

the surface, a tunnel was driven in the direction of the channel 400 feet, being still in bedrock, an upraise of about 20 feet was made where gravel was encountered, also a small amount of water. This gravel gave excellent prospects in gold, 10 to 20 cents to the pan, but indications were that we were not yet in the main pay channel. Fearing that we might encounter more water than we could handle by opening this upraise more extensively, not having any pumping facilities for handling this bottom water, we decided to stop work in this upraise and extend the main tunnel another 100 feet, which was done and another upraise made and when about 15 feet above the floor of the main tunnel, we suddenly broke through into what appeared to be, and doubtless was, the bottom of the main channel. Water and gravel came in with a great rush. It was necessary to bulkhead this to make it safe. Very little gravel was secured from this upraise, but enough to show that it was very rich. We had placed a small sinking pump in the bottom of the shaft to pump what little water escaped from above to the pumping station in the shaft, and while its capacity was only 80 gallons per minute, we managed to keep the main tunnel dry with this small pump for nearly three days, hoping to make another drive from the main tunnel of about 100 feet, where we intended to make another upraise, tapping the gravel at another point. This tunnel had been driven a distance of 30 feet when the water in No. 2 upraise increased, covering the floor of the tunnel and making further work in 550 level out of the question.

"I then made arrangements for closing down, taking out one of the large sinking pumps, but leaving all the pumps in the pump shaft intact. I also put guides in No. 2 hoisting shaft, which leaves the two hoisting compartments clear, ready for using skips and water tanks so that when the shaft is again unwatered it can be done with much less time and expense, as we will then have the tanks and pumps both to use for that purpose. The shaft is now in perfect condition.

"It may now be considered that all doubt heretofore existing as to the value of the bottom gravel in this enormous dead river channel has been dispelled, and that there doubtless exists an extensive body of high grade gravel. It having been found to be enormously rich on its rims near the surface, but a few hundred feet distant from our shaft in the Ward-Horsefly mine, no other conclusion can be consistently arrived at.

"It will now be necessary to provide a suitable hoist, with cages and water tanks complete for the hoisting of water and gravel. It will also be necessary to provide a pumping plant for handling the bedrock water, and additional boiler capacity should be provided. I therefore recommend the appropriation of sufficient money for further equipping the mine and placing it on a paying basis."

TECHNICAL PERIODICALS OF THE MONTH.

THE ENGINEERING MAGAZINE.

THERE are three articles in the October number of more than usual interest. The first, "The World's Need of Coal and the United States' Supplies," by F. E. Saward, with editorial preface, deals

with the possibilities of coal exportations from the United States, even to the length of supplying fuel to factories and workshops in Great Britain. England is now producing nearly 240,000,000 tons of coal per annum, and as comparatively few new mines have been opened up for ten years, the cost of extraction as it becomes necessary to go deeper into the ground and the thinner seams have to be worked, is proportionally increased. England consequently under these conditions prefers to retain her fuel supplies at home. The vast coal fields of the United States are comparatively speaking untouched, and that this country will, as Mr. Saward puts it, become "the coal seller of the world" at an early date is a matter capable of mathematical demonstration. The question now will England be affected by the decline of her foreign coal trade is well answered in the editorial preface above referred to. It is pointed out that the new development will "prove as life-giving and as little to be considered menaces to England's prosperity as even the wheat of the prairies or the cotton of the Southern States . . . and "if American coals can be landed in European ports at reasonable prices it means simply that the thousands of factories, forges, workshops and ship-yards, which are the framework of Britain's power, are assured against stoppage or decline."

Following Mr. Sayward's abstract discussion of the question is a paper descriptive of the important Connellsville coke region of Pennsylvania in which there are in operation or construction no less than 27,000 ovens and the industry represents an investment of \$100,000,000 and furnishes direct employment to 20,000 men.

An article on the use of water power by direct air compression by William O. Webster describes the various appliances in use for compressing air from falling water, among others the device known as the Taylor air compressor, one of which plants has been installed in the Ainsworth district of this province.

THE CANADIAN MINING REVIEW, OTTAWA.

The last number is devoted almost entirely to an account of the visit to Canada of the American Institute of Mining Engineers, together with a reproduction of the many interesting papers read. These together with the numerous handsome illustrations of the mines and localities visited form a most entertaining feature of the magazine. The *Canadian Mining Review*, however, is always worth reading, and has justly earned the high esteem in which it is held by the mining communities of Canada.

MINES AND MINERALS.

In *Mines and Minerals* for October Mr. R. B. Brinsmade, B.S., E. M., contributes the first of a series of papers on mining practice. In introducing his subject Mr. Brinsmade makes the following eminently sensible remark: "A managing engineer entering for the first time a camp whose practice is well established does well to move slowly, and to thoroughly acquaint himself with all the existing obstacles, and with the manner in which they have already been overcome, before attempting to introduce innovations. An old district like Butte is an entirely different problem for the engineer from a virgin camp like