joint loan from the District Bank about Rs. 5000 in a year for working expenses. A ton of bones costs about Rs. 50 in the Bombay Presidency. In the Tanjore District, bones can be procured at a very favourable rate at Rs. 40 a ton. For 100 tons about Rs. 4000 may be required. A 5 horse power oil engine would give one ton of bone dust (3/16") costing about Rs. 80 a ton in a working day of $8\frac{1}{2}$ hours. So there is a sheer profit of Rs. 30 per ton in making bone dust. Deducting expenses for crude oil, cylinder oil, shafting oil, driver's pay, boy's pay, wear and tear and interest on the outlay, we can get a net profit of Rs. 20 per ton of bone dust produced.

The Department of Industries would help as regards installations. Further there are now about 129 oil engine installations in the Tanjore District of which only 9 are pumping plants and the rest in industries (milling paddy). These installations will be without work during rainy season and owing to competition many are without any proper work. These can be utilised for crushing bones into bone dust. Only disintigrators costing about Rs. 300 should be attached to the oil engines. The oil-engine owners may derive profit if they determine to work in this new line. Not only will they be profited, but they will also benefit the ryots by supplying bone dust manure to the Tanjore wet lands which are now almost deficient in phosphates; 1 to 2 cwts may be necessary for an acre.

Notes.

The friends of Mr. K. Chinnaswami Pillai, Dip. Agric., will be glad to read the following account of him which we have taken from the Report of the Ceylon Agricultural society for 1914-15:—

"Mr. K. Chinnaswami Pillai who was seconded for duty as Foreman of the Dry Zone Experiment Station, Anuradhapura, reverted to his substantive post as Agricultural Instructor, Batticaloa, on 1st February 1915. Mr. Chinnaswami Pillai's training and experience in South India enabled him to put in some

excellent work in the laying down of a series of dry-land crops at the Experiment Station, and should stand him in good stead in the district in which he is now serving where the climatic conditions approximate closely to those of South India. Already his knowledge and advice as to agricultural practice have come to be appreciated and sought after, and some interesting schemes affecting crops and cattle are likely to be launched with his assistance."

The Pastoral Review recommends that if a few handfuls of sulphur be rubbed over the bags in which grain is stored, rats and mice will not touch them. K. C. J. (From Tropical Agriculturist.)

Mango twigs occasionally wilt away in the manner neem twigs are said to wilt in Mr. Y. Ramachandra Rao's note in the August issue of this journal. In the Pithapuram Estate Farm the writer observed in about January last year on some young mango trees almost every young twig thus affected. Some specimens were also forwarded to the Mycologist under the impression that the wilting might be due to a fungus, but no information about the cause of the disease was received till the middle of June 1914 when the writer left the place. The wilting has not so far been seen on any other tree. G. J.

Tillering of cereals, says Mr. Seeley of Tunbridge Wells, is largely the result of opportunity. The plant with a strong root hold and a fair length of stem underground, would branch more freely than that which germinated near the surface. Deep sowing of cereal seeds is, however, prejudicial to the healthy germination and robust growth of young plants and excludes the sprouting plants longer from sunlight till they come out of the thicker layer of soil. To reconcile the conditions that stimulate germination and tillering he advocates the use of a machine invented by him known as the 'machanical tillerer' the principle of which was that it pushed

the earth close to the roots of cereals sown in drills at reqnired intervals. (Extract from The Times.) K. U. K. M.

Potash from *Prickly Pear* :—In the course of operations for the destruction of prickly pear on a block of 10,000 acres of infested land in Queensland, it was noticed that the ash obtained by burning 5 acres of prickly pear amounted to half a ton of 80% Potassium carbonate. Seeing that the material was valued at £ 22,a ton a year ago in America and has now, owing to the War and the consequent shutting up of the Stassfurt mines, risen in value to £ 90, it was thought worth while to clear infested land from prickly pear which it would not pay to touch otherwise, as the recovery of the potash would pay for the clearing. Prickly Pear ash contains 15% Potash.—M. R. R. (From the Chemical News).

Sugar chemically changed into Soap :—" We hear of extensive investigations that are being conducted to use sugar as a substitute for fats. . . . . Sugar has potent elements of strength that can enter into the fabric of the Soap— . . . Large laundries have asserted that there were a number of advantages that had accrued from the use of sugar in soap that would guarantee a welcome to such soaps. Fine and delicate silk fabrics have been washed and the woof and warp of such garments have not deteriorated nor been affected. The colours also have not been affected but on the contrary have been enlivened. Then this soap also floats and can be used with salt water. This is of great significance to all engaged in maritime commerce.—K. K. R. (" Lousiana Planter Vol. IV.) "

The Agricultural Department is responsible for bringing about a large reduction in the seed-rate of paddy in the villages near the Central Farm, Coimbatore. The usual seed-rate in the Chithrachavadi villages 4 years ago was a

Selagai (30 Vallams) or 60 Madras measures per acre. Year by year, the seed-rate has been reduced at the instance of the Agricultural Department and in the current year, over 200 acres are transplanted with a seed-rate of 10 vallams or 20 M. M. per acre. It is likely that the seed-rate will still be reduced in future after this year's experience. In the Telungapalayam village which is close to our wet land area of the Central Farm, the ryots in over 300 acres have raised dry seedbeds of paddy and reduced the seed-rates. A quantity of 5 to 7 vellams or 10 to 14 M. M. per acre is now used where formerly a much larger seed-rate was adopted. Thus the ryots of the adjoining villages of the Central Farm have been approached and successfully made to reduce the seed-rate of paddy. W. R.

