

elongates and becomes enlarged at both ends. From the outer end arise the plumule and the roots, while the internal growth results in the formation of a large bulbous mass of spongy tissue pure white in colour. This is technically the cotyledon and is responsible for the absorption and digestion of the endosperm—the kernel and the liquid—which is then passed on to the young plant. This beautiful arrangement is appropriately styled 'wet nurse' arrangement.

These enlarged cotyledons of the germinating cocoanut—in appearance much like a sponge-cake—are considered luxuries and food for the invalids by the Polynesians. Along the west coast of Mexico these enlarged cotyledons are dried and sold under the name 'cocoanut apples.' These are said to be very delicious. T. S. V. *The Journal of Heredity*. April, 1916.

The following table showing the proportion of ash and potash in various tropical plants has been extracted from the July number of the *Tropical Agriculturist*.

	Ash.	Potash.	Percentage on.
Castor seeds	3 2	0 5	dried sample.
Cocoanut husk (dry)	5 3	47 0	on ash.
" shell	1 3	26 5	"
<i>Crotalaria juncea</i>	4 0	14 1	"
Neem husk	13 6	0 75	on sample.
" Poonac	9 0	1 69	"
<i>Sesbania Aculeata</i>	6 2	15 6	on ash.
<i>Tephrosia Purpurea</i>	5 9	24 0	"
Tobacco	16 0	25 9	"
Tapioca (stem)	4 7	22 1	"
" (leaves)	8 6	14 6	"
<i>Pithiclobium saman</i>	5 0	1 27	on sample.
<i>Vigna catiang</i> (dried)	14 2	3 46	"
" (fresh)	3 03	0 73	"

These figures are estimated on the sun dried sample.

From the above it is seen that cocoanut husk and shell contain in their ash a very large percentage of potash.

It is stated in the 6th November issue of the Louisiana Planter that large deposits of potash have been discovered in the State of Utah (America). So the dearth of potash need not be feared.

K. K. R.

Mr. H. O. Jacobson, Chief of the Plant Industry division Philippines gives the following results of a spacing experiment with paddy. Higher death rate of seedlings prevails in the close planting than in the widely spaced areas. Maturing period of the rice plant is not affected by the variation in spacing. An early maturing variety may be planted more closely than a late maturing one. Spacing has had little effect on the height of plants. Loss due to death of a certain percentage of seedlings which always operates against maximum production when only one seedling is used, is off set by planting more than one seedling in the hill. The limit to close spacing is reached in spacing 10×10 centimeters, and over crowding results. Consequently the greatest yields are found in the somewhat less densely planted areas. Under very intensive culture it appears that the proper spacing distance would have to be determined for each variety individually, also the approximate number of seedlings to be set in each hill. The tillering habits of varieties vary greatly and a distance satisfactory for a prolific variety would be altogether too great for one that stooled little. In conclusion, he says that one seedling per hill, provided with 100 square centimeters of area, evidently had all the room needed and was not able to fully utilise a greater area. Two seedlings on 100 square centimeters evidently competed for plant food to the detriment of each other but when given 150 square centimeters of area there was no evidence of damaging competition. The full extension of the tillering habit depends on environment, and if

the available food supply is abundant, the plants will quickly adopt themselves by means of additional culms. K. U. K. M.

Cultivation of Vadan Samba paddy in lands on the sea-board in the Tanjore District :—Soil. The lands on the sea-board are saline in nature, and they extend to very near the sea-shore and the fields near the sea are liable to be flooded with saltish water during certain periods of the year—chiefly in the months of October–November. The variety of paddy selected for being grown in such lands is Vadan Samba, and the plants would be sending forth their ears at the time the fields are flooded with saltish water.

*Method of cultivation :—*The nursery is prepared under the puddle system on receipt of water in the channels i. e., about the beginning of July and sprouted seeds are sown at the rate of 2 to 3 Madras Measures per cent of seed bed. The seedlings are pulled out when they are about 40 days old and planted about a span or a foot apart (the spacing, of course, depends upon the fertility or otherwise of the soil, planting being sparser in good lands than in poor ones), 4 to 6 seedlings being used in each hole. The lands would have been already got ready, and careful, or small ryots fold cattle or sheep in as large a portion of these lands as possible. As a rule, poor soils receive some manuring. It is considered safer to plant more seedlings together as the salinity of the soil may kill some of them. Saltish water gets into the fields during the flow of the sea in the months of October–November, and when it gets out of the field during the ebb, fresh water from the channels is let into the field and drained off with a view to remedy the bad effects of the salt water. It is said that, on certain occasions, it is not possible to do this operation, the crop then suffers much. Good rains at this stage are considered quite essential in such lands.

The after-cultivation done to the crop is the same as that done to paddy crops in general, viz., weeding. Under favourable conditions the crop is said to yield about 700 to 800 Madras Measures of paddy per acre. T. R. V.

