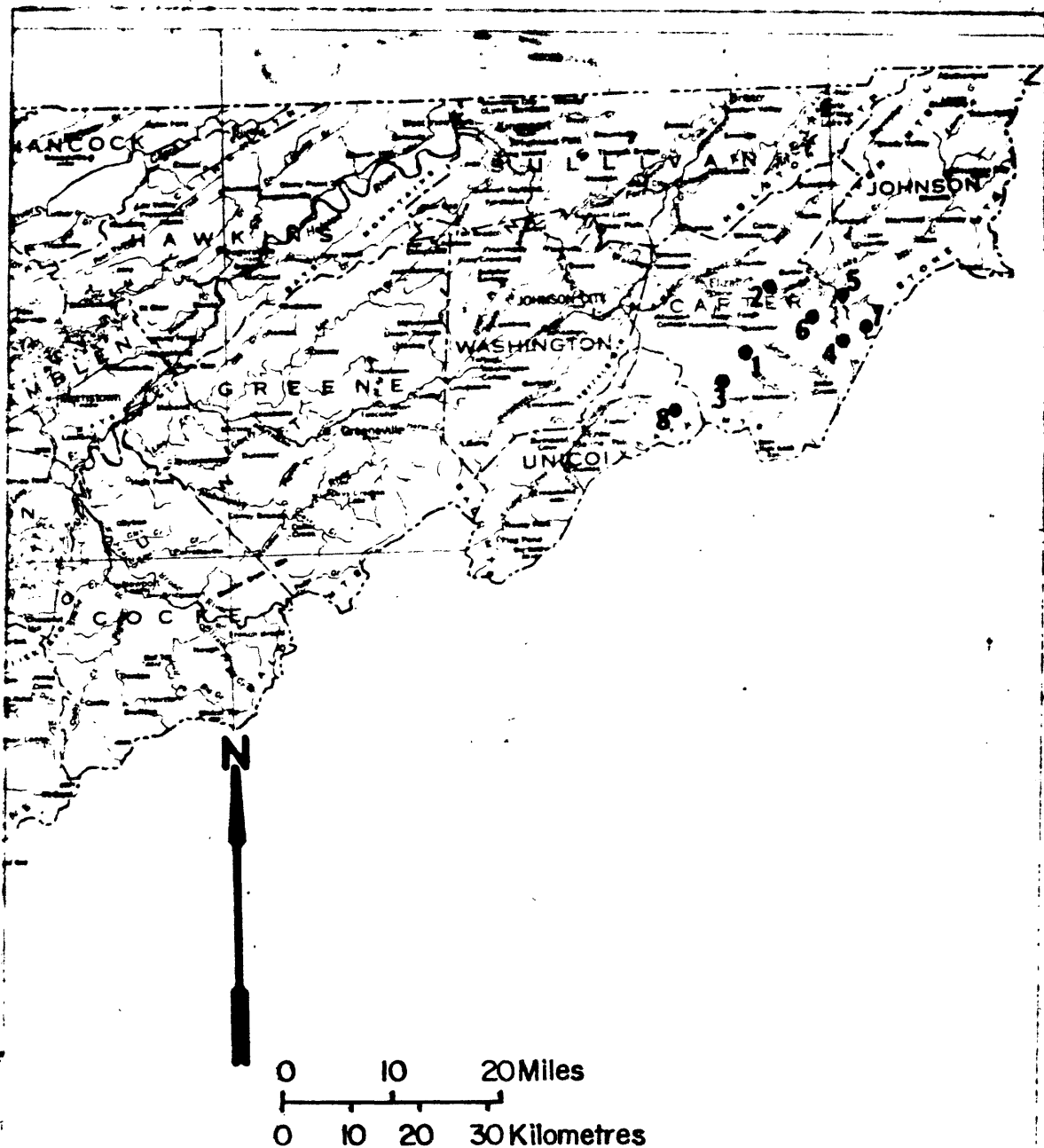


Figure 20. Uranium occurrences in non-sedimentary rocks of Tennessee

Table 16--Uranium occurrences in non-sedimentary rocks of Vermont
[For location see figure no. 21]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
1(a).	Snow Mountain(1)	Uraninite(?), magnetite, pyrite	Precambrian quartz-feldspar -biotite-chlorite gneiss, layered amphibolite	Pegmatitic segregations occur within both the gneiss and the amphibolite. Radioactivity (approximately 40 times background) is most pronounced in a coarse-grained granular quartz-feldspar -magnetite-(?) rock. Analyses showing greater than 0.1% U308 have been reported.	Bennington County. Route 30 south from the junction of Routes 11 and 30 for about 1 km. Follow signs to Snow Valley Ski Area. Test pits are located in a wooded area about 100 m southeast of the chairlift buildings at the top of Snow Mountain.	Take Gabelman, 1968; USAEC RME-4106, 1969; This report.
1(b).	Snow Mountain(2)	Uraninite(?), magnetite, allanite	Precambrian quartz-plagioclase -biotite-epidote greenstone, pegmatitic segregations.	Radioactivity (approximately 70 times background) is localized on the margins of a pegmatitic segregation within the greenstone. Both the greenstone and the pegmatitic rock have been crushed and annealed.	Bennington County. The outcrop is located on the south side of Route 11 approximately 500 m west of the junction of Routes 11 and 30 and 100 m east of the junction of Route 11 and the Appalachian Trail.	This report.

Table 16--Uranium occurrences in non-sedimentary rocks of Vermont
[For location see figure no. 21]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