It may not be generally known that Sugarcane contains in its Vascular bundles some quantity of soil water. When cane is crushed, this water is expelled and can be collected in drops at the other end of the cane. This water is almost tasteless. The average composition of this water obtained from some canes grown on Cane Breeding Station, Coimbatore is given below :—

Sucrose	...	·8 to 1·3%
Glucose	...	·03 to ·04%
Total Ash in 100 C. C. of water	...	·095 gm.
*Ash Soluble in hot water ...	...	·061 gm.
†Ash Insoluble in hot water ...	...	·034 gm.
Chlorine calculated as sodium chloride	...	·037.
Lime	...	trace.
So_3 calculated as Sodium Sulphate	...	·013.
Potash	...	·003.

* In Ash Soluble in hot water.

†Ash Insoluble in hot water was digested in HCL. and filtered.

Found qualitatively a fairly large quantity of Lime and some P_2O_5. (K. K. R.)

Estate Notes.

Students of Class III were taken on a short agricultural excursion in the South Canara and the Malabar Districts by the Assistant Principal from the 1st to 14th instant.

Students of Class II had a short tour from 18th to 22nd in the Salem District with the Principal and the Ag. Chief Assistant.

At the conversazione held in the officer's club on 6th inst. Mr. S. Sundararaman M. A., spoke about "Rubber-cultivation" in Travancore and Cochin. In the course of his talk, the methods of cultivation, the process of extracting and collecting rubber and the preparation of rubber for market were some of the points touched upon. The model illustrating the tapping of rubber trees and the chalk drawing prepared for the purpose were very instructive.

Another conversazione was held on the 20th instant when Mr. C. N. Krishnaswami Aiyar M. A. L. T., of Coimbatore, spoke on the 'Beauties of the Ramayana.' In the course of which he drew parallels between ancient Hindu and Greek authors in which, he believes, that there is a vast field for future students to work. He also paid a great tribute to ancient Hindu authors as students of human nature substantiating his statement with quotations from the Valmeeki Ramayana, the subject of the evening.

On the 2nd instant there was a hockey match with the Kumbakonam College team, played in our grounds. The A. C. & R. I. team won the match by 5 goals to 1. The first blood was drawn

by the A. C. & R. I. team by Mr. R. C. Wood the central forward within 10 minutes of the beginning of the play who put in another goal more within the first half time. The other three goals were put in one each by students Onkaram, Dharmalinga Mudaliar and Rangasami Pillai—(Games Captain). The Kumbakonam team, however, defended the goals very efficiently in as much as the twists made by the goal-keeper's stick warded off a few strong shots.

On the 11th instant a foot-ball match was played with the Stanes High School team in our grounds. It ended in 3 goals to our credit against one for the other team. Student Venkatachelam of Class II was mainly responsible for the defence; but for him Stanes could have had a happier day. The return match was played in their grounds on the 19th, with 6 goals to their credit against 2 of ours. Samual Nallathambi of Class I and Narasimha Chari of Class III exhibited themselves as clever forward players and our defence was very weak owing to the absence of Class II students in camp.

On the 26th of this month a hockey match was played with the Forest College team in our grounds. The play commenced very well. Our team had commenced the offensive in the first half when a rain set in and the match had to be brought to an end. It was declared draw with one goal to the credit of the Forest College team against two of ours.

The Students' Club is entirely self supporting, and depends for its funds on the subscriptions of the students themselves and other playing members, and the donations of well-wishers. Donations will be thankfully received by the Secretary and will be acknowledged in the pages of this Journal.

Proposals are on foot to start a Students' Library and the matter is being investigated by a Committee of Students. It is hoped to get the assistance of the Government in the erection of a Combined Reading Room and Library. We shall make our needs known to our many friends and well wishers when the scheme is floated.

Departmental Notes.

Appointments, etc.;—Mr. C. Madiah L. Ag., Assistant Farm Manager is posted to Koilpatti on his return from Newington (Court of Wards).

Mr. S. Pranathartiharan L. Ag., who is acting at present vice No. 1 will, on the latter's return to the Department, act for Assistant Farm Manager V. S. Subramania Sastri, Dip. Agri., on combined leave.