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My interest is to note in contributions to the Lotus Newsletter any remarks that are made on the relation between the perennial and annual growth habit in the genus. One has the impression, perhaps incorrect, that the species of the genus are predominantly perennial, and therefore rank with the perennial pasture legumes rather than with the predominantly annual group of species that provides the grain legumes of human nutrition.

A.D. O'Brien (Lotus Newsletter No. 6) mentions two annuals, L. angustissimus (L.) and L. subbiflorus Lag. (L. hispidus Desf.). It will be interesting to follow any attempts which may be reported in future issues to correct the "taxonomic confusion" to which A.D. O'Brien refers. In my own studies on the origin of annuals from perennials, perhaps under conditions of physiological stress (1975a, b and 1977), it will be important to know in the genus Lotus (a) which perennial species show a strong but variable streak of annuality in their progeny, especially along the borders of their natural distribution; (b) whether the varying percentage of annual (or biennial) types produced by perennials in a given season can be related to the environmental conditions obtaining during the flowering period in the previous season, either under natural or experimental conditions; and (c) whether it will become possible, following taxonomic and genetic analyses, to indicate possible perennial ancestors or the nearest perennial relatives of those annuals which are to be given specific status, and to note the progressive narrowing of the spectrum of variability which must inevitably follow such a change.

A.D. O'Brien also refers to the need for improved knowledge of the habitats of plants. It is to be hoped that, in defining habitats and distribution of the present day, it may be possible to work back from the present wide but largely derived or secondary distribution to the original core area(s) in its optimal biological ecosystem, before the arrival of man as a dispersal agent. I have tried to do this for the Gramineae of South Asia (1976b), but have not so far been able to proceed to the tropical, subtropical or temperate legumes. Such an analysis calls for the study of information, frequently still somewhat sketchy and hypothetical, on geological history and palaeoclimatology, and the history of vegetation and its associated fauna as governed primarily by these physical factors.

With the increasing pressure on land in the densely populated countries, farmers are finding it difficult to leave a perennial fodder crop in the ground through the dormant season, when some grain or cash crop could be grown in the intervening period. In parts of India, farmers producing green feed for dairy cows grow Medicago sativa "as an annual". I have suggested how one might try to discover or produce a

true annual alfalfa, better adapted to give rapid germination and higher yield from the first cut onwards in the short winter season of a monsoonal climate (1976a). I wonder whether it may be possible to consider similar steps to produce an annual Lotus, superior to those already available, to be fitted into slots in all-arable rotations in appropriate economic ecosystems and ecoclimates.

#### References

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