MICROMOUNT MINERAL COLLECTING IN THE BIG LUE MOUNTAINS OF EASTERN ARIZONA AND WESTERN NEW MEXICO

Ronald Gibbs

With one-way road log from the intersection of US 180 and NM 78 to collecting areas along AZ 78

Total mileage: 21.7 miles

Micromount mineral collecting in the Big Lue Mountains of eastern Arizona and western New Mexico

There are many good mineral-collecting localities for the micro-mounter in the Big Lue Mountains of eastern Arizona and western New Mexico. The area described lies between the towns of Mule Creek, New Mexico and Clifton, Arizona. In the collecting area, the mountains are primarily composed of Tertiary volcanic flows, flow breccias, and tuffs of rhyolite capped by younger Tertiary volcanic flows of basalt and basaltic andesite. The older volcanics host a suite of minerals similar to the topaz-bearing rhyolites of the Black Range of New Mexico whereas zeolites can be found in the younger basalts. Fine crystals of hematite, pseudobrookite, titanite, phlogopite, and several unidentified species can be found in vesicles lined with quartz and/or tridymite. The vesicular portions of the overlying basalts host the zeolites heulandite and offretite (erionite?) and some unidentified species as well as quartz and calcite.

The localities listed are just a few of the possible collecting areas. Exploration of stream beds and outcrops away from the road will undoubtedly yield additional localities and perhaps additional species. With the exception of the Coal Creek locality, all are roadcuts along Arizona Highway 78. All sites are accessible by automobile. Always use caution when collecting from roadside localities; the road is winding and traffic, although sparse, can come up on you in a hurry.

Suggested Equipment and Maps

4-lb crack hammer

safety glasses or some kind of eye protection

10X hand lens

Big Lue Mountains, AZ-NM 15′ USGS quadrangle map, scale 1:62,500 or

Big Lue Mountains, AZ-NM 7.5′ USGS quadrangle map, scale 1:24,000

Gila National Forest map

MICROMINERALS FROM THE BIG LUE MOUNTAINS

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The Big Lue Mountains of eastern Arizona and western New Mexico offer several good collecting opportunities for the micromounter. Good micromount specimens have been found in several localities near the state line along New Mexico and Arizona State Highway 78 west of Mule Creek, New Mexico.

The Big Lue Mountains are composed of Tertiary rhyolitic volcanics and younger Tertiary basaltic volcanics as flows and tuffs. The volcanics are often vesicular and host two distinct suites of minerals of interest to collectors. Minerals found in the older volcanics are similar to the Black Range topaz-bearing rhyolites and include:

pseudobrookite
titanite
hematite
tridymite
phlogopite
hollandite

Several unidentified minerals are present but they appear to be pseudomorphs after an undetermined mineral. Pseudobrookite is fairly common, occurring as slender elongated euhedral blades that are rarely over two mm long. Titanite is also common, occurring as very small, equant, transparent, reddish-orange crystals. Hematite is common as small blocky to this lustrous black crystals rarely over two mm in size. Tridymite is found in nearly every vesicle in some places and occurs as multiply twinned crystals up to one cm across. Phlogopite occurs as thin, transparent, light-brown crystals up to four mm across. Hollandite is locally abundant as black dendritic growths and coatings in vesicles and overgrowths on some of the other minerals.

The younger volcanics host a suite of zeolites and associated minerals that include:

erionite-offretite
heulandite
mesolite(?)
quartz
calcite

These minerals are more sparsely distributed but locally abundant. Heulandite and erionite-offretite occur as small euhedral crystals in vesicles. A minerals that resembles mesolite is sometimes found with calcite and quartz.

The localities examined so far have been in roadcuts or along stream banks. There are many unexplored hills, cliffs, and streams that may yield additional species.

--From the Thirteenth Annual New Mexico Mineral Symposium, November 14 and 15, 1992.

One-way road log starting near Mule Creek, New Mexico

0.0 Intersection of New Mexico Highway 180 and New Mexico Highway 78, about 45 miles northwest of Silver City, New Mexico. Turn west onto Highway 78 headed for the very small community of Mule Creek.

9.6 Mule Creek, New Mexico.

11.9 Now entering the Gila National Forest.

12.8 Intersection with Forest Road 111. Rockhounds like to collect small rounded pieces of obsidian, also known as apache tears, in the hills north of the highway between here and the state line.

15.4 Arizona-New Mexico State Line.

16.1 Area 1, Coal Creek. Turn off highway to left into flat parking area before stream crossing. Vehicles with high clearance or 4-wheel drive can drive up Coal Creek for a ways, but eventually you will have to walk. Hike up the creek bed as far as you wish, looking for boulders of vesicular rhyolite. Some of the rock is quite hard, so wear eye protection while using a hammer or sledge. At some point, the creek passes into New Mexico under a dilapidated barbed-wire fence that marks the state line. Continue up the creek as far as you wish. Good pseudobrookite and phlogopite, as well as other species, can be collected up and down the creek.

