

SELECT COMMITTEE ON ACCIDENTS IN MINES.

Extracts from the Minutes of Evidence.

[We gave in our last Number the Report of the Committee of the House of Commons on this deeply interesting subject, and shall now proceed to extract those parts of the evidence which are more particularly referred to by the Committee, as furnishing the reasons for the conclusions at which they have arrived.—Ed. M. M.]

James John Wilkinson, Esq., examined :

Have you for some years taken a lively interest in the working of coal mines, in the northern parts of this kingdom?—Yes; in the calamitous accidents which have arisen in the working of coal mines.

Are you one of the original members, if not the original proposer, of a society for preventing accidents in coal mines, in the county of Durham?—I was the original proposer of that society.

Can you give the Committee any information relative to the objects of their inquiry?—On the 25th of May, 1812, an accident happened at Felling, near Gateshead, in which ninety-two persons suffered. I was particularly struck with this very afflicting accident, and the more so, from a circumstance which I am sure will have its due effect upon the Committee, and that was this, that after ninety, if not the whole, of the sufferers had been taken out of the mine, and on a particular day, the coffin of what may be called the first of the sufferers began the procession, which increased before it got to the church until it amounted to a procession of ninety coffins, with mourners; this struck me particularly, and I thought if this could possibly be remedied, it would be doing a great good to society. I went into the north of England in the long vacation of 1813, and I consulted many of my friends, and the result was, that I considered it my duty to call the attention of the public to these accidents, to have a full investigation into the whole subject, and to see if any remedy could be applied. On the 1st of September, 1813, I published, and sent into Durham and Northumberland, proposals for a society for preventing accidents in coal mines; this was circulated by letters, &c., very extensively, and among the rest came to the notice of the late Bishop of Durham; his lordship wrote to the late Dr. Gray, afterwards Bishop of Bristol, to say that he gave Dr. Gray a *carte blanche* to do any thing that might be necessary in the formation of such a society. After consulting with many

of my friends, with Sir Ralph Millbanke and Dr. Gray, and Dr. Clanny, on the 27th of September, 1813, was published a handbill for a public meeting for the establishment of the society at Sunderland, and on the 1st of October, 1813, the meeting was actually held at Sunderland, Sir Ralph Millbanke in the chair, in which a committee was appointed, and I had the honour of receiving the thanks of the society for having suggested the plan of the society. The Committee began its meetings, and received a variety of communications, and one, which I beg to call the attention of the Committee to, was a communication from Mr. William Chapman, now deceased, the celebrated civil engineer, on the causes of frequent explosions of inflammable gas. In November, 1813, the society published its first report, which I beg to lay upon the table. (*The Witness delivered in the report, which was laid upon the table.*) That report contained a preface, stating that their funds were small, and that they had received several communications, and among the rest a very valuable letter from Mr. Buddle, which forms the basis of their first report. It was soon ascertained that the townships and parishes were extremely negligent in calling upon the coroners in cases of accidents, and Dr. Gray spoke to the magistrates, and the consequence was a charge at the sessions, which brought on a better system; and by Sir John Bayley also, a charge at the assizes, which contributed to the like effect. It was thought advisable to apply to Sir Humphrey Davy, and I called at the Royal Institution on Sir Humphrey Davy, but he had gone to Paris; I put a letter into the post-office for him, but not having paid the foreign postage, it was returned to Mr. Burn, the secretary of the society. In 1815, Dr. Gray was requested to write to Sir Humphrey Davy, as chairman of the Committee, to interest himself in the cause; and Sir Humphrey Davy came into the North either in August or September, 1815, and met several of the gentlemen of the Committee, and others, at Dr. Gray's. Sir Humphrey Davy afterwards saw Dr. Clanny and his lamps, and, I am persuaded, derived considerable advantage from them. Sir Humphrey Davy's lamp came out in 1816. I am sorry to state that the society received very little support or funds from the coal-owners, but I am glad to state that there was a greater vigilance in working coal mines, and a better system; that fewer accidents happened; and I am persuaded many valuable lives preserved to their families and their country. Mr. Buddle's pamphlet was a valuable addition, both to the miners and to science. Sir Humphrey Davy's and Mr. Stephenson's lamps also contributed to reduce