2.	Milton	-----	Cambro-Ordovician Clarendon Springs Formation, dolomite	Anomalous radioactivity is associated with chert-like clay galls within an intraformational breccia. Assays showing 0.018% U308 are reported.	Chittenden County. The abnormally radioactive localities are in the Clarendon Springs dolomite between Checkerberry Village and a point 0.8 km south-southwest of Cobble Hill.	The McKeown, 1951; Stone and Dennis, 1964.
3.	Berkshire Copper Mine	Bornite, chalcopyrite	Cambrian Tibbit Hill volcanics, chlorite-albite-epidote greenstone.	Anomalous radioactivity is reported in the south dump.	Franklin County. Proceed north 2.4 km from Berkshire, turn sharp right onto a narrow dirt road, go 500 m to left fork, go 350 m to mine dump.	Grant, 1968; Morrill and Chaffee, 1964; USAEC RME-4106, 1969.
4.	Dexter's uranium prospects	Fluorite, apatite, dolomite	Cambro-Ordovician Clarendon Springs Formation, dolomite	Anomalous radioactivity is associated with phosphatic nodules within the dolomite and with fluorite veins. Delayed neutron activation analysis of a grab sample containing phosphatic nodules shows 0.032% U.	Franklin County. Contact Thomas Dexter, Dexter Mining Co., Highgate Springs.	This report.

Table 16--Uranium occurrences in non-sedimentary rocks of Vermont
[For location see figure no. 21]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
5.	Eden Township	Autunite, uranophane	-----	This is a general reference to minerals found in the county. No specific localities were mentioned.	Lamoille County, Eden Township	Morrill and Chaffee, 1964.
6.	Johnson Talc Mine	Gersdorffite, ankerite, bornite, chalcopyrite, magnesite, graphite, ilmenite, magnetite, pyrite, pyrrhotite, talc	Cambrian Camels Hump Group	This is included because of the uraninite-gersdorffite association at the nearby Udall Mine.	Lamoille County. From the junction of Routes 15 and 100C in Johnson, go northeast for 1.3 km, turn right for 0.6 km (will pass an old mine on the left), turn right for 0.5 km.	Grant, 1968; Morrill and Chaffee, 1964; USAEC RME-4106, 1969.

