Summary of smaller mining districts in the Silver City region

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possibly the preparation of the ground by the intrusion of the Tyrone stock. The large northwest-trending faults, which are a dominant feature of the area – especially the Mangas Valley and the Malone faults – were particularly important in determining the regional distribution.

The fluorspar deposits are late Tertiary in age, later than the copper deposit at Tyrone, and later than the base-metal deposits in the Hanover-Santa Rita area. They may be about the same age as the precious metal deposits in the Mogollon area to the northwest.

SUMMARY OF SMALLER MINING DISTRICTS IN THE SILVER CITY REGION*

by
R. M. Hernon

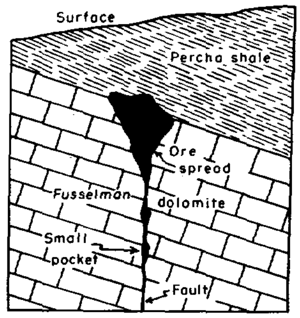
Chloride Flat Silver Ores

The Chloride Flat district, now idle, is northwest of Boston Hill and 2 to 4 miles west-northwest of Silver City. Production has been estimated by Entwistle (1944) at about 149,000 tons of ore that yielded about 4,000,000 ounces of silver valued at $3,293,000. The ore is of a type valuable for its fluxing qualities which permitted mining of low grade material.

The geology is similar to that of Boston Hill. The rocks of early Paleozoic age dip about 25° east-northeast, and are cut by numerous minor faults of the northeast-trending set. Most of the faults are downthrown on the eastern sides and have apparent displacement to the right.

Thin sills of dacite porphyry intrude the Percha shale, and dikes of hornblende diorite porphyry parallel or intrude minor faults. Alteration is similar to that in the Boston Hill district.

The ore bodies are localized along faults and fissures in dolomite immediately under or a short distance below the Percha shale. Fissure intersections are favorable loci of ore deposition.



Sketch showing localization of ore at contact of dolomite with shale. (Chloride Flat district). Taken from "Manganiferous iron-ore deposits near Silver City, New Mexico" by L. P. Entwistle; New Mexico Bureau of Mines Bull. 19, Figure 5, p.53, 1944.

The ore bodies are oxidized, and lie between dolomite walls that are altered to calcite. The ore consists of carbonates, quartz, abundant hematite, pyrolusite, limonite, and residual galena and its oxidation products. The silver minerals are cerargyrite and embolite, pearcite, argentiferous galena, argentite (alteration product of pearcite), and native silver. Entwistle (1944) believes that most of the silver was derived from primary argentite. Silver halides contained most of the produced silver. Except in proportions of economic metals, the primary mineralization and sequence are like those of Boston Hill.

