

mouth of the Delaware River to the head of Lake Superior. The wood is close grained, but its tough-wearing quality is probably due in large measure to its resinous character. This suggests whether one of the numerous rosin oils would not be a better application for soft pine floors than the linseed oil that we have generally used.

Trouble is often experienced here in procuring satisfactory coal, hard as well as soft. The insertion of the name of the mine in the contract does not prove a sufficient check. The best analyst or mineralogist cannot identify coal in this way; and, even though the coal offered may actually be taken from the mine alleged, the particular seam may contain such an admixture of coal-shale and foreign substances that the fuel is practically rendered worthless. Coal-shale is simply a slaty mineral, stained with carbon, and it bears a relation to true coal inferior to the relation that stained basswood bears to mahogany. In respect of weight the relation is reversed, coal-shale being often twice as heavy as coal. Finally, when the fuel is wet, it is difficult to distinguish coal from this worthless substitute. Coal miners and dealers are thus exposed to strong temptation. The only effective check on this adulteration is to burn in the Institution furnaces an occasional load of the fuel as it is being delivered. I would therefore recommend that in our contracts for coal, hard as well as soft, the following stipulation be inserted:—"The coal shall be delivered dry, free from slack, small coal, and foreign substances; when consumed in the Institution furnaces it shall not yield any clinkers or more than twenty per cent. of ash." These conditions are not unduly onerous—they were fulfilled in 1879; and coal that does not come up to these conditions is not proper fuel.

Our defective iron roofs are now being treated with the cement and paint process that I lately recommended; and, from a close examination of other roofs that have been similarly treated and have remained staunch for three years, I think that we have at length solved a perplexing question. This important repair is being defrayed by the Department of Public Works. The roof of the newly erected wing is not included in the repairs, as it remains quite water-proof. The same firm (Messrs. Gould and Agnew) that laid this new roof have the contract for the cementing of the older roofs.

Grounds.

The Institution grounds are now fast being redeemed from their bleak desolation, but a small annual subsidy will be required for some years to come. The grounds ought to be thickly studded with clusters of evergreen trees to break the force of the gales which sometimes strike this terrace with appalling violence. Here, as in the realms of King Alcinoüs, the west wind doth prevail; but our blind minstrels are not fanned by languid zephyrs, as was Demodocus, the blind minstrel of the soft Phæacians. No; the storms that thunder down the Oxford Hills, leap the Grand River, and charge up our incline, are wild marauders that can be kept at bay only by dense *cheveux-de-frise* of evergreens. For wind-fences, Norway spruce (*Abies excelsa*) is of course invaluable, but in the same genus we have two native trees, the black spruce and the white (*A. Nigra*, *A. Alba*), whose merits hitherto have been singularly overlooked, and which yield very pleasing contrasts of foliage. There is a variety of the Canadian black spruce that reaches a majestic height, and which in symmetry and other ornamental qualities yields to no evergreen imported from Norway mills or any other. There are also great decorative capabilities in our native cypress and arbor vitæ. Not the least part of the valuable service yielded by the recent Agricultural Commission of Ontario, was a review of our Canadian forest trees.

With a little labour, I could readily form a most ornamental sheet of water from the natural springs in the low marshy part of our ground. A lovely bit of landscape gardening is there trying to smile through a veil of reeds and sedges. At present the ground is generously given over to squatting bullfrogs that make our summer nights hideous by fruitless endeavours to tune their violincellos. This sheet of water could in winter be put to excellent service as a skating pond, and thus be made to yield a vast fund of healthful enjoyment to the blind. There can be no doubt that systematic physical exercise would immensely reduce the list of weakly and morose. The blind are so debarred from usual outlets of muscular energy that they require enforced exercise, not only on physical but even on moral grounds. Swimming is a valuable acquisition, and the blind learn it readily.