Table 16--Uranium occurrences in non-sedimentary rocks of Vermont
[For location see figure no. 21]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
7.	Udall Mine	Uraninite, gersdorffite, pyrite, chalcopyrite, pyrrhotite, sphalerite, galena, magnetite	Ordovician Stowe Formation, chlorite schist, quartzite, quartz-albite -muscovite schist	Uranium mineralization associated with gersdorffite is localized along a series of fractures at the contact between a unit of chlorite schist and magnetite-bearing quartzite and a unit of coarse grained quartz-albite -muscovite schist and quartzite.	Lamoille County. From Wolcott Methodist Church proceed west on Route 15 for 4.8 km. At this point take dirt road to the right for approximately 1400 m. At this point there is a rather indistinct fork to the right; follow the fork 260 m to abandoned mine workings.	Albee, 1957; Gabelman, 1968; Grant, 1968; Morrill and Chaffee, 1964; USAEC RME4106, 1964; White, et al, 1946; This report.

Table 16--Uranium occurrences in non-sedimentary rocks of Vermont
[For location see figure no. 21]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
8.	East Braiktree Arsenic Mine	Arsenopyrite, pyrite	Devonian Waits River Formation, black phyllite	Anomalous radioactivity of approximately 10 times background can be observed in the area of the main arsenopyrite vein. No specific radioactive minerals have yet been identified.	Orange County. Proceed south on Route 12 from East Braintree for approximately 0.8 km. Just south of the bridge turn east on a dirt road. Continue for about 0.5 km to a fork in the road, stay right and park just beyond the fork, walk along the road to an intermittent stream. Just beyond the stream is a trail to the right, follow the trail to the abandoned mine.	Grant, 1968; This report.
9.	Allen Mica Prospect	Graphite, muscovite, tourmaline	Pegmatite(?)	Anomalous radioactivity is reported.	Rutland County. From junction of Routes 4 and 100 west of Sherburne Center proceed north on Route 100 for 4.5 km, go due east for about 170 m to a 9 m long open cut.	Morrill and Chaffee, 1964.

Table 16--Uranium occurrences in non-sedimentary rocks of Vermont
[For location see figure no. 21]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
10.	Tweed River Mine	Muscovite, tourmaline	Pegmatite(?)	Anomalous radioactivity reported.	Rutland County. From junction of Routes 4 and 100 west of Sherburne Center proceed north on Route 100 for 8.6 km, turn east for 0.8 km, mine is near crest of hill.	Morrill and Chaffee, 1964.
11.	Uranium prospect	-----	-----	Reported as "uranium" prospect. No details are given.	Rutland County. The prospect is located approximately 1 km northwest of Devil's Den on Route 10, Green Mountain National Forest.	Morrill and Chaffee, 1954.
12.	Chester Mica Prospect	-----	Pegmatite(?)	Anomalous radioactivity is reported.	Windor County. The prospect is 3.2 km north of Chester.	Morrill and Chaffee, 1964.
13.	Soapstone Quarry	Steatite	-----	Anomalous radioactivity is reported.	Windor County, Tudlow Township.	Morrill and Chaffee, 1964.

