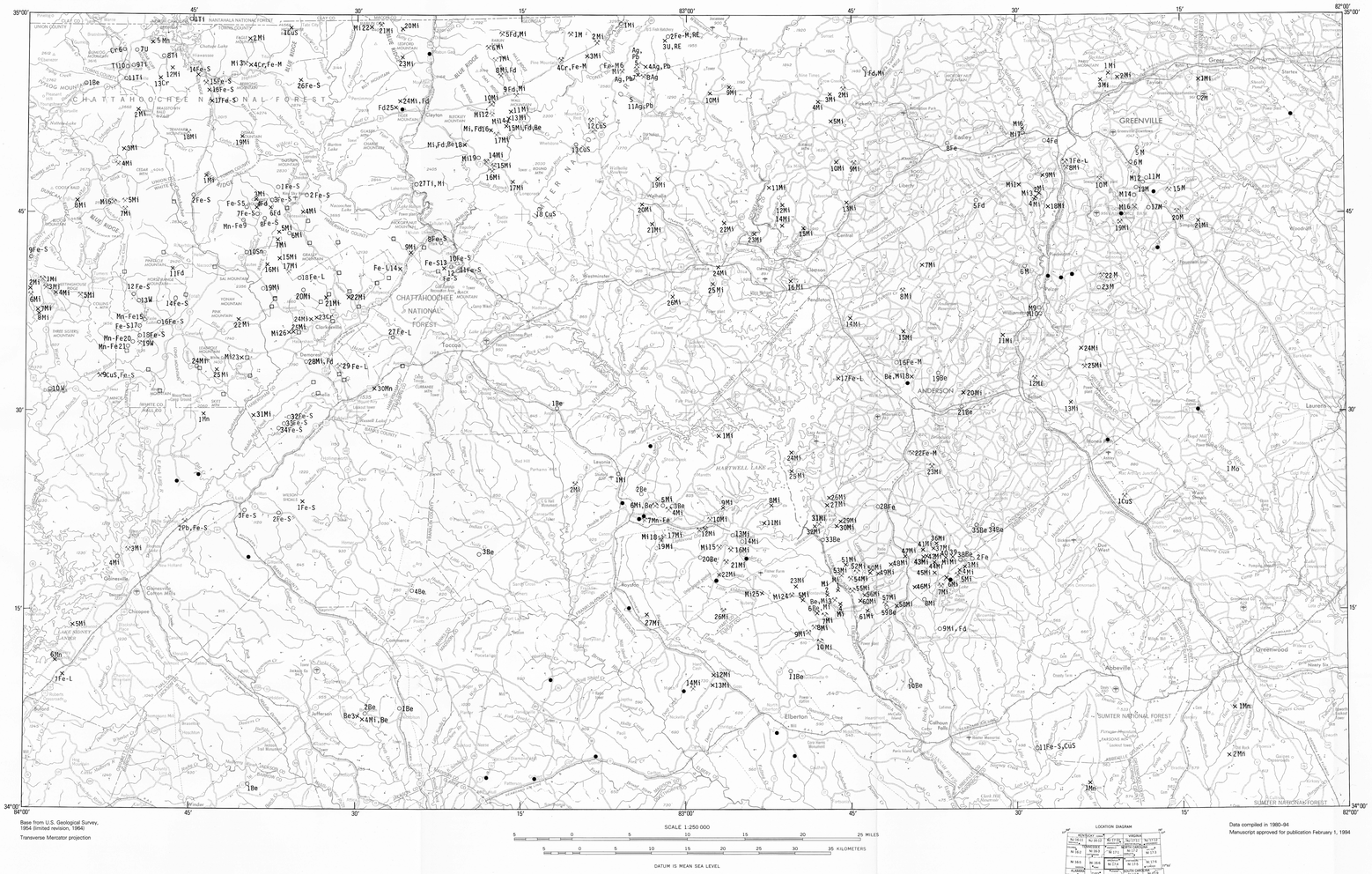
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF–2215–B



Base from U.S. Geological Survey, 1954 (limited revision, 1964)

Transverse Mercator projection

Figure 1.—Counties in the Greenville 1° × 2° quadrangle.

