

lower beds really belonged to the lower stratum. However, I could not venture to express an opinion upon that point merely from the drawing submitted.

2880. *Mr. Blair.*] This shaft was sunk behind the building?—Looking at it merely as a geologist, I should say [indicating on plan] that this formation and that were the same, and that this was a portion of the same, although differing, and that the junction line was along this line which I indicate on the plan. In each case the line of greatest motion would be at that depth in the shaft. This isolated mass has taken down where the ground is being torn and rent by the motion of this gutter of clay and stone.

2881. I understand from your remark, Sir James, that the object of the drain was to cut off the access of the water?—You mean the remark in the report?

2882. Yes?—The object of the suggestion was “to cut off the foundation from the surrounding clay formation, and to isolate it from the effect of that motion to which that formation is subject.”

2883. Would this drain with the top gallery and connecting shafts cut off?—I understand this is not an open drain. It is a tunnel, is it not?

2884. Yes; but you will see shafts here filled with stones at short intervals?—I do not think a tunnel and shafts would isolate it from motion in the same way as what I had in my mind at the time.

2885. Not if the shafts were at intervals of about half a chain?—Supposing this was clay, my idea was that this clay was resting upon a slippery bottom, like a ship upon skids, ready to slide. What you have got to do is to cut that clean through to control the motion. If you filled in rubble it would simply mean that the rubble would be crushed, and you could watch it and replace it; but this sliding onward seasonal motion would not be transmitted past an open cut.

2886. Would it not have the same effect if you put two cuts into it at different levels, and connected them with these vertical shafts, which are also shown to be filled with rubble?—It might if it thoroughly dried the clay. If it was found from experience that such tapping would thoroughly dry the whole mass of that clay along that line, it might have that effect; but I would not expect it to do so.

2887. *Mr. Lawson.*] May I ask did you ever at any time depart from the terms of your report of the 10th June, 1880, or give Mr. Blair to understand that you had done so?—Well, I have only made the three reports. I have not looked at them for years.

2888. I ask you that question distinctly and simply. Did you ever at any time depart from the terms of your report of the 10th June, 1880, or give Mr. Blair to understand that you had done so?—I do not remember doing so, nor I do not think it likely. Of course, it is such a very general way to put the question that I can hardly tell.

*Mr. Lawson:* I do not want to be more particular than that. That is quite a satisfactory answer.

*Report by Dr. Hector to the Colonial Secretary, dated the 3rd April, 1880.*

I AM acquainted with the general structure of the sloping hills facing the sea at Seacliff, between Blueskin Bay and Waikouaiti; but have not particularly examined the proposed site of the new asylum. The hills are composed of tough clay-marl and greensands in stratified masses, dipping seawards. The top of the range is formed by a capping of bluestone or basalt resting on the marls. This bluestone decomposes readily, and has broken away in extensive landslips during the gradual erosion of the soft underlying strata, and these landslips extend right down to the water's edge, facing the hill-side with an irregular deposit of yellow clay and boulders as expressed in the following section. [Section not in letter-book.] This superficial deposit is continually on the move. A good example of similar surface-motion on a wooden building is to be seen on the seaward slope of Saddle Hill, on the road to Brighton. There are, no doubt, portions of the hill-face where the clay-marls come to the surface, and where a secure foundation may be obtained, just as on *roches moutonnées* projecting through a glacier; but I cannot say, without a special survey, if the site chosen for the asylum is such a favourable exception. Building on the slope-deposit of boulder-clay would be obviously unsafe. To cut through it on to the underlying clay-marl would only lead to the more rapid descent of the mass above, and unless the drainage were very perfect no retaining-wall could be built to resist the pressure of such a deep cutting as is contemplated. I think that Dr. Skae's suggestion that the surface should be cleared over a considerable area should be adopted, and in the course of the present month Mr. Cox, the Assistant-Geologist, will make a survey of the locality so as to enable me to give a definite opinion when I return from Sydney early in May. I have fully instructed Mr. Cox as to the nature of the survey he is to undertake.

ALFRED THOMAS BRINDLEY re-called and further examined.

2889. *Mr. Blair.*] Can you tell us if the foundations of the corridor, Block I. north, were put in before those of the north wing?—That is to say the ambulatory-walls?

2890. Yes. Were they put in before those of the north wing?—No; my impression is that they were put in somewhere about the same time.

2891. How long did these ambulatory-walls stand—the concrete-walls—before the brickwork was put on them?—Roughly speaking I should think they might have stood a year or eighteen months, perhaps two years. Because this part was put in [indicating on map], and this was carried along, and they were five years doing the work. Anyhow, at least, they were standing a year. Some of my references perhaps will show when these blocks were started, but I cannot say from memory. I could easily find out.

2892. Was the ambulatory floor broken up before you left?—That was answered before.

2893. Was it replaced by the Contractor?—No, it was left as it was.

2894. Was the back wall of the ambulatory out of line after the concrete floor was replaced?—It was never taken up in my time.