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Zinc, Lead, and Barite Deposits and Occurrences in Paleozoic Rocks, East-Central United States

by

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Introduction

The accompanying metallogenic map and table are a compilation of information about zinc, lead, and barite deposits, prospects and occurrences in Paleozoic rocks in the United States east of the Mississippi River and west of the Blue Ridge Province, other igneous-metamorphic terranes and Triassic basins. The map was prepared primarily as a basis for interpretation of distribution patterns as related to geologic features and as a regional guide for initial stages of exploration. The map is not intended to be a resource map. The preliminary map shows the deposits and occurrences as related to major basins and arches and extent of continental glaciation. The final map (in preparation) will include additional occurrences and a geologic base showing bedrock units grouped by periods of the Paleozoic Era.

This compilation includes mineral occurrences, regardless of size, which are reported in the literature or from unpublished data. Some occurrences are localities that would be difficult or impossible to relocate and some reports provide little information beyond existence of the mineral in that locality. These are included if locations can be plotted with reasonable accuracy at a scale of 1:2,500,000 because the distribution patterns of zinc, lead and barite mineralization on a regional scale, is more important for the purpose of the map than specific localities. Table 1 provides references to additional information for each locality.

Interpretations of the distribution pattern must take into account wide variations in types of information availabile for different areas. For instance, a thorough study of occurrences of lead, zinc and barite from well-cuttings and surface exposures in Indiana (Shaffer, 1981) and a similar study in Ohio (Botoman and Stieglitz, 1978) provide more detailed information from the subsurface than is available for other states. Absence of comparable information on subsurface occurrences in other areas should not be interpreted as absence of subsurface mineral occurrences, but as absence of information.

Major mining districts and areas of numerous prospects, occurrences and small mines are outlined and a single symbol used to represent the district or area.

Many of the barite deposits shown on the map are residual deposits in which the ore occurs in residual soils overlying bedrock. The residual nature of the deposits is indicated in Table 1; the map symbols show the nature of the underlying bedrock from which the barite was derived to provide comparable information to that given for lead and zinc deposits and occurrences.

Characteristics of the Lead-Zinc-Barite Deposits and Occurrences

A wide variety of deposits and occurrences are shown on the metallogenic map. Most belong to the group commonly called the "Mississippi Valley" type. Common characteristics of such deposits have been summarized by Ohle (1959, 1980), Snyder (1968), Heyl and others (1974), Heyl (1982), Sangster (1982) and others. However, for every "characteristic" of Mississippi Valley type deposits, exceptions exist in deposits that exhibit most of the "characteristics" but differ significantly in one or more. Many of the deposits are situated in stable carbonate platforms, but many are not. The deposits are generally in shallow water, marine, carbonate rocks, but rocks of other lithologies are mineralized. The deposits are commonly peripherial to sedimentary basins or associated with structurally high areas.

Many, but not all, major deposits lie beneath regional unconformities or disconformities. Simple mineralogy (predominantly sphalerite, galena, barite, fluorite, calcite, dolomite, and cryptocrystalline quartz) has been considered a characteristic of individual districts, but mineralogy is subtly complex, and a large variety of minerals are known from Mississippi-Valley type deposits. The deposits are generally open-space fillings or veins but replacement is important in some. The deposits favor certain strata but are not restricted to specific beds, and mineralization is present throughout the stratigraphic section in some areas. The deposits are believed to have formed at low temperatures (70° to 200°C) from concentrated Na-Ca-Cl brines which are thought to be primarily of connate origin. Ore solutions are generally thought to have formed during the stage of evolution of sedimentary basins when warm, connate, metal-bearing brines migrated updip and precipitated ore minerals on encountering favorable conditions. The ore solutions were active, and often dissolved large volumes of rock during ore deposition.

The requirements for deposition to occur seem to be the existence of interconnected openings through which mineral-bearing solutions have moved in combination with conditions suitable for continuing the flow of the solution and precipitation. The combinations of conditions under which lead, zinc and barite precipitate can be met in a wide variety of situations.

Comparison with characteristics of geologic setting and host rocks in known deposits is an important factor in evaluating potential of prospects and occurrences but should not be used so rigidly as to rule out other possibilities. Composition of most host rocks is dolomite and the association of coarsely-crystalline dolomite (called white gangue dolomite or recrystalline dolomite) with ore is a common feature. Breccia, formed tectonically, by solution collapse, or by dissolution, is commonly a favorable host rock. Facies boundary zones, especially reef margins, are favorable for mineralization. Faults and joints can form favorable zones for mineralization and veins at the surface can be an indication of more extensive stratabound deposits in underlying rocks.

In addition to carbonate-hosted deposits of the Mississippi Valley type, clastic rocks are hosts for large base metal deposits in other parts of the world, such as sandstone-hosted lead deposits, shale-hosted massive sulfide deposits, and bedded barite deposits. Although no large deposits of these types have been found in the map area, occurrences of lead, zinc, and barite are known in clastic rocks and possibilities remain for discovery of large deposits in clastic rocks.

Another common type of host rock is coal or peat from which occurrences of sphalerite or anomolously high amounts of zinc have been described from Illinois, Pennsylvania, and New York.

Sphalerite, galena, and barite have been reported from numerous localities as fillings of vugs, geodes, and solution cavities. Commonly associated minerals include fluorite, calcite, dolomite, quartz, iron sulfides, celestite, and gypsum. Other common occurrences are concretions, nodules, disseminated grains, replacement of favorable beds, replacement or fillings of fossils, in reef zones, and associated with cryptoexplosion structures. Most of the reported occurrences of these types are not of economic significance in themselves, but are of importance in indicating that mineral-bearing solutions have moved through the rocks and conditions were favorable for deposition. Possibities may exist for future discovery of economic concentrations, especially in deeper favorable horizons.

The Map and Table

The symbols showing locations of deposits and occurrences were designed to provide a visual representation of features thought to be most significant, least subject to differing interpretations and most commonly reported in the literature.

The shape of the symbol shows the first commodity listed in Table 1, except for those deposits where a commodity other than lead, zinc or barite predominates. Commodities are listed in Table 1 according to abundance or major product in a mine or district, with minor or by-product commodities in parentheses. When relative abundance is not known, the order used is that given in the reference(s) cited. When references used do not indicate relative abundances, lead and zinc are listed before barite because of the differences in economic values.

The size of the symbol distinguishes large and medium deposits or districts according to the size limits used for the preliminary metallogenic map of North America (Guild, 1981). The size limits, in metric tons of lead, zinc or barite contained for both past production and/or reserves are as follows: for barite "large" is greater than 5,000,000, "medium" is 5,000,000 to 50,000; for lead and zinc "large" is greater than 1,000,000; "medium" is 1,000,000 to 50,000.

Mining districts and closely spaced groups of small mines, prospects and/or occurrences are outlined with a single symbol to represent the district or group. Small mines, prospects, and occurrences are shown by the same size symbol on the map and are differentiated in Table 1.

The age by geologic period and type of host rock is shown by ticks on the symbol and patterns in the symbol. Lower Ordovician host rocks are differentiated from Middle and Upper Ordovician host rocks because of the significance of the Middle Ordovician unconformity and paleokarst formation to localization of major deposits, especially in Tennessee. The types of host rocks, where known, are differentiated primarily into three major catagories in which most of the host rocks could be grouped -- carbonates, clastics and coal. All of the major zinc, lead and barite deposits and most of the smaller ones are in carbonate rocks, most commonly dolomite, as indicated in Table 1. Deposits in clastic rocks are significant because of possibilities for discovery of sandstone- or shale-hosted deposits. Occurrences of sphalerite in coal from Illinois and Pennsylvania have been studied and reported (Cobb, et al, 1980; Smith, 1977) and are of significance as a future resource as well as providing information about distribution. Table 1 provides more detailed information than shown on the map on commodities present and the type and age of host rock, including formation names. The additional information can be used by the reader to plot distribution patterns in color for attributes of interest.

Most deposits and occurrences shown on the map are from the surface or shallow depths and the age of host rocks correspond with the age of bedrock as shown on geologic maps. However, numerous occurrences are from deep wells (especially in Indiana, Ohio and Tennessee) and the age of the host rock does not correspond with surface geology. Subsurface occurrences are identified as such under "Comments" in Table 1.

The name(s) listed first in Table 1 is (are) the most recently or commonly used in the literature or is from a nearby geographic name. Other names for the occurrences are listed in parentheses. For districts, subdistrict names and/or names of some of the larger mines are included. The names are intended only to aid the reader in identifying the locality in other reports and are not necessarily current. This is especially true for names of quarries from older literature which may or may not be currently operating or being operated by the same company as in the past.

Conclusions

Certain observations can be made from examination of the map pattern, and possible explanations can be inferred. Some of these are discussed below. However, it is hoped that readers will use the map and table to make additional interpretations and that the interpretations will be useful in increasing understanding of the nature of the deposits and in encouraging further study and exploration.

The map shows the an association of mineralization with structurally high areas peripherial to basins. The association with lineaments, such as the 38th parallel lineament (Heyl, 1972) is much less pronounced on this map than on maps designed specifically to identify features and patterns of mineralization associated with lineaments.

The distribution by host rock shows that all of the large lead, zinc, or barite deposits which have been discovered in the east-central United States are in carbonate rocks, mainly dolomite, of Cambrian to Middle Ordovician age, with the exception of mineralization in Illinois-Kentucky District. However, occurrences, prospects, and small mines are known in host rocks from Cambrian through Pennsylvanian age and in clastic rocks and coal as well as carbonate rocks.

A regional pattern of lead, zinc and barite distribution can be seen from north to south. All of the large barite deposits that have been discovered are in the south (Georgia, Alabama, Tennessee and southern Virginia). Very few occurrences and no large deposits of zinc or lead have been found in Georgia or Alabama. Farther north, in Tennessee and southern Virginia, both zinc and barite deposits, some of which are very large, are numerous, but lead is not common. Lead deposits and occurrences have been found in the northern states (Wisconsin, Pennsylvania, New York and Vermont) in greater proportions relative to zinc and barite deposits than in southern states.

Several factors must be considered in interpretation of this pattern. The development of thick residual soils, which has concentrated barite into commercial deposits in the south, is one obvious factor in the barite distribution pattern. Discovery of economic deposits has encouraged further exploration, and, consequently, more occurrences are known in areas where ore deposits have been discovered. The completeness with which occurrences and prospects are reported in the literature varies from area to area. It is possible that these factors alone could account for the observed patterns of distribution. However, other factors are also worthy of consideration. The distribution pattern may reflect a regional zonation that could be the result of differences in distribution of materials in the source rocks, differences in transportation or differences in conditions at the place and time of deposition, or a combination of factors. Donald Sangster (oral communication, 1982) has recognized a pattern in lead/zinc ratios of ore deposits in which higher lead to zinc ratios are found closer to cratons. This pattern may be reflected also in the distribution of occurrences described above.

All of the major zinc and lead deposits that have been discovered in the east-central United States are in the areas which lack thick cover of glacial drift. However, the pattern of small occurrences shows no apparent relation to the extent of glacial cover. Therefore, it is possible that undiscovered resources may exist in areas that have been less prospected and have fewer bedrock exposures because of the cover of glacial drift.

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Table 1.--Zinc, lead and barite deposits and occurrences in Paleozoic rocks. [More than one name is given for localities that have been called by different names at different times. Older or less commonly used names and names of mines and subdistricts within a district are in parentheses. Commodities are listed in order of abundance, if known, in order listed in previous reports, or, if there is no other information, Pb and Zn before Ba. Minor or byproduct commodities are in parentheses. Commodities are shown by chemical symbols: Pb, lead; Zn, zinc; Ba, barite; Cu, copper; F, fluorine; As, arsenic; U, uranium; Ag, silver; Cd, cadmium. Size is given as occurrence or prospect or as small, medium or large for deposits which have been mined. Definitions of small, medium or large are those used by Guild (1981, p. A4). Dashes indicate unknown or no information available.]