17.1 Area 2: an inconspicuous roadcut in a dense stand of pines. It is between the next two stream crossings after the picnic ground on the right. Parking is very limited. Look in vesicular rhyolite in the roadcut and in the stream below the road. This spot has very nice titanite, pseudobrookite, and hematite, as well as some u unidentified amber crystals.

18.1 Area 3: look for vesicular basalt in the roadcut in the hairpin bend of the road. Heulandite and calcite can be found here.

21.4 Area 4: this locality is easily recognized as a large, high roadcut of light-grey rhyolite. A large parking area is found on the left with spectacular views of Arizona to the west. The best tridymite has been found here as well as hematite, pseudobrookite, titanite, and hollandite.

21.7 Area 5: this area can be reached from area 4 by walking down the road and looking for talus composed of reddish-brown and black basalt accumulating from flows on the ridgetop. Heulandite, offretite (erionite?), quartz, and calcite have been found in the vesicles.

Fig. 1 Big Lue Mountains

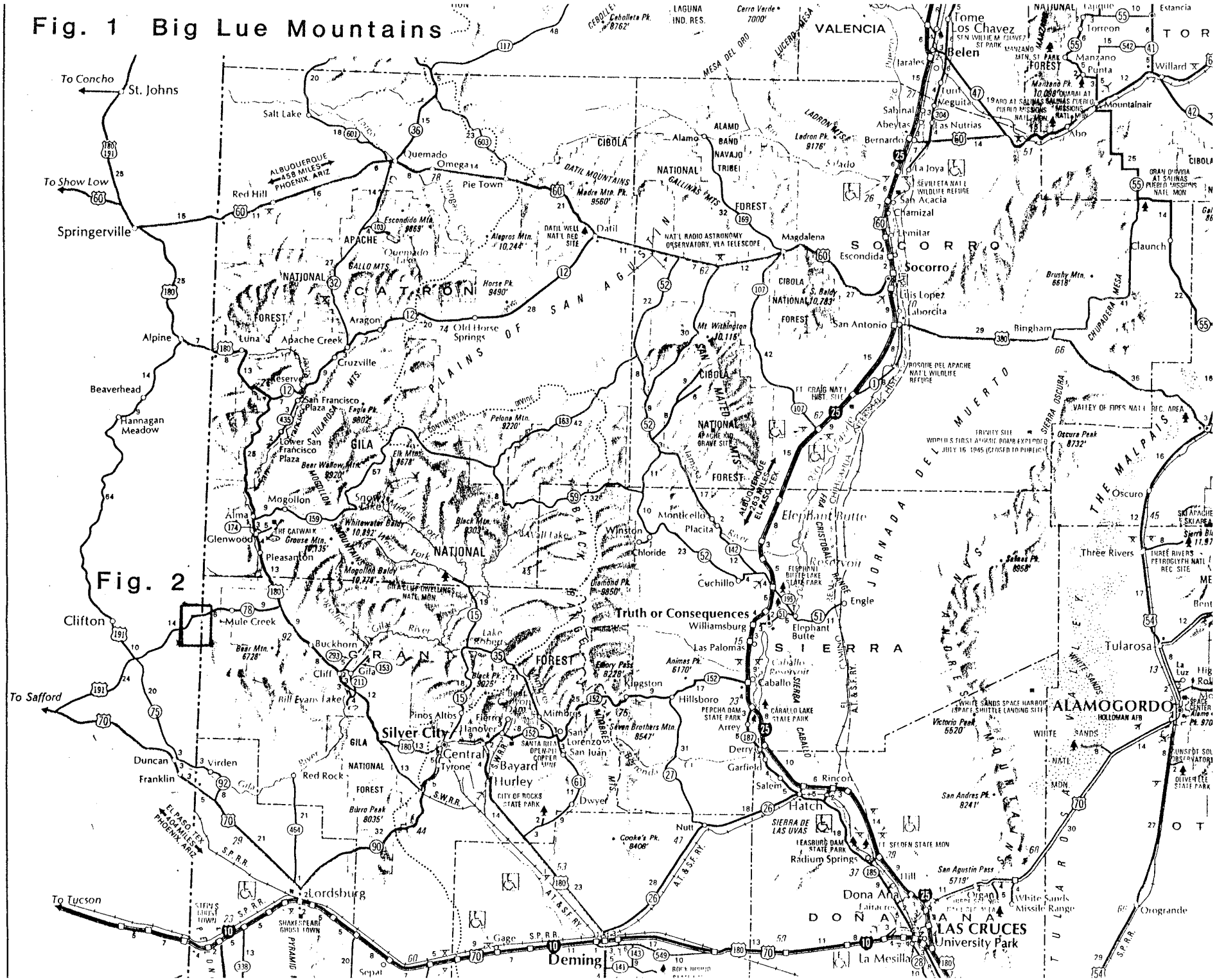
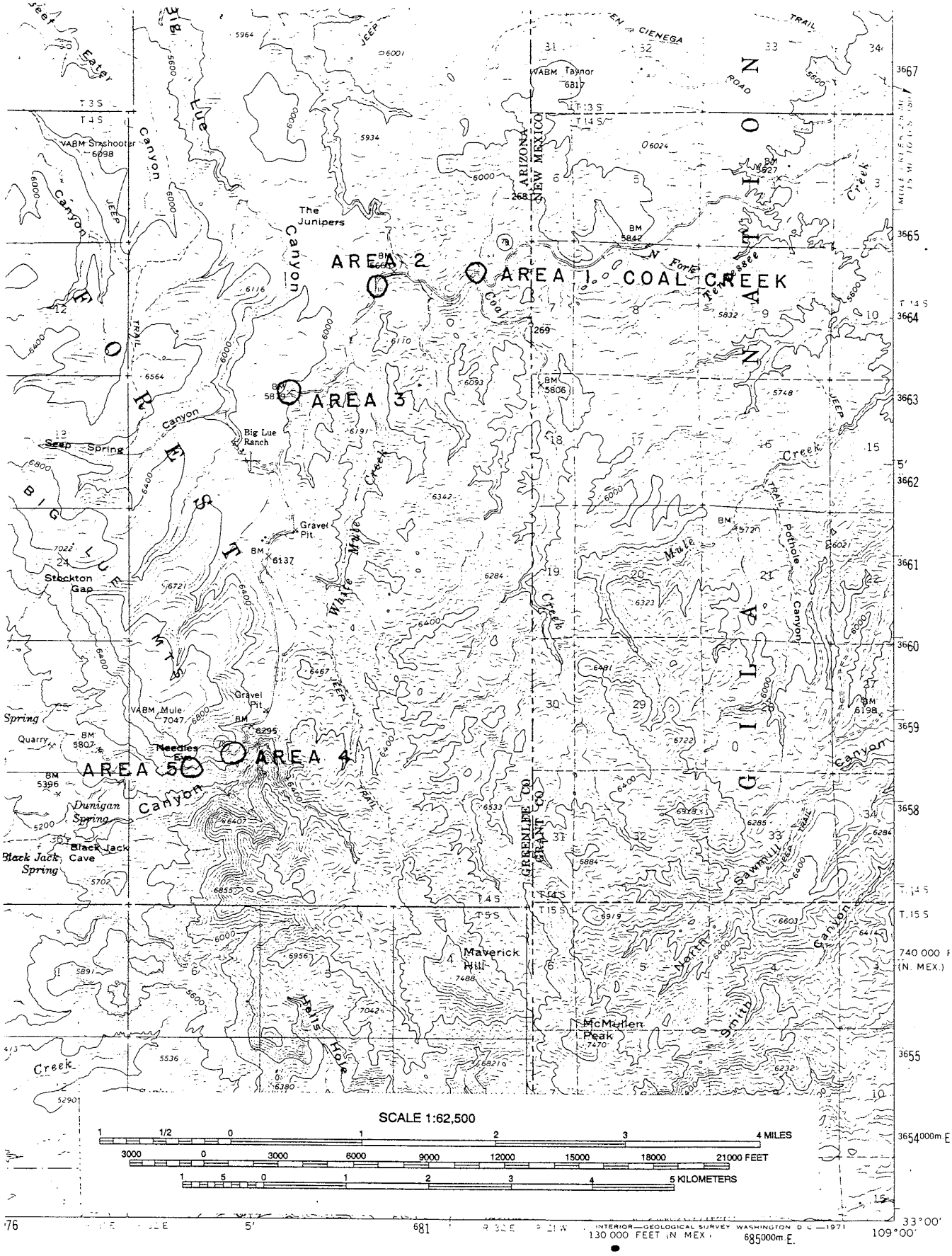


FIGURE 2


AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
COAL CREEK
The Junipers
Big Lue Ranch
Gravel Pit
Stockton Gap
Needles Eye
Dunigan Spring
Black Jack Cave
Black Jack Spring
Maverick Hill
McMullen Peak
Hells Hole
Big Lue Canyon
White Mule Creek
Mule Creek
Coal Creek
Sawmill Canyon
North Smith Canyon
Pothole Canyon
Seep Spring
Quarry
ARIZONA
NEW MEXICO
GREENLEE CO
GRANT CO
SCALE 1:62,500
4 MILES
21000 FEET
5 KILOMETERS
INTERIOR—GEOLOGICAL SURVEY WASHINGTON D C —1971
130 000 FEET (N MEX)
685000m.E.
33°00'
109°00'
740 000 F (N. MEX.)
3654000m.E