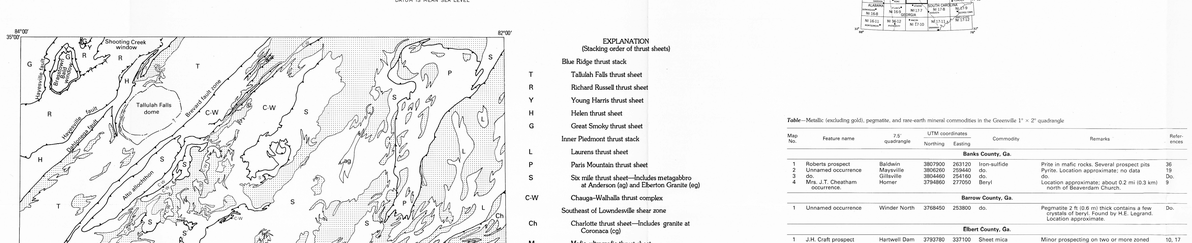


Figure 2.—Generalized tectonic map of the Greenville 1° × 2° quadrangle (modified from Nelson and others, 1989, 1990).

EXPLANATION

DEPOSIT

(Numbers refer to Map No. in table, listed by county; letters refer to commodity or other, listed below)

- 2CuS ⛏ Mine
- 6Fe-L ✕ Prospect
- 7Be ○ Occurrence
- □ Scheelite occurrence*
- ● Monazite occurrence**

COMMODITY

(Numbers in parentheses are number of deposits or occurrences: Georgia; South Carolina)

- **Ag** Silver (1; 4)
- **Be** Beryl (24; 10)
- **Cr** Chromium (chromite) (5; 0)
- **CuS** Copper-sulfide (2; 4)
- **Fd** Feldspar (12; 3)
- **Fe** Iron (0; 4)
- **Fe-L** Iron-limonite (6; 2)
- **Fe-M** Iron-magnetite (2; 4)
- **Fe-S** Iron-sulfide (30; 1)
- **M** Monazite (1; 17)
- **Mi** Mica (119; 109)
- **Mn** Manganese (4; 3)
- **Mn-Fe** Manganese-iron (nodules) (5; 0)
- **Mo** Molybdenum (molybdenite) (0; 1)
- **Pb** Lead (1; 3)
- **RE** Rare earths (0; 2)
- **Sn** Tin (cassiterite) (1; 0)
- **Ti** Rutile (5; 1; 1*)
- **U** Uranium (1; 1)
- **W** Tungsten (scheelite) (3; 0)

OTHER

- **S** Smelter

* Fluorescent mineral scheelite in stream alluvium reported by Hunt and Crawford in Habersham County (ref. 22) and by Hunt and Otwell in White County (ref. 23).

** Rare-earth mineral monazite found mostly in stream alluvium and occasionally in bedrock; reported by John B. Mertie, Jr. (refs. 30 and 31).

* Clay County, N.C.

Data compiled in 1980–94

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LOCATION DIAGRAM

MINES, PROSPECTS, AND OCCURRENCES OF METALLIC (EXCLUDING GOLD), PEGMATITE, AND RARE-EARTH MINERAL COMMODITIES IN THE GREENVILLE 1° × 2° QUADRANGLE, SOUTH CAROLINA, GEORGIA, AND NORTH CAROLINA

By

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DISCUSSION

All of the known mines, prospects, and occurrences of metallic (excluding gold), pegmatite, and rare-earth mineral commodities for the Greenville 1° × 2° quadrangle are tabulated in this report. The table lists, in consecutive order for each county (fig. 1), the map number of each item, which correlates and locates the item on the accompanying Greenville 1° × 2° quadrangle map. The known name of the feature; the 7.5′ topographic map on which the commodity site is located; the Universal Transverse Mercator (UTM) northing and easting grid coordinates from the appropriate 7.5′ topographic map; the commodity; remarks; and references are also listed. Some locations are known, but many sites are not verified and their locations are only approximate. References are listed in References Cited and referred to by number to save space.

