PLANT distribution and growth depend mainly on climatic factors. The soil in which plants grow is a resultant also of climatic forces. Consequently, we may well raise the question whether the degree of soil development or extent of nutrient depletion resulting from varying intensities of the climatic forces may not serve as an index to the ecological array of plant species. With the soil development and the plant distribution both determined by the same climate, then the nature of the soil and the distribution of the plants should agree. Which of the characteristics of the soil might control such an agreement, is a question that may well challenge speculative consideration.

Nitrogen, calcium, phosphorus, and potassium represent, in general, the major portion of soil fertility, or plant nutrient supply. Since the ultimate source of nitrogen is the atmosphere, then the plant nutrients of soil origin which are more commonly limiting plant growth, at least of legumes, can be considered to consist of calcium, potassium, and phosphorus. Further, since the variations in these three elements most dominate in the degree of soil development, may we not then look to the possibility that these same variations which reflect the effects of climate on the soil might also determine the ecological array? Some evidence and suggestions in support of such a possibility will be given consideration.

COMPOSITION OF VEGETATION REFLECTS INFLUENCE OF THE NUTRIENT DOMINANT IN THE SOIL

It is commonly agreed that potassium functions within the plant in carbohydrate production. In general, more potassium is required as more carbohydrate is produced. Potato tubers of almost pure starch, or carbohydrate composition, contain significant amounts of potassium. Sugar beets, sugar cane, sorghums, and other saccharine

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