

Besides these mechanical changes of granite constituents, chemical changes also take place. Felspar contains, among other things, sodium, calcium and potassium. These dissolved out furnish the salts of the ocean. The sodium furnishes the common salt, which under favorable conditions is laid down as beds of rock salt. Teach this in connection with salt mines and salt springs of the geography lesson. The calcium, united with carbonic acid, gives limestone, which in solution is washed into the sea, where sea animals use it to make their shells. These animals die, and the shells collect on the sea bottom as ooze, shell-limestone, etc., according to the kind of animal. This shell mass may re-dissolve and be re-deposited as crystalline limestone cemented by its own material. Under right conditions of heat and pressure, marble is one of the forms of limestone thus originated.

You should now have in your school collection all the rocks and minerals above named—granite, sandstone, quartzite, shale, slate, marble, coral, shell limestone, compact limestone, as well as dolomite and gypsum, which are naturally studied with limestone. Samples of sand and clay of different textures, with the rocks they came from, are necessary to teach the origin of soil.

It would be advisable, too, to make a mineral map of your province by taking a large table, marking off an outline map of the province, and covering it with rocks distributed as they are in the province itself. Mountains should be piled up with their proper rocks. Place a piece of iron ore for each iron mine, but do not place, say, hematite where limonite is mined. Indicate the locality of other minerals, mines and quarries in the same way. A glance at such a map gives the child a good understanding of the mineral wealth of his province, the association of minerals, the reason for location of centres of industry, and a knowledge of the farming lands, for the soil depends largely on the kind of rocks and their durability. On such a map do gold and coal occur in similar rocks? What about coal and limestone? What are the associate rocks of coal? Ask similar questions with reference to other minerals. The boy has learned now that rocks break up to form soils. Does he find in the field or the river-bed rocks different from those of the surrounding country? How did