

and true and faithful to its earliest love, ever returns to it with renewed affection.

Symmetry is not necessarily formality both are beautiful in themselves, but they have each their special province, and must not be confounded together.

## Slaking Lime for Agricultural Purposes.

Lime, obtained from marble, or limestone, from marine or fresh-water shells, by depriving it of its carbonic acid by burning is known by the several names of *burned lime*, *quicklime*, *caustic lime*, and *lime shells*. As a general rule, a ton of good limestone will yield half a ton of lime shells; but the weight of the latter, per bushel, varies with the kind of limestone used, and with the manner in which it is burned. In some cases, a bushel does not weigh more than 74 lbs., while in others, it will exceed 100 lbs., which shows how uncertain the quantity applied to land may be when it is estimated by the measure. Hence lime should be bought and applied to the land by weight.

In slaking, burned lime has a strong tendency to "drink in" and combine with water. Thus, when taken from the kiln and exposed to the air, it absorbs moisture and carbonic acid from the atmosphere, increases in weight, swells out, and gradually falls to powder. Or, if water be thrown upon the burnt stone, or shells, it "drinks it in," becomes hot, swells very much, and falls down in a short time to a bulky, more or less white, and almost impalpable powder. When the "thirsty lime" has thus fallen, it is said to be "slaked" or quenched, and is known under the name of "hydrate of lime." If more water be added, it is not "drunk in," but forms with the lime a mortar, or paste.

When burnt limestone, or shells, is laid

up in heaps in the air and is allowed to draw moisture and carbonic acid from the atmosphere, it falls to a powder of itself, and is said to be "slacked," or "air-slaked." In both of the states described above, the lime is hot, or caustic, and may be properly spoken of as *caustic lime*. If spontaneously slaked, that is, if it be in a state in which one half of the lime is combined with water, and the other half with carbonic acid, it may be said to be only *half caustic*.

When lime, whether it exists in a state of a hydrate obtained by slaking, or is in a caustic or half caustic state, is long exposed to the open air, it gradually absorbs carbonic acid from the atmosphere, and is more or less perfectly converted into a carbonate, or in that condition in which it existed before burning. In this state, it possesses no caustic nor alkaline properties, but is properly called *mild lime*.

In slaking lime for agricultural purposes it is acceded, as a general rule, that the mode which gives it the greatest bulk, and at the same time reduces it to the most minute state of division is the best. This may be effected by laying up the burnt limestone, or shells, into heaps in the air, and allowing them to draw moisture and carbonic acid from the atmosphere, where they will fall to powder of themselves. In practice, it is preferable to cover these heaps with sods, and leave them for several months, till the lime has completely fallen, or slaked, or till the time is convenient for laying it upon the land. Thus it is often carted into the field, in winter, covered up in heaps, and applied to the land, in spring, or summer, when preparing for green crops. The lime seldom becomes very hot when slaked in this way unless heavy rains happen to fall, when the surface of the lime heaps sometimes becomes so hot as to char and even set fire to the sods by which they are covered, and