

volume that it has a tendency to blow back the coal dust and pile it up in a solid mass in the chamber, the mixer blades screwing it forward to the following one so that the need of atomizing in that case is entirely eliminated.

From No. 6 mixer the material drops into a continuous bucket elevator and is elevated to the top of the press hopper. This hopper has a capacity of about a half ton

of mixture, and the material rests directly on the press rolls. The press is a modification of the Belgian type with the exception that it is made considerably stronger. All parts under strain are of steel. The gearing is made of cast steel with manganese bronze pinions, all having cut teeth.

(To be continued)

EXCHANGES.

Economic Geology, October-November, 1907.—An article of great interest in this number of *Economic Geology* is "The Weathering of Coal," by S. W. Parr and N. D. Hamilton. The writers conducted a series of experiments on small lots of nut, slack, broken lump and washed pea coal. The quantities used ranged from 10 to 20 pounds. It is pointed out that in storage plants with capacities of, say, 50,000 tons, deterioration of one per cent. means a loss of 500 tons. Also it is noted that deterioration would naturally occur at a higher rate in the small experimental lots than in commercial storage quantities.

The first series of tests was made as soon as possible after the mining of the coal. Here the writers lay great stress upon the prompt examination of samples to determine and record initial conditions.

The coal used was of small lump or nut size. Samples of one hundred pounds were subdivided in order to subject the same kind of coal to various conditions, as follows:—

- (a) Outdoor exposure.
- (b) Exposure to a dry atmosphere at a somewhat elevated temperature, ranging between 85 degrees and 120 degrees Fahr.
- (c) Under the same conditions as (b), but to be drenched with water two or three times per week.
- (d) Submerged in ordinary water at a temperature of approximately 70 degrees.

The conditions were continued through ten months. The results obtained are summarized thus:—

- (a) Submerged coal does not lose appreciably in heat value.
- (b) Outdoor exposure results in a loss of heating value varying from 2 to 10 per cent.
- (c) Dry storage has no advantage over storage in the open except with high sulphur coals, where the disintegrating effect of sulphur in the process of oxidation facilitates the escape of hydrocarbons or the oxidation of the same.
- (d) In most cases the losses in storage appear to be practically complete at the end of five months. From the seventh to the ninth month the loss is inappreciable.
- (e) The results obtained conform in a general way to the experience of users of coal from large storage heaps.

The *Mining and Scientific Press*, December 28th.—This number contains an article on "Cobalt," by Mr. Frank C. Loring, of Toronto. Referring to value of shipments, etc., Mr. Loring writes as follows: "During 1907, up to October 1st, 10,300 tons of ore have been sold, for which possibly \$6,000,000 has been received, almost entirely for silver. The district is now shipping approximately 1,000,000 ounces silver per month, as well as large quantities of cobalt, for which little is paid . . . Transportation and treatment charges are

from \$15 to \$25 per ton, with deductions of 6 to 7 per cent. of the assay value of the silver. One smelter pays \$20 per ton for ore carrying 8 per cent. cobalt. If ore is sold solely for cobalt 35 to 50 cents is paid per pound of cobalt, according to the percentage, with no allowance for silver."

The *Engineering Magazine*, January, 1908.—"Mining Developments in Nevada," by A. Selwyn Brown, appears in the *Engineering Magazine* for January, 1908. The article is a review of physical, not financial, conditions in Nevada mining regions up to the end of the year 1907. Up until 1900 Nevada had been looked upon as purely a silver producing State. The flooding of the Comstock mines in the early eighties and the closing of other silver mines had sadly depressed the whole industry. The Tonopah gold mine, discovered in 1900 in a remote corner of Southeastern Nevada, was purchased in 1902 by Philadelphia capitalists. Throughout the period 1904-7 a steady rush of prospectors set in. In 1905 Goldfield, Bullfrog and Manhattan camps were the centres of investment and financial activity. The present stringency has disorganized the district badly. Mr. Selwyn Brown, however, does not view the situation uncheerfully.

Many mountain ranges trending generally southwest, and having an elevation of about 500 feet, traverse the Tonopah and Goldfield districts. Artesian wells supply water to the large milling and cyanide plants.

Geographically, volcanic action has played a large part in the structure of Nevada. The volcanic rhyolites, andesites and porphyries are most important to the miner. Lead and copper lodes, however, occur in limestones and other sedimentary rocks. The whole of Nevada is mineralized, and many different minerals are mined. Government and companies' returns do not correspond, but the following total is the result of careful compilation. The total gold and silver production of Nevada from 1850 to 1907 is \$1,033,350,000. The Goldfield mines this year from January 1st to November 23rd have shipped 112,081 tons of ore, valued at \$11,208,100. Tonopah mines, worked in a more conservative manner, have yielded about \$10,000,000. Other fields are credited with \$4,000,000. The total for Nevada silver and gold for the year will be about \$26,700,000. In nearly all Nevada ores the ratio of silver to gold is about two to one.

TONOPAH.

The Tonopah mining district is comprised in an area of about seven miles square; the whole of which is mineralized. It is probable that future work will show that the vein systems successfully worked on Lone Mountain, 17 miles west of Tonopah, and at Ray, 12 miles north of Tonopah, are extensions of the Tonopah systems. On the six first discovered mines, the Tonopah, Montana,