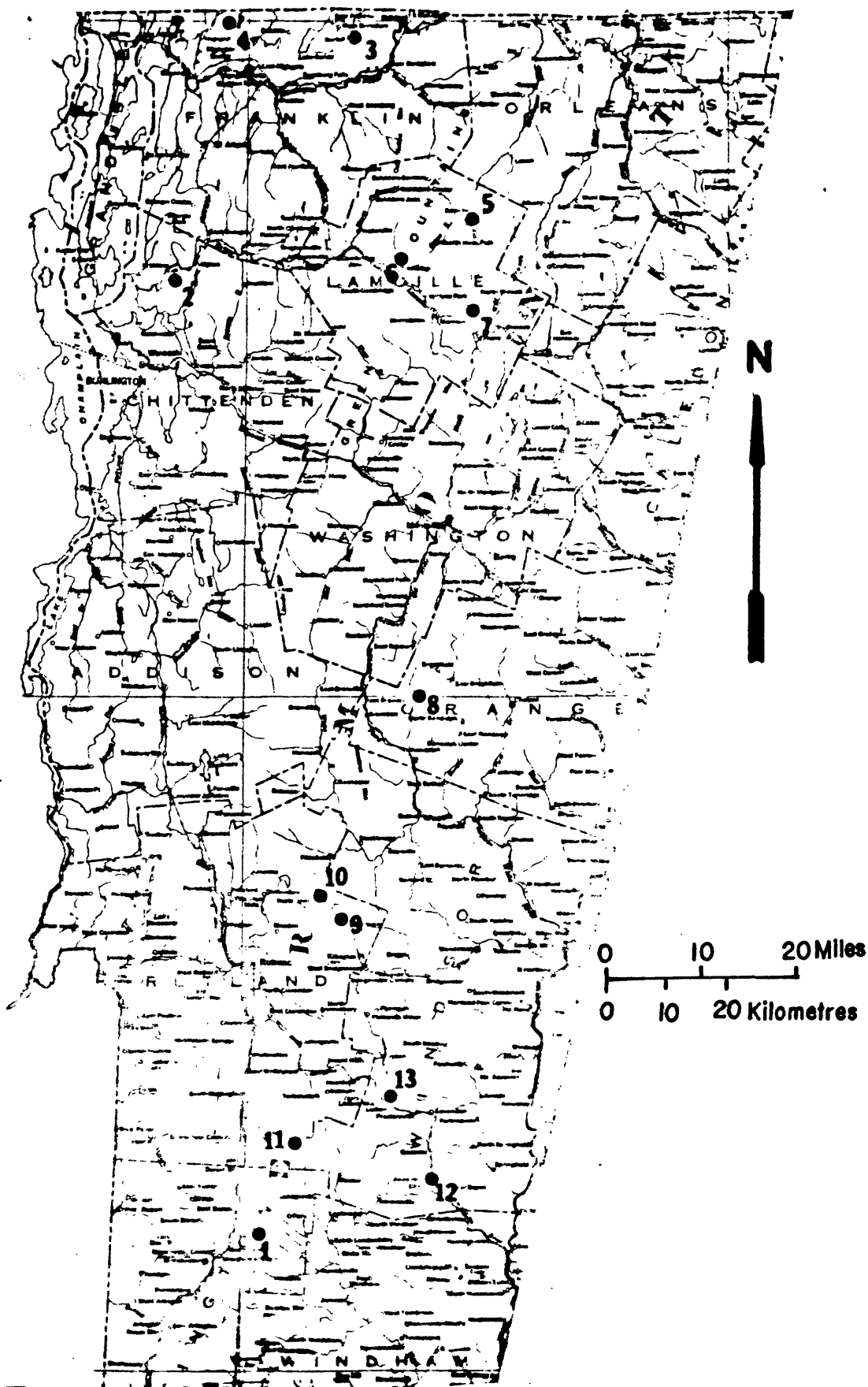


Figure 21.-Uranium occurrences in non-sedimentary rocks of Vermont.

Table 17--Uranium occurrences in non-sedimentary rocks of Virginia
[For location see figures no. 22 and 23]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
1.	Charlottesville area	-----	Lovingsston granite gneiss	The radioactivity is concentrated in a zone of weathered schist and gneiss. One sample assayed 0.04% U3O8, but most of the radioactivity is probably due to thorium.	Albemarle County. The locality is 14.5 km northeast of Charlottesville, near the airport.	Stow, 1955a, 1955b.
2.	Rutherford Mine	Fergusonite, samarskite, monazite, phosphuranlylite, autunite, allanite, columbite, microcline	Precambrian pegmatite	Pegmatite is intrusive into biotite gneiss.	Amelia County. The mine is located 2 km north of Amelia and 1.6 km southwest of the main producing area.	Dietrich, 1953; Pegau, 1928.
3.	Road cut (Route 122)	-----	Lovingsston granite gneiss	Outcrops show anomalous radioactivity up to 0.15 mr/hr.	Bedford County. Outcrops are along Virginia Route 122, between Bedford and Big Island.	Stow, 1955a.
4.	Culpepper Area	-----	Lovingsston granite gneiss, pegmatite	Anomalous radioactivity up to 2.5 mr/hr occurs. Assays range from 0.007 to 0.098% U3O8. Radioactivity is probably mostly due to thorium. Gabelman reports pegmatite; Stow mentions only the Lovingsston	Culpepper County. The road cuts are 12.8 km west of Culpepper along Virginia Highway 715.	Gabelman, 1968; Stow, 1955a, 1955b.