All of the features listed in the table are shown on the map. In addition, occurrences of the uncommon fluorescent mineral scheelite in stream alluvium, as reported by Hunt and Crawford (ref. 22, p. 15) for Habersham County, Ga., and by Hunt and Otwell (ref. 23, p. 13) for White County, Ga., are shown on the map by an open square (□). Occurrences of the rare-earth monazite, found mostly in stream alluvium and occasionally in bedrock, as reported by John B. Mertie (refs. 30 and 31), are shown by a solid dot (●). The generalized tectonic framework for the quadrangle is shown in figure 2.

There are no major mines or mineral-producing areas in the Greenville 1° × 2° quadrangle. During the 1700's and 1800's, farmers hand-collected surface accumulations of cobbles of iron and manganiferous iron gravel, which formed from the weathering of low-grade iron and manganiferous iron-bearing bedrock (Haseltine, ref. 318, p. 130). These small amounts of ore were used by charcoal furnaces to supply crude iron products to the local populace. No major iron ore or manganese ore deposits have been found in the quadrangle. Iron minerals of several varieties have been cited for 49 locations in this report—38 in Georgia and 11 in South Carolina. In this study, iron gossan of unknown origin is referred to as Fe, limonite as Fe-L, magnetite as Fe-M, and pyrite as Fe-S. An additional five sites for manganiferous iron nodules (Mn-Fe) are reported for Georgia. Small amounts of gossan manganese ore (Mn) are reported in seven places, four in Georgia and three in South Carolina, though traces of residual manganese stain and film are quite common on the bedrock of the area.

Copper sulfides have been found in bedrock at six locations in the quadrangle—two locations in Habersham County, two in South Carolina. At one site, the Chestatee pyrite mine, Lumpkin County, Ga., prospecting for copper was unsuccessful because the copper-sulfide mineral, chalcopyrite, was present in too small amount (Shearer and Hull, ref. 36, p. 182). The pyrite was mined from 1918 to 1919 for its sulfur content to make sulfuric acid (Bain and Hull, ref. 25, p. 1 and 3).

Silver-bearing galena has either been prospected or mined at four locations in a small district in Oconee County, S.C. A smelter was built in the area of the mines, but no production is recorded (Gaadik, ref. 12). A silver sulfide was prospected with no known results on the Stephenson vein at The Glades in Hall County, Ga. (Jones, ref. 24, p. 133). One report of lead is from a gold-bearing quartz vein at the Cumshaw mine, Hall County, Ga. (Jones, ref. 24, p. 141).

For this report, mineral commodities consist of mica, feldspar, and beryl. Presently, only small amounts of scrap mica are obtained from several mica mines in Georgia and South Carolina that are in operation within the quadrangle. During World War II, sheet-mica production from numerous small mines annually totaled several thousand pounds, with most mining activity centered in Hart and Elbert Counties, Ga., and Anderson and Pickens Counties, S.C. Since then, the number of active mines and production have steadily declined. This report lists a total of 228 mines, prospects, and occurrences of mica in the Greenville 1° × 2° quadrangle—119 locations in Georgia and 109 locations in South Carolina.

In the Greenville quadrangle, feldspar has been noted at 12 pegmatite locations in Georgia and at 3 locations in South Carolina; beryl has been noted in 34 pegmatite locations—24 in Georgia and 10 in South Carolina.

Monazite, a source of thorium and several other rare-earth elements, was mined from stream placers in the late 1800's and early 1900's. In this report 20 occurrences of rare-earth minerals (mostly monazite) are given in the table—1 in Georgia and 19 in South Carolina. Thirty additional monazite sites are shown on the map.

