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WYOMING LEADS IN MINERAL RESOURCES.

In Coal resources, Wyoming ranks first in the Union, in Asbestos, Bentonite, Oil Shale, Potash, Phosphates, Iron, Oil, and Natural Gas, it is also among the leaders and probably contains more mineral resources combined than any other State. Other important resources include Platinum, Gold, Copper, Clay, Cement materials, Epsomite, Granite, Manganese, Mica, Sulphur, Cyanite, Feldspar, Garnet, Soda, Graphite, Gypsum, Kaolinite, Limestone, Talc and Tripoli.

Development of these great resources will create better markets for farm products and ^{will} increase the prosperity of the State in many other ways.

Coal Beyond Calculation.

Coal constitutes the most valuable resource of the State, the total amount available with present mining methods amounting to 1,076,620,100,000 tons, sufficient at the present rate of consumption to supply the entire United States for two thousand years! Our present rate of production, some 8,000,000 tons per year would not exhaust this tremendous tonnage in one hundred thousand years!

Vast Oil Shale Deposits.

The oil shale lands in Wyoming on which fairly good classifications have been made, occur over an area of some 4,200 square miles in the vicinity of Green River, and are estimated to contain a quantity of not less than 7,176,000,000 tons of shale that will yield at least 15 gallons of oil per ton in addition to valuable by-products. The same area contains many million tons of lower grade oil shale, and there are other areas not yet examined that, undoubtedly, contain tremendous amounts of shale oil, on which information is not yet available.

Leads West in Iron.

Wyoming contains the most important iron deposits west of the Mississippi River. The Colorado Fuel & Iron Company is operating at Sunrise producing approximately 500,000 tons of high grade ore per year, this being the most important mine in the entire State. It is apparent that there is

ASBESTOS.

Casper Mountain contains possibly the largest deposit of asbestos in the United States. Two mills were erected several years ago and considerable development was carried on.

Asbestoms and a number of other Wyoming minerals could be used in connection with Casper asphalt for the manufacture of prepared roofing, and other active Commercial organizations should boost this to the point of getting results.

BENTONITE

Bentonite, a colloidal clay resulting from a volcanic ash is universally present in the oil districts of the state. It has close to a hundred uses in industry and arts, and new uses are continually being discovered. It is being produced at Medicine Bow, treated at Cheyenne and is shipped to all parts of the country. It promises to be a steady enduring industry.

CLAY

Clay is a product of such universal occurrence that other states do not need to look to Wyoming for their supplies, but this State has sufficient for its own uses, both fire-clay and brick clay, which as the population increases and the demand grows, will make an appreciable addition to our manufactures, as it is being mined in several parts of the State now.

CEMENT MATERIALS

For the manufacture of Portland Cement, it is necessary to have adjacent limestone and shale or clay deposits on the railroad. These conditions are fulfilled in two places in Wyoming, near Newcastle and at Iron Mountain. There are other occurrences, no doubt, and it is only a question of time and better transportation advantages before Wyoming will be producing Portland Cement.

EPSOMITE

Epsomite, or magnesium sulphate, epsom salts, occurs in its native state in tremendous quantity in Brooklyn Lake near Lookout, Wyo., where it is estimated that 1,500,000 tons are available. It is near the Union Pacific railroad and there are no obstacles to its development.

This mineral occurs near Wheatland in quantities to justify development when market conditions warrant.

RICH GOLD DEPOSITS.

The South Pass-Atlantic district is credited with a production of some \$5,000,000, all from shallow workings in veins and placers. Recent examinations of the veins show that many have gold in sufficient quantity to justify large scale operations and this camp will ultimately become an important producer. Placer gold occurs in nearly every gulch.

MANGANESE.

This mineral is reported in three points in Wyoming, on Casper Mountain north of Medicine Bow and south of Medicine Bow. None of the deposits have yet been developed, but they have produced specimens of very high grade, which made it evident that more development is justified.

MICA BEING SHIPPED.

Mica is being used to an increasing extent in eastern manufactories and the eastern and southern mines are being worked out. Consequently, Wyoming Mica is in demand and shipments are now being made.

The Encampment district has several deposits of both mica and chlorite which sells as mica, and carload shipments have been made.

Platte County has some good sheet mica in the claims of Stein and Lauk and Sunrise and west of Wheatland a large dyke has a high content of mica and is being developed by the Mica Queen Mica Company at Mica Hill.

SULPHUR FOR FERTILIZER

The sulphur deposits of Wyoming have not been fully developed and it is therefore, impossible to state the tonnage of crude sulphur available although several deposits occur in the vicinity of Thermopolis and one near Cody, which are believed to be commercial. The Ohio Mineral Company is operating on a deposit 4 miles northwest of Thermopolis, and the material consists of a sulphur of varying grades of purity deposited from waters and vapors emitted from hot mineral springs now extinct. Their holdings consist of 440 acres. They are producing sulphur 99.8% pure and shipping same to sugar factories in carload lots. Some ground sulphur is also produced.

The deposit contains epsomite and alum which will be saved as bi-products when market conditions justify. This concern is now prepared to produce the material in the deposit with practically no other treatment other than grinding for fertilizer purposes of a composition approximately 20% free sulphur, 20 to 25% gypsum and a similar amount of calcium carbonate. A lime phosphate will be added to give a 2% phosphate of lime content and the material will carry also, about 1% of potassium.

CYANITE FOR SPARK PLUGS.

The best spark plug porcelains are made from andalusite which is mined under great disadvantage in California and shipped to Detroit for manufacture. Cyanite is of the same chemical composition as andalusite and is in demand for this purpose. According to recent quotations, cyanite should bring \$40.00 per ton in Detroit. Cyanite has been noted in Wyoming, one of the few points in the United States where it is known to occur.

