

*Physical Characters.* The physical characters are those of density, hardness, structure, fracture, and colour. These characters generally suffice for the determination of the qualities of the stone. Let us now examine each of these characteristics.

1. DENSITY. The density of a material is the term by which we denote the quantity of matter it contains within a given surface, and is proportional to its specific gravity, or weight. Hence, by ascertaining the relative and specific weights of different materials, we have a measure of their density. The standard of comparison being pure water at a temperature of 60° Fahr. (15°.5 Cent.)

The density of a building material is to a certain extent a test of its compactness and durability.

2. HARDNESS. Relative hardness of different substances is determined by their relative powers of cutting and scratching. Amongst building materials the hardest substances, such as porphyry and siliceous grits 'strike fire,' or emit sparks when struck with the hammer, or pick.

For some purposes hardness is an important element in the selection of a building material, and in general the harder materials are the more durable. Experiments on the relative crushing weights of small cubes are frequently made when a very durable stone is required.

For decorative purposes, however, an excess of