According to Van Horn (ref. 43, p. 11), there is a possibility that placer occurrences of rutile, an ore of titanium, may be of economic importance at four locations in Towns County, Ga., and at one location in Clay County, N.C. A bedrock occurrence of rutile is reported in Rabun County, Ga. The uncommon minerals, the ore of chromium, chromite, has been identified at five locations in Georgia but in amounts too small to be minable. Grains of scheelite, an ore of tungsten, have been identified in stream alluvium at 24 sites and in one outcrop in Habersham County, Ga., by Hunt and Crawford (ref. 22, p. 15) and at 11 sites in White County, Ga., by Hunt and Otwell (ref. 23, p. 13) during a special research program. Blake (ref. 2) reported that a grain of wood tin or cassiterite, an ore of tin, was identified with native gold in the alluvium of the Nacoochee River, White County, Ga.

The only molybdenum occurrence in the Greenville quadrangle is at Masters Kiln, Laurens County, S.C., where Clarke (ref. 5) noted molybdenite in a contact between marble and quartz monzonite. Prospecting for uranium deposits prior to 1980 was not successful in the Greenville quadrangle (Ferguson and others, ref. 8).

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Table—Metallic (excluding gold), pegmatite, and rare-earth mineral commodities in the Greenville 1° × 2° quadrangle

