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BOOK REVIEW

SUTCLIFFE, J. F., BAKER, D. A.: *PLANTS AND MINERAL SALTS*. — Studies in Biol. No. 48, 2nd Ed. 1981. Edward Arnold Publ. Ltd. Net £ 2.50.

As other books of this series, this rather small booklet (68 pages) refers to the present knowledge of mineral nutrition of plants. The introductory chapter gives a brief survey of the sources of salts, of the composition of plant ashes, and briefly mentions the genetic control of the content of individual elements, the effect of environment, and generally the plant nutrition in nutritive solutions.

The further chapter deals with the individual elements in plant nutrition, their functions and the symptoms of their deficiency. In case their sources in the soil are given, the role of humus is not omitted, as well as the linkage of a series of elements, *e.g.* Ca, Mg, K, Mn, to humus. The authors did not neglect the toxic effect of mineral elements, *e.g.* the relationship between the excess of Mn, Cu, Zn, Co and Fe deficiency in plants, either.

The third chapter involves the ion absorption by cells. It starts with a well-known conception of the ion uptake by diffusion into the "free space" and Donnan's equilibria, and proceeds with the knowledge of the non-free space ion absorption. The chapter also gives data on the active ion uptake, function of carriers and energy of the active transport, and it ends with the passage on the factors affecting the ion uptake, as *e.g.* light and pH.

The subsequent chapter deals with the ion uptake by plants, beginning with the ion uptake from the soil and exchange processes between soil colloids and roots. It proceeds with the ion transport in roots, in symplasma (radial diffusion transport), the role of endodermis as a barrier, and with root exudation, and briefly summarizes the knowledge of the relationship between water and ion transport and ion absorption by leaves.

The chapter on the ion distribution in plants is of special interest to physiologists. It describes schematically the transport and distribution of ions in the plant and the recyclozation of elements in the system soil-plant. The individual passages deal with the transport in xylem, phloem, accumulation in reserve organs (bulbs, fruits, seeds, *etc.*), and the possibility of regulation of these processes by growth substances is also mentioned. An extensive passage discusses the ion distribution between roots and shoots in seedlings.

The last chapter concerns the problem of halophytes, especially the content of K and Na in sea halophytes is discussed with regard to the presence of these elements in sea water, as well as the accumulation of salts and their excretion.

The book gives a good survey of the present knowledge of mineral nutrition of plants and represents a truthful and comprehensive manual for plant physiologists and agronomists.

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