

seems to be made up of lamellæ of orthoclase, mingled with small portions of carbonates of lime and magnesia. A part of the iron also is probably present as carbonate, which, by its decomposition, gives rise to the rusty red color of the weathered surface of the trachyte.

MONTREAL.—The island of Montreal offers a great variety of trachytic rocks, which traverse both the Lower Silurian strata, and the dolerite of Mount Royal. Some of these dykes are finely granular, occasionally crumbling to sand, and frequently are earthy in texture. In some cases they assume a concretionary structure, and they are often porphyritic from the presence of feldspar or hornblende. One variety exhibits large feldspar crystals in a compact purplish or lavender-gray base, with a waxy lustre. This effervesces with acids, from an admixture of earthy carbonates, and closely resembles in its aspect certain trachytes from the Siebengebirge on the Rhine. Other varieties can scarcely be distinguished from the so-called domite, the trachyte of the Puy de Dôme, and exhibit small drusy cavities. The presence of carbonates in trachytic rocks has generally been overlooked; Deville however found seven per cent of carbonate of lime in a trachytic rock from Hungary, and it occurs disseminated in some of the trachytes of the Siebengebirge. Some of the trachytes about to be described contain moreover carbonates of magnesia and protoxyd of iron, and weather to some depth of a reddish-brown color from the peroxydation of the latter, like the trachyte from Chambly just noticed. Acids remove from many of these rocks, in addition to the carbonates, portions of alumina and alkalis. These are derived from a soluble silicate, which in the trachytes of Brome appears only as rare crystals of nepheline, and in Chambly as analcime and chabazite. In some of the compact and earthy varieties about Montreal, however, this soluble silicate exists to a large extent, and has the composition of natrolite. By this admixture of a zeolite the trachytes pass into phonolite.

The first of these trachytes which will be noticed forms a dyke near McGill College. The rock is divided by joints into irregular fragments, whose surfaces are often coated with thin-bladed crystals of an aluminous mineral, apparently zeolitic. Small brilliant crystals of cubic iron-pyrites, often highly modified, are disseminated through the mass. The rock has the hardness of feldspar, and a specific gravity of from 2.617 to 2.632. Its color is white,