

the rise. As the water-level was advanced it was, however, found to bear off to the north-east, and at a distance of 18 chains from the entrance the coal is cut by the Brunner fault, to pass through which threw the water-level still further to the east, and away from the boundary; so that the property has been proved to contain a considerable area of coal, which lies to the dip. That portion of the dip coal which lies on the south side of the fault has been worked out, but the large portion beyond the fault is still intact. The extension of the mine to the north is at present stopped by a second fault, which was partially explored three years ago by a stone drift 13 chains long and two bore-holes, but without satisfactory results. As far as this fault, the whole of the coal to the rise has been mined on the pillar-and-stall system. In what are known as the "old workings," lying to the south of the Brunner fault, the coal was very thick, frequently over 20ft., and the chambers were very large, and when the roof had flaked off were in some cases as lofty as 26ft. This portion of the workings is now closed up, so that its present condition cannot be ascertained. No pillars are now being worked there, but at a former time some of the pillars at no great distance back from the outcrop were partially removed, and some near the fault wholly excavated, and the roof allowed to settle. From the rise-workings beyond the fault the pillars are now being worked out, and the roof is settling down in a satisfactory manner, the coal in this part of the mine being much thinner. The pillars have also been worked out along the south side of the Brunner fault, in the dip-workings.

143. The Coal-pit Heath leasehold is 777 acres, of which 46 acres have been worked, with a total yield of 354,821 tons. The mine is in reality a continuation of the front part of the Brunner Mine, or the "old workings" to the dip. No headings have ever been carried through the Brunner fault in the Coal-pit Heath Mine, and, now that these are under one management, the dip-coal from beyond the fault in the Coal-pit Heath will be brought up the dip-workings which are being opened from the Brunner Mine lease. Besides this limitation of the workings by the Brunner fault, which runs east and west, the extension of the mine to the dip has been for the present stopped by a north-and-south fault, which it is calculated throws the coal down about 180ft. Formerly the Coal-pit Heath Mine was worked by a shaft 280ft. deep, but since the amalgamation this shaft has been abandoned, and the access to the mine is by an incline, up which the coal is hauled to the Brunner Mine stage. A strong rib of coal, varying from 60ft. in front to 400ft. near the fault, has been left unworked along the boundary between the Coal-pit Heath and Brunner Mines. This gives support to the hill, and formerly cut off all the drainage from the Brunner Mine, so that at one time the dip-workings in that mine were flooded, but now the water finds its way into the Coal-pit Heath, and is pumped from there. From a large area, the pillars along the side of the fault have been worked from the Coal-pit Heath, and since then serious cracks in the roof have extended to the surface, admitting storm-water to such an extent that the pumps were unable to cope with it, and the mine at present stands with water up to the first level. Measures have been taken to stop the surface-cracks on the hill-top, and to divert the creeks clear of them, and more powerful pumping-machinery is being erected, so that before long the water will be kept under. The danger of a heavy slip from the hill in consequence of the excavation of the coal is not imminent so long as the pillars in the old Brunner Mine and in the southern part of the Coal-pit Heath Mine and the before-mentioned dividing-rib of coal are left untouched. We are of opinion, however, that great caution must be exercised, as there is evidence of extensive slips from the hill having taken place in former years higher up the river than the present Brunner Mine. These slips have brought down the coal-strata to the river-level in a very crushed and irregular manner, which has given rise to the idea that there are lower seams, and that the strata at this place have, through an anticlinal arrangement, acquired an easterly dip. By following up the spur of the mountain, however, it is found that the coal-strata rise steadily to the eastward until they rest on the basement-rock of slate which forms the true core of the anticline, as after crossing the slate-belt the coal is found in