

ing voussoirs, as one would imagine, but on an almost horizontal bed, the successive courses slightly overlapping. It is rather an astonishing fact that these courses have a slope down outwards of about 1 inch in 2 feet. What the intermediate portion consists of is not known, but it is 4 feet thick and it is presumed that it is of brickwork with possibly radiating arches.

BYZANTINE PERIOD

The exteriors of the buildings belonging to that period which we term Byzantine depended largely upon brickwork for their effect. Stone seems certainly to be the most accepted material for all large or monumental work and we find that the art of brickwork is strongly developed only in the countries which are deficient in good building stone. This is the case in the region round about Constantinople where Byzantine art flourished, and no doubt accounts for the extensive use of concrete and brickwork in this district. In their construction, the Byzantine Architects followed the example set by the Romans, and used the brickwork as the casting for the main body of the wall which was of concrete. The bricks which they used were only $1\frac{1}{2}$ inches thick and the mortar joint was of the same thickness as the brick itself. Of course with such fat joints a considerable settlement took place. They therefore ran up the shell of the building and allowed it to settle before slabbing up the interior walls and floors with marble and the domes and vaults with mosaics. The mortar thus became a very important factor and great care was taken with the choice of materials for it and the mixing of them. It was composed of lime, sand, and crushed pottery, tiles, or brick, and was as lasting as the best Roman mortar and equally hard. To give the necessary relief to the exterior, the bricks were varied, all sorts of designs being indulged in, as the chevron or herring-bone pattern, thus giving a greater richness and play of colour. The same class of construction was often used for their domes as for the main walls. In many instances large flat bricks were used and laid on horizontal joints, the structure being gradually corbelled out to the Domical form. These domes were constructed without centering. Another very interesting form of construction used by them for dome work is one so closely allied to brickwork as to be worthy of notice. They used earthenware hollow pots and fitted them one into the other, surrounding the whole in concrete, thus forming a very light and strong structure practically on the same principle as our present day hollow terra-cotta fire-proof floors.

THE BEAUTY OF OLD BRICKWORK

And so we might continue with all the styles that have existed up to modern times. There is a warmth and charm about most old brickwork which is certainly lacking in our colonial article. I recall with pleasure watching the last rays of sunlight striking upon the old Norman brick tower of St. Alban's Abbey. The mellowed and yet rich tints in this tower are a delight. Age may have a lot to do with them, but the bricks themselves must have been good in the first place. This delightful

characteristic which applies generally to old work and also to quite a good proportion of modern work in England is hard to describe. It is a somewhat elusive quality, but if present it can never be passed without a second look, and the thought invariably flashes through the mind, "what excellent brickwork."

DESIRABLE QUALITIES IN NEW BRICKWORK

This quality of excellence, I take it, depends on several factors which might be enumerated as follows:—

1. The colour of the individual bricks.
2. The method of laying them.
3. The colour and method of pointing.
4. The proportion and size of the individual bricks.
5. Thickness of the joint.

So far, the points touched are hardly debatable, and I think you will have agreed with what I have said. Now we come to considerations which are open to argument and where individual taste is largely concerned. I shall, therefore, give a few somewhat fragmentary opinions of my own on this matter, which may not be in exact accordance with yours.

COLOUR

Referring to the divisions in the order before given, the first point is the colour of the brick. Whatever the colour is, each and every brick in the wall should not be absolutely the same colour. An unbroken mass in one tone is not to be found in nature and is quite inartistic. A painted surface is the only one that is uniform, and it, purely on account of this uniformity, never looks as well as a surface of unpainted material. You may say that an Oamaru Stone front is all one colour. So it is at first and it is then that it looks its worst. It is far more beautiful in after years when each stone has weathered to its particular shade. Now brickwork does not change much with exposure, therefore the bricks should be slightly varied in tone when taken from the kiln. It is in this respect that the clay burnt brick has the pull over the pressed sand brick. Unless great care be taken with picking over the bricks, there is always present this play of colour with the former giving a life and texture to the wall which is lacking in the sand brick. This drawback may, of course, be overcome mechanically by the discreet introduction of sand bricks of quite different colours in the form of patterns. Though personally I consider that the sand brick can never equal a first class burnt brick in the matter of colour, except that it somewhat resembles a limestone in its composition and therefore should weather like a lime-stone, and so ultimately give a play of colour. I am not advocating that brickwork should be like Joseph's coat—far from it—but that it is necessary that there be just a fraction of a tone of difference between each individual brick in a plain wall, if the wall is to possess the charm which belongs to much of the old work.

It is evident that the colour effect of the whole wall depends upon the colour of each unit, and for the mass of the colour to be pleasing, the general