Fleming Camp

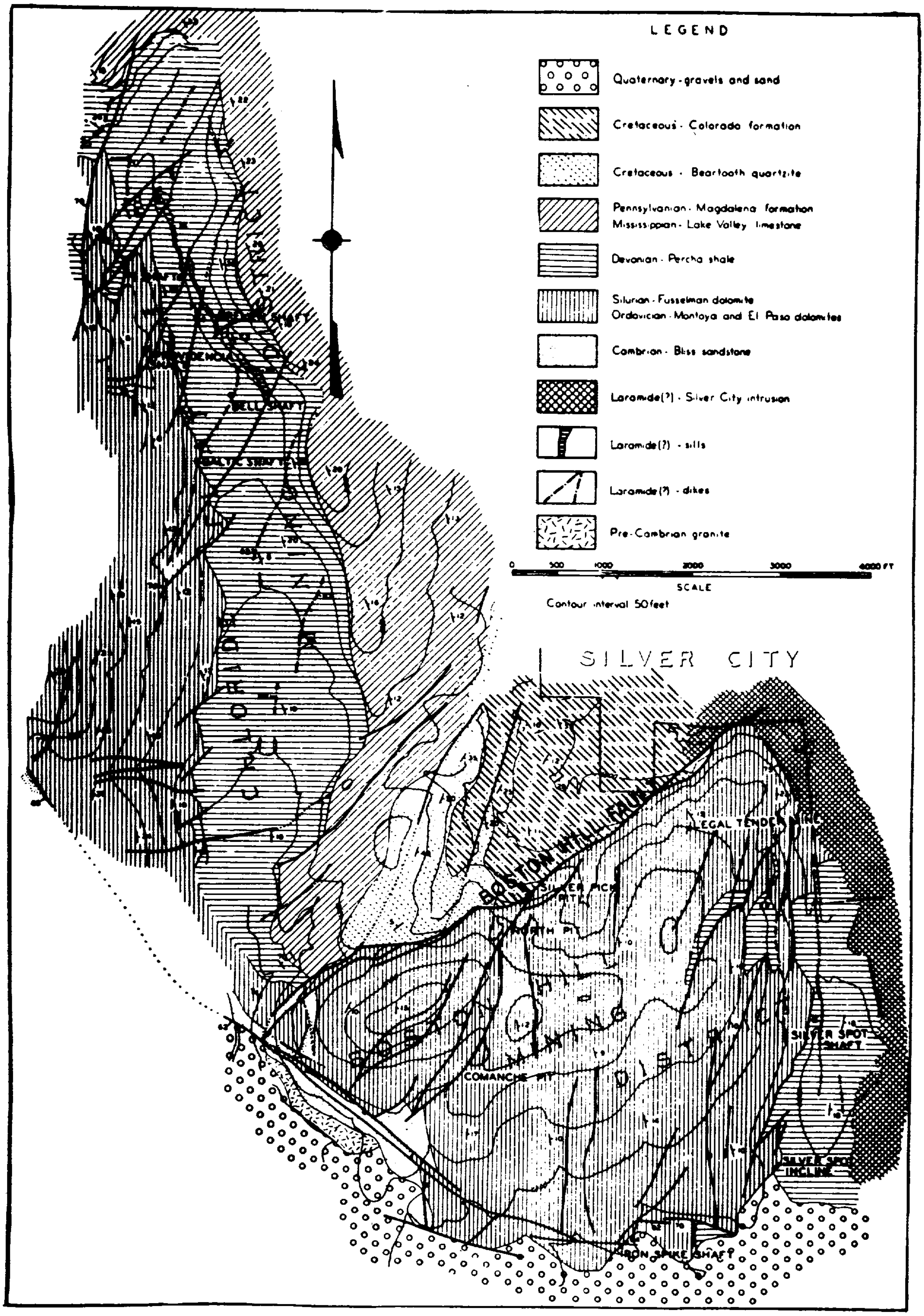
The ores of Fleming Camp, which is 6 miles northwest of Silver City, are similar to those of Chloride Flat, but they are localized as irregular pockets in the Beartooth quartzite. The Beartooth quartzite rests on the Fusselman limestone (Paige, 1916, p. 14) in part of the district. Production has been estimated at $300,000. The district is now idle.

Georgetown

The Georgetown district, now idle, is about 3 miles east of Fierro. Its silver output has been estimated at a value of $3,500,000 (Lasky and Wootton, 1933, p. 57). Both high grade and concentrating ores were mined; most of the ore was oxidized.

The sedimentary rocks of the district are of Paleozoic age and dip west-southwest at small angles (Paige, 1916, p. 14). Several faults of the northeast set cut the Paleozoic rocks. Paige has mapped a large northwest fault that drops Miocene (?) volcanic rocks and valley fill down on the northeast

*Reprinted from: Geology and ore deposits, Silver City region, New Mexico, in West Texas Geological Society Guidebook Field Trip No. 3, November 6-9, 1949, p. 4-6.