Map No.	Feature name	7.5′ quadrangle	UTM coordinates Northing	UTM coordinates Easting	Commodity	Remarks	References
					Banks County, Ga.		
1	Roberts prospect	Baldwin	3807900	263120	Iron-sulfide	Pyrite in mafic rocks. Several prospect pits	36
2	Unnamed occurrence	Maysville	3806260	259440	do.	Pyrite. Location approximate; no data	19
3	do.	Gillsville	3804460	254160	do.	do.	19
4	Mrs. J.T. Cheatham prospect	Homer	3794860	277050	Beryl	Location approximate; about 0.2 mi (0.3 km) north of Ravensdam Church.	9
					Barrow County, Ga.		
1	Unnamed occurrence	Winder North	3766450	253800	do.	Pegmatite 2 ft (0.6 m) thick contains a few crystals of beryl. Found by M.E. Legrand. Location approximate.	Do.
					Elbert County, Ga.		
1	J.H. Craft prospect	Hartwell Dam	3793780	337100	Sheet mica	Minor prospecting on two or more zoned pegmatite bodies.	10, 17
2	Turner prospect	do.	3793080	335920	do.	Zoned pegmatite, stained mica. Mostly trenched.	17
3	Cooley mine	do.	3791900	337580	Sheet mica and beryl.	Poor-quality sheet mica, minor beryl. Worked in World War II.	9, 10, 17
4	J.M. Skelton prospect	do.	3791350	337880	Sheet mica	Zoned pegmatite. Poor-quality mica	17
5	C.U. Gaines prospect	do.	3792830	332030	do.	Poor-quality mica	10, 17
6	Ruckersville Church prospect	do.	3790620	333560	Beryl and mica	7 beryl crystals 2 kg (4 lb) or more found.	9, 10, 17
Do.	M.L. Gaines mine	do.	3790060	333940	Sheet mica	Zoned pegmatite, small books, fair quality; minor beryl.	17, 26
7	Crawford and Daniel do.	do.	3790030	335540	do.	Zoned pegmatite. Crawford workings north of Daniel workings. Several pits. Poor-quality and small-size sheet mica.	Do.
8	Alexander mine	do.	3789810	333590	Sheet mica and beryl	Zoned pegmatite, poor-quality mica, minor beryl.	9, 10, 17
Do.	Ward prospect	do.	3788710	334240	do.	Location approximate	10, 17
9	Chapman mine	do.	3788400	332560	do.	Zoned pegmatite, zoned pegmatite, poor-quality mica, minor beryl.	9, 10, 17
Do.	Anderson mine	do.	3787840	332240	Sheet mica	Zoned pegmatite; stained mica	17
10	do.	do.	3787560	332040	do.	Small sheet mica in poor-quality pegmatite	9
11	Harmony Church occurrence	do.	3783340	329200	Beryl	Minor amounts of beryl reported from several pegmatites near Harmony Church. Location approximate.	9
12	Dewey Rose prospect	Dewy Rose	3782560	319760	Sheet mica	Mica sparse; small books	17
13	Hamilton prospect	do.	3781030	318760	do.	Mica sparse; small books	17
14	Adams mine	do.	3780790	316620	do.	Only minor amounts of mica	Do.
					Franklin County, Ga.		
1	Occurrences along Georgia Highway 17	Lavonia	3809300	306950	do.	Several pegmatite bodies. Poor-quality mica.	10, 20
2	Weldon mine	Martin	3809600	300700	do.	Two zoned pegmatites prospected	9
3	MacCannon property	Ashland	3799800	301700	Beryl	Location uncertain	9
					Habersham County, Ga.		
1	Unnamed occurrence	Lake Burton	3851000	261500	Iron-sulfide	Pyrite. Location approximate; no data	19
2	do.	do.	3850540	260500	do.	do.	19
3	do.	do.	3851100	260940	Iron-limonite	Pale-yellow colors of gossan with amphibolite	22
4	W.L. Morrison prospect	do.	3851150	263780	do.	Adit 40 ft (12.2 m) on gossan zone	22
5	Felton Shook prospect	Clarkesville NE.	3847570	260180	do.	Small pit 20 ft (6.1 m) long, 15 ft (4.6 m) wide, and 8 ft (2.4 m) deep.	22
6	Terrell Barron occurrence	do.	3846380	261680	do.	Small magnetite with some mica-rich pods in biotite gneiss. Pit 3 ft (0.9 m) deep.	22
7	Nancy Holcomb prospect	do.	3844620	260040	do.	Located in Chattahoochee National Forest. Small prospect pit 8 ft (2.4 m) in diameter, 4 ft (1.2 m) deep.	22
8	J.B. Lewis prospect	Tugaloo Lake	3843560	283400	Iron-sulfide	Pyrite. Location approximate; no data	19
9	Pete prospect	do.	3842180	282050	do.	Small amount of pyrite	19, 26
