be lost. I do not know that I have any other reasons to give. Having come to the conclusion to close the mine I saw Mr. Williams. He called at my office. It was agreed by us that, on the 28th February, 1883, that a certain portion of the mine should be worked: this was the portion in solid ground. With reference to the submarine part with the balance it was to be carefully watched. On the 1st March I visited the mine, and it was decided finally to close the mine. I quote from notes written at the time: "Decided finally, only in concession to the urgency of the circumstances mentioned yesterday by Mr. Williams, that I would consent to the bords in Barber's district being worked, but entirely without prejudice to their being closed at any time; and on no account is this to be taken as a precedent or justification for leaving the dip-workings open. Read this over to Mr. Williams. All the other places to be stopped, and the air guided round." The mine was finally closed. On the 19th March I visited the mine. I met Mr. Rich there. I had an interview with Messrs. Williams and Rich. In a letter I said, "Had an interview with Messrs. Williams and Rich, in which the latter proved himself willing and anxious to do everything required to make the mine perfectly safe. Pointed out my view of the case, and it was agreed to close the subaqueous workings, and allow them to fill with water to the level of the shaft." The result of that interview is stated. The men were withdrawn shortly after that. On the 20th I wrote to Mr. Williams, making regulations for the submarine workings.

516A. Do these regulations refer to the closing of the mine and the submarine workings?—I shall find them. I visited the mine again very frequently up to the end of the year. The water came in many times. The effect, in my opinion, of letting the water in was that it would have a hydrostatic pressure on the roof equal to the head of water. That pressure would uphold the roof o a very considerable extent. The inbreak of the sea was the result of two causes: first, that not sufficient submarine coal was left; and, in the second place, that a very large amount of coal was taken above high-water mark in the upper seam. In my opinion, this vacant space did much to break the roof, and the sea entered. The effect of letting water into the mine did not accelerate it. The sea would have broken in under any circumstances. The mine was "weighting" during the time that Twining, accompanied by myself, was making his survey in February, 1883. Several men noticed the weighting of the mine: the whole party noticed it. The weighting of a mine is caused by pieces breaking off from the pillars, and shows that enough coal had not been left to support the roof: the pillars are too weak, and these pieces chip off. They make a great noise. They made a great noise on this occasion, so much so that we retired with celerity from the place where we were eating our lunch to what we considered a safer place.

517. When did you go back?—As soon as the weighting had settled—as soon as the noises ceased. These noises are intermittent; they go and come again. The mine probably settles for a considerable period, after that they come on worse.

518. This shows a straining of the mine, does it not?—Yes; that the mine is in a state of tension.

519. Was it a safe thing to work thus?—I think it would not be safe to work thus at all. A mine must be regularly worked; when worked irregularly it would be dangerous. Let me explain to the Committee: If a large block of coal is taken out of one place the effect of that is deteriorating to the strength of other places, the same as if in a house you had a concrete pile in the middle of the floor, which supports the roof, without having piles all the way round. You might have enough strength in that to sustain the whole house, but it is not evenly distributed. There are very large pillars, perhaps, but they are no good. They are worse than nothing, because they are in one place, while all the places round them are weak.

520. When you took steps to let the water in, what steps did you take at the same time for preventing the flooding?—You will see by my report of the 20th March.

521. Tell us what steps you took in regard to the erection of dams?—I agreed with Mr. Williams that dams were to be constructed, so that, in case of an inburst of water in the upper works, the deep workings, 70ft. below, should not be flooded immediately—that it should not flow down the shaft, and imprison the men that were working.

522. Were the dams sufficient to keep off the whole inburst of water other than from the sea?—I do not understand your question.

523. Why were they erected?—In case of an inburst from the sea; to prevent the water running down the shaft from the sea.

524. Did you visit the mine after the sea broke in?—Yes; I visited it.

525. How did the dams work?—The dams were holding moderately well—as well as the timber could hold; but round about the water was coming in in considerable volume.

526. Have you had experience of submarine workings before?—Never. I have been under the sea, but it was at such a great depth that the ordinary workings were perfectly sufficient.

527. If the water had not been allowed to accumulate, would it have been safe to allow pumping operations?—In my opinion, the mine was unsafe; I would not take the responsibility of any man's life who would be in that mine.

528. Have you reports on this?—Yes; they are printed. [Reports put in evidence, dated the 26th May, 1883, and the 20th March, 1883: *vide* Appendix C and D.]

529. Cross-examined by *Mr. Chapman.*] How long is it since you came to New Zealand?—The 2nd July, 1878.

530. What was your experience before that date: how many years' experience did you have?—Six years. My experience was that I served my time as a mining engineer. I obtained a certificate of competency from the Home Government.

531. Did you ever manage a coal mine?—I had been assistant to the manager of the Netherseal Coal Mine, in Leicestershire.

532. Were the workings there anything like what you are accustomed to in this country?—No.

533. How old were you?—I was twenty-three years of age in 1878.

534. You sent a telegram on the 3rd July, and you received a reply: what induced you to