

coal are produced by driving the working places at right angles to this line of cleavage and in others by working in the contrary direction. The course of these planes in different seams should be compared with respect to their similarity or difference. The strata of the coal measures also exhibit particular lines of fracture by which they are, as it were, divided into blocks. Careful observation of the direction in which these cleavages run, in conjunction with equally well noted particulars of the course, size, and direction of throw of dykes, may aid in determining the character of the movements by which these ruptures are supposed to have been effected. The composition and thickness of each bed of the strata should also be noted and measured, and especially should these be observed when shafts are sunk. An accurate section should be taken of the strata passed through in each pit, and that of the deepest on the colliery should be laid down on the plan.

Fossils, too, should receive attention, as their presence in particular strata has been found in some districts an invariable guide to the proximity of a seam of coal. The quality of the water, and the circumstances under which it appears in the mine, deserve attention for the indications it may give of the existence of particular minerals through which it has passed. Another subject worthy of observation is the internal temperature of mines. With the exception of those belonging to the General Mining Association, none of the collieries in the Province are sufficiently extensive to show much variation from the external temperature; but it is on this account a fitting time to commence such observations. As the workings spread to a greater length and depth, a record of the change in temperature will not be found uninteresting, and the time may come when such records may be of scientific value.

What I have already said respecting the accuracy and details of plans will, I think, render sufficiently evident their value as an aid to the knowledge of the peculiarities of any district. Sufficient, I hope, has now also been advanced in support of the object of this letter. There is so intimate a relationship between the aid to science furnished by such observations as I have suggested, and their practical value, that I am confident that no manager who desires to perform his duty efficiently will neglect to make them.

To bring the preceding remarks to a practical issue it remains to suggest a form of conventional signs for adoption, the scale on which the workings may be plotted, and to make a few observations