

beg to forward with this report, in order that the Government may see for themselves what the real condition of the timber is.

Finding the timber in the south roof so unsatisfactory, I tried the rafters in the extreme north; but not having the opportunity of cutting off an end I had to be content with boring, and, out of fifteen rafters, all were white pine but two; three were nothing but dust, offering but little resistance to the auger, which easily went home after the lining was pierced.

Now the portion of rafter submitted herewith, would offer more resistance to pressure than those I have described as dust, so that it appears to me there are degrees of decay, and that the specimen referred to does not represent the worst degree; possibly the tests described as dust were the sap of white pine, which would account for the difference.

The next places tried were in the middle building, north and south of the centre. It should be noticed that, in selecting the points to be tested, my object was to distribute the examinations as generally as possible. In these places I found eleven white pine rafters out of seventeen, three of them being dust, as before.

I have estimated that the roof over the House of Representatives has to support about $8\frac{1}{2}$ tons of slates, that over the Legislative Council wing $11\frac{1}{2}$ tons, and the double roof over the centre portion about 22 tons.

There is another portion of these buildings apparently very rotten—I refer to the buttresses which have been added at a comparatively recent date, especially those on the south wing; as they abut on the public walk, they are likely to attract more attention than if not in so exposed a situation. Their appearance however is worse than their condition, since the framework is sound although the outside lining has rotted.

The cause of this is, that the boards (Scotch) are not suited to outside work, and they are made worse by being placed with the tongues downwards, whereas they should have been reversed; the effect is, that water gets into the grooves, and, having no means of escape, is absorbed by the wood, thus causing decay.

Much dry rot is to be found generally throughout the interior. All the floors, and much of the lining to the walls and ceilings, are of white pine, and, as elsewhere, are being slowly but surely eaten away. Nor is there any reason to suppose that, where white pine joists have been used, their condition is better than the rafters.

From the foregoing examinations, I am led to the following conclusions:—

1. The framework of the walls generally, and the outside boarding, are composed of suitable and durable timber, and are sound at the present time, excepting the buttresses.
2. That the inside lining is not sound, excepting to a small proportionate extent.
3. That 30 per cent. of the floor joists are not sound.
4. That the floors are of white pine, and are attacked generally with dry rot, but in a less degree than the rafters and lining.
5. That the rafters, ceiling, joists, and sarking, are almost entirely of white pine, in different stages of decay.

These questions now present themselves to my mind:—

1. Is the condition of the buildings dangerous, or likely to become so?
2. What are the chances of their standing, and how long?
3. Are they repairable?

The answer to the first question is, that at the present time the buildings are not dangerous, but that, from the nature and known spreading and increasing properties of dry rot, they will become so if not attended to.

2. The chances of their standing may be reduced to a certainty, it being simply a matter of expense.

The second part of this question is more difficult to answer. A case, however, within my own knowledge will enable me to arrive at a time sufficiently near for all practical purposes.

The case I refer to was a floor which was attacked with dry rot; when it commenced was not known, but it had been built only five years, when, upon a servant jumping rather heavily from some steps after cleaning a window, it suddenly gave way, when the joists were found to be eaten away with dry rot.

To answer the question completely, it is necessary to ascertain at what stage of decay a building becomes too weak to stand. I am of opinion that when the strength of the materials in buildings usually considered sufficient is reduced by one-half, from whatever cause, a structure cannot longer be considered safe. In this case there are parts approaching that proportion at the present time; but in my opinion it would be nearly correct generally to assume 30 per cent. of the original strength of the roofs and floors to have been reduced by the dry rot.

Looking to the case in point, where five years was sufficient time to reduce the strength of the materials to the breaking point, it follows that in two years' time the roofs and floors of these buildings will be unsafe. It must not be overlooked that circumstances frequently aggravate cases of the kind. A severe shock of earthquake, or a heavy gale of wind, would test the whole fabric, and find out prematurely the weak points.

3. To repair these buildings would be to renew or rebuild those parts where white pine has been used, and there would not be any difficulty in doing it. The repairs necessary would be new rafters, sarking, gutters, ridges, and corrugated iron to the roofs; new ceiling joists, new lining where white pine exists; 30 per cent. of new joists; new flooring boards, new calico, and papering and painting.

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