

book cases for reference books. The windows are glazed with leaded lights in geometrical patterns, having panels in same for quotations and inscriptions. It is the intention to have all these panels filled in with suitable mottoes painted on the glass as soon as a selection can be made. At present only a few have been painted on in the vestibule, entrance hall and staircase.



ENTRANCE HALL AND STAIRCASE, NEW LIBRARY, MCGILL COLLEGE, MONTREAL.

Special attention has been given to the three-light windows facing the campus, and to the five-light window at the other end of the reading room. These have been filled in with beautiful painted glass, the gift of Mrs. Peter Redpath. The three light window is specially elaborate, having a number of groups of the men great in art, poetry and music. The five-light window is not so elaborate as the other, and the colors were purposely kept lighter, so as to obstruct the light as little as possible. These windows are respectively dedicated to law, history, philosophy, astronomy, medicine, and have medallion portraits of the great masters in each subject.

For artificial light, electric lamps are used entirely, and in addition to handsome polished antique-brass electroliers suspended by chains from the roof, the reading room is lit by standards, with green shades, placed on each table. The walls of the reading room are colored a soft shade of green, relieved with gold, so as to be restful to the eye, and yet not too absorbent of light. The walls of the entrance hall and staircase are colored a dull soft red. All the floors are covered with cork carpeting to deaden the sound. The heating is entirely by hot water on the direct radiation system.

MORTAR.

It was found by Berthier after an analysis that Roman cement is composed of carbonate lime 657, carbonate magnesia 1005, carbonate iron 1063, carbonate manganese 1019, clay silica 1180, clay alumina 1066, water 1013. Berthier considered that with one part of common plastic clay, and two and a half of chalk by weight, a very good hydraulic lime could be made, which would set as speedily as the English one; but it is not probable, he allows, that we can obtain by mixtures hydraulic lime which will acquire as great hardness and solidity as the natural mortar, because these qualities depend, not only on the composition, but also on the state of compactness. The greater density the material possesses, and if it slake without changing its volume, the greater facility will its particles have in becoming aggregated, and the less shrinking will there be during its consolidation. Berthier drew the following conclusions from a numerous set of experiments. A limestone which contains 6 per cent. of clay affords a lime already perceptibly hydraulic. When the lime

amounts to from 15 to 20 per cent., it is very hydraulic, and when from 25 to 30, it sets almost instantly, and may therefore be considered as Roman cement. He conceives that the iron and manganese have no effect whatever in occasioning the hardening. In a mortar which owes its solidity to the adhesion of the lime to the alloys, or substances with which it is mixed, there is evidently an advantage in multiplying as much as possible the surfaces of contact. Thus alloys with large grains do not afford mortar so solid as the pulverulent ones, because there are spaces filled with pure lime which do not present the same resistance to fracture as the other parts. On the contrary, alloys in powder, though they present the greatest surface, yet require a very large proportion of lime. To obtain, then, with the smallest possible quantity of lime, mortars possessing the greatest solidity, alloys must be used containing particles of different sizes, avoiding always the mixture of argillaceous substances, which form a paste with water, but have no coherence. These opinions have been put to the test of experiment on a large scale, the sand usually employed in Paris affording a better mortar when merely washed than when the fine particles are removed by a sieve.

BLACK BIRCH FOR INSIDE FINISH.

Black birch for doors, wainscoting, and other interior work, is being introduced to a considerable extent, and is certainly one of the handsomest of the many varieties of woods that are being introduced into new houses, while the cost is much less.

Black birch is a close-grained wood, and is as easy to work as walnut, and is much cheaper than either walnut or cherry. There is a great difference in the quality and color of birch, that growing upon high and dry land being hard and susceptible of good polish, while the growth on swampy land is soft, and therefore not well suited for the purposes the upland product so admirably fills.

Birch grows in our northern latitude, and the trees attain considerable height and size in localities, and there is a species of bird's-eye birch which is well calculated for furniture. It resembles bird's-eye maple, and when polished it possesses that sheen which renders satinwood so pleasing to the eye. We pre-



FIRE-PLACE AND MANTEL IN READING ROOM, NEW LIBRARY, MCGILL COLLEGE, MONTREAL.

dict for black birch an important place among the fancy woods for house finishing and furniture.

A convent to cost about \$42,000 is now in course of erection in the parish of St. Louis de France, Montreal, at the corner of Cadieux and Roy streets. The building will be of brick and stone, two storeys, with mansard roof and basement.