Selected Articles.

POPULAR BOTANY,

AN ILLUSTRATION OF SOME OF THE MOST INTERESTING PHENOMENA CONNECTED WITH VEGETABLE LIFE.

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The study of Natural History opens for us so many sources for moral reflections and pure enjoyments, and rewards us at the same time with so many valuable developments useful to practical life that it can hardly be sufficiently appreciated. Whoever has an opportunity should regard it as a duty, to aid and to sustain every branch of this science to the best of his ability. And as it was my fate to pass more than thirty years of my life among plants, where the most favourable opportunities were offered to observe and study their life and habits, it affords me great pleasure to communicate to those who take interest enough in this branch of natural history some of my own observations and reflections in connection with other facts more generally known. The main object of this essay will tend to sum up and explain some of the manifold and interesting phenomena connected with vegetable life; to show some of the important functions which vegetables have to fulfil in the natural economy, and also the great wisdom and care which have necessarily been bestowed upon them, with regard to their creation, preservation, propagation, and diffusion over the surface of our globe. It would be to me a great gratification should these remarks make a lasting impression on the moral feelings of those who peruse them, and lead to a greater interest in the study of Natural History in general.

In order to be more perfectly understood I will try to avoid as much as possible all scientific terms, and wish, therefore, to have this paper regarded as an essay on popular botany.

The English word Botany is derived from the Greek, and signifies that branch in Natural History which comprehends all that relates to the vegetable kingdom.

With regard to its purpose, botany is divided into two branches, namely:—The theoretical, which has for its object the investigation of scientific matters; and practical, which aims to take advantage of this science for pecuniary profit. In the last named are included agriculture, floriculture, pomology, &c.

The origin of plants dates, without doubt, as far back as the period when the surface of our globe was sufficiently prepared for their reception and lasting nutrition; at all events, the creation of vegetables must have been long before that of the quadrupeds, for these being for their subsistence almost exclusively dependent on vegetables, either directly or indirectly, and as one single animal frequently devours more vegetable matter in one day than many thousand plants will produce during a whole year, an abundant number of the latter were needed for the continuation of animal life.

There is good reason to suppose that plants at first were constructed on much more simple forms than we are accustomed to meet, and that in the course of time and through the might of influences, they have gradually become more various and perfect.

This change in the forms of plants, however, passes on so very slowly, that a man's life is not sufficient to observe them. The evidence for the supposition already mentioned must, therefore, be derived from other facts, namely, by excavations.

A great many well preserved antediluvial plants have been thus discovered, which are recognized as plants of our days, but more simply constructed.

The indispensability of vegetables in natural economy cannot be better illustrated than by the fact of their existence everywhere. Plants are found on our globe as far north and south as it has been explored; their region extends from the deepest cave up to the boundary of snow on the highest mountains; far beyond that of the spheres of animal life.

They grow in almost every kind of soil; in sand, in gravel, clay, chalk; in swamps, in water, on stone and rocks; on living and mouldering wood, and even on living animals. It is obvious that according to their location and the different functions they have to fulfil, they must be differently constructed.

Vegetables are not only created for their own existence, but also as an indispensable means of maintaining animal life. Should it happen, for instance, that all the vegetables of our globe were destroyed, hardly any animal would be found alive in a short time thereafter. With regard to this great function, plants have been particularly favoured by nature, especially in regard to their independence, propagation, vitality and reproduction. While animals have been gifted with free will and voluntary motion, plants are chained to the ground; but vegetables, in return, have been endowed with other advantages, which will counterbalance them to a certain degree. So, for instance, most of the plants are hermaphrodite, combining the conditions of propagation in one individual. When most of the land animals produce, as a general rule, from one to two young ones per annum, and rarely more than twenty, a single plant usually produces during the same time many thousands; nay, ferns, lichens and mosses even several millions of seeds—each containing the germ of a new vegetable life.

Besides by seeds, the propagation of plants takes place in a natural way, by root-shoots, suckers, runners, layers; by bulbs, by bending over of branches, by dropping of twigs and leaves—without regard to the many different artificial manipulations, whose success is really astonishing.

In regard to vitality and reproduction I refer to the fact that animals usually die when deprived of integral parts of their body; plants retain their vitality when totally deprived of their leaves, branches, and even stems; as the grass on meadows, where cattle graze, is eaten off and reproduced sometimes once in twenty-four hours. As further evidence for my statement, I will mention that plants produce, with the assistance of light, air, and water, nourishment enough of themselves for the sustenance of their life and growth, independent of any other succour.

As soon, for instance, as the frost has interrupted the circulation of sap in vegetables, the leaves of