

short, branches spreading, glabrous: flowers spirally arranged, generally in scattered clusters of 3, males in pairs towards the upper part of the branches, females solitary between 2 males in lower part. *Male flowers*  $\frac{1}{2}$  inch in diameter; stamens 12, filaments equalling the anthers. *Female flowers* ovoid with appressed perianth segments. *Fruit* globose, about 1 inch in length. *Seed* globose.

Habitat.—Ceylon.

This palm has not yet fruited in the gardens, though it has several times flowered. The plant which is in the Palm Valley is at present about 15 feet in height and is very attractive with its close growing crown of leaves and blood red flower spikes.

F. FLIPPANCE.

(To be continued.)

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### Polyembryony.

Two instances of what presumably are cases of polyembryony were recently noticed by Mr. G. B. Deshmukh on germinating seeds in the Economic Gardens.

In one case, that of *Citrus decumana*, L. the Pomelo, one seed bore five shoots each with its own diminutive cotyledon and rootlet. These shoots were separated and planted and have done well.

The other case was a seed of the Avocado Pear, *Persea gratissima*, Gaertn. which gave rise to six shoots and a common root. They were difficult to separate and have been allowed to grow as they arose.

The above seeds took longer to germinate than the normal seeds did, and the first shoots were somewhat weakly in their early stages.

Mr. Deshmukh also reports that at the same time adventitious buds were observed on the leaves of a cabbage.

T. F. C.

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### Relation of Soil Acidity to Plant Juice.

In Soil Science Vol. VII, No. 6. E. Trong and M. R. Meacham bring to a conclusion their paper on Soil Acidity in its bearing on the acidity of the Plant Juice. In view of the large amount of fruit planting at present contemplated in Malaya the following extract from the above quoted paper should prove of value in influencing planters in their selection of soil.

“There are considerable differences in the acidities of juices of different species of plants. The acidity of each species of plant, while it may vary to an extent easily measurable, is, however, usually limited to a rather narrow range. Undoubtedly for each species of

plant there is a certain acidity which is most favorable for the life processes of that species. Unquestionably in many cases soil acidity, by limiting the supply of lime available for plants, affects the acidity of the juice or protoplasm of these plants. The importance of a proper regulation of plant acidity in relation to vital plant processes should be noted.

"In the life processes of plants, acids are formed, some of which are probably simple by-products. Lime and other bases are needed to neutralise these acids. Plants high in protein are usually high in lime and other bases indicating the formation of acids in protein synthesis. If the supply of lime and other bases is inadequate, the acidity of the plant juice rises to a certain extent which is limited because the accumulation of acids probably decreases the rate of the processes which produce acids. A condition of self regulation thus probably exists and death due to over-acidity is prevented. Slow growth and a weakened condition however, result as is the case with plants of high lime requirement growing on acid soils.

"In plants there are many "buffer" substances which to a certain extent help to maintain a more uniform acidity and prevent rapid and excessive alterations, as would result especially from diurnal changes in plant processes. Bases are however usually needed in the formation of these "buffer" substances."

T. F. C

### Red Ring Disease of Coconuts.

The following extracts are taken from a report read by Mr. W. Nowell, D. I. C., Mycologist, Imperial Department of Agriculture, Trinidad on Oct. 16, 1919, and published in the "Agricultural News" Vol. XVIII, No. 460. It is considered it may be of interest to local growers of coconuts.

"It may be remembered that during my last visit I had incidental opportunities of making observations on the so-called root disease of coconuts, and announced the invariable association of the disease in all cases examined, with a minute thread worm or nematode. The matter was not then sufficiently advanced for the issue of a report, and the investigation is still far from complete.

In the first place it must be stated that the connexion of the disease with the nematode worm has been abundantly confirmed. Not only is the worm present in close association with the first appearance of the disease in any organ of the plant, but infection experiments, with material to all appearances pure have resulted in complete and typical infestation of the inoculated trees with the reproduction of all the symptoms of the disease, the parallel controls remaining healthy. The proof cannot be considered absolute, but it comes nearer to certainty than is the case with very many plant diseases in which causation is regarded as established.

"The worm has been described as a new species, *Aphelenchus cocophila*, by Dr. N. A. Cobb, of the United States Department of Agriculture, who has prepared a paper on its characteristics for the forthcoming number of the West Indian Bulletin.