Map number	Name	Commodities	Size	Host Rock	Comments	Selected references
				ALABAMA		
1	Cherokee County	Ba	Occurrence	Lower Cambrian shale (Weisner Formation)	Vein cutting shale.	Adams and Jones, 1940, p. 37-38
2	Beaver Creek Valley-Greens Valley area	Ba	Small	In residual soil overlying Cambrian and Ordovician limestone and dolomite	--	Adams and Jones, 1940, p. 32-34; Hughes and Lynch, 1973, p. 32-34.
3	Pelham Range	Pb	Prospects	Ordovician limestone	Thin veins. On military reservation.	Neathery, et. al., 1972, p. 23.
4	Angel District (Evans mine, Angel Station)	Ba	Small	In residual soil overlying Cambrian and Lower Ordovician dolomite and limestone (Copper Ridge, Chepultepec, Newala and Longview Formations)	Fracture filling and replacement; boxwork patterns.	Adams and Jones, 1940, p. 34-37. Hughes and Lynch, 1973, p. 34-41.
5	Cedar Springs, Wellington and "Old Lead Mine"	Pb, Zn (Ba, F)	do.	Lower Cambrian to Lower Ordovician limestone and dolomite	Thin veins.	Neathery, et al., 1972, p. 21-24.
6	Leeds area	Ba	do.	In residual clay overlying Lower Ordovician Newala Limestone	Calcite veins and irregular vein-like replacement of barite in limestone.	Adams and Jones, 1940; p. 17-18, 32; Hughes and Lynch, 1973, p. 31-32.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
7	Vincent, Harpersville, Wilsonville district	Ba	do.	In residuum of Cambrian and Lower Ordovician dolomite and limestone	Barite occurs in residuum of the Copper Ridge and Chepultepec Formations, but may have been derived from weathering of the overlying limestone.	Adams and Jones, 1940, p. 17-18, 30-31; Hughes and Lynch, 1973, p. 30-31.
8	Longview Saginaw district (Longview Lime works)	Ba	do.	In residual clay overlying Lower Ordovician Newala Limestone	In one quarry brecciated Newala Limestone is cemented and partly replaced by calcite. Barite occurred immediately above this horizon.	Adams and Jones, 1940, p. 31; Hughes and Lynch, 1973, p. 29-30.
9	Sinks District (Julian Fancher, D.C. Weaver, Herron, Hardy Pratt)	Ba (F)	Medium	In residual clay overlying Ordovician dolomite or limestone (Newala Limestone and Mosheim Limestone)	As veins in limestone. Fluid inclusions have a temperature of 70°C-92°C (uncorrected for pressure). Veins contain calcite, marcasite, sphalerite, goethite and massive sulfur.	Adams and Jones, 1940, p. 21-29; Hughes and Lynch, 1973, p. 24-29; Jones and McVay, 1934, p. 761-766.

GEORGIA

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Hale dolomite quarry	Ba, F, Pb	Occurrence	Ordovician dolomite (Knox Group)	In a five-foot thick brecciated zone.	Butts and Gildersleeve, 1948, p. 111.
2	Ruralville area	Ba	Small	In soil which contains fragments from Ordovician Knox Group	Residual deposit of white crystalline barite in yellow to reddish-yellow clay loam.	Hull, 1920, p. 134-136.
3	Eton district	Ba	do.	In red soil which overlies Ordovician Knox Group	Residual deposit with white crystalline barite and some dark fragments with radiating structure.	Hull, 1920, p. 129-133.
4	Plainville area	Ba	do.	In brown soil and in Cambrian limestone (Conasauga Formation)	Residual deposits and veins in underlying limestone.	Hull, 1920, p. 136-139.
5	Big Dry Creek	Pb	Occurrence	Limestone	Small galena cubes have been found in a limestone quarry.	Cook, 1978, p. 24; Hurst and Crawford, 1970, p. 147.
6	Gibson property	Ba	Prospect	Residual in soil which contains weathered seams of Ordovician Knox dolomite	Fragments in dark red soil, thought to be derived from veins or fracture fillings.	Hull, 1920, p. 139-140.
7	Holcombe property	Ba	Small	In soil overlying Ordovician dolomite (Knox Group)	Fragments in red clay.	Hull, 1920, p. 127-129.
8	Cartersville district	Ba (ochre)	Large	In soils; primary ore-bearing strata are Lower Cambrian dolomite (Rome and Shady Formations)	As white to very light-blue, fine-grained, granular masses in residuum and in veins, pods and fracture fillings. Residual clays up to 200 feet thick.	Kesler, 1950, 97 p.; Reade, et al. 1980 p. 379-384.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
9	Stilesboro area	Ba	Prospect	In soil overlying Ordovician limestone (Chickamauga Formation)	Fragments in reddish-yellow soil.	Hull, 1920, p. 126-127.

ILLINOIS

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Upper Mississippi Valley lead-zinc district (The district includes about 35 lead and zinc mines in Illinois. Subdistricts are Elizabeth, Apple River-Warren, Stockton Simmons Mound, Morseville, Scales Mound, and Galena)	Zn, Pb,	Large	Middle Ordovician limestone and dolomite (most deposits in Galena Dolomite, Decorah Formation, and Platteville Formation); deposits of sulfides found in all formations exposed within the mineralized part of the district.	Ore bodies can be classified as (1)reverse-fault and fold controlled ore bodies, (2) joint-controlled ore bodies, and (3) placer and residual deposits. The ores in the fault and fold deposits occur as (1) vein fillings along fractures and bedding planes; (2) cavity fillings in solution breccias; and (3) disseminations by replacement and impregnation in favorable beds, particularly in shaly strata. Joint controlled deposits are veins in vertical joints and pod-like deposits in beds crossed by joints (Heyl, et al, 1959).	Heyl et al, 1959, 310 p.; Heyl, 1968; p. 431-459.
2	Oneco diggings area	Pb	Small	Middle Ordovician Galena Dolomite	Gash veins.	Heyl et al, 1959, p. 293-294.
3	Stadermann gold mine (Eleroy area)	Au, Cu Pb, Zn, Ba	do.	Upper Ordovician Maquoketa Shale	Small veins and lenses contain galena, sphalerite and barite; gold-bearing quartz veins in dolomite.	Heyl et al, 1959, p. 293-294.
4	Freeport area	Pb	do.	Middle Ordovician	--	Heyl et al, 1959, p. 293; Willman et al, 1946, p. 9.
5	--	Pb	do.	Middle Ordovician	--	Heyl et al, 1959, p. 293.
6	Mt. Carroll diggings	Pb	do.	do.	--	Heyl et al, 1959, p. 293; Willman et al, 1946, 48 p.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
7	Mecca Mine, Midland Electric Coal Corporation	Zn	Occurrence	Pennsylvanian coal (Carbondale Group, No. 6 coal)	Five hundred and ninty-seven ppm Zn in ash; identified as sphalerite.	Zubovic, 1960, 79 p.
8	Millbrook, Barron Mill farm near	Zn (Pb)	do.	--	Sphalerite at a depth of 60-62 feet in a water well; interpreted as residue in a solution cavity along a fault or joint within the Sandwich fault zone.	Bradbury, 1957, p. 4; Payne, 1938, p. 182-183.
9	LaSalle Stone Company quarry (abandoned)	Ba	do.	Pennsylvanian LaSalle Limestone	As cavity fillings.	Schrode, 1952, p. 126-128.
10	Essex Mine, Northern Illinois Coal Corporation	Zn	do.	Pennsylvanian coal (Carbondale Group, No. 5 coal)	Four hundred and fifteen ppm Zn in ash.	Zubovic, 1960, 79 p.
11	Allentown Mine, Midland Coal Company	Zn	do.	Coal	--	Cobb, 1981, 204 p.; Cobb et al, 1980, 21 p.
12	Mecco Mine (eastern and western pits) Midland Coal Company	Zn	do.	do.	--	Do.
13	Midland Coal Company (western pit)	Zn	do.	do.	--	Do.
14	Edwards Mine, Midland Coal Company	Zn	do.	do.	--	Do.
15	Norris Mine, Consolidated Coal Company	Zn	do.	do.	--	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
16	Sun Spot Mine, AMAX Coal Company	Zn	do.	do.	--	Do.
17	Buckheart Mine (northern pit), Freeman United Coal Mining Company	Zn	do.	do.	--	Do.
18	Buckheart Mine (southern pit), Freeman United Coal Mining Company	Zn	do.	do.	--	Do.
19	Big Eagle No. 1 Mine, Great American Energy Corporation	Zn	do.	do.	--	Do.
20	Crown No. 2 Mine, Freeman United Coal Company	Zn	do.	do.	--	Do.
21	Peabody Coal Company No. 17 Mine	Zn	do.	Pennsylvanian Coal (Carbondale Group No. 6 coal)	Two hundred and sixty-eight ppm Zn in ash.	Zubovic, 1960, 79 p.
22	Grand Tower, just north of	Pb	do.	Devonian limestone (probably Backbone Limestone)	Along a fault; found during railroad construction.	Bradbury, 1957, p. 2-3.
23	Hutchins Creek (near Alto Pass)	Pb	Prospects	Devonian limestone (Backbone Limestone and Clear Creek Chert)	Small crystals disseminated in limestone; along faults.	Bradbury, 1957, p. 1-2.
24	Eagle No. 2 Surface Mine, Peabody Coal Company	Zn	Occurrence	Coal	--	Cobb, 1981, 204 p.; Cobb et al, 1980, 21 p.

Number	Name	Commodities	Size	Host Rock	Comments	References
25 (Kentucky 3)	Illinois-Kentucky fluorspar district (In Illinois more than 80 mines, mine groups, prospects and occurrences in the Cave in Rock and Rosiclare districts, Interstate, Stewart, Hicks Dome, Empire and Lusk Creek Fault groups and Golconda area)	F,(Zn,Pb,Ba)	Medium zinc-lead production. Large fluorspar production.	Mississippian limestone, shale and sandstone	Vein deposits, which are along normal faults related to horsts and grabens; bedded deposits, which are found in horsts; solution-slump breccias, which extend downward below some bedded deposits; and diatremes, which are related to the Hicks dome structure (Pinckney, 1976).	Grogan and Bradbury, 1968, p. 370-399, Heyl et al, 1965, 20 p.; Pinckney, 1976, 15 p.; Worl et al, 1974, p. 4-5 and map.

INDIANA

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	--	Zn	Occurrence	Middle Ordovician dolomite (Trenton Limestone)	In well cuttings.	Shaffer, 1981, p. 30.
2	Z22 1/	Zn	do.	do.	In well cuttings; sphalerite shows for 70 feet.	Do.
3	Z23	Zn	do.	do.	In well cuttings.	Do.
4	Z20A and 20B	Zn, Pb	do.	do.	do.	Do.
5	Z25	Zn	do.	do.	do.	Do.
6	Z21	Zn	do.	Devonian dolomite (Muscatatuck Group)	do.	Do.
7	Z38	Zn	do.	Middle Ordovician silty dolomite (Trenton Limestone)	do.	Shaffer, 1981, p. 31.
8	Z34A and 34B	Zn	do.	Middle Ordovician dolomite (Trenton Limestone)	do.	Do.
9	--	Zn, Pb	do.	do.	do.	Shaffer, 1981, p. 30.
10	Z17 and Z18	Zn	do.	Silurian dolomite (Salamonie Dolomite)	do.	Do.
11	Z16	Zn	do.	Devonian limestone (Muscatatuck Group)	do.	Do.
12	Z84	Zn, Pb	do.	Middle Ordovician dolomite (Trenton Limestone?)	Quarry exposures at the Kentland cryptoexplosion structure.	Shaffer, 1981, p. 32, 35.

