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This is one of many related papers that were included in the 1966 NMGS Fall Field Conference Guidebook.

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CHECK LISTS OF MINERALS FOR MINING DISTRICTS OF COSTILLA, HUERFANO, AND LAS ANIMAS COUNTIES, COLORADO

By

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COSTILLA COUNTY

Hill (1912) recognized two districts in Costilla County: Grayback (Russell) and Plomo. Eckel's (1961) map of selected mineral localities and metallic mineral deposits shows these as Russell and Plomo. In addition, there is the Blanca area on the slopes of Sierra Blanca, on the line between Costilla and Alamosa Counties.

GRAYBACK OR RUSSELL DISTRICT

T. 28 S., Rs. 71, 72 W. Eckel (1961) cites 11 minerals from this district, but Patton, Smith, Butler, and Hoskin (1910) cite many more.

- Apatite
- Augite
- Biotite
- Calaverite
- Calcite
- Chalcocite
- Chalcopyrite
- Chlorite
- Epidote
- Feldspar
- Galena
- Garnet
- Gold
  - Placer
- Hematite
  - Specularite
- Hornblende
- Kaolinite
- "Limonite"
- Magnetite
- Malachite
- Marcasite
- Microcline
- Muscovite
- Orthoclase
- Plagioclase
  - Labradorite
- Pyrite
- Quartz
- Silver
- Sphene

PLOMO DISTRICT

T. 32 S., R. 71 W. This district has also been called Hematite or Rito Seco. Hematite appears to be the only mineral cited by Eckel (1961), but Gunther's (1905) description of the gold deposits of Plomo (published in the first volume of *Economic Geology*) records the following minerals.

- Chalcopyrite
- Chlorite
- Fluorite
- Galena
- Gold
  - Placer
- Hematite
  - Specularite
- Hornblende
- Muscovite
  - Sericite
- Orthoclase
- Plagioclase
- Pyrite
- Quartz
- Sphalerite

SIERRA BLANCA AREA

Eckel (1961) records gold, hessite, and tellurobismuthite. According to Eckel (1961, p. 322-323),

> "A supposed new mineral, a telluride of silver and bismuth, was first described and analysed by Pearce (1898b) from the Hamilton and Little Gerald mines on the slopes of Sierra Blanca, which marks the junction of these three counties [Costilla, Alamosa, and Huerfano]. . . . This mineral was later named Von Diestite, or vandiestite by Cumenge (1899) who also records an analysis. It was described by Pearce as threads associated with copper minerals and auriferous pyrite. Frondel (1940) studied specimens of the type material by X-ray and chemical means and finds it to be a mixture of tellurobismuthite intimately intergrown with hessite and occasional threadlike inclusions of native gold and specks of altaite(?). The species vandiestite is thus discredited."

OTHER LOCALITIES

Ilsemannite(?) has been reported from the southern part of the Trinchera Estate. Natron and trona(?) are recorded in the San Luis Valley; gilsonite occurs near San Luis; and prase occurs somewhere along the Rio Grande.

HUERFANO COUNTY

Hill (1912) recognized the Huerfano (Malachite) and La Veta Districts. Eckel (1961) did not apparently refer specifically to these districts, but in a review of uranium deposits, Simon (1956) had referred to the Huerfano Park area, as well as to the Badito Cone District.

BADITO CONE DISTRICT

T. 26 S., Rs. 68, 69 W. Autunite and fluorite occur in the Purgatoire and Dakota Formations (Simon, 1956).

HUERFANO DISTRICT

Tps. 25, 26 S., R. 70 W. This district has also been called Malachite or Huerfano Park. Autunite and a black unidentified mineral were found in the Huerfano Formation (Simon, 1956).

LA VETA DISTRICT

Originally this district was said to be located in T. 30 S., R. 68 W., but the name La Veta Pass District has been extended over a larger area, including parts of Tps. 28, 29, 30 S., Rs. 69, 70 W. Some of the following minerals are cited by Vanderwilt (1947, p. 119) and others by Simon (1956).

- Autunite
- Azurite
- Barite
- Calcite
- Carnotite
- Chalcopyrite
- Galena
- Gold
  - Placer
- Malachite

Quartz
Siderite
Sphalerite
Tetrahedrite(?)
"Gray copper"
Volborthite

Spanish Peaks Area

The following minerals were determined petrographically by Knopf (1936) in his study of the igneous rocks of the Spanish Peaks region. (Other sources, such as folios, have not been consulted.)

Actinolite
Uralite
Aegirite
Allanite
Analcime
Anorthoclase
Apatite
Arfvedsonite
Barkevikite
Augite
Diopsidic augite
Titan-augite
Biotite
Calcite
Chlorite
Cordierite
Epidote
Fayalite
Feldspar
Hauynite
Hauynepnosean
Heulandite
Hornblende
Basaltic hornblende
Hydronephelite
Hypersthene
Lepidomelane
Magnetite
Mesolite(?)
Microcline
Muscovite
Nepheline
Olivine
Orthoclase
Microperthite
Sanidine
Soda-orthoclase
Plagioclase
Albite
Andesine
Labradorite
Oligoclase
Prehnite
Pyroxene
Quartz
Riebeckite
Saponite
Bowlingite
Sphene
Spinel
Picotite
Thomsonite
Zeolites
Zircon

Other Localities

Alunogen
Calciovolborthite, Pass Creek
Chrysocolla, Rita Alto Peak
Gypsum
Kaolinite
Molybdenite, Mosca Pass
Olivine
Volborthite, Pass Creek

LAS ANIMAS COUNTY

Very few minerals are cited by Eckel (1961) from this county. Most references do not recognize any metal-mining district. Vanderwilt (1947) notes that there was small production of lead-silver ore in 1934 and 1935 from West Spanish Peak, but this was assigned to the La Veta District of Huerfano County.

