

not necessary, but we should be able greatly to improve the present state of affairs.

Mr. Rickard's paper appears to be a most important and valuable contribution in this direction and, I think, more likely to lead to a useful result than the voluminous discussions of the way ore has been formed and the deductions therefrom which are so dear to geologists. According to the theories of ore deposition generally accepted, the different elements or compounds which constitute ore are dissolved in some medium, transported in some way, and precipitated again, the solubility and precipitation are influenced by temperature, pressure and sometimes minute changes in composition, and other things; that is, the fact whether ore exists in any place depends on a combination of a number of events and, therefore, there must be a great number of ways in which the events might happen and, consequently, it seems unlikely we can correctly predict what has happened below the crust of the earth.

If we consider for a moment what takes place when we proceed in the opposite direction, viz.: vertically upwards, we see how theories have failed. It has formerly been assumed that with an ascent vertically upwards the barometric pressure and also the temperature would drop till finally at the limits of the atmosphere where the air pressure would vanish, the temperature would be zero (absolute) (—) that is—459°F. Within the last twenty years, however, meteorological observatories in many parts of the world have been sending out small balloons fitted with barometers and thermometers to great altitudes. This has proved that at an elevation of seven miles, more or less, dependent on the latitude, a layer of constant low temperature—50°F. to 130° is entered. This is called the stratosphere. As the balloon ascends through the stratosphere the temperature rises instead of dropping as it should, and this continues to an elevation of about 19 miles, beyond which there are no observations. Moreover, the stratosphere at the equator is some 30° colder than in middle latitudes, and over Canada, the stratosphere has a lower temperature in summer than in winter. We see then that in the case of the temperature of the air above us, although as far as known previously this depended on one thing only and nothing could interfere with it, the theory fails altogether. How much more likely is the theory to fail when the result admittedly depends upon a number of factors?

THE BRITISH COAL MINERS' PART IN THE WAR

As the outcome of a recommendation made in the report of the Departmental Committee on Coal Mining Organization, one of the most remarkable gatherings in the industrial history of the United Kingdom was held on Thursday, July 29th, at the London Opera House, Kingsway. The Home Secretary, Sir John Simon, presided. The meeting took the form of a conference of representatives of coal owners and miners from every coal field in the country, convened by the Government, at which there were about 2,500 present. The Government Departments and coal trade organizations represented included the Home Office, the Board of Trade, the Board of Education, the National Insurance Commission, the Ministry of Munitions, the Coal Mining Organization Committee, the Mining Association of Great Britain, the Miners' Federation of Great Britain, and the English, Scottish and Welsh Conciliation Boards. The proceedings were very enthusiastic

throughout. After speeches by Cabinet Ministers, a resolution declaring that "every effort should be made to secure the greatest possible output of coal," proposed by Mr. Robert Smillie, president of the Miners' Federation of Great Britain, and seconded by Mr. A. F. Pease, acting president of the Mining Association of Great Britain, was put to the meeting and carried unanimously.

Sir John Simon said the conference was called together by the Government and those connected with the great coal mining industry of the United Kingdom. Representatives of every coal field and, he believed, of nearly every miners' lodge in the whole country, were present. The Mining Association of Great Britain and the Miners' Federation were both represented, and that great assembly proved how united the coal mining industry was in the crisis they were prepared to face. The object of the meeting arose from a very remarkable and interesting report made by the Coal Mining Organization Committee, appointed by the Home Office and presided over by Sir Richard Redmayne. The committee, which contained an equal number of representatives of coal owners and miners, arrived at an absolutely unanimous report, and made a series of recommendations as to how the output of coal could best be maintained during the present emergency. It must be done by voluntary co-operation. That was the spirit in which the committee had reported; it was in that spirit that the Government had called the meeting together and counted upon them to promote the success of its object.

The mining industry had responded splendidly to the appeal for recruits. Whole regiments had been recruited from the colliery districts up and down the land. He had been assured by soldiers the most eminent that the miners carried to their work in the firing line the bravery and determination that actuated the industry throughout the country. In at least one military unit practically every private was a pitman, every officer and non-commissioned officer was connected with a colliery, and the commanding officer was one of H.M. inspectors of mines. The miners had given to Kitchener's Army a quarter of a million men.

The Government and the country looked to the coal owners to see to it that when these brave men came back to peaceful industry, places should be found for them again. He felt sure it was the fixed intention and the firm resolve of the coal owners of the United Kingdom that the men who had served them faithfully in times of peace and the country in time of war, should not suffer when they came back and asked to resume their ordinary occupations.

Warfare involved more than actual fighting. It involved supplies, transport and munitions, and those things depended absolutely upon a regular and abundant supply of coal. Furnaces must be kept stoked. The British navy—that sleepless and incomparable guardian of our liberties—must be kept steaming. And it rested first and above all on the coal mining industry to secure that the necessary supplies were forthcoming. They had lost the comradeship of 250,000 miners. Those who were left, and all who were concerned in it, must turn their thoughts and all their energies upon seeing how best and most effectively they could carry on the great coal mining industry. The committee he had mentioned, had ascertained that, as a result of the contribution made by the miners to the Army, there was a shortage of no less than three million tons of coal month by month; but with good will and an effort greater than any hitherto made,