Generalized geologic map, Boston Hill and Chloride Flat mining districts. Reproduced from "Manganiferous iron-ore deposits near Silver City, New Mexico" by L. P. Entwistle; N. Mex. Bur. Mines Bull. 19, Plate 2, 1944.

side. This fault limits the Paleozoic formations east of Georgetown.

The ore bodies are extremely irregular, and are localized in the Fusselman limestone immediately below the Percha shale, and along or near dikes. The ores contain cerargyrite, native silver, and argentite; bromyrite and pyrargyrite are reported. They contain minor amounts of lead in the form of cerussite and argentiferous galena. The main primary silver mineral is believed to be argentite.

The dolomite of the Fusselman limestone contains abundant vugs and open cavities that commonly have calcite linings. Much of the dolomite is silicified. Stringers of quartz are abundant.

Pinos Altos District

The Pinos Altos district is about 7 miles north-northeast of Silver City. Placer gold was produced first during the early 60's, but later complex gold-bearing lead-zinc-copper ore was mined from narrow veins, and zinc ore from replacement deposits in limestone. Zinc ore is now being produced from replacement deposits.

The total value of produced metal, predominantly gold, has been estimated at $8,000,000. Of this about $800,000 represents the value of placer gold (Lasky and Wootton, 1933, p. 59).

The sedimentary rocks consist mainly of limestone of Carboniferous age and quartzite, shale, and sandstone of Cretaceous age (Paige, 1916, p. 14). These rocks crop out in the western part of the district.

Large areas in the north and east parts of the district are underlain by andesitic flows and agglomerates assigned by Paige (1916, p. 7) to the Upper Cretaceous.

Numerous dikes and irregular sills of augite andesite intrude all the described formations, and are particularly abundant in the formations of Cretaceous age. Less common are dikes of syenite lamprophyre. A quartz monzonite stock about 2 by 3 miles in maximum dimensions centers at the town of Pinos Altos. Thick, nearly horizontal Miocene (?) flows and tuffs overlap the older rocks at the northern margin of the district.

The structure as shown on published small-scale maps appears simple, but recent work by geologists of mining companies reveals many complexities. Faults of northeast and northwest trend are common. The sedimentary rocks dip gently east, according to Paige (1916), but in a few places they dip steeply over small areas. The Cretaceous volcanic rocks appear to dip steeply in many places.

The replacement deposits center at the Cleveland mine 2 miles west of Pinos Altos. A considerable tonnage of zinc ore containing minor proportions of copper and lead was mined during the First World War. At present a similar but smaller deposit is being mined on the adjacent Houston-Thomas property. The minerals are sphalerite, chalcopyrite, galena, pyrite, quartz, iron-bearing carbonate, and oxidation products.

The ore bodies, which are associated with dikes and fissures, are tabular masses oriented with the bedding. Commonly there are two such ore bodies separated by 4 to 15 feet of unreplaced limestone. Thickness of ore bodies ranges from 10 to 30 feet. Extensive oxidized deposits have yielded some ore at the surface.

Vein deposits (Paige, 1916, p. 17) are located mainly within or adjacent to the Pinos Altos stock. The wall rocks include the quartz monzonite of the stock, other intrusives, and the Cretaceous volcanic complex. Veins range in length from a few hundred feet to nearly a mile; they die out by splitting into ramifying stringers. The veins are narrow, ranging in width from a few inches to a maximum of ten feet.

All veins contain quartz, pyrite, chalcopyrite, calcite, gold, and silver. Most also contain galena and light-yellow to black sphalerite. Some have considerable barite and rhodochrosite.

A typical specimen figured by Paige (1916, p. 17) shows symmetrical crustified banding about a vuggy center. The sequence from walls to center is: quartz and pyrite; sphalerite and chalcopyrite; quartz and chalcopyrite; sphalerite; quartz with sparse chalcopyrite.

Native silver, argentite, and cerargyrite are the important economic minerals of one vein (Lasky and Wootton, 1933, p. 59).

