

lending and circulating library. Although the library at the college is excellent, red-tapism does not permit its being as useful as it might be. Besides, the library would be of immense value to many of the mofussil non-officer members who never can have access to the college library. These are only a few suggestions out of many that strike one. But they may be too ambitious for our present purposes. Money is sure to come provided we have a definite and useful programme. With the Government and the landed aristocracy on either side of us, who can deter us from marching onward on the path of progress unless it be our own pessimism?

Yours &c.,
A member.

Notes.

Nutrition of Proteids:—The view almost universally held until now, with regard to the nutrition of proteids is that food-proteids like the gluten of wheat are acted upon by the digestive juices in the alimentary canal and converted into soluble peptones which are then absorbed by the blood vessels and converted into body proteids like the myosin of the muscle. In a lecture delivered before the Chemical society a few months ago, Professor F. G. Hopkins, Biochemist, states that food-proteids are completely broken up in the intestines into about 18 simple amino-acids of definitely known composition, that these amides are absorbed in circulation and carried to the tissues which have the power of synthesising suitable body-proteids. That peptones are not found in blood vessels, that peptones injected into the system cause poisonous symptoms in some cases and total excretion is as such in the urine in all cases and that a number of amide bodies have been found to be present in the blood, these form strong presumptive evidence in favour of Professor Hopkins's views. His conclusions, however, have been derived from carefully conducted experiments on live rats, these animals having been found to be

the best adapted for various reasons. The rats were fed on artificially prepared mixtures of amides, from some of which a few of the amides were left out. A few typical amides seem to be essential for growth, as their withdrawal causes death; while others are not quite essential as the same are synthesised in the system of the animal. Professor Hopkins states that the supply of diverse amino-acids induces the construction of new tissues in growing animals and repair of waste tissues in adults; in other words, that there is a selective condensation of the various simple compounds—amino-acids—into proteid complexes of more or less definite structure.

To those who are conversant with the analysis of food stuffs, the question suggests itself:—"If amino-acids are the chief source of proteid supply, is there any need to distinguish between true albuminoids and amides in food stuffs and to characterise the former as more valuable than the latter in animal nutrition?" This aspect of the question must be specially interesting to all those who are practically engaged in the feeding of animals.

(M. R. R.) *From the Journal of the Chemical Society.*

Rice Protein :—In a recent bulletin Mr. Sen states that the protein of rice more nearly resembles the majority of the proteins of animal tissues than do the proteins of maize and wheat. This is an interesting information and explains the fact that rice, in spite of its low protein content, furnishes food for more human beings than any other cereal. (K. K. Rao.)

Anaikombu in Paddy :—The readers of this Journal may perhaps remember about the notes which appeared on this subject in 1915. Since then some further light has been thrown on this obscure disease through observations made at the Research Institute Coimbatore.

The eggs of the fly have been at last discovered. They are laid about the region of the ligules in young plants. The young

maggots hatch out in 3 days, creep down the stem between the leafsheaths, and seek out the growing points of the apical or the side buds. They feed on the tender nutritious tissues of the buds and turn into pupae in the hollow chamber thus formed. The chamber now elongates and forms the "*Anaikombu*" or silver-shoot.

It has also been found that this formation is not confined to paddy alone but is common on various wild grasses. 3 of the common grasses at the wetlands at Coimbatore show this kind of malformation. Several other grasses showing similar silver shoots have been found in Bellary, Kurnool and Godavari districts. Further investigation may show that this phenomenon is widespread among grasses in the presidency.

At first it was thought that the grasses in which these formations were noted would prove to be the host plants of the paddy gallfly (or *Anaikombu*). Comparison of the flies bred out of the 3 grasses at Coimbatore showed that all were different species which confined their attention only to particular grasses. Recently at Samalkota, a grass (*Panicum stagninum*—*Bontha ooda* in Telugu) has been found the abundant galls which seem to be caused by a fly that appears to be identical with the paddy one. Y. R. Rao.