FELDSPAR.

Feldspar is used in a great many manufacturing processes, the most important being in pottery and glazing. A very high grade feldspar occurs in Wyoming, particularly, in the pegmatite dike with the mica being developed by the Mica Queen Mining Company.

PHOSPHATES FOR FARMS.

The phosphates reserves of Wyoming are among the most important in America. They are located in the western and southwestern part of the State. Distance from points of consumption has retarded development, but shipments are now being made from Cokeville, and the industry is sure to grow.

POTASH INEXHAUSTIBLE.

The Leucite Hills of Sweetwater County, are capped by a Tertiary lava flow known as leucite, containing 10% potash and 10% alumina, estimated to contain nearly 200,000,000 tons of each. The principal deposits are about four miles from the railroad near Superior, Wyoming.

GOVERNMENT PRINTING OFFICE: 1917

a supply of iron ore sufficient to maintain the present rate of production for the next 50 or possibly 100 years. In addition to the Sunrise deposit, there is also the Chicago mine, the Good Fortune and the property of the Platte Canyon Mining Company near Guernsey. All of these deposits are in the Pre-Cambrian rocks and were exposed by the erosion of the Carboniferous rocks above.

Another important iron deposit is not far from Casper--the Seminole deposit. Development has not been carried to a point where it is possible to estimate the available tonnage, but from present developments and surface indications there is no question but that there is a tremendous quantity of commercial ore there. This ore should be mined and should be treated in Wyoming. Development has been delayed by lack of railroad facilities, but, now that the construction of a Casper to Rawlins railway is a question of only a short time, efforts should be made to secure the development of this resource.

In addition to these deposits, we have also the greatest titaniferous iron deposit in the United States. Limestone for flux is convenient to each iron deposit.

COPPER

Copper occurs in every mountain range in the state in quantities to justify the prediction that immense amounts will be produced. Several million dollars' worth of copper have been produced from the Encampment District, and more copper awaits development. The Sunrise Hartville District has been a copper producer since early days.

CENTENNIAL GOLD AND PLATINUM.

New discoveries of Platinum and Gold here have encouraged development, and two strong companies are developing their holdings.

The district may become either a platinum or gold camp, as there are a number of gold prospects of considerable merit, and two of these, the Cliff and Queen, are now being developed.

URANIUM, VANADIUM AND RADIUM.

These rare metals occur in Wyoming. They were mined for a time near Lusk. Recently Vanadium has been found on Casper Mountain by Mr. D. B. Crockett, and this property should be developed further to determine its economic possibilities.

MOSS AGATE

The northeastern part of Platte County, in Wyoming has produced some very fine moss agate, a shipment of a carload having been made some twenty years ago by J. J. Hauphoff of Hartville. This moss-agate is of a milky variety with a black speck ^{of} moss and occurs in such large blocks that it can be used for a great many purposes.

MARBLE

The marble occurring in the Pre-Cambrian rocks in the vicinity of Guernsey is of such good quality and such immense quantity that it would constitute a source of ornamental and building stone of great value in any part of the United States where large building operations were in progress.

TALC

Talc has been discovered in the Cooney hills and in the Encampment district, and trial shipments have been made. Talc is used in the trade for at least 60 different purposes, the principal purposes being of importance in the order named: paper filler, paint trade, roofing, rubber, textiles and toilet powder. Competition in the talc industry is very keen in the east and business is not attractive to a new producer, however, for any manufacturing purposes using talc in the western territory, Wyoming talc should be able to compete.

TRIPOLI.

Tripoli occurs 8 or 10 miles north of Sunrise in the carboniferous formation. It is a form of silica derived either from the decomposition or alteration of chert or as a residual product from the decomposition of a highly siliceous limestone.

The occurrence at Sunrise is of the Missouri type and tripoli usually occurs in layers in compact bedded deposits. It is extremely porous, light weight material, fairly compact. It is so soft that it can easily be cut with the finger nail and crumbled between the fingers due to its porous structure.

The Missouri tripoli is rarely pure white and is discounted a little for that reason. Wyoming tripoli is used for foundry facings, large blocks of are used for fillers, for which purpose Wyoming tripoli can be sawed into blocks with an ordinary wood saw.

The solution of the problem of extracting the potash and alumina rests with the chemists. Those deposits are now attracting attention and 1926 will, no doubt, see some efforts being made to utilize these important resources.

SODA

Sodium sulphate is found in a great number of small lakes in various parts of Wyoming, and has been produced commercially from lakes near Laramie and Rock River, and is now being produced on a large scale from lakes near Casper.

Sodium sulphate is one of the state's best mineral resources, and there seems to be a great demand for its manufactured products,--caustic soda, salt cake and soda ash.

GRAPHITE IN DEMAND

Graphite in commercial amounts occurs near Wheatland, southwest of Casper, and in the Encampment District. World stocks of graphite are now reduced to such an extent that attention is being directed to the Wyoming deposits.

GYPSUM USEFUL

Gypsum is plentiful in the Chugwater formation (Red Beds) in several parts of the State not far from the railroad. Gypsum is used in a great many ways, and the manufacture of gypsum is increasing in various parts of Wyoming as the local demand for this product develops and as these deposits are near the railroad, they should soon become attractive. A gypsum plant in Big Horn is producing gypsum blocks for partitions and other indoor and outdoor construction.

KOALINITE.

Koalinite is a soft, white clay and is known on the market as china clay. Some very fine samples of koalinite have been reported from Wyoming, equalling in quality the best koaline produced anywhere.

LIMESTONE FOR SUGAR FACTORIES.

The quarrying of limestone for sugar factory purposes has increased year after year, until now the shipments made amount to 60,000 tons per year and as new factories are built, shipments will become greater as limestone is almost as necessary as sugar beets.