

Don't put vinegar in metal dishes.

Don't boil meat at a gallop. Boil five minutes, then cook it at a temperature of 160 deg. Fahr.

Don't make bread into large loaves. The centre is apt to be underdone, and spoil easily.

Don't keep custards in an open vessel. They are liable to become poisonous.

Journ. Jamaica Agri. Society, Dec. 22—Jan. 23.

Correspondence.

May I request friends or any of the readers of the Journal to let me have, loose or bound, the following numbers of the Journal? As one of the oldest members of the Union and, for some years, its General Secretary or Editor, I wish to make up a complete set for reference. Price and Postage will be paid by me.

1911—Yellow year book.

1913—Volume I (whole).

1915— „ III (whole).

1916— „ IV (whole).

1918— „ VI (February only).

5th May 1923.

M. R. Ramaswami Sivan,
Agricultural College, Coimbatore.

Students' Corner.

Annual Report of the Students' Club, Agricultural College, Coimbatore, for the year 1922-23.

The working Committee of the Students' Club begs to submit the following report for the year 1922-23.

Strength. There were 119 members on the rolls this year as against 101 of last year. The increase in strength was due to the increase in the number of classes consequent on the affiliation of our College to the University of Madras.

Meetings. Six meetings were held during the year of which two were General Body Meetings; there were besides four Committee Meetings to transact the business of the Club. Some radical changes were brought about in the rules of the Club which brought into existence Team Captains for all the games instead of a single Games Captain as hitherto.

Activities. (a) *Literary:* Plague scare was responsible for retarding our activities during the second term, but we more than made up by a particularly busy third term when there were as many as 8 meetings. There were a series of lectures on child Training by Professor Kulkarni of the Victoria College, Indore. A feature of most of this year's meetings was the use of Magic Lantern slides to illustrate the lectures which were all well attended and appreciated.

Subject.	Lecturer.	President.
<i>20th October, 1922.</i>		
1. Sugarcane problem in India.	Rao Sahab T. S. Venkataraman.	Mr. F. R. Parnell.
<i>5th December, 1922.</i>		
2. Chemistry in relation to Agriculture.	Dr. R. V. Norris.	Mr. G. R. Hilson.
<i>22nd February, 1923.</i>		
3. Rothamsted Experiments.	Rao Sahab M. R. Ramaswami Sivan.	Mr. F. R. Parnell.
<i>26th February, 1923.</i>		
4. Agricultural Experiments.	Mr. F. R. Parnell.	Dr. R. V. Norris.
<i>4th March, 1923.</i>		
5. Impressions of the Ceded Districts.	M. Balakrishnan.	Mr. G. N. Rangaswamy Ayyangar.
<i>9th March 1923.</i>		
6. Cyanamide Experiments.	Mr. B. Viswanath.	Rao Sahab M. R. Ramaswamy Sivan.
<i>14th March, 1923.</i>		
7. Plantain cultivation in South India.	Mr. D. Balakrishnamurthi.	Rao Sahab T. S. Venkataraman.
<i>17th March, 1923.</i>		
8. Cotton improvements.	Mr. G. R. Hilson.	Mr. D. Balakrishnamurthi.

(b) *Games*. Now passing on to the other side of our activities—the athletic side—we had an equally interesting year. (1) *Cricket*. We had bad luck at Cricket this year. Although of the ten matches played we lost only one, it was rather unfortunate that the one we lost—due mainly to the absence of Mr. Anstead from our midst—happened to be the deciding match of the tournament. (2) *Hockey*. Similar misfortune greeted us at Hockey, where after winning 'the Stanes' in the first round we lost to our old rivals and neighbours the Foresters. (3) *Football*. We are glad, however, that we have been able to maintain our record at Football and keep the Cup which we won even last year.

The Cecil Wood Tennis Tournament attracted nearly as many entries as last year and the standard of game exhibited was of a very high order. For the third time Student P. Sudarsanam won the Cup. We had an interesting and exciting Final match to witness when student Ratnavelu the runner-up put up a decent fight. Another interesting encounter was the semi-final between Ratnavelu and C. S. Anantanarayana Ayyar, a match which had to be played twice before a decision could be arrived at.