1/ Sample Numbers, Shaffer, 1981, p. 30-32.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
13	Babcock Construction Company quarry	Zn	do.	--	In quarry.	Erd and Greenberg, 1960, p. 50, 51, 55; Shaffer, 1981, p. 32.
14	--	Zn, Pb	do.	Devonian limestone (Muscatatuck Group)	Surface exposure.	Shaffer, 1981, p. 32.
15	Z15	Zn	do.	do.	In well cuttings.	Shaffer, 1981, p. 30.
16	Z35	Zn	do.	Silurian dolomite (Wabash Formation)	do.	Shaffer, 1981, p. 31.
17	--	Zn	do.	Silurian limestone (Salamonie Dolomite)	do.	Shaffer, 1981, p. 30.
18	Z7 and Z53	Zn	do.	Middle Ordovician dolomite (Trenton Limestone)	do.	Do.
19	Z19	Zn	do.	Silurian dolomite (Salamonie Dolomite)	do.	Do.
20	--	Zn	do.	Devonian limestone (Muscatatuck Formation)	do.	Shaffer, 1981, p. 31.
21	Z50	Zn	do.	Silurian dolomite (Wabash Formation)	do.	Do.
22	Z51	Zn	do.	do.	do.	Do.
23	--	Zn	do.	Devonian limestone (Muscatatuck Formation)	do.	Do.
24	Z48A and 48B	Zn	do.	do.	do.	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
25	Z55, 56, 57, 68, 69	Zn	do.	Silurian dolomite (Wabash Formation)	do.	Do.
26	Z76	Zn	do.	do.	do.	Do.
27	Z28	Zn	do.	Upper Ordovician shaly limestone (Maquoketa Group)	do.	Shaffer, 1981, p. 30.
28	--	Zn	do.	--	Outcrop along Big Pipe Creek 1 mile north of Bunker Hill.	Erd and Greenburg, 1960, p. 50, 51, 57; Shaffer, 1981, p. 25.
29	Z47	Zn, Pb	do.	Upper Ordovician dolomite (Trenton Limestone)	In well cuttings.	Shaffer, 1981, p. 31.
30	Eric Stone Company quarry	Zn	do.	--	--	Erd and Greenburg, 1960, p. 50, 51, 55; Shaffer, 1981, p. 25.
31	Z79	Zn	do.	Devonian limestone (Muscatatuck Group)	Surface exposure.	Shaffer, 1981, p. 31.
32	Z2	Zn	do.	Silurian dolomite (Wabash Formation)	do.	Shaffer, 1981, p. 30.
33	Z3	Zn	do.	Middle Ordovician dolomite (Trenton Limestone)	do.	Do.
34	Z4	Zn	do.	do.	do.	Do.
35	Z1	Zn	do.	Middle Ordovician dolomite (Trenton Formation)	do.	Do.
36	Heller Stone Company quarry	Zn	do.	--	--	Erd and Greenberg, p. 50, 51, 63; Shaffer, 1981, p. 25.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
37	Z75	Zn	do.	Silurian dolomite (Wabash Formation)	Surface exposure.	Shaffer, 1981, p. 32.
38	Z49	Zn	do.	Lower Ordovician dolomite (Knox Group)	In well cutings.	Shaffer, 1981, p. 31.
39	--	Ba	do.	--	Surface exposure.	Shaffer, 1981, p. 25.
40	--	Ba	do.	--	do.	Shaffer, 1981, p. 25.
41	Bluff along Mud Pine Creek	Zn, Ba	do.	--	do.	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 62; Shaffer, 1981, p. 25.
42	--	Zn	do.	--	From a small coal mine.	Erd and Greenburg, 1960, p. 50, 51, 62; Shaffer, 1981, p. 25.
43	Z41	Zn	do.	Middle Ordovician dolomite (Black River Formation)	In well cuttings.	Shaffer, 1981, p. 31.
44	Z77	Zn	do.	Silurian dolomite (Wabash Formation)	Surface exposure.	Shaffer, 1981, p. 32.
45	--	Zn	do.	do.	In well cuttings.	Shaffer, 1981, p. 30.
46	Z42	Zn	do.	Middle Ordovician dolomite (Trenton Limestone)	do.	Shaffer, 1981, p. 31.
47	--	Ba	do.	--	Surface exposure.	Shaffer, 1981, p. 38.
48	Z80	Zn	do.	Devonian dolomite (Muscatatuck Group)	Surface exposure.	Shaffer, 1981, p. 32.
49	Z73	Zn	do.	do.	do.	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
50	Z12	Zn	do.	Middle Ordovician dolomite (Trenton Limestone)	In well cuttings.	Shaffer, 1981, p. 30.
51	Z37	Zn	do.	Lower Ordovician dolomite (Knox Group)	do.	Shaffer, 1981, p. 31.
52	Z36	Zn	do.	do.	do.	Do.
53	DeBolt quarry	Zn, Ba	do.	--	--	Erd and Greenburg, 1960, p. 18-19, 50, 51, 63; Shaffer, 1981, p. 25, 26.
54	Abandoned quarry	Ba	do.	--	--	Erd and Greenburg, 1960, p. 18-19,63; Shaffer, 1981, p. 26.
55	--	Zn	do.	--	Surface exposure.	Shaffer, 1981, p. 25.
56	Z31	Zn	do.	Mississippian limestone (Sanders Formation)	In well cuttings.	Shaffer, 1981, p. 31.
57	Wallace quarry (abandoned)	Zn, Ba	do.	--	Surface exposure.	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 60; Shaffer, 1981, p. 25.
58	Waveland Stone Company quarry	Zn, Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 18, 50, 51, 59; Shaffer, 1981, p. 25.
59	Parkersburg quarry (abandoned)	Zn	do.	--	--	Erd and Greenburg, 1960, p. 50, 51, 59; Shaffer, 1981, p. 25.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
60	New Ross Limestone Company quarry	Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 19, 59; Shaffer, 1981, p. 25.
61	Z5	Zn	do.	Silurian dolomite (Wabash Formation)	In well cuttings.	Shaffer, 1981, p. 30.
62	Z43	Zn	do.	Mississippian lime-stone (Blue River Group)	do.	Shaffer, 1981, p. 31.
63	--	Zn	do.	Devonian dolomite (Muscatatuck Group)	do.	Do.
64	Z45	Zn	do.	Mississippian lime-stone (Blue River Group)	do.	Do.
65	Z44	Zn	do.	Mississippian lime-stone (Sanders Group)	do.	Do.
66	Z46	Zn	do.	Mississippian limestone (Sanders Group)	do.	Do.
67	--	Zn	do.	--	Surface exposure.	Shaffer, 1981, p. 25.
68	--	Zn	do.	Pennsylvanian shale (Racoon Creek Group)	do.	Shaffer, 1981, p. 31.
69	--	Zn	do.	do.	do.	Do.
70	Z78	Zn	do.	Pennsylvanian siltstone (Racoon Creek Group)	do.	Shaffer, 1981, p. 32.
71	Russellville Stone Company quarry	Zn, Ba	do.	--		Erd and Greenburg, 1960, p. 18, 19, 50, 51, 60; Shaffer, 1981, p. 25.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
72	Abandoned quarry	Zn	do.	--	--	Erd and Greenburg, 1960, p. 50, 51, 61; Shaffer, 1981, p. 25.
73	Ohio and Indiana Stone Company quarry	Zn, Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 61; Shaffer, 1981, p. 25, 26.
74	Lone Star Cement Company quarry	Zn	do.	--	--	Erd and Greenburg, 1960, p. 50, 51, 61; Shaffer, 1981, p. 25.
75	Indiana State Farm quarry	Zn	do.	--	--	Do.
76	--	Ba	do.	--	Surface exposure.	Shaffer, 1981, p. 26.
77	Bicknell Coal Company	Zn	do.	Sandstone	In siderite concretions.	Erd and Greenburg, 1960, p. 50, 51, 56; Shaffer, 1981, p. 25.
78	Z33	Zn	do.	Mississippian limestone (Blue River Group)	In well cuttings.	Shaffer, 1981, p. 30.
79	Z52	Zn	do.	do.	do.	Do.
80	Z8	Zn	do.	Silurian? limestone (Wabash Formation?)	do.	Do.
81	--	Zn	do.	Mississippian limestone (Sanders Group)	do.	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
82	Z9	Zn	do.	Mississippian limestone (Blue River Group)	do.	Do.
83	Z10	Zn	do.	Devonian dolomite (Muscatatuck Group)	do.	Do.
84	McCormicks Creek State Park	Zn	do.	--	Outcrop along McCormicks Creek.	Erd and Greenburg, 1960, p. 50, 51, 60; Shaffer, 1981, p. 25.
85	--	Zn, Ba	do.	--	In abandoned quarry.	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 60; Shaffer, 1981, p. 25, 26.
86	Gosport	Zn	do.	--	In cut near railroad station.	Erd and Greenburg, 1960, p. 50, 51, 59; Shaffer, 1981, p. 25.
87	Gosport	Zn	do.	--	In cut on secondary road.	Erd and Greenburg, 1960, p. 50, 51, 59; Shaffer, 1981, p. 25.
88	Z32	Zn	do.	Devonian dolomite (Muscatatuck Group)	In well cuttings.	Shaffer, 1981, p. 31.
89	Brooklyn Shale Company Pit	Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 19, 59; Shaffer, 1981, p. 25.
90	Z30	Zn	do.	Mississippian limestone (Sanders Group)	In well cuttings.	Shaffer, 1981, p. 31.
91	--	Ba	do.	--	In road cut on Indiana 37.	Erd and Greenburg, 1960, 18, 19, 57; Shaffer, 1981, p. 25.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
92	--	Zn, Ba	do.	--	do.	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 57; Shaffer, 1981, p. 25.
93	--	Zn, Ba	do.	--	do.	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 57; Shaffer, 1981, p. 25.
94	Bloomington Crushed Stone Company quarry	Zn, Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 58; Shaffer, 1981, p. 25.
95	Griffys Creek	Zn	do.	--	Outcrop on small tributary to Griffys Creek.	Erd and Greenburg, 1960, p. 50, 51, 57; Shaffer, 1981, p. 25.
96	--	Zn	do.	--	Outcrop and wash in stream.	Erd and Greenburg, 1960, p. 50, 51, 58; Shaffer, 1981, p. 25.
97	--	Zn	do.	--	do.	Do.
98	--	Zn, Ba	do.	--	In abandoned quarry.	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 57; Shaffer, 1981, p. 25.
99	--	Zn	do.	--	Exposure in temporary excavation.	Erd and Greenburg, 1960, p. 50, 51, 58; Shaffer, 1981, p. 25.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
100	--	Ba	do.	--	In road cut on Indiana 46.	Erd and Greenburg, 1960, p. 18, 19, 58; Shaffer, 1981, p. 25.
101	--	Ba	do.	--	In road cut on Indiana 37.	Do.
102	--	Zn	do.	--	In abandoned quarry.	Erd and Greenburg, 1960, p. 50, 51, 58; Shaffer, 1981, p.25.
103	Smithville quarry (abandoned)	Ba	do.	--	do.	Erd and Greenburg, 1960, p. 18, 19, 58; Shaffer, 1981, p. 25.
104	--	Ba	do.	--	In road cut on Indiana 37.	Do.
105	--	Ba	do.	--	do.	Do.
106	--	Zn	do.	Mississippi limestone	Two surface exposures. One in Sanders Group (Z70).	Erd and Greenburg, 1960, p. 50, 51, 58 Shaffer, 1981, p. 25, 32.
107	Z39	Zn	do.	Devonian dolomite (Muscatatuck Group)	In well cuttings. Near a surface exposure Z71 (not shown separately) of sphalerite in Mississippian limestone (Sanders Group).	Shaffer, 1981, p. 31, 32.
108	--	Zn, Ba	do.	--	In abandoned quarry.	Erd and Greenburg, 1960, 18, 19, 50, 51, 57; Shaffer, 1981, p. 25.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
109	Z29	Zn	do.	Devonian dolomite (Mascatatuck Group)	In well cuttings.	Shaffer, 1981, p. 31.
110	Z6	Zn	do.	Silurian dolomite (Salamonie Dolomite)	do.	Shaffer, 1981, p. 30.
111	--	Zn	do.	Devonian limestone (Muscatatuck Group)	do.	Do.
112	Meshburger Stone Company quarry	Zn	do.	--	--	Erd and Greenburg, 1960, p. 50, 51, 53; Shaffer, 1981, p. 25.
113	--	Zn	do.	Devonian limestone (Muscatatuck Group)	--	Shaffer, 1981, p. 32.
114	Z74	Zn	do.	do.	--	Do.
115	Paul Frank quarry	Zn, Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 55; Shaffer, 1981, p. 25.
116	--	Zn, Ba	do.	--	--	Shaffer, 1981, p. 25.
117	--	Ba	do.	--	--	Do.
118	Ralph Rogers Company quarry	Zn	do.	--	--	Erd and Greenburg, 1960, p. 50, 51, 56; Shaffer, 1981, p. 25.
119	Webster quarry (abandoned)	Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 19, 56; Shaffer, 1981, p. 25.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
120	--	Ba	do.	--	In outcrop in drainage ditch along Indiana 58.	Do.
121	--	Ba	do.	--	In outcrop along road.	Do.
122	--	Ba	do.	--	In road cut.	Do.
123	--	Zn, Ba	do.	--	In abandoned quarry and railroad cut.	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 56; Shaffer, 1981, p. 25.
124	Nally, Ballard, and Cuto quarry	Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 19, 57; Shaffer, 1981, p. 25.
125	Z81	Zn	do.	Mississippian limestone (Blue River Group)	--	Shaffer, 1981, p. 32.
126	Radcliff and Berry, Inc. quarry	Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 19, 59; Shaffer, 1981, p. 25.
127	--	Zn	do.	Mississippian limestone (Sanders Group)	In well cuttings.	Shaffer, 1981, p. 30.
128	--	Zn, Ba	do.	Mississippian Harrodsburg Limestone (?)	From an abandoned quarry immediately west of Seymour Gravel Company quarry (Indiana 129).	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 55; Shaffer, 1981, p. 25.
129	Seymour Gravel Company quarry	Zn, Ba	do.	Mississippi Harrodsburg Limestone	In geodes.	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
130	--	Zn	do.	Mississippian lime-stone (Salamonie ? Dolomite)	In well cuttings.	Shaffer, 1981, p. 30.
131	--	Ba	do.	--	In abandoned quarry.	Erd and Greenburg, 1960, p. 18, 19, 62; Shaffer, 1981, p. 26.
132	Salem Lime and Stone Company quarry (abandoned)	Zn	do.	--	--	Erd and Greenburg, 1960, p. 50, 51, 62; Shaffer, 1981, p. 25.
133	Hoosier Lime and Stone Company quarry	Zn	do.	--	--	Do.
134	--	Zn, Ba	do.	--	In cut for dam spillage.	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 62; Shaffer, 1981, p. 25, 26.
135	--	Zn	do.	--	In abandoned quarry.	Erd and Greenburg, 1960, p. 50, 51, 63; Shaffer, 1981, p. 25.
136	--	Zn, Ba	do.	--	In abandoned quarry.	Erd and Greenburg, 1960, p. 18, 19, 50, 51, 63; Shaffer, 1981, p. 25, 26.
137	--	Zn	do.	--	In road cut on Indiana 60.	Erd and Greenburg, 1960, p. 50, 51, 63; Shaffer, 1981, p. 25.
138	--	Zn	do.	--	In railroad cut.	Erd and Greenburg, 1960, p. 50, 51, 62; Shaffer, 1981, p. 25.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
139	Scott County Stone Company quarry	Zn	do.	--	--	Erd and Greenburg, 1960, p. 50, 51, 61; Shaffer, 1981, p. 25.
140	--	Ba	do.	--	In railroad cut.	Erd and Greenburg, 1960, p. 18, 19, 55; Shaffer, 1981, p. 25.
141	--	Ba	do.	--	In road cut on Indiana 129.	Erd and Greenburg, p. 18, 19, 61; Shaffer, 1981, p. 26.
142	Tri-County Stone Company quarry	Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 19, 62; Shaffer, 1981, p. 26.
143	--	Zn	do.	--	Surface exposure.	Shaffer, 1981, p. 25.
144	Z13	Zn	do.	Mississippian limestone (Sanders Group)	In well cuttings.	Shaffer, 1981, p. 30.
145	Scheeler quarry	Ba	do.	--	--	Erd and Greenburg, 1960, p. 18, 19, 60; Shaffer, 1981, p. 26.
146	--	Zn	do.	Mississippian limestone (Blue River Group)	In well cuttings.	Shaffer, 1981, p. 31.
147	--	Zn	do.	--	In road cut on Indiana 70.	Erd and Greenburg, 1960, p. 50, 51, 61; Shaffer, 1981, p. 25.

