The Japanese bean proved the earlier plant; it flowered and fruited two weeks before the local one did.

In about two and a half months from the time of sowing, the first picking of young hanging pods, when about 5 to 6 inches long, took place.

At that stage, they are tender, and can be eaten as a substitute for French beans, of which, however, they lack the flavour.

For that purpose, they should be sliced diagonally, boiled and then tossed for a few minutes in butter.

At a later period the pods become stringy, and later still they take a woody consistency, when they are useless.

The beans themselves are poisonous, unless they have been first divested of their skins, and the separated cotyledons have been heated over the fire previously to boiling them. But although the writer has eaten them after such treatment, the risk is too great to justify their use as a food, either for man or cattle.

The poisonous principle in the bean of *Canavalia ensiformis* is probably, judging by the odour of the freshly opened beans, the same as found by W. R. Dunlop (Tropical Agriculturist March 1916) in *Phaseolus lunatus*, viz: hydrocyanic or prussic arid.

The sword-bean is, as already stated, a very fast grower, which commends it as a restorative crop, in place of a bare fallow: to that end as soon as the first picking of the young pods has taken place, it can be dug into the soil, which it enriches with its stored nitrogen, while the copious leafage serves to aerate the soil and increase the supply of humus.

As a cover crop without staking, it has also much to recommend it, as its broad leaves spread rapidly over the ground and keep down the weeds very effectively.

If staked as previously described, it serves admirably as a screen for exotic plants which cannot be grown to their best under the sun in the open. Lettuces are amongst these. Under the strong sun the excessive evaporation saps the vigour of the plants —the leaves, instead of standing erect, close to the stem, droop away, while the stem itself bolts upward or trails limply on the ground. Strong rains on the other hand, often destroy the seedlings, or in the older stage, beat down the leaves and even tear them.

Under the diffuse light afforded by the foliage of the sword-bean (which has to be pruned when too thick) the excessive evaporation is reduced and the impact of the rain is broken. By using the sword-bean as a screen and rain-breaker, some quite fair samples (*i.e.* fair for our locality) can be grown even at sea-level.

E. Mathieu.

Staking Yams.

The Chinese who grow yams in the Malay Peninsula do not trouble to stake them. This fails to obtain the best yield and should be remedied.

Yams upon light porous soils in areas where the rainfall is relatively small may be left to trail their vines on the soil, for thereby the moisture in it is retained: but nowhere in the Malay Peninsula is the rainfall small enough to justify this: on the other hand the great room afforded for development by the use of stakes produces a greatly increased return. Experiments, demonstrating this increase, were performed twelve years ago in the island of St. Lucia, West Indies (Agricultural Bulletin, Barbados, VIII, April 3rd, 1909, p. 105). The results were as follows:—

Race of Yam	Return when not Staked	Return when Staked
"Lisbon"	3.2 tons per acre.	6.7 tons per acre.
"Bottle-neck Lisbon"	2.4 tons per acre.	4.3 tons per acre.

Since the above was written the following note has appeared in the Agricultural News, March 6th, 1920.

"A note in the Agricultural News February 8th, 1919, drew attention to an experiment conducted at the Botanic Station, Montserrat, in yam cultivation, as to whether it was profitable or not to provide stakes for the vines to run on. Mr. Robson, the Curator, came to the conclusion that the increased yield produced by the staked plants would more than pay for the increased cost involved.

"Mr. Robson has recently forwarded a note upon a similar trial carried out in 1919 with the results obtained therefrom, six rows of six different varieties of yam were planted on ordinary banks, to which pen manure had been supplied, 4 feet apart, the plants being three feet apart in the row. These rows were staked, and five rows unstaked were planted alongside as a control. The yams were planted on May 1st, 1919, and reaped on January 19, 1920. The results showed that in every case there was a large increase in yield from the staked rows as compared with the unstaked ones, amounting to more than 100 per cent. on the total yield, thus confirming the results obtained in 1918."

I. H. Burkill.

Some Factors in Plant Competition.

A preliminary account of the results of experiments conducted at the Rothamsted Experimental station to ascertain the relative importance of the different factors that come into play when one plant enters into competition with another is given in "The Annals of Applied Biology", Vol. VI, Nos. 2 and 3.

"Competition of one plant with another is a very complex, not a simple, phenomenon, and may be broadly analysed as follows:

(1) Competition for food from the soil.
(2) Competition for water.
(3) Competition for light.
(4) The possible harmful effect due to toxic excretions from the roots, if such occur.

"The first three factors lend themselves to direct experiment; the fourth is more difficult to demonstrate but the possibility of its existence must be reckoned with in estimating results."