Agriculture.

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CHAPTER II.

ORGANIC COMPOUNDS PRODUCED BY PLANTS.

We have seen that carbonic acid, water, ammonia and other substances which form the food of plants, are taken into their cells and vessels, and constitute the raw material which affords the various oxygen, hydrogen, and nitrogen required for the formation of their tissues and products. Nothing in nature is more wonderful than the processes of organic chemistry by which the plant accomplishes this, and which can, for the most part, be imitated in no other way than by the agency of living matter.

It is to the presence of different compounds, of the descriptions that we owe the diversity of tastes, odours, nutritious, poisonous, or medicinal properties, which we find in different plants, and in different parts of the same plant. A tuber, or grain, is perhaps simply a magazine of food, ready prepared to be taken into the growing plant, and yielding nourishment to every organ, and in its soluble forms passing through the pores of the root, its more insoluble forms dissolved by the saliva of animals, or digested into sugar, and then into blood, nourishment, or deposited in the woody cells and vessels.

That these substances are not related, may be shown from the fact that one may be changed into another, that sugar may be converted into wood or starch, and gum into sugar, and *vice versa*, we have abundant proof in many common processes. If a barley corn be moistened and drawn into a sprouted state, the starch of its starch converted into sugar, the sugar of a beet, or of maple sap, when fermented, yields alcohol, which by oxidation becomes vinegar, and becomes convertible into sugar, starch, or gum. If a potato is moistened, and begins to grow, its starch furnishes the material for stem and foliage, after having first been taken up in the sap in the form of gum and sugar.

SALE OF STOCK

BY the Government in Great Britain, during the year 1862, 1,000,000 head of cattle were slaughtered for food, and 1,000,000 sheep, besides lambs, and 1,000,000 pigs, besides sucking pigs, and 1,000,000 calves, besides sucking calves, and 1,000,000 lambs, besides sucking