KENTUCKY

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Central Kentucky district (More than 200 vein deposits; 177 mines and prospects described by Robinson, 1931)	Ba (F, Zn, Pb)	Medium	Mostly in Middle Ordovician limestone; 96% of the veins are in Lexington Limestone Formation, Tyrone Limestone and lower Clay's Ferry Formation. Some veins extend into Upper Ordovician Richmond Group.	In steeply dipping veins and fault breccia fillings on the Jessamine Dome. Most veins are in nearly vertical strike-slip faults. 177 mines and prospects.	Jolly and Heyl, 1964, p. 596-624; Plummer, 1971, p. 252-258; Fohs, 1913, p. 441-588; Robinson, 1931, 127 p.
2	Cumberland River area (Central Tennessee district)	Ba, F, Zn, Pb	Prospects	Upper Ordovician limestone (Leipers Limestone) and Mississippian shale and limestone (Fort Payne Formation)	Steeply dipping veins and fault breccia fillings; veinlets of barite in shale; barite in geodes and as irregular nodular segregations in limestone.	Jolly and Heyl, 1964, p. 596-624; Plummer, 1971, p. 257-258; Taylor, 1962.
3 (Illinois 25)	Illinois-Kentucky fluorspar district (In Kentucky more than 120 mines, mine groups, prospects and ocurrences in the Western Kentucky district)	F (Zn, Pb, Ba)	Medium zinc-lead production. Large fluorspar production.	Mississippian limestone, shale and sandstone	Vein deposits, bedding replacement deposits, and residual deposits; most large vein deposits are in the principal NE- or E-trending faults; some are in cross or oblique faults or other fractures. Some veins are fissure fillings; others have resulted from replacement of wall rock. In some deposits fluorspar cements breccia fragments.	Currier, 1923, 1937, p. 364-386; Grogan and Bradbury, 1968, p. 370-399; Pinckney, 1976, 15 p.; Williams et al, 1954, 127 p., Worl et al, 1974, p. 5 and map.

MARYLAND

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Johnsville Mine	Ba	Small	Cambrian limestone	Bedded lens.	Ostrander, 1942, p. 44. Brobst, 1965, p. 5
2	Sauble quarry	Ba	Occurrence	Cambrian limestone (Loudoun limestone)	Veins, small bands and stringers.	Watson and Grasty, 1915, p. 361-362. Brobst, 1965, p. 5.

MICHIGAN

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Point Aux Barques lighthouse	Zn	Occurrence	Mississippian Coldwater Formation	Sphalerite and calcite shell replacement.	Heinrick, 1976, p. 195; Lane, 1900, p. 229.
2	Collison's well, Snell's well and an unnamed well	Pb	Occurrence	Pyritiferous shale	Galena reported from 3 wells at depths of 40 to 75 feet.	Lane, 1900, p. 161.
3	Muller's well	Zn	Occurrence	--	Iron and zinc sulfides reported from a depth of 113-118 feet.	Lane 1900, p. 145.
4	Bauer's well, Sebewaing	Zn	do.	Mississippian Bayport Limestone	Fragments of shalerite reported from a depth 118 feet.	Heinrick, 1976, p. 195; Lane, 1900, p. 221, 229.
5	Cass City	Zn	do.	Mississippian sandstone (Marshall Formation)	In nodular concretions and drusy cavities.	Davis, 1909, p. 185, 203; Heinrick, 1976, p. 196; Rominger, 1876, p. 104-105.
6	Grand Ledge Clay Products Company	Zn, Pb	do.	Pennsylvanian Saginaw Formation	In ironstone concretions.	Dorr and Eschman, 1970; p. 255; Heinrick, 1976, p. 195.
7	Bellevue	Zn, Ba	do.	Mississippian Bayport Limestone	As fine crystals in cavities.	Dorr and Eschman, 1970, p. 255; Heinrick, 1976, p. 195, p. 55.
8	Coldwater	Zn, Pb	do.	Mississippian Coldwater Shale	In clay-ironstone concretions.	Dorr and Eschman, 1970, p. 255; Heinrick, 1976, p. 195.

NEW YORK

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Rossie (Bigelow, Macomb)	Pb, Zn	Small	Precambrian to Ordovician limestone and sandstone	Silurian mineralization.	Brown, in press, Neumann, 1952a, 25 p.
2	Redwood	Pb	do.	Cambrian sandstone (Potsdam Sandstone)	Vein; small amount of galena disseminated in limestone.	Miller, 1910, p. 58.
3	Pillar Point	Ba	do.	Ordovician limestone (Trenton Limestone)	Small veins.	Merrill, 1895, p. 582, Newland, 1919, p. 33.
4	Martinsburg	Pb, Zn	Occurrence	do.	--	Miller, 1910, p. 58.
5	Fairfield	Ba	do.	Ordovician shale (Utica shale)	In small veins and geodes.	Newland, 1919, p. 34.
6	Salisbury	Zn (Pb,Cu)	do.	Ordovician limestone (Trenton Limestone)	Filling of solution cavities and fissures.	Newland, 1919, p. 306.
7	Little Falls	Ba	do.	Ordovician dolomitic limestone (Beekmantown Group?)	In small veins and geodes.	Newland, 1919, p. 34.
8	Saratoga Springs	Zn	do.	Ordovician dolomite (Beekmantown Group)	Veins	Newland, 1919, p. 306.
9	Blue Corners	Zn, Fe	do.	do.	On small inclined fractures.	Lesure and Klemic, 1977.
10	White Creek	Pb	do.	Limestone, sandstone and(or) slate	"Small strings and bunches" (Mather, 1843).	Hartnagel and Broughton, 1951, p. 61; Mather, 1843, p. 498; Newland, 1919, p. 143.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
11	Sprakers	Zn, Pb	do.	shale	--	Hartnagel and Broughton, 1951, p. 61; Newland, 1919, p. 143.
12	Carlise	Ba	do.	Silurian shale	Veins 1/4 to 1 1/2 inches wide.	Beck, 1842, p. 207; Newland, 1919, p.34.
13	Schoharie	Ba, Sr, Pb	do.	Silurian shale and limestone	Nodular aggregates of crystals.	Beck, 1842, p. 207-208; Newland, 1919, p. 34, 143.
14	Niagra Falls	Zn	do.	Silurian (?) limestone	--	Hall, 1843, p. 447.
15	Lockport	Zn (Pb)	do.	Silurian dolomite (Lockport Group)	Linings of small cavities and stringers.	Newland, 1919, p. 307.
16	Manning	Zn (Pb, Sr, Ba)	do.	Silurian dolomite (Lockport Group) and overlying Holocene peat bogs	Metals concentrated in Silurian patch reefs, transported by ground waters and selectively concentrated in peat bogs as finely divided sulfides.	Cannon, 1955, p. 119-185.
17	Rochester (Penfield and other quarries)	Zn	do.	Silurian dolomite (Lockport Group)	In solution cavities.	Bassett and Kinsland, 1973, p. H1-H9; Jensen, 1942, p. 199-203; Kinsland, 1977, p. 849-854.
18	Wolcott	Ba	do.	Silurian	In geodes.	Beck, 1842, p. 209.
19	College Hill	Zn (Cu, Pb)	do.	Silurian dolomite (Lockport Group)	Disseminated or in geodes; in reef zones.	Dale, 1953, p. 103-108.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
20	Buffalo	Ba	do.	Devonian	"In laminae, in... rounded masses called septaria" (Beck, 1842).	Beck, 1842, p. 209.
21	Silver Creek	Ba	do.	Late Devonian mudrock and shale	Barite nodules.	Pepper, J. F., unpublished data.
22	Laona	Ba	do.	Devonian	"In laminae, in... rounded masses called septaria" (Beck, 1842).	Beck, 1842, p. 209.
23	Syracuse	Ba	do.	Silurian (?) limestone	"In plates or tables interlacing each other" (Beck, 1842).	Beck, 1842, p. 206.
24	Tully Limestone	Zn, Ba	do.	Devonian limestone	Replacement of matrix and grains, shell fillings.	Heckel, 1973, p. 59, 75, C9.
25	Auburn	Ba	do.	Devonian ?	"In laminae, in ... rounded masses called septaria" (Beck, 1842).	Beck, 1842, p. 209.
26	Cayuga and Seneca Lakes	Ba, Zn	do.	Devonian shale (Genessee shale)	In limestone concretions.	Martens, 1925.
27	Canaan	Pb, Zn (Ag)	Small	limestone	Veins. Numerous small veins reported in the area.	Beck, 1942, p. 46; Mather, 1843, p. 500-501.
28	Claverack	Pb	Occurrence	--	Vein	Mather, 1843, p.502; Beck, 1842, p. 46.
29	Livingston	Pb, Zn?	do.	--	In an old mine in Livingston.	Mather, 1843, p. 503.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
30	Ancram (Livingston Lead Mine)	Pb (Cu,Zn,Ba,Ag)	Small	Ordovician dolomite (Wallomsac Formation)	Mineralization in faults of possible Triassic age (Radcliff, oral communication, 1981).	Hartnagel and Broughton, 1951, p. 61; Beck, 1842, p.45-46, 409; Mather, 1843, p. 498-500; Newland, 1919, p. 142-143; Peterson,1950, p. 47.
31	Smithfield (Northeast)	Pb (Cu, Ag)	do.	Ordovician limestone	Large number of small veins.	Beck, 1842, p. 46; Mather, 1843, p. 500-502; Newland, 1919, p. 143.
32	Fishkill	Pb (Cu)	Occurrence	Limestone	In a thin vein of quartz.	Mather, 1843, p.503
33	Shawangunk district (Guymard, Ellenville, Shawangunk, Ulster and Otisville mines)	Zn, Pb (Cu)	Small	Silurian conglomerate, sandstone, and subgraywacke (Shawangunk Conglomerate)	In sheeted zones along faults, tabular bodies of quartz, stringers and veins.	Eilertsen, 1950, 41 p.; Ingham, 1940, p. 751-760; Mather, 1843, p. 359-362; Newland, 1919, p. 300-306; Neumann, 1952b, 10 p.; Sims and Holtz, 1951, p. 101-120.
34	Haverstraw	Ba	Occurrence	--	Minute crystals associated with calcite.	Beck, 1842, p. 206.

