a very large number of substances peculiar to different plants, which substances make a difference between different classes. Thus we have gum, sugar, starch, a great number of oils, such as peppermint, turpentine, &c., a great variety of perfumes, and an almost endless variety of substances used in medicine, such as quinine, strychnine, &c., all composed of organic elements. A great many substances have been discovered amongst organic bodies composed of the same elements, and yet exhibiting physical and chemical properties essentially distinct from each other. A great class of bodies known as the volatile oils, oil of turpentine, essence of lemons, oil of balsam of copaiva, oil of rosemary, oil of juniper, and many others, differing widely from each other in their odor, in their medicinal effects, in their boiling point, contain the same elements—carbon and hydrogen—in the same proportion. No one of them contains more of either element than the others do. Nature, in her perfect laboratory, furnishing all these by skillful arrangement and mode of union; now making food to support life; now a deadly poison to destroy it; now a sweet perfume; now a most fetid odor; now a brilliant dye. We have the same elements partially under our control, and though we cannot vie with her in formative skill, yet we can, by calling the intellect to aid the labor of the hands, make the earth to yield its fruits abundantly, secure a sustenance for ourselves and a heritage for our posterity.

THE ORIGIN AND MODE OF FORMATION OF THE SOIL.

The soil is that portion of the earth which forms its outer crust, and is indispensable to the vegetable world, as well to give it mechanical support as to furnish it materials for growth and nourishment. It consists of the remnants or small particles of different rocks, (inorganic matter,) intermingled with the remains of animals and plants, (organic matter.) A brief survey of the different kinds of rocks; the multifarious mechanical and chemical influences to which they are exposed, the effects of which are destructive to their coherence—will show the manner of the formation of the soil, and disclose the general nature of its constituent parts.

The various kinds of rocks which form the solid part of our globe, are absolutely distinct from each other by their origin and character, and naturally divide themselves into two principal classes, in various forms, viz: in Igneous forms, such as originate from the effects of fire, and are found in large bodies, without the least regularity in the arrangement of their particles; and in Neptunic