Table 17--Uranium occurrences in non-sedimentary rocks of Virginia--Continued
[For location see figures no. 22 and 23]

Location No.	Name	Mineralogy	Host	Comments	Location	Source of information
5.	Independence area	-----	Grayson granite gneiss	Exposures show anomalous radioactivity as high as 0.40 mr\hr. No concentrated mineralization was found.	Grayson County. Road cut exposures are in the vicinity of Independence.	Stow, 1955a, 1955b.
6.	Chestnut Knob area	Magnetite, monazite	Precambrian Wissahickon schist	Magnetite-bearing schist shows anomalous radioactivity as high as 1.6 mr\hr. Radioactivity is probably due mostly to thorium.	Henry County. The locality is east of Chestnut Knob, between Ridgeway and Spencer along Va. 687.	Stow, 1955a, 1955b.
7.	Woodville area	-----	-----	Radioactive soils in a metamorphic belt show anomalies up to 2 mr\hr.	Rappahannock County. The locality is near Woodville.	SINB WASH-1128, 1969.
8.	Powers prospect	Manganese oxides	Knox dolomite	Manganese oxide veinlets are anomalously radioactive.	Scott County.	Gabelman, 1968.

Abbreviation SINB refers to Southern Interstate Nuclear Board.

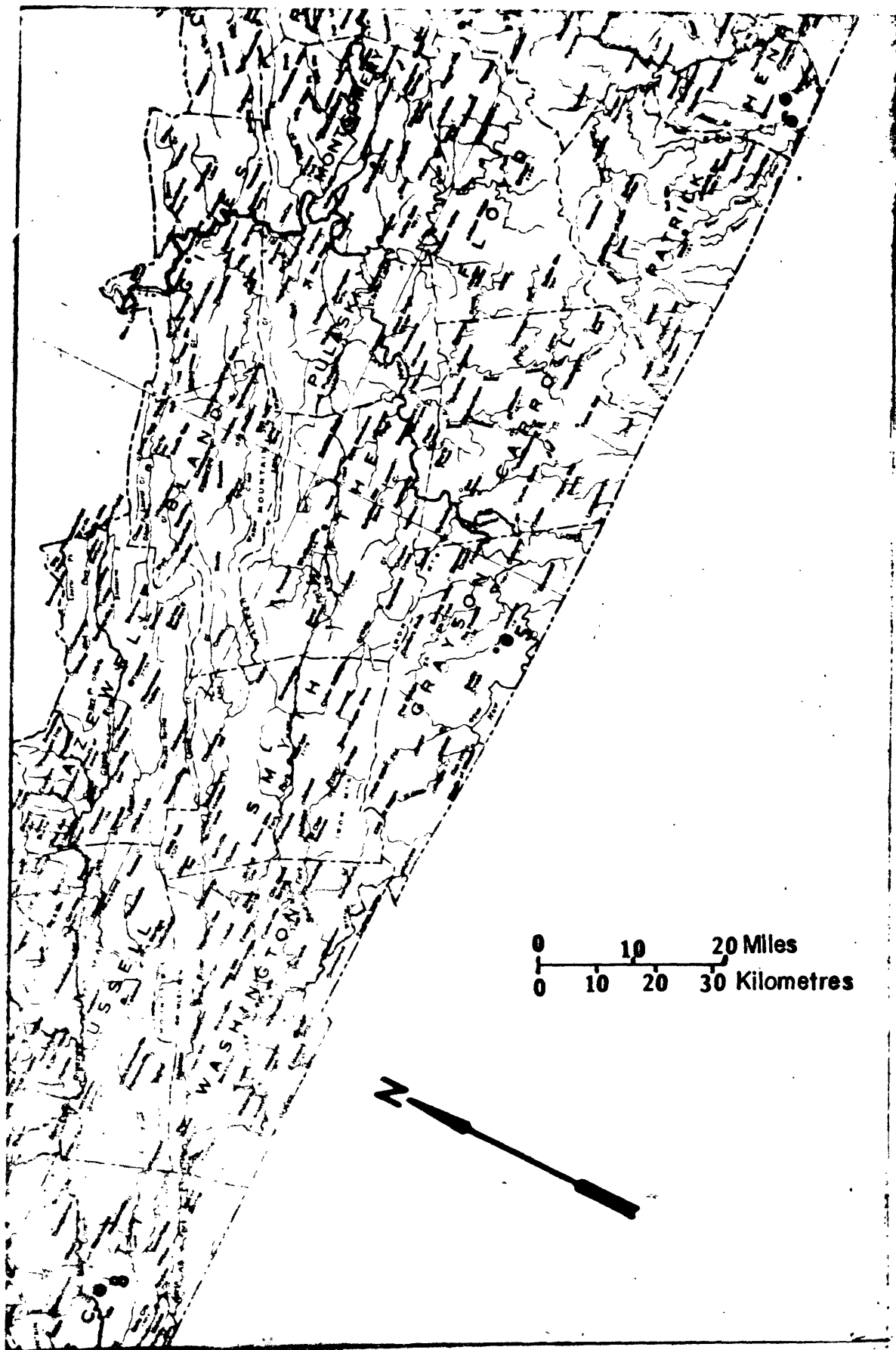


Figure 22. Uranium occurrences in non-sedimentary rocks of southwest Virginia

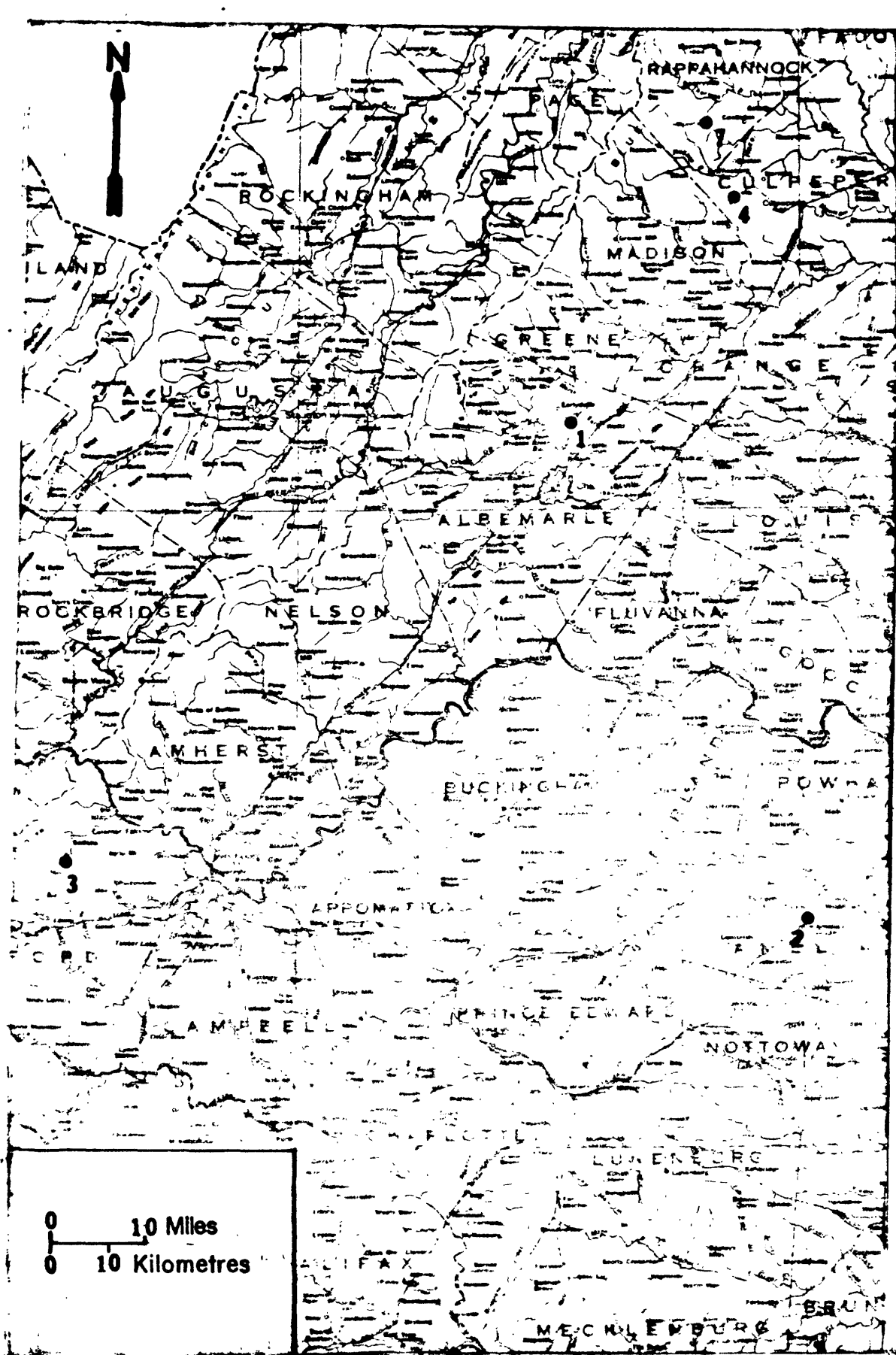


Figure 23. Uranium occurrences in non-sedimentary rocks of north central Virginia

Table 18--Selected references arranged according to State

Alabama	Butler and Chesterman, 1945; Gableman, 1968; Johnson, 1953; SINB, 1969; Stow, 1955a; USAEC RME-4104, 1968a.
Connecticut	Butler and others, 1962; Cameron and others, 1945; Comstock, 1880; Foye, 1922; Gableman, 1968; Hess and others, 1942; Ingerson, 1938; Jannuzzi, 1959; McKeown, 1951; Popenoe, 1946a, 1946b, 1966; Rice and Foye, 1927; Schairer, 1931; Shainin, 1946; Shannon, 1920; USAEC RME-4106, 1969; Zietz, 1974
Georgia	Butler and Chesterman, 1945; Butler and others, 1962; Furcron, 1955; Gableman, 1968; Heinrich and others, 1953; Hurst and Otwell, 1964; Johnson, 1953; SINB, 1969; Stow 1955a, USAEC RME-4104, 1968a; Walker and Osterwald, 1963