Henbane :—The recent dearth of the alkaloid atropine and its congeners, hyoscyamine and hyoscyne (*scopolamine*) and the high prices commanded by these solanaceous alkaloids, which are largely used in ophthalmic medicine, is due to their manufacture having been carried on in Germany. Some years ago a solanaceous plant (*Hyoscyamus muticus*), closely allied to common henbane and growing wild in Egypt, proved on investigation at the Imperial Institute to be a most valuable source of these alkaloids, and since the outbreak of war the Imperial Institute has arranged for large quantities to be sent from Egypt to this country, where it is now

being employed by manufacturers. Before the war, Germany had taken nearly the whole of the supply from Egypt.

The same plant grows in India, but investigations at the Institute have shown that the wild plant from Northern India apparently may contain less alkaloid than that from Egypt. In view of the demand for the drug, which is not likely to be met from Egypt alone, the question as regards the Indian plant deserves further investigation.

The same is true of the related plant, *Datura Metel*, which on examination at the Imperial Institute has shown to contain the valuable alkaloid *scopolamine*, though with Indian samples in smaller amount than is usual in the plant grown in other countries.

On the other hand, *Datura Stramonium* from India has furnished quite satisfactory amounts of alkaloid, and if procurable in quantity would be of value.

The question of the production in India of solanaceous plants is one which is worth further consideration. For commercial production the collection of wild plants could not be depended on, and cultivation would have to be undertaken. This would not be difficult, as the plants grow readily especially in Northern India.

Thymol:—Thymol a solid substance derived from the volatile oils of certain plants, including Thyme. It has been extensively used as an antiseptic during recent years and manufactured almost exclusively in Germany. The best commercial source of thymol is the volatile oil of Ajowan seed (*Carum copticum*), a kind of caraway, which is abundant in India. Before the war almost the whole of the exports of Ajowan seed from India went to Germany for the manufacture of thymol. As a result of the war there was at once a serious shortage of thymol in this country, and the price rapidly rose to eight times its usual level. There was, however, no reason why the manufacture of thymol should not be under-

taken in the United Kingdom from the Indian ajowan seed. The Imperial Institute accordingly drew the attention of British manufacturers to the subject, and offered to put them in touch with Indian exporters of the seed, which was virtually unknown to manufacturers. In response to this offer a large number of enquiries were received at the Imperial Institute from firms in this country, some of whom obtained consignment of Ajowan seed from India for the purpose of starting the manufacture of thymol, which is now definitely established.

Games.

1. *Hockey Tournaments*:—The above tournament which had only eight entries, all town teams, opened in the first week of this month with the match between the Agricultural College and the Coimbatore College, on the Recruits grounds. The match witnessed a very one-sided contest, the Agriculturists easily winning the match by the wide margin of six goals to one.

The second match was played between the Recruits and our team the same grounds and it was a one sided game. From the very start, the Agriculturists led by Mr. Parnell carried the ball very well and finished in successful aims. The Recruits never seriously threatened our goal and once or twice they managed to come near, only to be beaten back by our defence. As it was getting dark, the whistle blew and the match ended in a win for the Agriculturists by 11 goals to nil.

The finals was played between our team and the Stanes' High School on the Recruits grounds. A tough fight which was then expected had attracted a fairly good number of spectators. Soon after the commencement, the Agriculturists took up the ball and for about 10 minutes kept up a close pressure against the other goal. The pressure was utilised in scoring a goal, amidst loud cheers, by Rangaswamy of our team. Afterwards the pressure was

relieved the Stanes took up the attack and scored a goal. They pulled up for the rest of the time in scoring two more goals before the second half. On crossing over, the Stanes asserted their superiority. They attacked with great vigour which resulted in 3 more goals for them. When the whistle sounded, the Stanes were left winners of the cup by a wide margin of 6 goals to 1.

2. *Cricket match*:—A friendly match was played between the two teams representing the Agricultural College and the Forest College on the Agricultural College grounds. The match ended in a draw.

3. *Hockey*:—Two friendly matches at Hockey were played on our grounds between the Reserve police and our team. The first match ended in a win for the Reserve by 6 goals to 1. The second match was better contested and it ended in a win for A. C. R. I. by 4 to 3.

Departmental Notes.