OHIO

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Sohio #1 Lautzenheiser	Zn	Occurrence	Middle Ordovician Trenton Limestone	Well	Botoman and Stieglitz, 1978, p. 4, 5.
2	Lorex #1 Reckner	Zn	do.	do.	do.	Do.
3	Liberty #1 Slahunek	Zn	do.	Lower Ordovician Knox Group	do.	Do.
4	Maumee Stone Company quarry (Lucas County)	Zn, Sr, F	do.	Silurian Greenfield Formation and Lockport Group	--	Do.
5	Maumee Stone Company quarry (Wood County)	Pb, Zn, F, Sr	do.	do.	--	Botoman and Stieglitz, 1978, p. 4, 6.
6	Kraemer Stone Company, White Rock quarry (Clay Center quarry)	Zn, Pb, F, Sr	do.	Silurian Lockport Group	Well known collecting locality.	Botoman and Stieglitz, 1978, p. 4-5, 8; Howard, 1959; McAllister, 1943; Montage, 1948; Morrison, 1935; Zodac, 1947.
7	Maumee Stone Company quarry (Ottawa County)	Zn, Sr, F	do.	do.	--	Botoman and Stieglitz, 1978, p. 4, 6.
8	Old Genoa quarry	Zn, F	do.	do.	--	Do.
9	Ohio Lime Company quarry	Pb, Zn, F, Sr	do.	do.	--	Botoman and Stieglitz, 1978, p. 4, 6; Green, 1971, p. 280-281.
10	Martin Marietta Chemicals	Zn, F	do.	do.	Quarry	Botoman and Stieglitz, 1978, p. 4, 6.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
11	Charles Pfizer and Company quarry	Pb, F, Sr	do.	do.	--	Do.
12	Leeds' barite occurrence	Ba	do.	Devonian Huron Shale	Coal seams traversed by "sheets" of barite.	Leeds, 1875, p. 105.
13	Pugh Quarry Company quarry	Zn, F, Sr Ba	do.	Devonian Dundee and Detroit River Formations	--	Botoman and Stieglitz, 1978, p. 4, 6; Parr and Chang, 1977, 1978, 1979, 1980.
14	France Stone Company quarry	Zn, F	do.	Silurian Tymochtee Formation	--	Botoman and Stieglitz, 1978, p. 4, 6.
15	Ottawa Stone Company, Inc. quarry	Zn, F	do.	Silurian Raisin River and Tymochtee Formations	--	Do.
16	Maumee Stone Company, Junction quarry	Zn, F	do.	Devonian Dundee and Detroit River Formations	--	Do.
17	Ridge Township Stone quarry	Zn, F	do.	Silurian Tymochtee Formation	--	Do.
18	Delphos Quarries Company quarry	Zn, F	do.	Silurian Tymochtee Formation	--	Do.
19	National Lime and Stone Company	Zn	do.	Silurian Raisin River and Tymochtee Formations	--	Do.
20	Putnum Stone Company, Inc. quarry	Zn, F	do.	do.	--	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
21	Western Ohio Stone Company quarry	Zn	do.	Silurian Tymochtee Formations	--	Do.
22	National Lime and Stone Company quarry	Zn, F	do.	do.	--	Do.
23	National Lime and Stone Company quarry	Zn	do.	Silurian Greenfield Formation and Lockport Group	--	Botoman and Stieglitz, 1978, p. 4, 5.
24	Ashland #1 Cotner	Zn	do.	Middle Ordovician Wells Creek (Glenwood) Formation	Well	Do.
25	National Lime and Stone Company quarry	Zn, Sr	do.	Silurian Greenfield Formation and Lockport Group	--	Botoman and Stieglitz, 1978, p. 4, 6.
26	White #1 Stubb	Zn	do.	Middle Ordovician Trenton Limestone	Well	Botoman and Stieglitz, 1978, p. 4, 5.
27	Brinkerhoff #1 Fox	Zn	do.	Lower Ordovician Knox Dolomite	Well	Do.
28	C. M. McCarthy quarry	Zn	do.	Silurian Raisin River and Tymochtee Formations	--	Botoman and Stieglitz, 1978, p. 4, 6.
29	Hardin Quarry Company quarry	Zn, F	do.	Silurian Tymochtee Formation	--	Botoman and Stieglitz, 1978, p. 4, 5.
30	McMahon-Bullington #1 Wolf	Zn	do.	Lower Ordovician Knox Formation	Well	Do.
31	Blood #1 Schlabach, Blood #2 Schmidt	Pb	do.	Silurian dolomite (Lockport Group)	Wells, rare galena as a vug filling.	Botoman and Stieglitz, 1978, p. 4, 6; Multer, 1963; p. 13.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
32	Wooster, outcrop near	Zn(Pb)	do.	Mississippian Cuyohaga Formation.	As crystals in shale, as fillings or replacements of fossils, and as fossiliferous concretions associated with pyrite and calcite.	Botoman and Stieglitz, 1978, p. 4, 6; Ver Steeg, 1940.
33	Marshallville, outcrops near	Zn, Ba(Pb)	do.	Pennsylvanian shale of the basal Pottsville Formation above unconformity	In clay-ironstone septarian concretions in black, bituminous, thinly laminated shale.	Botoman and Stieglitz, 1978, p. 4, 6; Ver Steeg, 1942.
34	Immel, R. Coal mine	Zn	do.	Pennsylvanian Allegheny Formation	Wurtzite in coal.	Botoman and Stieglitz, 1978, p. 4, 6.
35	Ellsworth, outcrop near	Zn, Ba	do.	Pennsylvanian	In shrinkage cracks in ironstone concretions in shale.	Botoman and Stieglitz, p. 4, 6.
36	Steubenville, outcrop near	Zn	do.	Pennsylvanian Conemaugh Formation	Wurtzite in clay-ironstone concretions.	Do.
37	Ohio Geological Survey stratigraphic section 12771	Zn	do.	Silurian Brassfield Formation	--	Botoman and Stieglitz, p. 4, 5.
38	Ohio Geological Survey stratigraphic section 15756, Old Marble Cliff, Lewisburg quarry	Zn	do.	Silurian Brassfield Formation	--	Botoman and Stieglitz, p. 4, 6.
39	Ohio Geological Survey Stratigraphic section 15772	Zn	do.	Silurian Brassfield Formation	--	Botoman and Stieglitz, 1978, p. 4, 6.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
40	Blue Rock quarry, American Aggregates Corporation	Zn	do.	Silurian Greenfield Formation	--	Botoman and Stieglitz, 1978, p. 4, 5.
41	Cominco-American CA-54 Swingley	Zn	do.	Lower Ordovician Knox Dolomite	Well	Do.
42	G. E. Havens Limestone Company quarry	Zn	do.	Silurian Greenfield Formation	--	Botoman and Stieglitz, 1978, p. 4,5; Rodgers, 1936, p. 114.
43	Ohio Geological Survey stratigraphic section 13610; Davon Inc., Highland Plant quarry	Zn, Ba	do.	Silurian Brassfield Formation	--	Botoman and Stieglitz, 1978, p. 4, 5.
44	Marshall quarry	Zn	do.	Silurian Lilley-Peebles Formation	--	Do.
45	Ohio Geological Survey stratigraphic section 13609	Zn	do.	Silurian Brassfield Formation	--	Botoman and Stieglitz, 1978, p. 4, 5.
46	Serpent Mound	Zn, F	do.	Silurian dolomite. Greenfield Lilley-Peebles, Bisher, and Brassfield Formations	In shatter breccia in cryptoexplosion structure.	Botoman and Stieglitz, 1978, p. 4, 5; Heyl and Brock, 1962, p. D95-D97; Stout, 1941, p. 17, 78.
47	Ohio Geological Survey stratigraphic section 14350	Zn	do.	Silurian Brassfield Formation	--	Botoman and Stieglitz, 1978, p. 4, 5.
48	Ohio Geological Survey stratigraphic section 9732	Zn	do.	Silurian Brassfield Formation	--	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
49	Cominco-American #1 Rockey	Zn, Ba	do.	Lower Ordovician Knox Group	Well	Do.
50	Ohio Geological Survey stratigraphic section 12667	Zn, Ba	do.	Silurian Brassfield Formation	--	Do.
51	Cominco-American #1 Hughes	Zn, Ba, Cu(?)	do.	Lower Ordovician Knox Dolomite	Well	Do.
52	Old Glouster Brick quarry	Zn	do.	Pennsylvanian Conemaugh Formation	In clay-ironstone concretions.	Botoman and Stieglitz, 1978, p. 4, 6; Seaman and Hamilton, 1950, p. 43-50.

