found in Tyrol, in Dauphing, and in Scotland.

Asbestos has been employed with much success for fireproof roofing and flooring, for the packing of steam pipes and pistons of engines, and for the packing in fireproof safes.

GAUGING PORTLAND CEMENT.

A correspondent of the Builders' Journal writes that he is desirous of doing some cement dressing, and asks what he should mix with Portland cement to make it bold. He has tried mixing with water only, but the cement rubbed off in a powder as soon as it dried. The explanation given is as follows: Obviously the cement used was of inferior quality or improperly gauged. Water is the natural liquid for gauging Portland cement, but it should be clean and free from foreign matter. For casting cement dressings the cement should be mixed with an aggregate, in the proportion of three to five of the latter to one of the former. The aggregate may consist of broken stone, brick, granite, slag, gravel or coke breeze. The size of the aggregate is regulated (to some extent) by the size and purpose of the cast, and may range from ¼ inch to 2 inch. The aggregate should also be angular, and of mixed sizes, so as to bond better together. The addition of a small percentage of sand tends to form a closely grained surface.

SWEDISH BRICKWORK.

Sweden is a country of forests, says the Stone Trades Journal, and until recently the domestic buildings were constructed almost entirely of wood. Time after time, however, the towns have been laid waste by fire, and from the ashes there are now rising towns of brick and stucco. The bricks are usually larger than those employed in this country, measuring about 12 in. by 6 in. by 3 in., but the size varies in different districts. For exposed brickwork, header bond is generally adopted, the angles being formed with three-quarter bricks laid alternately along each return. At Upsala Cathedral, however—which, by the way, has been restored till it looks as if it were built yesterday instead of five hundred years ago—the bond is somewhat curious and varies in different parts of the building. Most of it is a modification of the so-called Flemish bond, and consists of two stretchers followed by a header. The effect is far from displeasing. A few modern buildings in Stockholm are faced with rock-faced wall stones, shading in color from yellowish-brown to purple. The courses vary in depth and in width of bed, so as to bond with the brickwork behind.

CUBING BUILDINGS.

A writer in the Builders' Journal says: "Referring to the cubing of a building for the purpose of roughly estimating its cost, it does not seem difficult to calculate the cube contents of, say a house; but I am told just enough to gather that there are different modes of allowing a capacity to foundations, and perhaps roofs, &c. Kindly give me some information on this subject."

Answer. — Leaning's "Quantities," which is the standard work, says: "The most usual practice is to multiply the outside length of the building by the breadth, and the result by the height from the bottom of the footings to halfway up the roof. These measurements, to be of any value, must always be done in the same manner, and must comprise the whole contents, including the walls. Disregard chimney-stacks, buttresses, and dormers, unless in unusual number. A different price per foot may sometimes be adopted for the various parts, but not often. It is more convenient to adopt one uniform rate. For boundary walls and such works an approximate estimate should be made and added to the price arrived at by cubing." There are other methods, but this is the best. The rate for a private residence averages 7d per cubic foot.

NEW KIND OF CHIMNEY BRICK.

A German system of chimney building has been recently introduced into America. These chimneys are of round construction, being built of radially moulded bricks, perforated. The perforations serve as a dead air space, preventing radiation through the walls, resulting in better average draft, and causing same to be less affected by atmospheric changes. A sufficient number of sizes and shapes of these are carried in stock to enable the builder to produce a circle of any diameter, and thus to build a chimney of any size, and to conform to the diminishing radius as the height increases. These bricks are much larger than the common form, and the joints are correspondingly fewer. No attempt is made to make the perforations register. They serve simply to give the mortar a better hold and to furnish dead air space which retard the radiation. It is possible, too, that they serve a useful purpose in the uniform burning of the brick. At all events, brick so perforated crushed at 5,035 lbs. per square inch, against 4,987 lbs. for solid brick made out of the same material. The perforations, it is said, increase the adhesion of the joint about threefold.