Maine	Bastin, 1911; Cameron and others, 1954; Dana, 1886; Emmons, 1910; Gableman, 1968; Hess and others, 1943; Klemic, 1954; McKeown and Klemic, 1953b, 1953c; Morrell, 1958; Morrell and Hinckly, 1959; Nelson and Narten, 1951; Shainin and Dellwig, 1954; Smith and Maslowski, 1937; USAEC RME-4106, 1969; Winteringham, 1955
Maryland	Blanchett, 1966a, 1966b, 1966c, 1966d; Bromery and others, 1964; Gableman, 1968; Neuschel, 1965; Ostrander and Price, 1940; Pearre and Heyl, 1960; Shannon, 1926; SINB, 1969; USAEC RME-4103, 1968
Massachusetts	Billings, 1941; Billings and Wolfe, 1944; Clapp, 1921; Emerson, 1895, 1917; Hess and others, 1943; Hitchen, 1935; Johnson, 1951; Julien, 1878; Popenoe, 1964a, 1964b, 1966; Richmond, 1937; USAEC RME-4106, 1969
Michigan	Butler and others, 1962; Gableman, 1968; James and others, 1968; USAEC RME-150, 1968b; Vickers, 1953a, 1954a, 1954b, 1955, 1956a, 1956b; Walker and Osterwald, 1963; White, 1950