10	Unnamed occurrence	Tugaloo Lake	3841160	278980	do.	Pyrite. Location approximate; no data	19
11	do.	do.	3840140	284550	do.	do.	19
12	do.	do.	3840340	284000	do.	Pyrite. Location approximate; no data	19, 26
13	Panther Creek prospect	do.	3839880	282450	do.	Pyrrhotite vein 1 to 3 ft (0.3 to 0.9 m) thick and 75 ft (22.9 m) long.	22, 36
14	W.C. Moore prospect	Tallulah Falls	3840340	276880	Iron-ilmenite	Siliceous and micaceous ilmenite. May be titaniferous magnetite.	22
15	Orkney Lyon prospect	Clarkesville NE.	3841620	269100	Sheet mica	Pegmatite. Sheet mica of poor quality	Do.
16	Jim Carter prospect	Helen	3841400	258240	do.	Pegmatite at fork of small branch. Also present in stream 100 ft (30 m) to south	Do.
17	C.P. Wilbanks mine	Clarkesville NE.	3840570	260990	do.	Pegmatite dike 4 ft (1.2 m) thick. Mined about 1935 for sheet mica. Pit 20 ft (6.1 m) in diameter, 12 ft (3.6 m) deep. Was Victor prospect.	Do.
18	Unnamed occurrence	do.	3838560	263040	Iron-ilmenite	Flat-size cobbles of gossan with ilvaite (lievrite)	Do.
19	C.W. Lindsey occurrence	Helen	3838200	257680	Sheet mica	Pegmatite. Sheet mica of poor quality	Do.
20	Roy Stephens occurrence	Clarkesville NE.	3838700	263120	do.	Pegmatite boulders in road cut	Do.
21	Arrendale Feed Co. prospect	do.	3837300	264580	do.	Three small prospect pits; also scrap mica. Was Alec Addison prospect.	Do.
22	Kolloch prospect	Tallulah Falls	3836440	271150	do.	In one of old roads; small books of sheet mica from a shaft 10 ft (3 m) deep on pegmatite.	10, 17, 26
23	Beaverdam Creek prospect	Clarkesville	3833670	265660	Chromium	Small pods of chromite in schist with Fe-Mn nodules	Do.
24	Mrs. C.H. Black prospect	do.	3843440	264430	Sheet mica	Trench 25 ft (7.6 m) long and 6 ft (1.8 m) wide and deep. Pegmatite with 4- by 5-in. (10.2- by 12.7-cm) books.	Do.
25	Vaughn Carson prospect	do.	3831680	261760	do.	Several pits 12 to 20 ft (3.6 to 6.1 m) wide and 4 to 6 ft (1.2 to 1.8 m) deep, aligned N. 40° E. Pegmatite with 3-in. (7.6-cm) books.	Do.
26	Monroe Colson prospect	do.	3831660	261360	do.	Trenches and pits for about 150 ft (46 m) in N. 75° E. direction; depth 4 to 6 ft (1.2 to 1.8 m). Pegmatite with 2- by 3- to 6-in. (7.6- to 15.2-cm) books.	Do.
27	Thomas Owenby occurrence	Ayersville	3830600	275660	Iron-ilmenite	Small area with gossan cobbles	Do.
28	Unnamed occurrence	Clarkesville	3828000	262680	Mica and feldspar	Pegmatite in roadcut	Do.
29	Byrd Thomas Farm prospect	do.	3828000	262680	Iron-ilmenite	Surface gossan colorations and ilmenite	Do.
30	Judge Pitts prospect	Ayersville	3823760	273300	Manganese	Less than one carload; low-grade, residual ore shipped for tests in 1886. Was John P. Fort property.	21, 22
31	Unnamed occurrence	Lula	3820270	256230	Sheet mica		Do.
32	Unnamed occurrence	Baldwin	3819560	260900	Iron-sulfide	Pyrite. Location approximate; no data	19
33	do.	do.	3818800	259330	do.	do.	19
34	do.	do.	3818200	259330	do.	do.	Do.
					Hall County, Ga.		
1	Armour prospect	Lula	3820680	249420	Manganese	Location approximate; no data	26
Do.	Unnamed prospect	do.	3815660	248200	Silver	Several long tunnels on quartz veins	24
2	Cumshaw mine	Gainesville	3805520	246400	Lead and iron-sulfide	Pyrite and galena, assay $0.40 per ton; Au at $20.00 per troy oz.	10
3	Merck mine	do.	3801600	238300	Sheet mica	Extensive workings on a series of concordant pegmatite lenses; larger ones are zoned.	10
4	Carter occurrence	do.	3800380	236850	do.	Mica	29
5	L.T. Westbrook prospect	Flowery Branch	3791020	230640	Mica	Also graphite; from pegmatite	29
6	Chester Lyon prospect	do.	3788180	229330	Manganese	No data	29, 38
7	A.M. Williams prospect	do.	3784620	228730	Iron-ilmenite	From sulfides	29