The maximum strike length of ore shoots is about 1,500 feet. The deepest ore developed is about 900 feet below the surface. Some of the ore shoots showed an increase in proportion of copper with depth (Schmitt, 1938, p. 11).

RECENT INVESTIGATIONS OF RADIOACTIVE OCCURRENCES IN SIERRA, DONA ANA, AND HIDALGO COUNTIES, NEW MEXICO

by
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Reconnaissance examinations have recently been made of a number of radioactive occurrences in Sierra, Dona Ana, and Hidalgo Counties, New Mexico. Properties briefly described in this paper were selected to indicate a few of the diverse types and ages of radioactive occurrences now known in this part of southwestern New Mexico.

Uranium-Bearing Fluorite

A deposit of uranium-bearing fluorite, currently under lease by the Hanosh Mining Company of Grants, New Mexico, is located in Sierra County about 2 miles northeast of Monticello in Section 26, T. 10 S., R. 6 W. Original discovery was made in 1948 by the Terry brothers of Truth or Consequences.

The deposit is located on a low south-trending ridge at the southern limits of the San Mateo Mountains. Two prominent masses of interbedded Paleozoic quartzite, limestone and chert are exposed along the ridge. These are separated and partially enveloped by a Tertiary andesite intrusive. The sediments are moderately folded, have a northerly strike, and dip to the east at moderate angles. The chert beds are irregular and in part have been derived by replacement of limestone beds. Several small bodies of sediments are found as inclusions in the andesite.

Principal mineralization is found in a lenticular body of brecciated chert, included in the andesite. Uranium mineralization is associated with dark purple fluorite which occurs principally in small, closely-spaced, intersecting veins and less commonly as cementing material in the chert breccia. No primary uranium minerals have been noted, but uranophane and some gummite are present in portions of the fluorite body. Uranium mineralization is believed to have accompanied fluorite mineralization at a very late stage of the andesite intrusion. Similar occurrences of uranium and thorium-bearing fluorite have been noted elsewhere in southwestern New Mexico.

Radioactive Syenite Dikes

Radioactive syenite dikes are found at several points in the south Red Hills area of Sierra County along the western slopes of the Caballo Mountains. The principal occurrences are located on the Red Rock Claims, Section 33, T. 16 S., R. 4 W., owned by Mr. Truman Griffith, Arrey, New Mexico, and on the Plainview Claims, Section 4, T. 17 S., R. 4 W., owned by Mr. Jack Chatfield, Caballo, New Mexico.

Red syenite dikes, intrusive into a large mass of Precambrian granite, out crop at many points in the south Red Hills area southeast of the Caballo Dam. The geology of this area has been described by Kelley and Silver (1952). The syenite dikes are predominantly coarse-grained and commonly are coarsely porphyritic with abundant large phenocrysts of red orthoclase. Much of the syenite, particularly radioactive portions, contains a considerable amount of a black, interstitial, chloritic mineral. The age of the syenite is not known.

A similar syenite in an adjacent area cuts beds of the Bliss formation, thus it seems questionable that the syenite exposed at the Plainview and Red Rock Claims is Precambrian as field relationships there suggest.

Approximately one-fourth of the syenite dikes noted show appreciable radioactivity and many others show some anomalous radioactivity. The radioactive dikes, although megascopically similar, show considerable variance in radioactive mineralization. Notable amounts of thorium accompany uranium mineralization at the Red Rock Claims, but at the Plainview Claims, thorium is absent or present in minor amounts. The only visible mineralization, a small amount of uranophane (?), was noted at one of the more highly radioactive outcrops at the Plainview No. 6 Claim. Origin of the uranium and thorium mineralization has not yet been established. It is probable that the mineralization accompanied the initial syenite intrusion but some field evidence suggests the possibility that mineralization may have been introduced by hydrothermal solutions at a later date.

Radioactive Tufa

A deposit of radioactive tufa outcrops on the