1. Mr. Hugh Charles Sampson, B. Sc., Deputy Director of Agriculture, Madras, on return from leave, to be in charge of V and VII circles, with headquarters at Trichinopoly.

2. Mr. Roger Thomas, B. Sc., on relief by No. 1 to be Deputy Director of Agriculture, VI circle Madura, Ramnad and Tinnevely with headquarters at Madura.

3. The following appointments of clerks are ordered:—

1. U. V. Venkatasubayya, 3rd clerk Principal's office, Coimbatore to be Head clerk VI Circle Madura, to join forthwith.

2. T. K. Subramania Ayyar, 2nd clerk Deputy Director's office V and VII circles and acting accountant in the same office, to be accountant, VI circle.

3. M. D. Subbaratnam, Typist Assistant Director of Agriculture, Southern circle's office to act as Typist, VI circle, while the Assistant Director of Agriculture Southern Circle is on leave.

4. K. S. Subramaniya Ayyar, Head clerk, Government Agricultural chemist's office and sub-protem 1st library clerk to be 3rd clerk, Principal's office (vice No. 1)

5. M. R. Venkatarama Ayyar, Head clerk Government Mycologist's office to be 1st Library clerk sub-protem (vice No. 4).

6. T. Seshagiri Rao, 2nd clerk Deputy Director's office 1, 11 and 111 circles Bellary, and acting head clerk Government Economic Botanist's office to be head-clerk, Government Mycologist's office (sub-protiem vice No. 5).

7. N. Kunhiraman Nair, Head clerk Deputy Director's office 1, 11 and 111 circles, Bellary to be Head clerk, Deputy Director's office V and VII circles, Trichinopoly (vice No. 8).

8. Ramaswamy, Head clerk, Deputy Director's office, V and VII circles, Trichinopoly from 1st November 1916 to be Head clerk Deputy Director's office, 1, 11 and 111 circles, Bellary (vice No. 7).

9. K. Venkata Rao, on combined leave to continue to be Accountant, Deputy Director's office V and VII circles, Trichinopoly from 1st November 1916.

10. S. Sankaran Pillai, Head clerk, Assistant Director of Agriculture Southern Circle's office, Trichinopoly, to act as accountant in the office of the Deputy Director of Agriculture V and VII circles (vice No. 9) while the Assistant Director of Agriculture, Southern Circles is on leave.

11. V. Babugopal, Typist and acting 2nd clerk Deputy Director's office V and VII circles, Trichinopoly, to revert as Typist in the same office on the abolition of the 2nd clerk's post there.

12. The privilege leave for 1 month granted to M. R. Ry., T. R. Ranganath, Assistant in Mycology from 3rd October 1916 is extended by 15 days.

Mr. T. V. Subramanyam, B. A. is appointed temporary Assistant in Entomology on Rs. 75, 75, 75-5-125 vice M. R. Ry., Y Ramachandra Rao on deputation to Pusa.

The following transfers are made in the interests of the public service :—

1. M. R. Ry., K. P. Sundara Ayyar, Farm Manager from Manganullur to Taliparamba to be in charge of Taliparamba Farm.

2. K. T. Bhandary, Assistant Farm Manager, on relief by No. 1 from Taliparamba Farm to District work in South Canara with headquarters at Mangalore.

3. C. S. Madiah, Assistant Farm Manager, to be in charge of the Coconut stations with headquarters at Kasaragod.

4. K. Govinda Nambiar, Assistant Farm Manager to remain as Assistant Farm Manager, Coconut stations, headquarters at Nileshwar.

5. M. Raman, Assistant Farm Manager from Kasaragod, to be Assistant Farm Manager Taliparamba Farm.

6. M. U. Vellodi, Assistant Agricultural Demonstrator, is posted to District work, South Malabar, headquarters Pulghat.

7. K.M. Jacob, Assistant Farm Manager, on relief by No. 6, is transferred to Samalkota for farm training.

8. D. Panakala Rao, Assistant Farm Manager, Palur, is granted sick leave on medical certificate for 3 months and 24 days from 7th September 1916. This cancels the order granting him privilege leave for 1 month and 9 days from 7th September 1916 in this office.