If we cast a glance on the geographical distribution of rocks, and their relations in space, in that portion of the earth's crust which is accessible to us, we shall find that the most universally distributed chemical substance is *silicic acid*, generally in a variously-colored and opaque form. Next to solid silicic acid we must reckon carbonate of lime, and then the combinations of silicic acid with alumina, potash, and soda, with lime, magnesia, and oxyd of iron.

The substances which we designate as *rocks* are determinate associations of a small number of minerals, in which some combine parasitically, as it were, with others, but only under definite relations; thus, for instance, although quartz (silica), feldspar, and mica are the principal constituents of granite, these minerals also occur, either individually or collectively, in many other formations. By way of illustrating how the quantitative relations of one feldspathic rock differ from another, richer in mica than the former, I would mention that, according to Mitscherlich, three times more alumina and one third more silica than that possessed by feldspar, give the constituents that enter into the composition of mica. Potash is contained in both—a substance whose existence in many kinds of rocks is probably antecedent to the dawn of vegetation on the earth's surface.

The order of succession, and the relative age of the different formations, may be recognized by the superposition of the sedimentary, metamorphic, and conglomerate strata; by the nature of the formations traversed by the erupted masses, and —with the greatest certainty—by the presence of organic remains and the differences of their structure. The application of botanical and zoological evidence to determine the relative age of rocks—this chronometry of the earth's surface, which was already present to the lofty mind of Hooke—indicates one of the most glorious epochs of modern geognosy, which has finally, on the Continent at least, been emancipated from the sway of Semitic doctrines. Palæontological investigations have imparted a vivifying breath of grace and diversity to the science of the solid structure of the earth.

The fossiliferous strata contain, entombed within them, the floras and faunas of by-gone ages. We ascend the stream of time, as in our study of the relations of superposition we descend deeper and deeper through the different strata, in which lies revealed before us a past world of animal and vegetable life. Far-extending disturbances, the elevation of great mountain chains, whose relative ages we are able to define, attest the