Analcime, Apishapa quadrangle
Calcite, crystals in geodes in limestone, Apishapa River
Graphite, Trinidad and El Moro coal fields
Kaolinite
Marcasite, nodules in Timpas Limestone near Thatcher
Olivine, Apishapa quadrangle
Quartz, var. Agate and Amethyst, "summit of Range of Animas River"
Uranium minerals, prospects in Dakota and Purgatoire Formations east of Trinidad (Simon, 1956)
Vesigneite (analogue of volborthite), in Permian red beds at prospects west of Stonewall (Simon, 1956)

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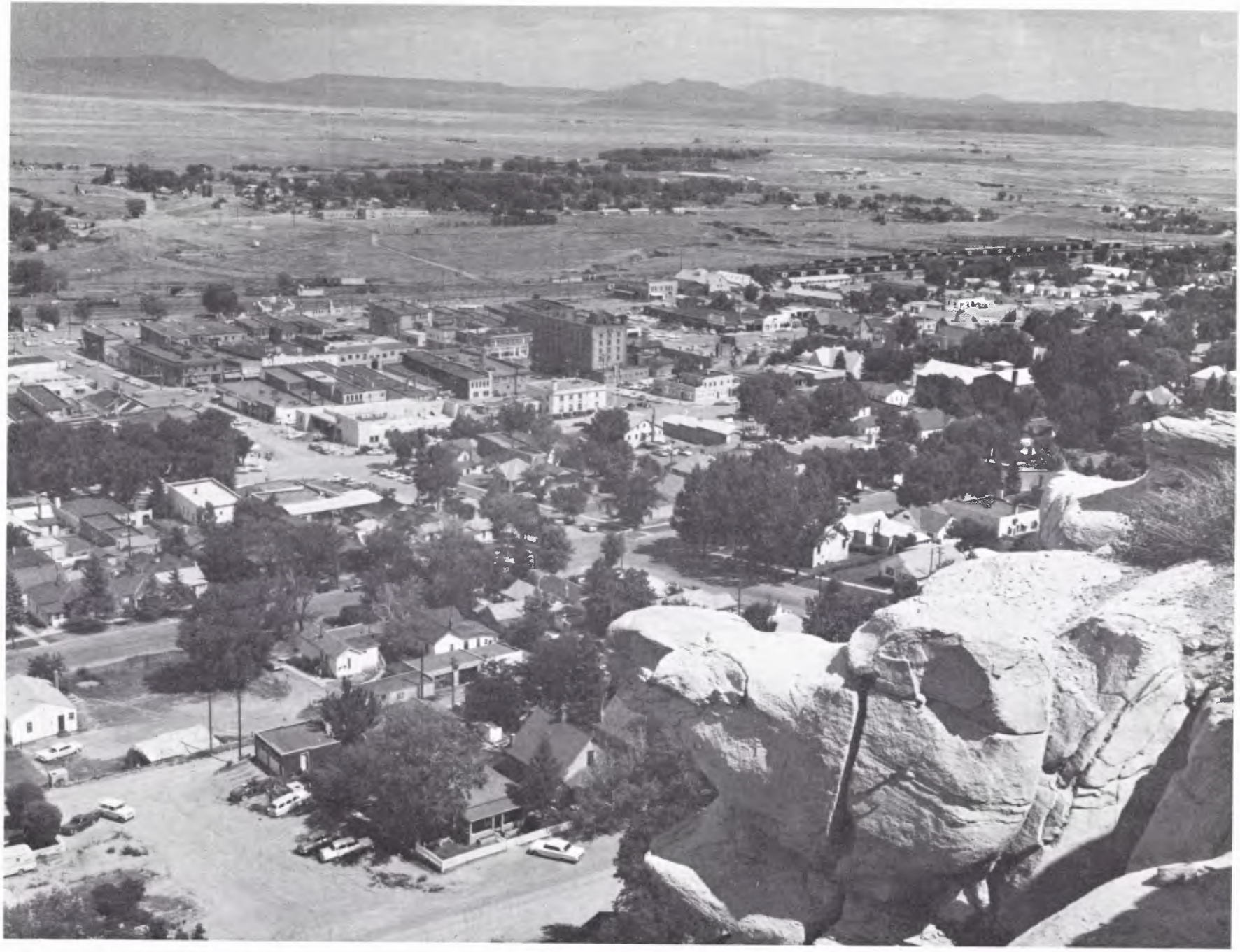
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RATON, NEW MEXICO. View southeast from Goat Hill *(Photograph by H. L. James).*