

dusts from other collieries in different parts of the Kingdom.

The experiments were made at Garswood Half Colliery and in the apparatus special arrangements were made to secure accuracy and uniformity in the velocity of the air currents passing through the gallery, in the proportion of pit gas or fire damp, used with the air, and in the intimacy and consequent uniformity of the mixture. In order to raise the air current in the gallery to a temperature similar to that of the atmosphere in colliery workings, the air supply was drawn through a system of heated pipes, so that, when passing at as high a velocity as 1,000 feet per minute, its temperature could be raised up to 80° or 85° Fahr, even in very severe weather during which the experiments were made.

The samples of coal dust experimented with were examined with respect to fineness, proportions of volatile matter and ash, and one or two other points, all being carefully dried before use.

Experiments were made in the first instance with a view of ascertaining the smallest proportion of fire damp which, when mixed with the air passing through the apparatus, would furnish an atmosphere capable of firing at a naked flame of a particular size placed in the gallery. It was next ascertained what quantity of gas below that proportion was needed to impart to the mixture of air with a large quantity of each particular coal dust the property of exploding throughout the gallery. By these experiments the samples were classed in the order of their sensitiveness to explosion, and it was found that, while those which were very rich in pure coal, and which contained the highest proportion of very fine coal dust, required the lowest proportion of fire damp in air to bring them to explode readily when suspended in a dense cloud, the order of sensitiveness of samples containing higher proportions of non-combustible matter did not necessarily harmonise with their comparative richness in pure coal, nor with their comparative fineness. This was strikingly illustrated by two samples of dust from Seaham Colliery, one of these taken from one of the roads, contained more than half its weight of non-combustible matter, yet ranked third in order of sensitiveness; another, which contained considerably more coal, and a somewhat larger proportion of finer dust, ranked only fifth.

Other experiments were made with Seaham coal dust in the entire absence of fire damp by firing a cannon charged with powder, either while the dust was being carried through the gallery by air currents of different velocities, or with dust being deposited upon the side and floor of the gallery. In this latter description of experiment, two shots were sometimes fired in succession, and in different directions, with and against the air current, so that dust raised by the concussion and rush of gas from the first shot might be exposed to the flame of the second. In these instances the velocity varied from one to three hundred feet per minute with a negative result. By increasing the velocity to 1,000 feet per minute a slight but decided indication was obtained in several experiments that dust particles were inflamed by these shots which were fired in the direction of the air current. In these instances the volume of flame produced on firing the shot was certainly greater than when no dust was suspended in the air, but the duration of the flash was but slightly if at all prolonged. On one single occasion a long reddish flame was produced when a shot was fired which travelled to the forward end of the gallery. Some fire damp had been passed into the latter just previously and it was evident that although the apparatus had subsequently been ventilated, the exception-

al result was due to the presence of some, though certainly a very small, quantity of fire damp, for when the experiment was carefully repeated, all conditions, except the possible presence of gas, being identical with those previously existing, the only effect observed was the slight increase in the volume of the flash of flame produced by the shot, which has been described.

DALHOUSIE EVENING V. GOVERNMENT NIGHT SCHOOLS,

Supplementary to what was said in last issue of Record we have been favoured by a statement which, somewhat condensed, follows:

Dalhousie evening schools were first formed at the request of a number of miners in Cape Breton. The University had added to its course in arts and science, that of engineering and mining. The addition of a mining school seems to have suggested the idea of doing something for those who for various reasons were unable to take advantage of the education given within the walls of the college. The Senate discussed the question, and the best that could be done at that time was to open a summer school.

The first of these schools was opened in Sydney and Glace Bay during the summer of 1903. The next summer the school was held in Glace Bay alone. The subjects specially asked for were Chemistry, Coal Mining and Geology.

During this experimental stage two or three things were made clear: 1. The men wanted the aid the school gave, this was proven by the fact that the attendance on the school during the second summer was double that of the first. 2. That the term, six weeks, was too short for the amount of work that had to be done, besides a number of men were on the night shift which reduced their term by half. 3. Some of those taking the classes found the work a little too advanced, consequently they did not receive the benefit they otherwise might had they been better prepared, say, in mathematics.

Having these difficulties in view, the whole situation was gone over by both men and teachers. Finally it was agreed at the request of the men to reconstruct the course so as to meet their requirements; open evening classes which were to continue from October to May, with summer classes in Surveying etc., practically to continue the work for the greater part of the year instead of six weeks. This of course meant an increase of teachers and a larger outlay, but the Alumni came to the help of the College and promised to see them over the difficulty. Thus the work in 1904 closed with the idea of opening, not during the summer, but in the fall of the following year.

At that stage, a number of things plunged the object of the school into a sort of chaotic state. Other educational institutions began branching out. They had schemes in part resembling that of Dalhousie, and in part differing very materially. It is not necessary to enter on a detailed statement of their plans, suffice to say that many of the men got things somewhat mixed up, and no wonder. What with at least two colleges seemingly competing, the men may be pardoned if they did not know where they were educationally.

It is but right that it should be known that during the agitation of 1904-05, Dalhousie was simply going on with the work they had commenced two years be-

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