Table 18--Selected references arranged according to State--Continued

New Hampshire	Adams, 1962; Brimhall and Adams, 1969; Butler, 1956, 1957, 1961; Butler and Byers, 1975; Cameron and others, 1954; Chapman, 1953; Emmons, 1910; Lyons and Larsen, 1958; McKeown, 1951; Megathlin, 1928; Meyers, 1941; Page and Larrabee, 1962; Phair, 1956; Popenoe, 1964a, 1964b; Reskovac and Trundle, 1967; Shaub, 1937, 1938; Shortle, 1936; Verrow, 1941
New Jersey	Boynton and others, 1966; Butler and others, 1962; Gableman, 1968; Haji-Vassilow and others, 1974; Klemic, 1954; McKeown and Klemic, 1953a, 1953b, 1953c; Sims, 1958; Stewart, 1951; USAEC RME-4106, 1969; Walker and Osterwald, 1963; Walthier, 1955; Wilkerson, 1958; Wood, 1967
New York	Bannerman, 1972; Bodelson, 1948; Butler and others, 1962; Eng. and Min. Jour., 1957; Gableman, 1968; Howard Univ., 1974; Januzzi, 1959; Klemic, 1954; Klemic and others, 1959b; Luedke and others, 1959; McKeown, 1951, 1954; McKeown and Klemic, 1953a, 1953b, 1953c, 1956; Narten and McKeown, 1952; Popenoe, 1964a, 1964b, 1966; Prucha, 1955; Rowley, 1960, 1962; Schreiber, 1958; Shaub, 1940; USAEC RME-4106, 1969; Walker and Osterwald, 1963; Walthier, 1955; Zodac, 1939
North Carolina	Bryant and Reed, 1966, 1970; Butler and Chesterman, 1945; Butler and others, 1962; Butler and Stansfield, 1968; Conley, 1958; Councill, 1955; Epps and Castain, 1971; Gableman, 1958; Griffitts and others, 1953; Johnson, 1953; Murdock, 1950; Olson, 1944, 1952; Oriel, 1950; Overstreet and others, 1960, 1962; Parker, 1952; Reed, 1964; Slaughter and Clabaugh, 1944; SINB, 1969; Stow, 1955a; USAEC RME-4105, 1968d; Walker and Osterwald, 1963; Walthier, 1955
Pennsylvania	Bolger, 1955; Butler and others, 1962; Gableman, 1968; Gottfried, 1959a, Klemic, 1954; McCauley, 1961; McKeown, 1954; McKeown and Klemic, 1953a, 1953b, 1953c; Montgomery, 1957, 1969; Pearre and Heyl, 1960; Stewart, 1951; USAEC RME-4103, 1968c; Walker and Osterwald, 1963; Walthier, 1953; Wells and others, 1933
Rhode Island	Emerson, 1917; McKeown, 1951; Popenoe, 1964a, 1964b, 1966; Smith and Cisney, 1956

Table 18--Selected references arranged according to State--Continued

South Carolina	Heron and Johnson, 1969; Johnson, 1953; Overstreet and others, 1960; SINB, 1969; Stow, 1955a; USAEC RME-4105, 1968
Tennessee	Butler and others, 1962; Butler and Stansfield, 1968; Gableman, 1968; Johnson, 1953; SINB, 1969; Stow, 1955a; USAEC RME-4104, 1968a; Walker and Osterwald, 1963
Vermont	Albee, 1957; Butler and others, 1962; Cameron and others, 1954; Gableman, 1968; Grant, 1968; McKeown, 1951; Morrill and Chaffee, 1964; Popenoe, 1964a, 1964b; Stone and Dennis, 1964; USAEC RME-4105, 1969; Walker and Osterwald, 1963; White and others, 1946
Virginia	Blanchett and others, 1966c,d; Dietrich, 1953; Epps and Costain, 1971; Gableman, 1968; Gottfried, 1959b; Griffits and others, 1953; Johnson, 1953; Larsen, 1959; Neuschel, 1965; Pegau, 1928; SINB, 1969; Stow, 1955, a,b; USAEC-RME-4104, 1968a

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