SERPENTINE. — Oil-green to blackish and yellowish green to greenish white; massive or fibrous; often having the crystalline form of another mineral. H=3; feels somewhat greasy. Consists of silica 43.48, magnesia 43.48, water 13.04 = 100. Mixed with limestone it is verd-antique marble.

THE CHLORITE GROUP. — Like green mica when crystallized, but inelastic; usually granular-massive; of a dark green color, and greasy feel. Silica from 25 to 35 per cent in the different species; the other ingredients are alumina, magnesia, iron, etc., with 12 to 14 per cent of water.

6. Silicates of Alumina Containing Water.

KAOLINITE. — Pure white clay, derived usually from the decomposition of orthoclase — the silica, alumina, and potash of the orthoclase changing to a compound of silica, alumina, and water, by the loss of potash and gain of water in its place. Consists of silica 46.4, alumina 39.7, water 13.9 = 100.

Besides the hydrous micas, there are the common species : --

PINITE OR AGALMATOLITE. — A compact mineral, soapy to the touch, often resembling a compact soapstone. Like serpentine and massive pyrophyllite, it is often cut into images in China. Consists of silica, alumina, potash, and water.

PYROPHYLLITE. — A mineral resembling talc in color, cleavage, and soapy feel when crystallized, and like some fine-grained soapstone when massive. Consists of silica, alumina, and water. It differs from talc in containing alumina in place of magnesia.

GLAUCONITE OR GREEN EARTH. — The material of the New Jersey marl, or Green sand of the Cretaceous and other rocks. It is a soft, dark or light green silicate of alumina, iron, and potash, with water.

ZEOLITES. — Stilbite, chabazite, analcite, natrolite, prehnite, are some of the zeolites (a word derived from the Greek for to boil, the species fusing easily with intumescence). They are hydrous species, consisting of silica, alumina, lime or soda, and water. Laumontite is another related hydrous silicate. They are common minerals in the cavities of amygdaloid and some other rocks. Pectolite is a hydrous silicate of lime, found in fibrous forms, under similar circumstances.

7. Carbonates.

CALCITE (or calcium carbonate), often called carbonate of lime. It is the material of common limestones. H = 3, it being easily scratched; and G = 2.715, when pure. Composition: $CaO_3C = Carbonic acid 44.0$, lime 56.0 = 100. When dropped in powder into



hydrochloric acid diluted with one half water, it effervesces strongly, giving off carbonic acid. The annexed are some of the forms it presents when crystallized. It cleaves alike in three directions, making the angle 105° 5' with one another (= R on R in Fig. 53 A); the form, Fig. 53 A, is called a rhombohedron. When crystallized, calcite is often transparent and colorless. But the mineral occurs of various colors from white to black, and the massive kinds from translucent to opaque. All the common marbles are limestones, either of this mineral species or the following, or mixtures of the two.

Dolomite (or calcium-magnesium carbonate). — Resembles calcite so closely that the two cannot often

be distinguished except by chemical means. It constitutes many limestone strata, both massive and crystalline. When dropped in powder into cold dilute muriatic acid, it effervesces very feebly; but on heating, a brisk effervescence is produced. Cleavage angle