PENNSYLVANIA

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Harrison Township	Zn(?), Pb(?)	Occurrence	--	--	Smith, 1977, p. 295.
2	Ridgebury, east of	Pb, Cu	Occurrences	Devonian Catskill Formation	--	Smith, 1977, p. 289.
3	Roaring Branch of Lycoming Creek	Pb,Zn,Cu	Occurrence	Devonian Upper Catskill Formation	--	Smith, 1977, p. 293.
4	Millview Quarry	Pb, Zn (As, Cu)	do.	Devonian coquinoid limestone (Catskill Formation)	Disseminated grains, blebs and veinlets; mostly concentrated near top of coquinite bed.	Smith, 1977, p. 221-222.
5	Prospect 12	Pb, Cu	do.	Devonian sandstone (Catskill Formation)	--	Smith, 1977, p. 291.
6	Oil City, east of	Pb, Zn	do.	--	Oil-well cutting.	Smith, 1977, p. 295.
7	Sugar Hill Quarry	Zn (Cu)	do.	Pennsylvanian siderite nodules in shale above the Vanport limestone	Sphalerite and wurtzite in nodules.	Smith, 1977, p. 223-225.
8	Coal mine west of Parker	Pb	do.	Carboniferous fire clay	--	Smith, 1977, p. 289.
9	Racoon Creek near Beaver	Pb, Zn	do.	Coal measures	Nodules	Smith, 1977, p. 288.
10	North Vandergrift	Zn, Pb (?)	do.	Limy shale at base of Upper Freeport coal	Nodules	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
11	Valley Camp, brick yard quarry					
12	Glassmere Brick Company quarry					
		Zn, Ba, Cu	Occurrences	Pennsylvanian black shales (Conemaugh Formation)	The most productive mineral localities for occurrence of wurtzite along shrinkage cracks in clay-ironstone concretions. Eleven other occurrences listed by Seaman and Hamilton, 1950.	Lapham and Geyer, 1959, p. 29-30; Seaman and Hamilton, 1950, p. 43-50.
13	Wittmer					
14	Donohoe					
15	Victor (Hector) Hollow	Pb, Zn	Occurrence	Mississippian Pocono sandstone	Considered by Smith to have a reasonable but slight chance of indicating a significant prospect in the area.	Smith, 1977, p. 291.
16	Scranton	Zn	do.	Pennsylvanian coal measures	--	Smith, 1977, p. 292.
17	Sullivan Trail Coal Company, west	Zn	do.	do.		Smith, 1977, p. 293.
18	Pine Hill, Milford	Zn	do.	Devonian Mahantango Siltstone	--	Smith, 1977, p. 294.
19	Milford Road	Zn(?)(Pb, Cu)	do.	Devonian Hamilton Sandstone	--	Do.
20	Lime Bluff Quarry	Zn, Pb(Cu)	do.	Limestone, upper Tonoloway Formation of Upper Silurian age and possibly lowermost Keyser Formation of Devonian age.	In calcite veins.	Smith, 1977, p. 177-180.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
21	Lymehurst Quarry	Pb, Zn	do.	Silurian limestone (Tonoloway Formation)	In a calcite veinlet.	Smith, 1977, p. 180-182.
22	DeHass, A.M.	Pb	do.	Silurian Tonoloway limestone (?)	--	Smith, 1977, p. 291.
23	Buffalo Valley	Pb	do.	Silurian Tonoloway(?) limestone	--	Smith, 1977, p. 295.
24	Winfield Quarry	Zn, Pb	do.	Silurian limestone (upper part of the Tonoloway Formation)	Replacement of pyrite-bearing laminated limestone; calcite and sphalerite gash veins.	Smith, 1977, p. 185-187.
25	Doughty mine (Dougherty)	Pb, Zn (Cu)	Small	Silurian limestone (Tonoloway Formation)	In calcite veins and a replacement bed.	Smith, 1977, p. 170-175.
26	Almedia mine area (Webb mine, Dave's Seafood outcrops)	Pb, Zn (Cu, As, Ag)	do.	do.	Veins in outcrop, ore in a fracture zone, as irregular replacements of limestone and along joint planes. Possibly a crackle breccia.	Smith, 1977, p. 163-168.
27	I. Turn's farm	Zn (Cu)	Occurrence	Silurian red beds (Bloomsburg)	--	Smith, 1977, p. 294.
28	Penn Haven Junction	Pb (U)	do.	Devonian sandstone (Clarks Ferry-Duncannon of Catskill sandstone)	Occurrence of clausthalite and uraninite on quartz-encrusted joint surfaces and disseminated.	Klemic et al., 1963; p. 67, 78-79, 87; Smith, 1977, p. 290.
29	Walcksville	Pb, Zn (Cu)	do.	Devonian sandstone (Upper Trimmers Rock sandstone)	In tension fractures and thin quartz veinlets along bedding-plane fractures.	Klemic et al., 1963, p. 58, 90-91; Smith, 1977, p. 290.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
30	Nesquehonig, Coal strip mine southwest of	Pb	do.	Pennsylvanian coal measures	--	Smith, 1977, p. 290.
31	Bowmantown	Pb	do.	Devonian sandstone (Lower Catskill)	--	Do.
32	Lehigh Gap	Pb	do.	Silurian sandstone (Tuscarora-Shawangunk)	--	Smith, 1977, p. 290.
33	Hecktown, limonite mine on von Steuben farm	Zn	do.	--	Considered by Smith (1977, p. 294) to have a reasonable but slight chance of indicating a significant prospect in the area.	Smith, 1977, p. 294.
34	Schneider	Zn	do.	Lower Ordovician dolomite (Beekman-town Group)	--	Smith, 1977, p. 293.
35	Kreamer	Zn	do.	Devonian conglomerate (Ridgley Member, Old Port Formation below Needmore)	--	Smith, 1977, p. 295.
36	Wadeville	Pb, Zn, Cu	do.	Pennsylvanian coal measures	--	Do.
37	State Game Land	Pb	do.	graywacke	--	Do.
38	Pottsville	Pb	do.	Pennsylvanian coal measures	--	Do.
39	Adamsville	Pb, Zn	do.	Devonian sandstone (Palmerton sandstone)	--	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
40	Friedensville District-Ueberroth Mine, Old Hartman Mine Correll or Saucon Mine, Triangle or Three Corners Mine	Zn (Cd)	Large	Lower Ordovician dolomite (Rickenback Formation of Beekman-town Group)	Replacement of breccias.	Callahan, 1968, p. 94-107; Smith, 1977, p. 82-88, 102-111, 140-149.
Included in 40	Greene Mine	Zn	Occurrence	Jackson Formation of Beekmantown Group	Considered by Smith (1977, p. 289) to have a reasonable but slight chance of indicating a significant prospect in the area.	Smith, 1977, p. 293.
Included in 40	Allentown quarry at Little Lehigh-Jordan Creek	Zn	do.	Cambrian Limestone (Allentown Formation)	Do.	Do.
41	Rickenback	Zn	do.	Lower Ordovician Beekmantown Group	Do.	Smith, 1977, p. 289.
42	Oley Valley	Zn (Cu)	do.	Lower Middle Ordovician dolomite and limestone (Ontelaunee Formation)	In breccias near the crest of an anticline.	Smith, 1977, p. 112-113.
43	Milesburg Gap	Zn, Pb	Prospects	Silurian quartzite (Tuscarora Formation)	In veinlets, along faults, in breccias.	Smith, 1977, p. 208-217.
44	Skytop	Pb, Ba	Occurrence	Silurian quartzite (Tuscarora and Juniata Formations)	--	Smith, 1977, p. 209.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
45	Sinking Valley-Keystone Mine area	Zn, Pb	Small	Ordovician limestone and dolomite	In veins and breccias.	Smith, 1977, p. 89-102, p. 124-140.
46	Mill Run	Pb (Zn)	Occurrence	Devonian sandstone (Chemung(?) Formation)	Galena disseminated in sandstone.	Smith, 1977, p. 219.
47	Canoe Creek Quarry	Zn	do.	Silurian limestone (Keyser Formation)	Mineralization on a joint.	Smith, 1977, p. 168-170.
48	Thompson	Pb, Zn	Prospect	Silurian limestone (Tonoloway Formation)	Mineralization along and near a joint.	Smith, 1977, p. 183-185.
49	Hares Valley area	Zn, Pb	Prospects and occurrences	Silurian clastic rocks (mainly Tuscarora Formation)	Mineralization along joints, associated with faults, thin veins, limonite gossans.	Smith, 1977, p. 188-207; Smith et al, 1971.
50	Roaring Spring area	Zn (Pb)	Occurrences	Ordovician dolomite (Belefonte and Upper Axemann Formations)	In dolomite bed that has been partly replaced by silica, in chert nodules, quartz and dolomite rosettes and in shaly laminae between beds.	Smith, 1977, p. 115-120.
51	Knisley and Sproul Lime and Stone Company Quarries	Zn	do.	Silurian-Devonian limestone (Tonoloway and Keyser Formation	In calcite-filled joints.	Smith, 1977, p. 176-177.
52	Soister Limonite Mine (3 locations)	Fe(Zn)	do.	Ordovician dolomite (Beekmantown Group)	Possibly in a collapse-rubble breccia.	Smith, 1977, p. 120-124.
53	Woodbury Prospect area	Zn, Pb	Prospects	Cambrian-Ordovician limestone and dolomite	In breccias.	Smith, 1977, p. 149-162.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
54	Entriken	Pb	Occurrence	Mississippian sandstone of the Pocono Formation	--	Smith, 1977, p. 292.
55	Shirleysburg	Pb(?)	do.	Silurian quartzite (Tuscarora Formation)	Considered by Smith (1977) to have a reasonable, but slight chance of indicating a significant prospect in the area.	Smith, 1977, p. 292.
56	Ft. Littleton area	Ba	Small	Silurian limestone (Tonoloway Formation)	Replacement of wall rock and breccia fragments in a fault zone.	Socolow, A. A., 1959.
57	New Enterprise Quarry	Zn	Occurrence	Ordovician (Milroy Member of the Loysbury Formation)	--	Smith, 1977, p. 289.
58	Centerville	Zn	do.	Devonian limestone near base of Shriver Formation	0.5% Zn in goethite. Considered by Smith (1977) to have a reasonable, but slight chance of indicating a significant prospect in the area.	Smith, 1977, p. 288.
59	Hyndman	Pb	do.	Mississippian through Pennsylvanian	Outcrop along Gooseberry run.	Smith, 1977, p. 288.
60	Lake Loon	Ba	do.	Middle Devonian shale (Marcellus Shale)	Nodules in shale.	DeWitt, 1974 and personal commun., 1981.
61	Cooks Mills	Ba	do.	Middle Devonian shale (Marcellus Shale)	do.	DeWitt, 1974 and personal commun., 1981.
62	Chambersburg area	Ba	Small	In residual soil overlying Cambrian and Ordovician limestone	Veins.	Brobst, 1965, p. 7; Stone, 1940, p. 5-8.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
63	Waynesboro area	Ba	Occurrence	In residual clays and Cambrian limestone	Vein filling in brecciated limestone.	Do.
64	Bamford Mine area	Zn	Small	Cambrian dolomite (mainly Ledger Dolomite)	Veins conformable to bedding.	Smith, 1977, p. 19-32; Freedman, 1972.
65	North Manor Hill area	Zn	Occurrence	Cambrian dolomite (Vintage Formation)	As blebs disseminated in dolomite; as veinlets and limonite replacing pyrite.	Smith, 1977, p. 54-57.
66	Gap Northeast	Zn (Pb, Cu)	Prospect	do.	Geochemical anomalies for zinc to the south and southwest.	Smith, 1977, p. 46-49.
67	York Stone and Supply Company New Quarry	Zn (Cd, Cu)	Occurrence	Cambrian dolomite (Ledger Formation)	In irregular horizontal lens at least partly localized within a particular bed.	Smith, 1977, p. 80-81.
68	Pequea and Burnt Mills Silver Mines area	Pb, Ag	Small	Cambrian dolomite (Vintage Formation)	In quartz veins along bedding planes.	Smith, 1977, p. 62-79.

