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W. H. JENNINGS.

WASTAGE OF COAL.

BY W. H. JENNINGS.

For a number of years, at almost every meeting of the Institute, there has been some agitation on the question of the "Wastage of Coal." We have papers on this subject from several of the members,, and undoubtedly they have been productive of good, but no great or decisive benefit has, as yet, resulted. At the last winter meeting of the Institute, the President was instructed to appoint, from among its members, a committee o wait on the Legislature and request of them that a commission be appointed to investigate the matter of wasteful mining of coal in the State.

Your committee met and put their suggestions before the proper members of the Legislature, who were very favorably impressed and promised their support. But because of unforeseen contingencies the bill was defeated when it came before the House.

Your committee deemed the matter of such interest that it continued the work, to a certain extent, endeavoring to get information on which a definite remedy might be based, on the suggestion of some of the members of the Legislature, that more could be done by bringing a specific plan for the Legislature to act on, than by urging the appointment of a commission of investigation. All this was done in the early part of 1896 and reported at the summer meeting in Pittsburgh. It was suggested in that report, that this work be continued and that circular letters be sent to the several mines of the State, requesting information on different points, by which it was hoped to learn more definitely the conditions prevailing throughout the State.

These circulars were sent out but were a disappointment as regards results. The information received did not seem to me to justify a calling of the committee, which has not met since the adjournment of the Legislature. I have compiled, for the benefit of the Institute, a chart of the replies to this circular, which will be of interest in many ways. In working up this chart, and studying these reports, it seems to me that one would be entirely unwarranted in making suggestions as to methods of work with-

out knowing the peculiar environments of each case. To criticize a man's plan of work without any knowledge of the peculiar conditions confronting him would be a gross injustice, and so from these reports alone it would be an impossibility to suggest any plan or remedy.

The following replies were received in answer to the circular letter:

From mines working No. 1 seam, 2; No. 2 seam, 3; No. 3 seam, 5; No. 4 seam, 4; No. 5 seam, 5; No. 6 seam, 26; No. 7 seam, 5; No. 8 seam, 16; both Nos. 5 and 6 seams, 2; both Nos. 6 and 7 seams, 1; total, 69.

Of these sixty-nine mines two are worked on the County Durham system, none on the Long Wall system. The greater number are worked on either the single or double entry systems, the width of the rooms ranging from 15 to 30 feet; the thickness of room pillars from 3 to 24 feet. In twenty-two cases, no pillars are drawn; in the others they are drawn as far as possible.

Forty-one are familiar with other methods of work than that they are using. Of these, thirteen thought a change of method would result in a saving, and the rest said not.

The percentage of the coal saved has been unquestionably overestimated; many claim to have saved 100%, and yet admit that they left top coal in the mine. This top coal, however, is left both as a protection and as inferior, but mostly because it is not merchantable.

The average per cent. of coal saved, from these overestimated reports, is only 80%.

Surveys are made from once a month to once a year; in one case, only once in from four to five years.

The reports as to distance between veins, necessary for the safe mining of upper veins after the lower veins have been worked, are of not much service. Twenty-seven out of sixty-one replies say that falls which occur after pillars are drawn, break to the surface. If this is so the intervening seams of coal must be broken so as to make the successful mining of upper veins doubtful. One report says, "after a lapse of twenty years any vein, either above or below, can be worked." It may be, however, that these breaks to the surface are no more than cracks and not a breaking up of the strata.

A few report blasting from the solid, but most of them are of the opinion that it is a poor plan; that more coal can be saved by mining.

Those reporting on Long Wall system think it would save coal if it could be worked, but the majority seem to be of the opinion that the system would be impossible for the Ohio coals

because of the weak floor and strong roof, and also because many of the mines stand idle so long the work would be constantly obstructed by falls.

In twenty-nine cases the coal is mined by the owners of the land; in thirty-five cases, mined on royalty; and in five cases, royalty is paid on part, and part is owned.

The chart which we have made tabulating these replies is not an exact copy of the replies. In many cases the answers were such that it was evident the questions were misunderstood. When it was possible from the answers to other questions to get the answers on these points we have taken the answer thus acquired, instead of the one given; and in some places left out the answers entirely. In working up this chart and these replies, it has seemed obvious that no suggestions of any practical benefit can be made by one not personally acquainted, by at least a personal inspection, with each particular case. Such a course of investigation would entail a great deal of expense and time to any one person. It seems to me that the proper solution of the matter then, would be a plan such as follows:

Let the Chief Mine Inspector, with his deputies, take up the matter. They personally visit the mines and have access to the plats, and can see for themselves whether the mines are being surveyed properly. They can estimate from the plats, and their own observation, the amount of coal being saved; and can observe the character of the falls, and with the manager and mine boss on the ground, determine the practicability of mining any upper veins.

Let a list of questions be made such as would get all the information required to make a decisive and feasible plan to lay before the Legislature be prepared. Supply each of the District Inspectors with this list of questions and as he visits the different mines in his district let him fill out this blank, with his knowledge of the answers desired, and his knowledge of the case at hand, helped by such information as he can get on the ground from the superintendent or mine boss.

This would result in a report of such a character that the information would be of great value, coming as it will from practical men who are interested in the matter, and working on a uniform plan.

This list of questions should be prepared at this meeting and the District Inspectors requested to work up this report during the year, and a full report made at the next winter's meeting, at which time the Legislature will be in session. If any plan can then be agreed upon it can be laid before the Legislature and a much needed legislation had.

I would request each member to suggest any question which he thinks, if answered, would shed any light on the question. I would suggest, to start the list, the following:

1. Name of mine. locality.
2. Name of manager and mine boss.
3. What vein are you working?
4. What is the average thickness of vein?
5. What system of mining are you using?
6. Make sketch showing the plan of mining and note on it by figures the widths of rooms and entries and thickness of pillars between entries, rooms and entry and rooms.
7. Do you draw pillars, and when?
8. Are you familiar with other methods of mining?
9. What other methods?
10. In your opinion would any other method yield a larger per cent. of the coal, or be more economical in mining?
11. What other method would you suggest?
12. What per cent. of the coal are you saving?
13. What per cent. is unavoidably lost?
14. What per cent. lost which might be saved by better methods?
15. Do you leave any top coal?
16. Is it left as inferior coal or as a protection for the roof?
17. Is the mine surveyed, if so how often?
18. Is the coal mined by the owner of the land or on royalty?
19. Are there other veins in your district, give their names?
20. Are they above or below, and how many feet from the bottom of one to the bottom of the other?
21. Are they being worked?
22. Do you know where two veins are being worked in the same hill?
23. Do you consider it safe to work upper veins after the lower have been worked, if so what distance between veins (bottom of one to bottom of the other) would be necessary to make it safe?

Give name of person making this report and date on which it is made. [Applause.]

On motion a vote of thanks was extended to Mr. Jennings for the paper read.

Mr. W. B. Hanlon, whose name appears next on the program, not being present, Mr. James P. Davis next presented his paper, entitled "Extravagant Mining."

