

to say, one of the shifts only in the mine at one time, the others to remain on the surface ready to take their turn whenever the necessity arose to change those underground. The working parties I would place under the care and leadership of the under officials, and the bearer parties I would place under the leadership of the most cautious men, who are capable of leading, and who are the most acquainted with the travelling roads underground; a list of the names of the parties and leaders should be taken. A number of plans of each district should be drawn out roughly but accurately, and given to the leaders when necessary; the plans to mark the position of the doors, air-crossings, etc., and the direction and course of the air-currents.

Having seen also that there was a sufficient supply of refreshments, and that each of the men going underground was provided with a good safety lamp, I would now proceed down the mine, entering by the down-cast shaft. Arriving at the shaft bottom with the parties selected for the first shift, and whilst the parties are waiting for the materials to be sent down, I would make an inspection of the connection with the return air-way nearest the shaft in each split—if the splits were made right at the shaft bottom. Returning to the shaft bottom, where the men would now be ready and waiting my return, I would give the leaders of the parties the following instructions, with strict orders that they be carried out to the very letter: (1) That the officials operate in their own district, and that each bearer party convey materials to the district with which their leader is best acquainted (2) that the leaders are not to let their men work in the return air, but to keep always in the intake; (3) not to work more than the specified time, and should the men become exhausted before that to return to the surface at once; (4) to report to me from time to time during the shift, by the bearers or one of the party, how things are proceeding; and should anything particular crop up in any district, which would require my special attention, to communicate with me at once, so that I may visit that particular place and give the necessary instructions.

I would station myself in the most convenient place in the mine to receive reports from the different districts. In case of being called away to any district, my visit there would be as brief as possible, but sufficient, less my presence and attention may be needed in any other district.

After all the above arrangements and precautions have been made, which are of the utmost importance to the safety of the working men and for the successful carrying out of the operations, the actual work of restoring the ventilation could now commence. Beginning with the destroyed doors and air crossings nearest the shaft, in each split and with a good quantity of props, bars, deals, brattice cloth, air pipes, nails tools etc., at hand temporary arrangements could be expeditiously set up. These temporary arrangements should be so placed that the permanent ones could be completely fixed up without removing them. Then, whilst the parties fixing up the temporary doors and air crossings would be well in advance, parties for the purpose of erecting the permanent arrangements could begin work, and the two operations could be carried on at the same time, thus restoring the ventilation to its normal state with the least possible delay.

When all the permanent doors and air crossings

have been completed, and the air having taken its usual course, all the noxious gases would soon be completely carried out of the mine, which in a few hours would be in a fit state for working and travelling in.

With regard to the safety of the working men, I believe that if the instructions mentioned above were carried out thoroughly, the workmen would be exposed to very little danger indeed, as they would be always working in fresh air.

#### SURVEYING.

Q.—How would you make a survey with a theodolite in a working driven to the boundary, and how would you proceed to connect it with the surface?

A.—The first thing I would do would be to arrange my sights so long as I could get them, without losing a great deal of time.

Having got these fixed points, I would have a hook put into the roof or timber, so that when I was ready to start my survey it would only be necessary to put the lamp on the hook, or if an error had been made in the survey I would have these fixed points to go back to and check the survey.

The next thing to be done is to set the theodolite up between the first and second stations.

After the instrument is set up I would next level it, and then direct my telescope until it is approximately in the line of sight with the first lamp, and is then clamped to the vertical axis. The telescope can be adjusted to the line of sight by the slow motion screw fitted below the horizontal plates.

Unclasp the vernier screw, rack your instrument approximately in line with the second lamp, the bottom plate being stationary. Adjust the telescope correctly by the slow motion screw, and then read both verniers, which will give the angle between the first and second lamps. Lift the telescope out of its vertical axis, and reverse, and then repeat the operation again, which should give you the same reading.

The above process to be carried out until the whole of the survey is done.

To connect the underground workings to the surface plan can be done in two ways—by magnetic meridian, or looking up the shaft and then at some fixed object on the surface. All that is necessary is to make the underground survey to some fixed point such as the shaft, which is certain to be on the surface plan. Then you can draw your magnetic meridian, and plot your survey from the shaft in-by. If great accuracy is required, I should make a survey of the surface in connection with the underground.

#### THE BRITISH GOVERNMENT AND THE UNEMPLOYED.

Mr. Asquith delivered his eagerly-anticipated statement in the Commons on the unemployed, in answer to a question by Mr. Henderson. At the outset, however, he made it abundantly clear that the attention of the Government is given for the moment entirely to the special question of immediate urgency. Its proposals, he took care to explain, are limited to tiding over the distress of the present and of the coming months. They are not intended to go to the root of the evil. Roughly outlined, the Government's proposals amount to this. Sanction has been given to