Eight or nine shoots belonging to the Progress lode are known on the surface, but some of these have been little explored in depth owing to their consisting of low-grade quartz. Thus the most westerly shoot, known as Smith's, has not been prospected below No. 2 Old Progress adit. Next to the east is the Progress shoot, which has been mined to a depth of 1,100 ft. (from the surface to 50 ft. below No. 9 level), where it abruptly terminated. It was from 75 ft. to 200 ft. long, about 12 ft. thick, and contained good-grade ore. The Dam shoot, still farther east, averaged 180 ft. long by 12 ft. thick. It dipped regularly nearly to No. 9 level, where it flattened and, undulating gently, continued southward for over 500 ft. It extended for some distance below No. 9 level, but does not appear to have been definitely traced to No. 10 level, although some small irregularly placed ore-bodies at this horizon may perhaps be referred to it. The behaviour of the shoot between Nos. 8 and 9 levels and its termination below No. 10 level are undoubtedly due to faulting. Near the surface, east of the Dam shoot, are two shoots known respectively as the West and Middle shoots. Down to No. 5 level these are separate, but in No. 6 level they unite to form one ore-body equal in size to the combined shoots. This continued more or less regularly to below No. 9 level. Since the Middle shoot was the more important in the upper levels, this name is retained for the combined shoot found in the deeper levels. Although a large amount of high-grade ore was obtained from this shoot, much of the quartz contained too little gold for profitable working. Callaghan's block in Nos. 8 and 9 levels is evidently part of the Middle shoot, but in and below No. 8 level the shoot is much broken, so that the relation of the detached and irregularly disposed masses of quartz of the lower levels to one another and to the regular shoots is in many cases uncertain. The Pioneer block, which yielded the bulk of the ore won from Nos. 10 and 11 levels, is probably the downward extension of the Middle shoot. The Winze block and the South block are undoubtedly fragments broken by fault-movements from the Pioneer block. The East shoot, which outcrops on the surface about 150 ft. east of the Middle shoot, has been definitely traced to No. 9 level. Probably also some of the large and little-explored bodies of low-grade quartz found in the most south-easterly extensions of Nos. 10 and 11 levels belong to this shoot. In the upper levels the strike of the shoot is nearly east, but in Nos. 5 and 6 levels it is north, so that here and in the lower levels it is known as the North-and-South shoot. It consists of two or three parallel quartz-bodies, one of which in places is over 30 ft. thick, but the others are not more than 6 ft. In some levels it is 200 ft. long, but it is usually not more than 150 ft. Prospecting has shown that the shoot contains only a small amount of payable ore, and in consequence little exploration has been undertaken below No. 9 level. Another shoot outcrops about 200 ft. south-east of the shoot above described. On the surface it strikes a little south of east, but in Nos. 3, 4, and 5 levels its course is nearly north and south. Two parallel ore-bodies, called John's and Far East shoots, are known. The quartz contained little gold, and the shoots have not been looked for below No. 5 level.

In the upper levels all the shoots dip at about 60°, but in depth, with the exception of the Progress shoot, they flatten considerably. All except the two most easterly, which, on account of their low gold-content, were not explored in the deepest levels, were found to terminate in depth against a fault-zone. This fault is best exposed in No. 10 level, where it has been penetrated by four crosscuts, from each of which it has been explored for considerable distances. The position and course of this fault at the horizon of No. 10 level have thus been definitely determined. It is variously known as the Chemist Shop, West, or Main fault, and was first definitely recognized in No. 11 level, in which it bounds the Winze block on the west. Much quartz was broken from the Winze block during fault-movements, and is now distributed along the fault above the Winze block as drag-quartz. In this part of the fault drag-quartz is abundant to No. 10 level, where, in the drives from the No. 10 main west crosscut, a leading stope was taken off to ascertain if the mixture of auriferous quartz and crushed country was payable. The explorations between Nos. 10 and 11 levels proved that the fault dipped east-north-east between 65° and 70°. Further information on this point is furnished by a vertical diamond-drill hole sunk from a point in the main crosscut of No. 11 level a little over 200 ft. from B shaft. From 886 ft. to 905 ft. this bore passed through intensely crushed country, which is almost certainly part of the plane of the Main fault. The dip of the fault between No. 10 level and this point is about 67°. A belt of intensely crushed country crosses the Old Progress No. 2 adit (890 ft. above No. 10 level) about 700 ft. from the portal. This is evidently the Main fault at this horizon. No other known underground workings cross the fault at this horizon, but the fracture can readily be traced on the surface along the valley of Devil Creek above its junction with Union Creek. Southward the fault takes a south-easterly course and follows Devil Creek Valley. To the north the fault was traced on the surface over the spur between Devil and Oriental creeks and along the valley of the latter stream.

Mr. R. Bullman, formerly surveyor for the Progress Mines, in an unpublished report has suggested that the fault here considered is a reversed fault—that is, that the hanging-wall side, in this case the country east of the fault, has moved upward in respect to the footwall. All the evidence is against this view. In nearly all faults the hanging-wall is displaced downward with respect to the footwall, and such faults are called normal. The friction of one rock-mass on the other crushes the country near the fault-plane, induces fractures in the neighbourhood of the fault, and tends to cause the rock near the fault to be relatively less displaced than that farther away. Quartz broken from the ore-bodies severed by the fault is "dragged" and distributed along the fault, the direction in which it extends indicating the direction from which the known ore-body has moved. Thus drag-quartz above the south block extended from between Nos. 10 and 11 levels to No. 9 level, a distance of 150 ft. vertical. Above the Winze block it extends higher along the fault-plane than No. 10 level. Clearly the severed edges of the Winze and South blocks, which are fragments of the Middle shoot, lie, on the west side of the fault, at a higher horizon than the known Winze and South blocks. The flattening of the shoots as they approach the fault is to be attributed to bending and the distortion of the rock-mass near the fault owing to the great friction. The fact that the lode flattens as the fault is approached indicates