

cut and fitted will stand without cement, as may be seen in ruins of ancient buildings, and first class masonry, with carefully laid courses, well bonded and joints dressed to half an inch for ten inches back approximates to this. But in second or third class masonry, the courses are not so carefully arranged nor the joints so accurately dressed, and more irregular pieces, such as spalls, &c., are allowed in the heart of the wall, in consequence of which the bond is not so strong as in first class, and there is more dependence on the binding power of the cement. Take concrete—where the stones in themselves have absolutely no bond at all—the very best cement is required; so, in my opinion, if any difference in the quality of cement is permissible in different classes of masonry, the best cement should be placed in that class in which the bond of the stones is least able to afford sufficient strength.

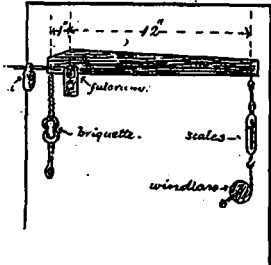
Mr. Barrett: Why are tests made of the tensile strength of cement instead of the compressive strength, which is the principal requirement in work?

Mr. Ball: It has been found by experiment that the tensile strength of cement bears a nearly constant ratio to its compressive strength—about 1-10. A very large and strong machine would be required to make compressive tests, beside which it is difficult to say at what particular weight a cube is crushed, as it splits up into smaller pieces and breaks gradually, whereas tensile briquettes break instantly.

Mr. Woolnough also pointed out that in specifying the weight per struck bushel of Portland cement it was necessary to test a whole bushel filled from a hopper placed at a certain specified height above the measure. A half or quarter bushel filled in the same manner would not be a half or a quarter of the weight of the whole bushel.

Mr. Ball stated that he did not place much value on this test, as it required a large quantity of the cement, was troublesome to make, and was only useful in indicating whether the cement was well burned or not, which could be ascertained by methods before described.

Mr. Virgil G. Marani gave an illustration of a very practical and easily constructed cement testing machine. A lever of wood is constructed, at one end of which, 1" from fulcrum, the appliance for holding the briquette is attached. At a distance,



say 12" on other side of fulcrum, an ordinary spring scales is hooked, the strain being produced by a small windlass. Therefore when scales, 12" from fulcrum, register 10 lbs. a time of fracture of briquette, the cement has stood a test of $12 \times 10 = 120$ lbs. Before making test, the weight of scales is counterbalanced by a sliding weight at *a*. This, although not an absolutely accurate method, gives very satisfactory results.

PERSONAL.

Mr. J. A. Pearson, President of the Toronto Architectural Sketch Club, is visiting parents and friends in England.

Mr. M. B. Aylesworth, architect, Toronto, is making a tour of Europe, in search of architectural knowledge.

Mr. Geo. W. Gouinlock, architect, Toronto, has recently entered into partnership with Mr. Garland, the firm name being Gouinlock & Garland.

Mr. Willis Chupman, C. E., proposes to visit Europe shortly. One object of his visit is to witness the effect of cold weather upon the operation of sewage farms in Germany.

The Hon. J. A. Oulmet has been appointed Minister of Public Works for the Dominion, and the Hon. John Haggart has been placed at the head of the Department of Railways and Canals.

The partnership recently entered into between Messrs. Smith & Gemmill and Mr. E. B. Jarvis, architects, of Toronto, has been dissolved. Mr. Jarvis has again opened offices in the Traders' Bank building.

Mr. John Galt, C. E., Toronto, has patented a steam or water heating furnace consisting of sections, with means for uniting them and providing circulation of water or steam from section to section, said sections being provided with a fire-chamber in the upper part thereof, with a siphon of water above and around the same, and flues situated beneath said chambers for conducting heated products of combustion therefrom through said section to the outlet.

OUR ILLUSTRATIONS.

NEW HIGH SCHOOL, MONTREAL.—ALEX. C. HUTCHISON, ARCHITECT.

This building occupies a block of land lying between Peel and Metcalfe streets, formerly the site of the High School building destroyed by fire over a year ago. It has a frontage on each street of about 250 feet by a depth of about 216 feet, and a height of two stories above the basement.

The basement contains the Smead-Dowd heating apparatus, coal rooms, play rooms, janitor's apartments, chemical and physical laboratories, with lecture and work rooms attached, and manual training room. The main and second storey floors contain thirty-two large and eight small class rooms, offices for superintendent, treasurer, principals, board room, &c.

The central portion of the building fronting on Metcalfe street contains a drill hall, 90' 0" x 56' 0", while the second storey of the central portion of the building, fronting on Peel street, contains an assembly hall capable of seating about 1300 persons. The building is wired throughout for electric lighting, and all the class rooms, lecture rooms, &c., are in telephone connection with the principal's room.

The elevations of the building are faced with pressed brick with trimmings of olive green New Brunswick sand stone.

HOUSES ON BAY ST. SOUTH, HAMILTON, ONT.—JAS. BALFOUR, ARCHITECT, HAMILTON.

The corner house is a reconstruction, having formerly been a cottage.

RESIDENCE OF CAPT. S. CRANGLE, ROSEDALE ROAD, TORONTO. —GORDON & HELLIWELL, ARCHITECTS, TORONTO.

"CANADIAN ARCHITECT AND BUILDER" COMPETITION FOR A SUBURBAN COTTAGE—DESIGN BY "JACK PLANE" (J. W. SIDDALL), TORONTO, AWARDED THIRD POSITION.

"METHODS IN COLORING."

Mr. Scott Morton recently read a paper before the Architectural Association on "Methods in Coloring" and commenced with the statement that "the true color-feeling is a rare thing." This talented lecturer gave in his paper a few color laws as follows: Different tones of the same color tell well beside each other or in the same composition. Take, for example, all the tints on a piece of self-colored velvet or silk. There are unending gradations of these. Much interesting work has been done on this idea on the lowest scale of color, viz., that of greys. Mr. Waterhouse expresses his predilections for pearly greys and drabs, including ivory, red or green, with very small points of delicate turquoise blue. Omitting the red or green meantime, his predilections for the pearly greys and drabs, including ivory, are well worthy of being kept constantly in mind, as these are in sympathy with the general greenness of our climate or surroundings, but it will strike all colorists that unless these tints are handled in a masterly way, there is the danger of insipidity. Mr. Scott Morton says that light is an important element in color work. If there is a direct sky light falling into the room, the reflection from the floor, which may be carpeted, counts for much, as its influence is felt on the ceiling and parts of walls not reached by direct light. He suggests for working out a color scheme, the mixing of a pot of what might be termed the dominant or key-color, and from that pot take more or less color for harmonizing and contrasting every tint employed.

One of the chief reasons for the failure of cheap houses to look well is the fact that they are overloaded with ornament. If those who wish to build cheaply would be content to build plainly, the result would be more satisfactory to the eye. The same fault is noticed in cheap furniture. It is always disfigured with fancy turns and machine carving, while to find a piece of plain, substantial finish, one must look at the high priced goods. Too many men only able to build a cottage, load it with weak imitations of the palace, and the result is thoroughly inharmonious. In the cheap house let plainness of construction reign from foundation to gable. Let the ornamentation be, not in the wood-work, but in the painting. Then the effect may be whatever desired, and may be changed at the pleasure of the owner.

—E.

American manufacturers of radiators are reported to have arrived at an understanding by which competition will be restricted.