Table—Metallic (excluding gold); pegmatite; and rare-earth mineral commodities in the Greenville 1° × 2° quadrangle—Continued

Map No.	Feature name	7.5′ quadrangle	UTM coordinates Northing	UTM coordinates Easting	Commodity	Remarks	References
					Hart County, Ga.		
1	A.C. Crocker prospect	Reed Creek	3816820	320860	Sheet mica		16
2	Unnamed occurrence	Lavonia	3808100	309700	Beryl	Location approximate; no data	19
3	do.	do.	3806200	313850	do.	do.	Do.
4	Unnamed mine	do.	3806390	313330	Mica		17
Do.	Sam Bailey mine	do.	3805590	313860	do.	Zoned pegmatite. Worked in World War II	10, 17
5	Joe Wood occurrence	do.	3806660	313010	do.	Location approximate	10, 26
6	Taylor mine	do.	3806520	312340	Mica and beryl	Zoned pegmatite; Good-quality sheet mica. Rare beryl. Mined out.	27
Do.	Wood mine	do.	3806320	312590	do.	Extensive workings on two or more pegmatite bodies. Some beryl. Also known as Chapman mine.	17, 26
Do.	Old Water Hole mine	do.	3806220	312380	do.	Good-quality mica. Rare beryl	9, 17, 26
Do.	Taylor No. 2 mine	do.	3806130	312520	do.	Small pegmatite explored in 1968	27
7	J.R. Brown placer	Royston	3804500	310280	Manganese-iron	Used for manganese and iron. Residual bed 3 to 6 ft (0.9 to 1.8 m) thick.	21
8	J.B. Lewis prospect	Hartwell NE	3805800	327830	Sheet mica	Mica pegmatite; prospect pits backfilled	16
9	Pete prospect	Reed Creek	3804280	322050	Mica	Location approximate; no data	17
10	Rowland mine	Hartwell	2803890	319860	do.	Two small feldspathic pegmatite bodies; Do. mica sparse; small books	Do.
11	Luther Shiflet prospect	do.	3803900	327060	do.	Cut 225 ft² (21 m²) partly filled; mica pegmatite; probably covered by lake.	15
12	Scott mine (two locations).	do.	3803060	317760	do.	Fine-grained pegmatite; small books of mica.	17
			3802200	318280			
13	T.J. Cunningham occurrence	do.	3801830	322690	do.	Zoned pegmatite	16
14	Burrio and R.H. Burns occurrences.	do.	3801090	323540	do.	Location approximate; no data	17
15	Funkhouser mine	do.	3800400	320600	Flake mica	Large pit almost 0.5 mi² (1.3 km²) in granite saprolite.	16
16	Ruth Jones and scrap mines).	do.	3800330 and 3800000	322130 and 322500	Sheet and scrap mica.	Northern unzoned pegmatite prospected for sheet mica. Southern zoned pegmatite worked for scrap mica.	17
17	Howard Banister mine	Royston	3802240	308100	Sheet mica	Pegmatite 1 ft (0.3 m) to 2 ft 6 (0.6 to 2.1 m) thick and 700 ft (213 m) long.	10, 17, 26.
18	Truitt D. Garner mine	do.	3801980	312520	Mica	Zoned pegmatite	Do.
19	Green Rose mine	do.	3801820	312910	do.	Poor-quality mica. Franklin Mineral Rock Products.	17
20	Unnamed occurrence	Hartwell	3798900	317950	Beryl	No data	19
21	H & P and McKinney prospect	do.	3799060	321460	Mica	Several small pegmatite bodies worked for sheet mica.	17
22	T.A. Anderson prospect	do.	3798560	320560	do.	Mica pegmatite containing clear mica	Do.
23	R.L. Shiflet prospect	Hartwell Dam	3794480	331000	do.	Zoned pegmatite; small production	Do.
24	Mark Carter mine	do.	3793480	330380	do.	Several pits in poorly exposed pegmatite	16, 17
25	J.B. Gaines prospect	Hartwell	3794180	326520	do.	Poor-quality mica in zoned pegmatite	16
26	Richardson mine	Royston	3803400	308480	do.	Much mica on dump. Several zoned pegmatites; one worked for 100 ft (30 m). Partially filled; small, poor-quality mica on dump.	10
27	Joe Findley prospect	do.	3791650	310220	do.		15
					Jackson County, Ga.		
1	L.W. Hoge occurrence	Commerce	3778600	275900	Beryl		9
2	W.R. Potts occurrence	Nicholson	3778520	270800	do.	Green beryl from pegmatite. Location approximate.	Do.
3	Harris School prospect	do.	3778100	270500	do.	Several pegmatites containing beryl in vicinity; poorly exposed; beryl found in southeast and south on road. Location approximate.	Do.
4	M.F. Webb prospect	do.	3778100	270730	Scrap mica and beryl.	Four pits and two cuts in pegmatite; minor beryl; location approximate.	Do.
					Lumpkin County, Ga.		
1	Glasstop mine	Neels Gap	3839410	227400	Sheet mica	Extensive working for several hundred feet. Poor-quality mica.	10
2	Caldwell prospect	do.	3838260	225460	Mica	Location approximate	11
Do.	Shotgun Water prospect.	do.	3837500	228130	do.	do.	10, 11
3	Wash Walker or Big Mica mine	do.	3838630