SYMPOSIUM ON SOIL PLANT RELATIONSHIP

(Concluding Remarks by the Chairman of the Symposium held at the First Indian Geophytological Conference, Lucknow, December 21-24, 1975)

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Even though organised at a short notice, twenty-seven contributions were received for the symposium on 'soil-plant relationship' held under the auspices of the Paleobotanical Society on the occasion of the First Indian Geophytological Conference. Of these, twenty-one papers were orally presented at the symposium. These papers touched various aspects of soil-plant relationships like the effect of soil water regimens on plant growth, distribution of total and available plant nutrients in varied soil types, fixation of plant nutrients, assessing chemical methods for determining available plant nutrients, determining critical nutrient concentrations for soil fertility evaluation, effect of cropping patterns on the availability of plant nutrients, crop response to fertilizer amendments, resolution of edaphic factors detrimental to plant growth specially in some problem soils, and the genotypic reaction to soil environment. While eighteen out of the twenty-one papers presented at the symposium made original contributions to varied aspect of soil-plant relationships, three made a critical appraisal of the current thinking about the complex problems of great practical importance, viz. iron chlorosis, heavy metal toxicities and saline sodic (usar) soils.

Since organisers of the symposium were anxious to keep minimum interval between the symposium and the publication of its proceedings, only fifteen papers could be included in the proceedings of the symposium published in the December 1976 issue of *Geophytology* (Vol. 6, Number 2).

The symposium was illuminating in many ways. AGARWALA AND SHARMA spelt out the details of the sand culture technique as adapted for Indian conditions, largely using indigenous ingredients. Plant Physiologists and Agronomists will find it useful for resolving the complex nutrient problems and screening varieties for tolerance to deficiencies and toxicities of essential plant nutrients. The paper by CHATTERJEE *et al.* on the total and available plant nutrients in Uttar Pradesh soils indicated a potential deficiency of molybdenum and copper in some important soil types. The contribution by HUNSIGI AND SRIVASTAVA revealed that we have yet to find a suitable chemical extractant for evaluating potassium availability in soils under sugar cane cover. AGARWALA AND SRIVASTAVA dealt with the importance of phosphatic fertilization for optimising sugarbeet yield in alluvial soils. The two papers by BRAR AND SEKHON made a critical appraisal of the role of moisture regimens in movement of ions and the contribution of the plant genotypes in the study of soil-water-plant continum. These papers also emphasized the influence of seasonal changes in determining the availability of plant nutrients in soils. BANSAL AND SEKHON emphasized the usefulness of working out critical limits of zinc for evaluating response to applied zinc in low zinc soils, and SHARMA AND SHARMA pointed out that wheat shows marked varietal differences to zinc deficiency and that these differences can be ex-

ploited in maximising crop production. Gypsum has been shown to increase the tolerance of plants to boron toxicity by CHAUDARY *et al.* In their paper on translocation of iron in sugarcane, SRIVASTAVA AND TANDON emphasized the need for a biochemical understanding of processes involved in absorption and utilization of iron. AGARWALA *et al.* showed that utilization of iron by rice is influenced by the form of nitrogen supply in the nutrient medium. The contribution by SINGH AND SINGH on the performance of rice varieties in sodic environment draws attention to usefulness of varietal selection for cultivation on problem soils. Three papers presented at the symposium focussed attention to the complex nutritional problems resulting from adverse soil conditions. One of these by MEHROTRA *et al.* dealt with the resolution of iron chlorosis, one of the most widespread nutritional disorders of plants ; the second by BISHT *et al.* reviewed the information pertaining to the phytotoxic aspects of heavy metals, and the third by AGARWALA *et al.* gave a critical appraisal of the nutritional disorders encountered in saline alkali soils of Uttar Pradesh. The information compiled in these papers will be useful in sorting out the nutritional problems that impede crop production in some problem-soils of the country.