those accidents. I believe much remains now still to be done. The accidents in coal mines may arise from improper working, as to which I beg to refer the Committee to Mr. Buddle's letter, in our first report. During the time that the society was in activity, a person of the name of Ryan, from Ireland, came to the society with a new system of ventilation, the object of which was to do away almost entirely with the bracing and boarding of what may be called the old system, but Mr. Ryan's plan did not succeed. Another system of working will be explained to the Committee by Mr. Martin. Accidents may also arise from improper ventilation. I beg to refer the Committee to the plans of ventilation mentioned by Mr. Buddle, in our first report, by a furnace, page 6; by a water-wheel, page 6; by a hot cylinder, page 7; by air-pumps, page 7; and by air-coursing, page 17; and also to the defects of the system, in page 21. After the ventilation comes the system of light to the miner; and I beg to refer the Committee to light by candles, mentioned by Mr. Buddle in our report, page 18; by the steel-mill, in page 20; then come the different lamps. The first lamps in priority are Dr. Clanny's, who has been the inventor of several, and has been an indefatigable labourer, but, I am sorry to say, has received no reward. Sir Humphrey Davy's is a beautiful invention, and a great improvement, and did great good; but on inquiry in the North of England, I believe it is liable to accidents by pieces of coal, by the stour, particles of coal-dust, settling on the meshes, and by sudden blowers of gas; and I think it would be improved if there were a rim which would keep what we call the stour in the north, the dusty atmosphere, from descending upon the gauze; and if the upper part of the gauze was made in the shape of an inverted cone, the dust would be less liable to settle. Sir Humphrey Davy's lamp, in my opinion, has suffered from the indiscreet zeal of his friends in not allowing it to be an imperfect instrument, or rather in insisting that it is completely perfect. It was soon ascertained, I believe, that Sir Humphrey Davy's lamp wanted a sufficient light, and a reflector was added to it; whether it is now used or not in collieries, I am not aware. With Sir Humphrey Davy's lamp ought to be mentioned Mr. Stephenson's, another valuable addition to coal mines, on a similar principle; there is a dispute as to priority between Sir Humphrey Davy and Mr. Stephenson. I now come to another subject of considerable importance, in working mines, which has already been mentioned to the Committee, and that is the danger that arises from breaking into old workings or wastes. This occasioned the dreadful accident at Heaton, and for prevent-

ing this in future, I beg to present to the Committee two pamphlets by Mr. Thomas and Mr. William Chapman, on the propriety of having maps of all the workings of coal mines. I beg leave also to call the attention of the Committee to the lead mines, and to express my opinion that cleanliness must add considerably to the health of that body of miners, who suffer much in their health.

Mr. Nicholas Wood, examined :

Are you engaged professionally as a collier-viewer in some of the largest collieries in the counties of Northumberland and Durham?—Yes; I am viewer for Lord Ravensworth and partners' collieries, and I am engaged in Gateshead Park and Tyne Main collieries.

Are you the author of a work that has been given to the public on railroads?—I am.

Will you have the goodness to state to the Committee your idea of the coal stratifications of the North of England, as productive of carburetted hydrogen gas?—The coal in the North of England generally lies in seams, varying from three feet to six feet in thickness; it consists of different varieties of coal, some considerably more bituminous than others, which may, perhaps, be classed into bituminous or caking coal, and slaty, or coal that does not cake.

Do you consider the bituminous or caking coal, or the slaty, to generate greater quantities of carburetted hydrogen gas?—The bituminous coal.

Are those stratifications liable to interruptions or dislocations?—To considerable dislocations and interruptions, both in number and extent.

Have you ever observed a greater or less generation of carburetted hydrogen, where those interruptions or dislocations take place?—In answering that question, I do not know whether it would not be necessary to enter into an explanation of the manner in which the gas exists in the coal, in the first instance, and then to point out the way in which those dikes and slips affect that gas, and bring it in contact with the miner, in the operation of working the coal.

The Committee wish you to proceed to give your opinion of how the carburetted hydrogen gas is suspended in the coal stratification, and the alterations which take place in consequence of those disruptions and dislocations?—In the operation of working the coal, we find in practice a continual hissing sort of noise in the coal, especially where it abounds very much with inflammable gas. Lately, by means of cutting coal into very thin slices, and magnifying those slices, it has been ascertained that the coal is very porous, and that those pores contain bitumen distinct from the chemical composition of the