

Some idea of the heat may be gathered from the statement of the instructor that the metal parts of the apparatus burnt his hands when taking it from the backs of the retiring relays. All the work of course was done in an atmosphere that would have been very quickly fatal to any unprotected person. The men worked by the light of electric hand lamps of the Hubbell type. Neither the weight of the lamps nor the apparatus seems to have caused the men particular discomfort. The protection afforded to the face and head by the helmets seems to have been of great value. One of the men wore a mouth breathing apparatus, as owing to his large physique no helmet had been found large enough to fit him. He suffered from the heat and steam on his face, and could not advance as far as those fitted with helmets, although he is an old fire-fighter. It is evident that for smoke and fire the helmet type is likely to be the most useful one.

The lessons of this fire are exactly those of the Hamstead fire, which we may quote in part from the article of 1st May, above referred to.

"1. To be really effective and useful in time of need, oxygen apparatus should be kept on the spot, and should be available for use instantly."

Had the Draeger apparatus been used at Sydney Mines when the fire was first noticed it could of course have been extinguished with much greater ease than was actually the case.

"2. It is absolutely necessary that men be trained in the use of these apparatus in conditions that are as nearly as possible actual conditions, that is, in really unbreathable gases. . . . Untrained men are worse than useless when the emergency comes. No man knows his hidden idiosyncrasy until he makes the test."

In the case under review, there can be little doubt that the effective way in which the men from Glace Bay dealt with the fire and handled their apparatus was due to their having trained rigidly and conscientiously in the smoke chamber. Every man was known to be fit for the work.

3. . . . Relays of fresh men should be ready to take up the work."

Twenty-four men were in the Sydney Mines party, as compared with the small parties at Hamstead. They were able to work in relays and constantly relieve each other. Of course it must be admitted the conditions were distinctly different from those prevailing at Hamstead, for in that case the whole mine was involved.

"4. An adequate supply of oxygen and cartridges should be at hand."

The Glace Bay corps took with them ten apparatus, with sufficient spare oxygen cylinders, potash cartridges, and electric lamps to last each apparatus for twelve hours.

A further lesson, which although it may not meet with general approval, we consider cannot be too strongly emphasized, is the national character of rescue work in mines. The conditions which existed at Sydney Mines to occasion the visit of the Glace Bay corps did not fortunately involve any especial danger to human life. But there is a danger that where men have trained and lives are in danger the services of the trained men will be called upon. In our note of the 1st May we said: "We know that willing volunteers will never be wanting when other men's lives are in danger, and it is hard to refuse aid under such circumstances. But what right has anybody to expect volunteers from another district to risk their lives in the unknown workings of a strange colliery at long dis-

tances from their base of supplies? Such men are like the mariner in uncharted seas, and could be accused neither of cowardice nor inhumanity if under such circumstances they refused to endanger their lives. But we know they would not refuse, and therefore the national character of the matter becomes at once apparent."

That large corporations should equip their mines with such apparatus is a wise precaution on their part, and a cheap fire insurance premium, apart altogether from the humanitarian aspect. The coalfields of Nova Scotia are the property of the Government. Anything that will or may save human life is a matter for Government action. Therefore apart from anything that that the coal operators may do on their own initiative, we cannot see how either the provincial or the federal government can ignore their share of the cost and responsibility of this matter.

### ANTIMONY.

Although a falling market throughout the year gave little encouragement to the development of American production of antimony, the output in the United States in 1907 showed an increase of 256 tons in quantity and of \$19,497 in value as compared with the output of the preceding year, the total being 2,022 short tons, valued at \$622,046, in 1907, as against 1,766 short tons, valued at \$602,549, in 1906.

As usual the greater part of the antimony produced in the United States was that contained in antimonial lead and sold by the smelters in that form. As this alloy is extensively used in type metal, babbitt metal, coffin trimmings, and similar wares the two metals need not be separated.

The imports of antimony in 1907, in the form of metal, regulus, ore, and salts, exceeded even those of 1906, up to that time the greatest recorded, rising in value from \$1,616,381 in the earlier to \$1,686,802 in the later year.

The consumption of antimony and antimony salts in 1907, as shown by the addition of the values of production and of imports, amounted to \$2,308,848.

A statistical report on the condition of this industry in the United States, prepared by Frank L. Hess, has just been published by the United States Geological Survey as an advance chapter from "Mineral Resources of the United States, Calendar Year 1907." Copies of this report may be obtained by applying to the Director of the Survey at Washington, D.C.

The death rate per thousand employees occupied in coal mining in the United States reached the startling figure of 4.86 in 1907. This is an increase of 1.55 over 1906, when the rate was 3.31. The number of tons of coal mined in 1907 for each life lost was 145,471 tons, as compared with 19,950 in 1906. West Virginia coal mines showed the highest death rate in 1907, 12.35 per thousand, and the lowest production of coal per life lost, 65,969 tons. Missouri's rate was the lowest, being 0.95 per thousand men employed, and 499,742 tons of coal mined for each life lost in spite of the general impression that the mine explosions are responsible for the majority of deaths in coal mining, it is found that while 947 deaths and 343 injuries were due in 1907 to gas and dust explosions, yet 1,122 deaths and 2,141 injuries were caused in the same period by falls of roof or coal; and 855 deaths and 2,416 injuries were ascribed to other causes.