Window Box Vegetables:—The women in Berlin have now taken to window and balcony gardening, and we are told of big competition now being carried on, to see who can grow the most on their little balconies and window sills. Flowers, however, have given place to the less ornamental but far more useful vegetable, and as every flat has a balcony, and every window a sill with or without sun, on that precious ground radishes, tomatoes, cauliflower, and carrots are being grown; and the waste comes in handy for the purpose of feeding the rabbits, of which, as a very prolific source of food supply, we are led to understand every German family keeps a large number. Other articles of diet are procurable only by ticket and every Berliner has a pocket full of cards nowadays: bread, milk, butter and potato cards, with in some cases rice and egg cards; and if to these are added the season pass on the tram the ticket for the barber, and the indispensable police card, each Berliner must carry about with him quite a respectable packet. Apparently the Hun has as strong a taste for cake as he has, or used to have, for sausage, but we are told that the sweet cake of which the Berliner is so fond is a wonderful production today. First it was ordained that no flour was to be used, unless mixed with potato, maize or rice flour, and then only in limited quantities. Then it was decreed that no milk should be used, and no cream. Fat and butter could only be had in the most limited quantities, but still the street cake appeared. Finally the use of wheat was forbidden but the bakers worked away with maize and rice meal with fruit and almonds, and although the choice was limited, the cakes were still there. (From I. D. News). W. R.

Wholemeal V. white bread :—There is no greater waste and no more unfortunate practice than the total exclusion of the bran or fiber of the wheat grain from our national loaf. The mineral salts in our foods have been placed in the husk or the skin for a wise purpose, and we are careful to exclude them as far as we can in almost all that we eat. They are responsible for the production of the bones and the teeth and they are vital to the blood, which, when reduced to a condition of poverty, affects the happiness, health and life of the man. A child fed on milk from which the minerals had been removed could not live, for it would obtain no bone making material, while its blood would be unable to nourish it. White bread consists almost wholly of starch and gluten, and when consumed, leaves no residue in the digestive system, for practically all is absorbed. It is this fact which accounts for the pernicious habit of the Englishman as a consumer of purgative medicines, to which the consumer of wholemeal bread is almost an absolute stranger. (Professor Long, in Pearson's Magazine). W. R.

Departmental Notes.

M. R. Ry., U. Mudlagiri Nayak B. A., is appointed Sub-Pro Tem 4th grade Assistant in Agricultural Chemistry on a salary of Rs. 75, 75, 75-5-125 in the vacancy caused by the deputation of M. R. Ry., T. S. Venkatraman, 3rd grade Assistant in the Sugarcane station.

He should report himself for duty to the Government Agricultural Chemist, Agricultural College, Coimbatore, at an early date.

C. R. Srinivasan, L. Ag., is appointed as Assistant Agricultural Demonstrator on Rs. 35-2½-75 on probation and posted to Koilpatti.

M. P. Kunhikutty is appointed Assistant Manager of Agricultural Stations on Rs. 35-2½-75 on probation, and is posted to the Central Farm, Coimbatore, for cattle work; vice K. R. Harihara Ayyar reverted to the Civil Veterinary Department.

M. R. Ry., S. Sundararaman, M. A., Assistant in Mycology, is granted 6 days' extension of privilege leave, in continuation of the one month's leave already granted to him from 28th April 1916.

The following appointments and postings of Assistant Managers of Agricultural Stations are ordered.

They will all start in the Lower Division on the grade of Rs. 35-2½-75.

1. K. S. Sankaran Pillai to be Assistant Manager of Agricultural Stations on probation with effect from 1st June 1916 the date of his joining the Department and to proceed from the Central Farm to Koilpatti Agricultural Station on the return of Assistant Manager M. R. Ry., V. S. Narayanaswami Ayyar from leave.
2. A. Gopalan Nayar L. Ag., to be Assistant Manager of Agricultural Stations on probation Taliparamba Agricultural Station.
3. L. Narasimhachari L. Ag., to be Assistant Manager of Agricultural Stations on probation, Palur Agricultural Station.
4. A. Gopalakrishnayya L. Ag., to be Assistant Manager of Agricultural Stations on probation, Samalkota Agricultural Station.
5. G. Sitarama Sastri to be Assistant Manager of Agricultural stations on probation, Sirvel Agricultural Station.
6. K. Govinda Nambiar to be Sub-Pro Tem Assistant Manager of Agricultural Stations, Taliparamba Agricultural Station.—*vice* M. R. Ry., C. V. Seshachari S. P. T. in the upper Division.
7. A. Venkoba Achar to be Sub-Pro Tem Assistant Manager of Agricultural Stations, Hagari Agricultural Station *vice* M. R. Ry., M. K. Nambiar S. P. T. in the upper Division.
8. S. Viravarada Raju to act as Assistant Manager of Agricultural Stations, Manganallur Agricultural Station.

Assistant Manager Bhairy Siva Rao is transferred on relief by No. 7, to be Assistant Agricultural Demonstrator, Godavari District for groundnut propaganda work.

Assistant Agricultural Demonstrator N. Raman attached to the Virudupatti circle is granted one month's privilege leave from the date of availing himself of it.

K. P. Sundara Ayyar L. Ag. Assistant Agricultural Demonstrator, Kadambur Circle, is granted 3 months' privilege leave from date of relief.