

derable solubility, is peculiarly fitted for being applied to the purposes of nourishment: it is accordingly hoarded in magazines, with a view to future employment, being to vegetables, what the fat is to animals, a resource for the exigencies which may subsequently arise. With this intention, it is carefully stored in small cells, the coats of which protect it from the immediate dissolving action of the surrounding watery sap, but allow of the penetration of this fluid, and of its solution, when required by the demands of the system. The tuberous root of the potato, that invaluable gift of Providence to the human race, is a remarkable example of a magazine of nutritive matter of this kind.

The lignin, on the contrary, is deposited with the intention of forming a permanent part of the vegetable structure, constituting the basis of the woody fibre, and giving mechanical support and strength to the whole fabric of the plant. These latter structures may be compared to the bones of animals; composing, by their union, the solid frame work, or skeleton of the organized system. The woody fibres do not seem to be capable of farther alteration in the living vegetable; and they are never, under any circumstances, taken up and removed to other parts of the system, as is the case with nutritive matter of a more convertible kind.

The sap holds in solution, besides carbonaceous matter, some saline compounds and a few earthy and metallic bases; bodies which, in however minute a quantity they may be present, have unquestionably a powerful influence in determining certain chemical changes among the elements of organic products, and in imparting to them peculiar properties; for it is now a well ascertained fact that a scarcely sensible portion of any one ingredient is capable of producing important differences in the properties of the whole compound. An example occurs in the case of gold, the ductility of which is totally destroyed by the presence of a quantity of either antimony or lead, so minute as barely to amount to the two thousandth part of the mass; and even the fumes of antimony, when in the neighbourhood of melt-