

THE DISASTER AT THE LEVANT MINE, CORNWALL, ENG.

Failure of Cornish-Beam Man-Engine.

A very serious disaster occurred at the Levant mine on Monday last, involving the loss of at least twenty lives, and probably considerably more, as well as of injury to others. This is the most serious accident which we can remember to have occurred in Cornwall, and the circumstances under which it took place are equally remarkable. The cause of the disaster was the breaking of the connection between the engine and the reciprocating rod or beam which works in the shaft, and constitutes the man engine. Reference was made to the Levant man engine in a recent article in this paper describing a visit to the Levant mine, and it is the only machine of the kind working in this country and, perhaps, in the world.

While the man engine is generally spoken of in these days as a survival of a peculiar primitive character, it is interesting to note that at the time of its adoption in Cornwall it was generally preferred by the men to the skip winding then employed in collieries and other mines, and at Levant to-day the ore is wound in ordinary skips while the men use the man engine. The man engine was first introduced in the Hartz at the Spiegelthal mine, working to a depth of 110 fathoms. This was in 1833, and in a short time numerous other mines became similarly equipped. The principle was advocated in Cornwall by Mr. Charles Fox in 1834, and the first installation was put in at Tresavean, and put to work in January, 1842. A year and a half later it had been extended down to the 200-fathom. In 1845 a similar engine was installed at the United Mines, working to a depth of 210 fathoms. Both these engines were worked with double beams, the miner in travelling stepping alternately from one to the other. In 1851 a new system was installed at Fowey Consols, consisting of a single oscillating rod, with sollars on either side. Three single-rod engines were erected in this decade: Fowey Consols, 280-fathom; Dolcoath, 220-fathom; and Levant, 200-fathom. The rods of the man engine were made of Norway pine, in average lengths of 36 ft., joined together like pump rods, the stroke of the engine in all cases giving a travel of 12 ft. In Hunt's "British Mining" it is explained that owing to the great improvements made in the pumping plant in the early years of the nineteenth century mines were deepened rapidly, and the exertion of reaching lower levels by ladders was more than the older men could endure, and consequently that some form of mechanical haulage became necessary. The question was taken up by Mr. Michael Loan, who suggested following the example of the collieries and winding the men by ropes. The miners, however, would not accept the idea of being "brought up like coal and rubbish," and objected that if the ropes broke they would be killed. In consequence of this the idea of winding was given up and that of the man engine rod adopted. One of our correspondents, writing to the "Mining Journal" in 1860, argued strongly in favor of the man engine as follows: "During the last few years a notion seems to have been growing in Cornwall that the mechanical raising of men from deep mines is to be finally accomplished not by man engines but by safety skips, or some other modification of the system now in use in coal mines. Now we all know the dangers attending this system even in collieries where the shafts are always perpendicular, and it con-

sequently is an extremely doubtful question whether in incline shafts skips could ever be made sufficiently secure to be entrusted with human lives." He then proceeds to examine opinions expressed by the French Government expert, M. Moissenet, in a report on Cornish industry, in which he expressed the opinion that man engines were not only infinitely safer but much more economical, and likely eventually to supersede the winding system in use in collieries.

Curiously enough, although the Levant man engine has been working over sixty years, to say nothing of the plants in the other four mines, there does not appear to be any record of a similar accident in this country, or indeed of any accident at all involving more than the loss of one life; that is to say, due to individual carelessness of the men travelling, though there can be no doubt that to the novice using the machine for the first time an impression of great risk is conveyed. On the other hand, in Germany two similar accidents occurred in the eighties, in each of which eleven men lost their lives. Consequently, the immunity from serious accident which has characterized the man engine in this country appears to a large extent to have been a matter of good fortune and careful supervision of material rather than inherent in the system.

As to exactly what happened at Levant, as well as the magnitude of the disaster, full particulars are still wanting. It appears to be believed that the engine rod parted from the beam of the engine on the completion of the upward stroke, and that the whole beam then fell down the shaft, according to one account, to the bottom. The bottom of Levant is, we believe, about 330 fathoms deep, but how far the bottom of the beam is from the lowest point in the shaft we are not aware. The shock of the fall broke the beam in several places, and these sections falling in the shaft swept the sollars until they were wedged with debris and stopped. The most serious destruction was wrought in the upper part of the shaft, and no one was killed below the 140-fathom.

At the time of the accident the shifts were changing, and the beam was carrying a fairly full complement, so that the accident occurred at a moment when the effect was most serious. The mine possesses ladder-ways in the pumping shaft, and, of course, there is the skip shaft through which all the stone is wound, but it is not suitable for hauling men in the ordinary way. The great difficulty which has to be encountered in rescue work is the difficulty of reaching men who may be jammed in the shaft, which necessarily takes a long time to clear, and there is reason to fear that the number of casualties may reach considerably higher than is at present known, and that many of the injured must have suffered greatly before they could be reached.—"Mining Journal."

ECONOMIC DEPENDENCE SPELLS POLITICAL SUBSERVIENCE.

Canada should be in a position to meet her own coal needs from her own coal mines. Canada's status as a nation will never be fixed until every effort has been made to make this country self-supporting. That our present condition of subservience to a foreign nation, however friendly at this time, reflects the Canadian spirit, cannot be asserted in the presence of our victors returned from the great war.—"Montreal Star."