

MANUFACTURES AND MATERIALS

TERRA-COTTA.

A lecture on terra-cotta and its uses was recently given at the Midland Institute, Birmingham, by Mr. J. C. Nicol. The lecturer, after pointing out the antiquity of the use of terra-cotta, as illustrated in the buildings of the Babylonians and Assyrians, described the composition of the material. Most modern manufacturers, he said, had to mix and blend their clays, bringing parts from a distance, so as to get together a suitable combination of texture and color, whilst some introduced color pigments, which in baking came out quite different from what was expected of them, though by repeated trials and observations good tints, particularly bluish-grays and pinks, could be obtained.

Architecturally speaking, the term terra-cotta was given to the blocks above the size of the ordinary bricks, and capable of decoration by casting from a modelled enrichment. The forms used should never be made on stone outlines, nor should the material be made to look like stone in any particular. It had a distinctive character of its own as a plastic and modelled material, although there was no structure in stone that could be worked out in terra-cotta. Indeed, by the use of iron brackets and concrete cased with terra-cotta greater projections could be obtained, and columns and entablatures of any size could be wrought out. Yet the architect who had been accustomed to design heavy stone buildings, and wished to change his material, would fail dreadfully if he did not realise that he was working in an entirely different medium. Terra-cotta itself would not outrage any of the canons of art, but the misuse of it would. When subjected to heavy weights in walls, due to imperfect filling, terra-cotta was liable to crack. The pocketing taken out to equalise the shrinkage in burning must be filled in with concrete that would not shrink when set. Referring to the durability of the material, Mr. Nicol said it was sometimes desirable in exposed situations that copings, cornices, and gutters formed in terra-cotta should have damp courses of lead or slate in case the joints should perish, and in all cases the ends and joints should be made in cement. All blocks should be equally well

burnt, as the ordinary constituents of town atmosphere would then not affect it. The free acids found in the air of manufacturing centres like Birmingham would permeate the pores of the soft bricks and dissolve the more soluble constituents.

THE CANADA RADIATOR COMPANY, LIMITED.

The Canada Radiator Company, Limited, whose advertisement first appears in this number, make the following claims in behalf of the "Canada" radiator. "The company is manufacturing a patented radiator with a positive and perfect circulation and differing from the ordinary radiator in that the steam or water must travel the length of each loop before entering the next. In the ordinary radiators as at present constructed the hot water ascends the first loop to the top and flows along the top falling throughout all the loops as it cools and discharges into the return pipe; thus the water only travels twice the height and once the length of the radiator, while in the "Canada" the water travels as many times the height of the radiator as there are loops in it.

In the ordinary steam radiator there is no provision at the top of the loops for the escape of the air, which is expected to fall to the bottom of the loop against the pressure of the steam and travel along the bottom of the radiator and then rise to escape through the air vent. This defect in construction has caused the introduction of what is known as the "Paul system of vacuum" which is largely used in all our large buildings. In the "Canada" the air is driven before the steam and there is no chance for it to pocket and thus hamper the circulation and expensive means for extracting it are not necessary. Owing to the perfect circulation and provision for carrying off the air the same radiator is adapted for use in either a steam or hot water plant. This company claims that because of the construction of their radiators its use will save both in the installing of the plant and in subsequent fuel bills."

The Toronto office of the company is at 124 Bay street, where they have a very nice display.

The Manitoba Union Mine Company has been incorporated with a capital of \$500,000 to manufacture portland cement at Miami, Man.

The works of the west Kootenay Brick and Lime Company at Nelson, B. C., have recently been purchased by a company organized by Mr. Ernest Mansfield. The new company will develop a marble quarry opposite Kaslo.

Mr. E. Brevender, formerly of the Napanee Cement Works, is organizing a company to manufacture portland cement at Lakefield, Ont. The town has granted the company a bonus of \$10,000. Works will be erected at once, and will it is said be operated by electricity.

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