TENNESEE

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	J. Curtis No. 1 Memphis Equipment Company	Zn	Occurrence	Lower Ordovician Knox Group	In well cuttings.	Tennessee Division of Geology, unpublished data, 1969.
2	Heywood Cordle No. 1, Memphis Equipment Company	Zn	do.	do.	do.	Do.
3	Fee (Joyner) No. 1, Draughon Bros.	Zn	do.	Cambrian-Ordovician Knox Group	do.	Do.
4	Central Tennesee district (Elmwood and Gordonsville Mines; deposits near Sugar Creek, Gainesboro, Hartsville, Lebanon, Carthage; six small mines on veins, numerous prospects and occurrences)	Zn (Ba,F,Pb)	Large	Lower Ordovician dolomite and limestone (Knox Group; most ore is in the lower and middle Mascot Dolomite; subordinant amounts of ore are in the underlying Kingsport Formation). Fissure vein deposits are mainly in Middle Ordovician carbonate rocks, but are known in rocks as young as the Lower Mississippian Warsaw Limestone.	Predominant structures of large ore bodies are solution collapse breccias. Large ore deposits appear to be spatially associated with pre-Middle Ordovician structure. Fissure-vein deposits contain barite, fluorite, and calcite with small amounts of sphalerite and galena.	Braun, E. R., 1982, p. 11; Callahan, 1977; Jewell, 1947; Kyle, 1976, p. 892-903; Main, 1976, p. 113-121; White, 1979; Winslow and Hill, 1973.
5	W. E. Bertram No. 1, Sam Jarvis	Zn	Occurrence	Lower Ordovician Knox Group	In well cuttings.	Tennessee Division of Geology, unpublished data, 1969.
6	W. M. Phillips, No. 1, Bystoree, N.C.	Zn	do.	Lower Ordovician Knox Group	do.	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
7	Pall Mall	Ba	Medium	Residual clay overlying Mississippian limestone (St. Louis Formation).	Barite is restricted to a single favorable bed; no mineralization is known in the underlying limestones; possibly a bedded replacement deposit.	Maher, 1970, p. 14-15.
8	L. F. Choate No. 1, Travis Smith et al	Zn	Occurrence	Lower Ordovician Knox Group	In well cuttings.	Tennessee Division of Geology, unpublished data, 1969.
9	Grissom No. 1, Pike Oil Co. et al	Zn	do.	Cambrian Ordovician Knox Group	do.	Do.
10	Clemner-Roberson No. 1, Sun Oil Company	Zn	do.	Lower Ordovician Knox Group	do.	Do.
11	Sewanee Fuel and Iron Company No. 1, Sequatchie Gas Company	Zn	do.	do.	do.	Do.
12	Powell River District (most production from the New Prospect, Bunch Hollow and Kings Bend mines. Ninty-two mines prospects and occurrences described)	Zn, Pb	Small	Cambrian limestone and dolomite; the most productive deposits are in the Maynardville Limestone Member of the Nolichucky shale; smaller deposits in the Copper Ridge Dolomite	Three types of deposits: (1) replacement deposits along faults, with some open space filling in the breccia, (2) fracture fillings, (3) bedded replacement deposits apparently unrelated to faults or fractures.	Brokaw, et al, 1966.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
13	Straight Creek District (Straight Creek Mines, five prospects)	Zn, Pb	do.	Cambrian dolomite (Maynardville Limestone and Copper Ridge Dolomite)	Ore is in a zone of crushed and broken dolomite in all gradations from small veinlets to large masses almost entirely replacing the country rock.	Maher, 1958, p. 2, 27; Secrist, 1924, p. 47-52.
14	Evanston District (Livesay or Mill cut; six other prospects)	Zn	do.	Cambrian limestone in the Rome Formation	Small replacement veinlets and disseminated flakes and masses.	Secrist, 1924, p. 53-64.
15	Copper Ridge District(Idol and Flat Gap Mines, eight prospects)	Zn	Large	Lower Ordovician dolomite and limestone. (Mainly in the Kingsport and Mascot Formations)	Principal ore zone is a brecciated dolomite. Brecciated zones are at facies boundaries between sediments that formed on topographic highs and those deposited in subtidal environments. Occurs in gangue of white, coarsely crystalline dolomite. Brecciated horizons coincide with local strike of bedding.	Churnet, and Misra, 1982, p. 15, Hill, 1969; Hill, et al., 1971; Hoagland, 1962; Sayrs and Clayton, 1949; Secrist, 1924, p. 80-96.
16	Rodgersville Area (Caney Valley Mine and prospect)	Ba	Small	In residual soils overlying lower Ordovician Mascot Dolomite	--	Maher, 1970, p. 30.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
17	Click Ridge	Ba	Prospect	Cambrian limestone (Honaker dolomite)	Clear green crystalline barite in calcite vein.	Brobst and Hobbs, 1968, p. 274.
18	Orebank mines and prospect	Ba	Small	In residual clay overlying Lower Ordovician dolomite (Upper Knox Group)	A small barite mine and a brown iron ore mine with abundant barite.	Maher, 1970, p. 29
19	Barite nodule locality 6	Ba	Occurrence	Middle Ordovician carbonaceous shale (Athens Shale)	Nodules of barite and pyrite in black shale.	Carpenter and Fagan, 1969.
20	Fall Branch-Greeneville district (ten mines which produced barite, about twenty-six barite prospects, Fall Branch Zinc Mine and eight zinc prospects)	Ba, Zn	Small	Barite in residuum overlying carbonate rocks (Mainly upper Knox Group, but minor mineralization in carbonate rocks of the Conasauga Group of Cambrian age, and in shales of Middle Ordovician age. Zinc in Lower Ordovician dolomite (Mascot and Chepultepec Formations)	Barite in veins and crystalline agregates in bedrock. Zinc in brecciated dolomite cemented by white, crystalline dolomite.	Brokaw, et al, 1966, p. A17-A20; Maher, 1970, p. 15-17; Secrist, 1924, p. 96-104.
21	Watauga Point and Carden	Zn, Pb	Prospects	Middle Cambrian Honaker Dolomite	Replacement of county rock and fracture-fillings.	Maher, 1958, p. 9-25; Secrist, 1924, p. 140-141.
22	Nidifer Branch (Barite prospect in Stony Creek District)	Ba	do.	Cambrian Shady Dolomite and its residuum	--	Maher, 1970, p. 29; King, et al. 1944, p. 187.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
23	Dugger, Doughtery and Wagner zinc prospects; Draught Creek barite prospect and Dry Run Mine (Mn, Ba)	Mn,Zn,Ba	Prospects; small production from Dry Run Mine	Cambrian Shady Dolomite and its residuum	Vein and fracture filling; residual barite and manganese deposits. In Butler and Stony Creek manganese districts.	King, et al,1944 p. 168-174; King and Ferguson, 1960, p. 86; Maher, 1970, p. 17, 29.
24	Embreeville (Bumpass Cove District)	Fe, Zn, Pb, Mn	Medium	Cambrian Shady Dolomite and residual clay	Most production from oxidized deposits in residual clay; also disseminated and associated with brecciated country rock and sparry dolomite.	Rodgers, 1948.
25	Lost Creek (Rhodelia)	Ba (Zn)	Small	In residual soil and underlying Middle Ordovician argillaceous dolomite (Dot Formation) and Lower Ordovician dolomite (Mascot formation)	In a collapse breccia. Barite occurs as veins, coatings around breccia blocks, and fragments of coatings and veins embedded in argillaceous dolomite matrix.	McCormick et al, 1971; Harris, 1969, p. 35-37; Fagan, 1969; Carpenter et al, 1971, p.792-795.
26	--	Ba	Prospect	In residuum of Lower Ordovician Upper Knox Group	--	Maher, 1970, p. 32.
27	Moore	Pb, Zn	do.	Cambrian dolomite (Rome Formation)	In stringers and blebs of white, crystalline calcite and in dolomite; dolomite has a shattered texture.	Maher and Finlayson, 1965. p. 46.
28	Oak Ridge	Ba	Occurrence	In residuum above Lower Ordovician Knox Group (uppermost Longview Dolomite or lower Kingsport Formation	White barite in cherty residual clay.	Maher and Finlayson, 1965, p. 45.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
29	Owl Hole Gap	Zn	do.	Cambrian dolomite	--	Maher, 1958, p. 28.
30	Mascot-Jefferson City District (Mascot, Young, New Market, Grasselli, Davis-Bible, Jefferson City, Coy, North Friends Station, Jarnigan, Athletic, Mascot, Beaver Creek Mines)	Zn	Large (the leading zinc-producing district of the United States)	Lower Ordovician dolomite (Mascot, Kingsport and upper Longview Formations of the Knox Group)	Associated with white crystalline dolomite in solution-collapse breccias below the middle Ordovician unconformity.	Fulweiler and McDougal, 1971; Harris, 1971, p. 735-743; Hoagland, 1967; Hoagland, et al. 1965; Kendall, 1960; Oder and Ricketts, 1961.
31	Barite nodule locality 1	Ba	Occurrence	Middle Ordovician carbonaceous shale (Athens Shale)	Nodules of barite and pyrite in black shale.	Carpenter and Fagan, 1969.
32	Barite nodule locality 2	Ba	do.	do.	do.	Do.
33	Barite nodule localities 3 and 4	Ba	do.	do.	do.	Do.
34	Barite nodule locality 5	Ba	do.	do.	do.	Do.
35	Naft prospect (Rader prospect, R. N. Hartman mine)	Ba (Zn)	Small	Lower Ordovician dolomite (Mascot Formation)	Two ore-bearing horizons; one mostly of pyrite and barite forming narrow seams and veinlets; one with sphalerite in addition to barite and pyrite, which in places formed pockets.	Secrist, 1924, p. 102-104.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
36	Kodak	Ba	do.	In residual clay above upper Knox Group (Kingsport Formation?)	--	Maher, 1970, p. 32.
37	Kimberlin	Pb	do.	Cambrian dolomite (Rome Formation)	--	Ramsey, 1926, p. 376.
38	Trotter	Zn (Fe)	Prospect	Lower Ordovician slightly phosphatic carbonaceous dolomite (Mascot Formation)	Disseminated in breccia matrix and fillings in solution cavities and channels of a paleokarst terrane, filling of bedding-plane fractures.	Carpenter, et al, 1971, p. 796-797.
39	Del Rio District (Eleven mines and six prospects)	Ba	Medium	In mylonite and breccia in fault zones; Cambrian quartzite (mostly Unicoi Formation) Precambrian quartzite (Snowbird Group); some in Precambrian slate and Lower Cambrian Erwin Formation	Veins localized by over-thrust faults and related structures.	Fergeson and Jewell, 1951; Maher, 1970, p. 13-14, 31.
40	Blowing Cave	Ba	Small	Residual clays overlying Lower Ordovician dolomite (Knox Group)	Possibly the first barite deposit noted in east Tennessee.	Kain, 1819; Maher, 1970, p. 32.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
41	Nuns Cove	Ba, Zn	Prospect	Residuum and dolomite of the Upper Knox Group (Newala Limestone)	--	Brobst and Hobbs, 1960, p. 274-275; Maher and Finlayson, 1965, p. 44-45; Maher, 1970, p. 17-18, 32.
42	Little Mountain (Fairgarden)	Ba, Zn	do.	Residuum and dolomite of the Upper Knox Group	Discrete blebs or crystalline barite and less abundant fine-grained sphalerite.	Maher, 1970, p. 17, 18, 32; Maher and Finlayson, 1965, p. 44-45.
43	Chestnut Ridge (W. Harrison)	Ba	Occurrence	In cherty residual clay derived from Lower Ordovician Kingsport Formation	White, medium to coarse-crystalline barite masses with chert and clay.	Maher and Finlayson, 1965, p. 45
44	C. C. Patrick	Ba (Pb,Zn,Fe,F)	Small	Lower Ordovician dolomite (Knox Group)	Replacement and open space filling of massively bedded, finely crystalline cherty dolomite.	Maher, 1970, p. 32; Secrist, 1924, p. 134
45	McReynolds	Ba	Prospect	In residual clay underlying Ordovician limestone (Kingsport Formation)	Large and small pieces of barite on the surface.	Dunlap, 1945.
46	Friendsville (Griffiths)	Ba,Pb,Zn,Fe (F)	do.	Lower Ordovician dolomite (Upper Knox Group)	Solution-collapse breccia. Barite is distributed throughout the mineralized horizon; galena and sphalerite occur in detached pockets in the brecciated zone, as replacements of breccia fragments or small veinlets; oxidized ores occur in clay residuum.	Dunlap, 1945; Secrist, 1924, p. 128-130.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
47	J. F. Chapman	Ba (Fe, Pb)	do.	Residual clay overlying Lower Ordovician dolomite (Mascot Formation)	Bedrock not exposed at surface.	Dunlap, 1945.
48	Unitia	Ba, Pb, Zn	do.	do.	Opened for lead about 1905. Dump contains barite, galena, sphalerite.	Maher, 1970, p. 32.
49	Heaton	Ba	do.	do.	--	Maher, 1970, p. 32
50	Sweetwater District (112 mines and prospects in 1960)	Ba (F, Pb, Zn)	Medium	In residual clay and underlying Lower Ordovician dolomite and limestone (Knox Group, mainly the Kingsport Formation; also Chepultepec, Longview and Mascot Formations)	Nodules and larger masses of barite, chert, and limonite in reddish or yellow clay. Bedrock contains veins and breccia masses cemented by barite, fluorite and pyrite with some local concentrations of sphalerite and galena. Some structures that localized barite thought to be produced by solution and some by tectonic movement (Maher, 1970, p. 13).	Laurence, 1960; Maher, 1970, p. 11-13.
51	Notchy Creek	Ba	do.	In residuum of Lower Ordovician Kingsport Formation	--	Maher, 1970, p. 34.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
52	W. L. Baugh	Ba	do.	In residuum of very cherty Lower Ordovician Kingsport Formation	--	Do.
53	Hambright	Pb (Zn, Ba, Fe)	do.	Lower Ordovician limestone and dolomite (Mascot Formation)	Replacement veinlets in limestone, no brecciation, minor amounts of coarsely crystalline dolomite.	Swingle, 1959, p. 70-73.
54	Griffen (Cleveland)	Ba	do.	In residual clay overlying Lower Ordovician dolomite (principally Kingsport Formation and probably Mascot Formation)	Dump material consists chiefly of clay, chert, and barite and contains fragments of brecciated dolomite cemented by barite, chert and gangue dolomite.	Maher, 1970, p. 18-19; Swingle, 1959, p. 59-62.
55	Shofner	Ba	Prospect	In residuum above Lower Ordovician Knox Dolomite	Obscured by Highway 75 construction.	Maher, 1970, p. 34.
56	Hardwick (Dollie D)	Pb, Zn (Ba)	Small	Late Cambrian dolomite (Maynardville limestone)	Open-space breccia filling and replacement; deposit shaped like an inverted funnel.	Dunlap, 1946; Swingle, 1959, p. 73-75.

VERMONT

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Franklin County	Zn, Pb	Prospect	Lower Cambrian dolomite (Dunham Formation)	In highly deformed sedimentary breccia as matrix filling and solution breccia in favorable beds. Deformed by Taconic and Acadian orogenies.	J. P. Broderick, oral communication, 1982.
2	Newport	Pb	Occurrence	--	--	Morrill and Chaffee, 1964, p. 31.
3	Morrisville (Morristown, Lamoille)	Pb, Zn, Ba	Prospect	Cambrian or Ordovician schist	Cross-cutting veins.	Grant, 1968, p. 24-25.
4	Lion Hill (Oram, Brandon, Leicester)	Zn, Pb, (Cu)	do.	Upper Cambrian dolomite (Monkton or Winooski Formations)	In highly deformed folded and sheared autochthonous rock, mineralization deformed by Taconic orogeny (Ordovician).	Grant, 1968, p. 29-30; Jacobs, 1943(?), p. 18; Jacobs, 1944(?), p. 17, 39; J. P. Broderick, oral communication, 1982.
5	Orwell	Zn	Occurrence	--	--	Morrill and Chaffee, 1964, p. 33.
6	Wallingford	Pb	do.	--	--	Morrill and Chaffee, 1964, p. 47.
7	Danby	Pb	do.	--	--	Morrill and Chaffee, 1964, p. 15.

