commencement of winter. The formation of the layers of wood progresses, the wood becomes harder and more solid but after August the leaves form no more wood: all the carbonic acid, which the plants now absorb, is employed for the production of nutritive matter for the following year: Instead of woody fibre, starch is formed, and is diffused through every part of the plant by the autumnal saps." We may here mention, that *bread* is made from the bark of Pines in Sweden during famines. The following directions are given by Professor Autenrieth for preparing a palatable and nutritious bread from the Beech, and other woods destitute of Turpentine. Every thing soluble in water is first removed by frequent maceration, or soaking in water, and boiling; the wood must then be reduced to powder; and after being repeatedly subjected to heat in an oven, it is ground to a flour in the usual manner of grain. Wood thus prepared, is said, to acquire the taste and smell of flour. It is never quite white. It agrees with corn flour in not fermenting without the addition of leaven, and in this case; some leaven of corn flour is found to answer best. With this it makes a perfectly uniform and spongy bread, and when it is thoroughly baked, and has much crust, it has a much better taste of bread, than what in time of scarcity is prepared from the bran and husks of corn. Wood-flour also boiled in water, forms a thick tough, trembling jelly, which is very nutritious.

Starch can be recognised in the body of a tree by the aid of a good microscope. The barks of the several aspens, and pine trees contain abundance of this substance, which can be extracted from them, as from potatoes by trituration with water. It exists also in other parts of perennial plants. An early winter, or sudden change of temperature checks this provision of nature; the wood does not ripen, and its growth in the next year is very limited. From the starch, thus accumulated, sugar and gum are produced in the succeeding spring. After potatoes have germinated (sprouted,) the quantity of starch in them is diminished. The juice of the Maple tree ceases to be sweet from the loss of sugar, when its buds, blossoms, and leaves obtain maturity.

The sugar-cane loses a part of its sugar, when it blossoms; and sugar does not accumulate in the beet-root until after the leaves are completely formed.

Experiments have established the important fact that the produce of potatoes may be much increased by plucking off the blossoms from the plant producing them. In two fields of equal size and equally tilled and manured, the plants deprived of their blossoms yielded 47 bolls; the other field in which the blossoms were left untouched yielded 37 bolls.

These facts prove the part, which sugar, starch, and gum fulfil in the development of plants; and explain the reason, why these substances exercise no influence on the growth, or process of nutrition of a matured plant, when supplied to them as food, which has been done as experiments.

Starch, sugar, and gum, when accompanied by an azotized substance (a substance containing azote, or nitrogen) serve to sustain the embryo plant until its organs of nutrition are unfolded. These are stored by the plant in its seed. Carbonic acid, water, and ammonia are the food of fully developed plants. Accordingly pure water is more advantageous to the growth of a young plant, than that containing carbonic acid, but after a month, the reverse is the case.

The formation of sugar in maple trees does not take place in the roots but in the woody substance of the stem; the quantity of sugar in the sap augments until it reaches a certain height in the stem of the plant, above which point, it remains stationary.

In whatever form therefore, we supply plants with those substances, which are the produce of their own action, in no instance, do they appear to have