

and set out in rows nine inches apart. A fortnight later they were manured by pouring an emulsion of cow-dung into runnels between the rows. In 41-44 days they were mature, the maximum weight being five ounces.

The lettuces were then sent out in pairs to friends willing to endeavour to judge their table value, each pair with a voting paper. These voting papers showed that the english race was preferred to the french in four cases, and the french to the english in one, while as regards the others the votes cast were roughly equal. The four races of english origin judged better than the french race against which each was pitted, were:—Sutton's Golden Ball, Standwell, Improved Tom Thumb and Satisfaction: the french race judged better than its english competitor was Vilmorin's All-the-year round.

On the whole it appears that from the salad standpoint only races favoured in England are a little better suited to Singapore than races favoured in France.

The races named above are not the only races which did satisfactorily. Sutton's Heartwell, Whiteheart Ideal, and Nonsuch made good in growth, as also did Vilmorin's Large White Stone, Balloon, Neapolitan, Green Madrid and May King.

The experiment, however, must not be considered as final. The chinese cook comes in, and the way in which he served the trial lettuces must have varied. Few know just how a lettuce should be treated, and the cook is not one of them. A lettuce for salad should be allowed just to get flaccid, then an hour before serving it should be plunged into pure cool water, which it will take up the more greedily for the flaccidity and it will be the crisper and better when eaten. But at any rate the chinese cook would treat both competing lettuces with equal disregard to their best.

J. LENNON.

A SPINY YAM FROM SUMATRA.

In the whole vegetable kingdom there are very few instances of the conversion of roots into spines, and these almost without exception in Monocotyledons: *e.g.*, some palms, one of the Iridaceae and a few species of *Dioscorea* such as *D. esculenta* and *D. prehensilis*.

A new and divergent instance is now added in the undescribed *Dioscorea* from Sumatra which is here figured. This *Dioscorea* converts the roots arising on its tubers into spines, and they may cover the whole surface: thus it wears an armour against the depredations of wild pigs etc. It is otherwise with the Asiatic *Dioscorea esculenta* and the African *D. prehensilis* where the spines are the lateral rootlets of long specialised roots produced above the yam and distributed around it in a way that would on the whole

seem to be more effective, because the spines persisting from the year before protect the succulent root of the new year; but the interest of a different method of getting cover is not reduced thereby.

I. H. BURKILL.

TAHITIAN YAMS.

The statement made in this Bulletin vol. I, 1917, p. 396, that *Dioscorea esculenta* does not penetrate the Pacific to the eastward of Fiji is now proved incorrect. Its tubers have been sent to Singapore by the great kindness of Professor Harrison Smith; who has supplied also all the other yams which he could get wild or cultivated in the neighbourhood of Papeete. They are figured upon the accompanying plate.

The great yam, *Dioscorea alata*, Linn. is the most important to the Tahitians of these roots. They grow it in several races, such as *ufi taho-taho* (No. 1 on the plate) and *ufi opura* (No. 10), both being large rather long yams, as *ufi mene-mene* (Nos. 4 and 5) which has neat round tubers, as *ufi tiauu* (No. 9) which is long and deep going, and as *ufi paparateu* (No. 2) which is very long and deep going.

The first crop raised in Singapore from these showed above ground differences between *ufi taho-taho* and *ufi opura* in the frills on the angles of the stems, the first having them green and the second having them purple, in a slight earliness in *ufi taho-taho*, and in the lobes of its leaves being larger less rounded and somewhat uprising in comparison with those of *ufi opura*. There were three tubers got from each, the largest of *ufi taho-taho* weighing 5525 grammes, and the smallest 2607 grammes (average 3957 grammes) the largest of *ufi opura* weighing 4590 grammes, and the smallest 2352 grammes (average 3825 grammes). *Ufi paparateu* returned an average of 3230 grammes; *ufi tiauu* of 2230 grammes; and *ufi mene-mene* of 2253 grammes.

No. 6 in the plate are tubers of *Dioscorea esculenta*, Burk.,—the lesser yam, which Professor Harrison Smith obtained with the name *ufi hoi*. Further *Dioscorea bulbifera*, Linn., (No. 3 on the plate) was given to him under the same name, with the explanation that whereas the first is edible, the latter relatively is not. It is most interesting that the edible and the relatively inedible should not have been distinguished by name; and it would seem therefore that the first though edible is really a very little known and used food. Again the name is interesting for *ufi* and *hoi* both have the meaning "Yam" and nothing more, in the centres of their use; and the Tahitian when he says *ufi hoi* says yam-yam in two different, but closely related, languages. This in itself, apart from the confusion of the cultivated with the wild root, suggests a recent introduction of the tuber.