VIRGINIA

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Runion	Zn, Pb	Prospect	Devonian sandstone	In veinlets of ankerite.	Luttrell, 1966, p. 114.
2	Shenandoah Valley District (Timberville, Weatherholtz, Bowers-Campbell mines)	Zn (Pb)	Small	Lower Ordovician dolomite (Upper Beekmantown Group)	With vein dolomite in breccia-type ore bodies, as vein fillings and as isolated replacement crystals.	Herbert and Young, 1956; Young, 1967.
3	Grove Hill	Zn	Occurrence	Lower Ordovician dolomite (Upper Beekmantown Group)	Associated with a minor bedding plane fault; disseminated crystals replace thin gouge; larger crystals are in vein dolomite cementing fractured beds.	Herbert and Young, 1956, p. 39.
4	Wiseland	Zn	do.	Lower Ordovician dolomite (Upper Beekmantown Group)	Small crystals in "recrystalline" dolomite.	Herbert and Young, 1956, p. 36.
5	Staunton	Pb, Zn	Prospects	Lower Ordovician (Beekmantown Group)	Small prospects for galena west of Staunton.	Luttrell, 1966, p. 122.
6	Earhart prospect	Ba	Small mine	--	Residual in soil.	Edmundson, 1938, p. 80.
7	Clifton Forge	Ba	Occurrence	Devonian shale (Needmore and Millboro shale members of the Romney Shale)	Barite concretions and shrinkage cracks in concretions filled with veins of calcite, gypsum and barite.	Lesure, F. G., 1957, p. 55-57.

Map Number	Name	Commodities	Size	Host rock	Comments	Selected references
8	Becktel	Ba	do.	--	Associated with chert float.	Edmundson, 1938, p. 79.
9	Shorter	Ba	Prospect	Lower Ordovician dolomite (Beekmantown Group)	In dolomite.	Edmundson, 1938, p. 57, 80.
10	Johnson	Ba	do.	In soil overlying lower Ordovician dolomite (Beekmantown Group)	Residual deposit.	Edmundson, 1938, p. 57, 79.
11	Williamson	Ba	Small	In soil derived from the Cambrian Conococheague limestone	Residual deposit.	Luttrell, 1966, p. 143.
12	Crash mine and prospect	Ba	do.	Lower Ordovician dolomite (Beekmantown group)	In dolomite and in the overlying residual clay.	Luttrell, 1966, p. 39.
13	Huffman	Ba	Prospect	Residual soil overlying Lower Ordovician Beekmantown dolomite	Residual deposit.	Luttrell, 1966, p. 68.
14	Gusler-Austin mine	Ba	Small	Lower Ordovician dolomite (Beekmantown Group)	Replacement masses and cement in breccias in dolomite and fragments in residual soil.	Edmundson, 1938, p. 60-62.
15	Caldwell	Ba	Prospect, shallow workings	Middle Ordovician Athens shale	Dark-gray barite containing carbonaceous matter occurs in shale along a fault.	Edmundson, 1938, p. 60.
16	Troutville	Pb, Zn	Prospect	Cambrian dolomite (Elbrook Formation)	In dolomite breccia cemented by white dolomite.	Luttrell, 1966, p. 132.
17	Rucker mine	Ba	Small	In residual soil overlying Lower Ordovician Beekmantown dolomite	--	Luttrell, 1966, p. 113.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
18	Bonsacks	Zn	Prospect	Cambrian dolomite (Rome Formation)	Disseminated cavity fillings in brecciated dolomite veined with white dolomite.	Luttrell, 1966, p. 22.
19	Reed mine	Ba	Small	Cambrian dolomite or limestone (Elbrook Formation)	As cement in breccia and replacement bodies along fractures and bedding planes.	Luttrell, 1966, p. 110-111.
20	Martin	Ba	do.	In clay thought to overlie Cambrian Unicoi Quartzite	Residual deposit.	Luttrell, 1966, p. 91.
21	Peppers Ferry Mine	Pb	do.	Brecciated dolomite	One solid mass of lead ore and small pockets.	Luttrell, 1966, p. 104.
22	Cloyd	Zn	Prospect	--	Zinc ore reported.	Luttrell, 1966, p. 35.
23	Langhorn and Wills prospects (Bonys Run)	Zn, Pb	Small	Cambrian dolomite (Rome Formation?)	Disseminated in white dolomite and cementing fractures in gray dolomite.	Luttrell, 1966, p. 79.
24	Walker and Vaughn	Zn, Pb	Prospect	Cambrian dolomite (Rome Formation)	--	Luttrell, 1966, p. 138.
25	Camp Kiwanianna	Zn, Cu	do.	Cambrian dolomite (Shady Dolomite)	Disseminated	Luttrell, 1966, p. 31.
26	Tices Mill (Piedmont)	Zn, Cu	Small	do.	Disseminated splotches and veins in breccia and replacement of carbonate cementing the basal sand-stone of the Shady Dolomite.	Luttrell, 1966, p. 129-130.
27	Alleghany Springs	Zn, Pb	Prospect	do.	Disseminated	Luttrell, 1966, p. 7.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
28	Christianburg	Zn, Pb	do.	Probably in dolomite of the Rome Formation (Cambrian)	--	Luttrell, 1966, p. 34.
29	Pilot Knob	Pb, Zn	do.	Cambrian Shady Dolomite	Disseminated and filling fractures in breccia.	Luttrell, 1966, p. 105-106.
30	Bertha District (Bertha and Barren Springs mines)	Zn, Pb	Small	Residual clay overlying the Cambrian Shady Dolomite	Residual clays worked; disseminated sphalerite only in small amounts in underlying rocks, which lack brecciation.	Luttrell, 1966, p. 18-19.
31	Austinville-Ivanhoe District (Austinville and Ivanhoe mines, numerous small mines and prospects	Zn, Pb	Large	Lower Cambrian dolomite (Shady Dolomite)	Within breccias and as replacement of sedimentary textures; localization of ore is thought to be at facies boundary zones. (E. L. Weinburg, oral communication, 1981).	Brown and Weinburg, 1968; Luttrell, 1966, p. 12-13, 71; Weinburg, 1971.
32	Kimberling and No Business Creeks	Zn, Pb	Occurrence	limestone, probably of Devonian age	Associated with pyrite and oxides of iron and manganese.	Luttrell, 1966, p. 78.
33	Taylors Ridge	Zn, Pb	do.	--	Zinc minerals reported from 2 miles east of Springville near the end of Taylors Ridge.	Luttrell, 1966, p. 127.
34	Russell-Tazewell Counties area	Ba	Medium	Lower Ordovician limestone and dolomite (Beekmantown Group) and overlying residual soils	Fracture fillings and replacement masses in bedrock and irregular fragments in the overlying residual soil.	Edmundson, 1938, p. 63-76.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
35	Orr	Ba (Cu)	Small	Lower Ordovician dolomite (Beekmantown Group)	Replacement masses.	Luttrell, 1966, p. 101.
36	Smyth County area	Ba	Medium	Lower Ordovician limestone and dolomite (Beekmantown Group) and overlying residual soils.	Veins and replacement masses in bedrock and irregular fragments in the overlying residual soil.	Edmundson, 1938, p. 76-79.
37	Pat Kieth	Zn, Pb	Prospect	Cambrian Copper Ridge Dolomite	Disseminated small masses.	Luttrell, 1966, p. 103-104
38	Osborn Mine	Zn, Pb	Small	Middle Cambrian Maryville Limestone	Possibly near the trace of a major thrust fault.	Luttrell, 1966, p. 101.
39	Masons Store	Zn	Prospect	Middle Ordovician Holston Limestone	Seams contained small quantities of calamine in thin, irregular zones along the bedding of the rocks.	Luttrell, 1966, p. 92.
40	Lane	Zn	do.	Cambrian Rome Formation	Disseminated near a zone of thrust faulting.	Luttrell, 1966, p. 79.
41	Bowman (Arcadia)	Zn	Small	Cambrian dolomite (Honaker Dolomite and Copper Ridge Dolomite)	In white vein dolomite in a brecciated zone near a thrust fault.	Luttrell, 1966, p. 24.
42	Barite nodule locality 7	Ba	Occurrence	Middle Ordovician carbonaceous shale (Athens Shale)	Nodules of barite and pyrite in black shale.	Carpenter and Fagan, p. 17-29.

WEST VIRGINIA

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Howell Farm	Zn (Pb)	Prospect	Cambrian Tomstown dolomitic limestone	Breccia filling along bedding.	Ludlum, 1955, p. 855-861.
2	Jericho Draft	Zn	Occurrence	Devonian Ridgley Sandstone	Disseminated sphalerite(?) in calcareous sandstone.	Lesure et al, 1982.

WISCONSIN

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
1	Upper Mississippi Valley Lead-Zinc district (The district includes 313 mines in Wisconsin. Subdistricts in Wisconsin are Hazel Green-Shullsburg, Meekers Grove (Jenkinsville) Big Patch, Plattsville, Calamine-Truman-Darlington, Potosi, Fairplay, Beetown, Fennimore, Mifflin-Cokerville, and Mineral Point-Linden-Dodgeville).	Zn, Pb, (Cu, Ba)	Large	Middle Ordovician limestone and dolomite (most deposits in Galena Dolomite, Decorah Formation, and Platteville Formation); deposits of sulfides found in all formations exposed within the mineralized part of the district.	Ore bodies can be classified as (1) reverse-fault and fold controlled ore bodies, (2) joint-controlled ore bodies, and (3) placer and residual deposits. The ores in the fault and fold deposits occur as (1) vein fillings along fractures and bedding planes; (2) cavity fillings in solution breccias; and (3) dissem-inations by replacement and impregnation in favorable beds, particularly in shaly strata. Joint controlled deposits are veins in vertical joints and podlike deposits in beds crossed by joints (Heyl et al, 1959).	Heyl et al, 1959; Heyl, 1968.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
2	Bridgeport quarry	Pb, Zn	Occurrence	Lower Ordovician brecciated dolomite (Oneota Dolomite, Prairie du Chien Group)	As replacements, crystals lining vugs, and veinlets in breccia.	Heyl et al, 1959, p. 294.
3	Little Kickapoo lead diggings	Pb	Small	Lower Ordovician silicified and brecciated dolomite (Oneota Dolomite, Prairie du Chien Group)	As large crystals and masses.	Heyl et al., 1959, p. 294; Strong, 1882, p. 75-78.
4	Wauzek Ridge lead diggings	Pb	do.	--	Similar to Little Kickapoo lead diggings (3).	Heyl et al., 1959, p. 294.
5	Woodman lead mine	Pb	Small	Lower Ordovician Prairie du Chien Group; markedly silifified by jasperoid.	Workings follow fractures and brecciated areas along which galena and calcite were deposited.	Do.
6	Little Grant lead diggings	Pb	do.	Lower Ordovician Prairie du Chien Group	In vertical fractures associated with abundant iron sulfides.	Do.
7	Orion lead mine	Pb	do.	do.	In openings in silicified rock.	Heyl et al., 1959, p. 295.
8	Akan lead mine	Pb	do.	do.	--	Do.
9	Sextonville lead diggings	Pb	do.	do.	--	Do.
10	Keyesville lead diggings	Pb	do.	do.	--	Do.

Map number	Name	Commodities	Size	Host rock	Comments	Selected references
11	Demby-Weist mines	Pb	do.	Lower Ordovician Prairie du Chien Group and Jordan Sandstone member of the Upper Cambrian Trempealeau Formation.	Veins and lodes in vertical or steeply dipping faults or fissures.	Heyl et al., 1959, p. 281-282.
12	Black Earth lead diggings	Pb	do.	Lower Ordovician Prairie du Chien Group	Worked about 1828.	Heyl et al., 1959, p. 295.
13	Pine Bluff lead diggings	Pb	do.	do.	do.	Do.
14	Cambria, Doylestown and Rio lead diggings	Pb	do.	do.	Locations uncertain.	Do.