Unfortunately, the term "variation" has been applied to a great number of phenomena of a very different nature, and in the mind of most people is something that can not be clearly defined. As a result, the biological and practical significance of variation is not clearly appreciated.

1. The individual plants of a species sometimes present such striking differences at different stages of development that the observer might readily regard them as different species or even different genera, where, as a matter of fact, only different ages are represented. Thus, a great number of species of the genus *Acacia* present a delicate fern-like foliage when young, whereas the old plants are clothed with narrow and simple leathery organs, which in shape and texture resemble the leaves of the mistletoe. Conifers, such as *Thuja* and *Juniperus*, which when fully developed have flat, scale-like leaves, are when seedlings provided with typical needle-leaves. Such juvenile forms can be fixed by cuttings and they then keep their peculiar needle-leaves for many years, presenting small trees, which are no more like the *Thuja* or *Juniperus* than a spruce is like a pine tree. Such fixed, juvenile forms have been described as species of a special genus, *Retinospora*.

2. Light sometimes causes variations of the most astonishing nature. The well-known blue bell, *Campanula rotundifolia*, generally has only long, narrow leaves. When the plants are growing in grass, however, or when they are young, basal leaves occur, which are round or kidney-shaped. Whether or not a plant shall have the latter kind of leaves is a matter of light, as can be demonstrated by the following experiment: enclose the upper part of a blue bell plant in a box of wood, and the new shoots developed from the enclosed parts of the plant will carry leaves round or kidney-shaped and in all respects similar to the round or kidney-shaped root-leaves.

3. Amphibious plants often present one water-form and one land-form, which are widely different from each other. Numerous experiments have shown that the water-form can be changed into the land-form and vice versa, and that the same individual can present shoots of both types at the same time. Such variation, induced by the amount of water available, can be observed in such plants as water parsnip (*Sium*), water plantain (*Alisma Plantago*), knot-weed (*Polygonum amphibium*), numerous species of *Ranunculus*, etc.

4. Other plants, when placed in certain environments, often show striking variations. Thus, it is rather common for plants growing in a climate where hot winds prevail, such as in