The inter-class Tournament could not be played to a finish this year since most matches ended in draws.

The following are awarded colours for the games noted against their names:—

1. N. Pattathan	...	Cricket.
2. T. Rangabrahma Rao	...	Do.
3. C. V. Bhasyam	...	Hockey.
4. M. Ratnavelu	...	Hockey & Football.
5. R. Balasubramaniam	...	Hockey.
6. C. V. Thangavelu	...	Football.
7. Rajam Ayyangar	...	Do.
8. S. V. Duraiswamy	...	Do.
9. P. Sudarsanam	...	Do.

Our thanks:—We beg to offer our heartfelt thanks to our President F. R. Parnell Esquire, M. A. to our donors and to all those

gentlemen who lectured and presided at our meetings and to Dr. Nageswami, Messrs. Chitambar, Shiva Rao, U. Vittal Rao, and K. T. Bhambhani. We also thank Rao Sahib M. R. Ramaswami Sivan, Messrs. T. S. Srinivasan and K. Krishnamurti Rao, Rao Sahib V. Ramaswami Rao and Mr. C. Tadulinga Mudaliar for their kind and very sympathetic help in several ways.

Our thanks are specially due to Mrs. Parnell for kindly giving away the prizes.

We hope that the above well-wishers of our Club will continue to evince the same keen interest in future and be a source of guidance and inspiration in the affairs of our Club.

Conclusion. In conclusion we believe that we had quite a successful and a busy year notwithstanding the prevalence of plague. It is our earnest wish that the Club will continue to infuse the same spirit of sportsmanliness and cordiality among its members as hitherto and we close with the firm belief that under the inspiring guidance of our President and the staff, the Club will be ever increasing and widening its activities. We wish the Club better and continued success in the coming years.

The outgoing Students. You, we are sure, will carry with you pleasant recollections of the College and Club and it is our earnest desire that you should always have a niche in the corner of your heart for the Maidan and the small building in its corner where you have spent many a useful and joyous evening.

V. Suryanarayana,
Secretary.

Applicants for B. Sc. Ag. Course.

Candidates for admission to the B. Sc. Degree Course will be required to appear for an interview at one of the following centres on the dates noted against each:—

Centre.	Place at which candidates should assemble.	Date.
Coimbatore.	Agricultural College.	June 19—20.
Madras.	Office of the Director of Agriculture Madras.	June 21—22.
Samalkot.	Agricultural Station.	June 23—24.

Candidates should mention in their application forms the centre at which they elect to appear and send them to the Principal, Agricultural College, Coimbatore, so as to reach him on or before the 15th June 1923.

[It is believed that the Minister for Development will be present at the time of selection of students for the B. Sc. Ag. decree—*Editor.*]

Applicants for Certificate Course.

Candidates for admission into the Certificate Course should present themselves for Examination at one of the centres noted below on the dates specified.

2. Intimation of their intention to appear should be sent so as to reach the officer noted at least 2 days before the date of the examination.

3. Formal application with necessary certificates should be posted so as to reach the Principal, Agricultural College, Lawley Road, P. O., Coimbatore by May 31st 1923 or may be handed over personally at the examination centre.

Place of Examination.	Date and time.	Officer to whom intimation should be sent.
	June.	
Agricultural College Coimbatore.	} 1st—9 A. M.	Principal.
Govt. Agricultural Station, Anakapalli, Vizagapatam District.		
Office of the Dy. Director of Agriculture, III Circle, Bellary.	9th—9 A. M.	Deputy Director of Agriculture.

College Vacation :

On the presentation of certificates to the Short Course Students on the 7th April, the College closed for the Summer Recess, and all students, except B. Sc. III who sat for Part II Examinations, left Coimbatore for their homes. The College will reopen on the 15th June.

B. Sc. Ag.*Part II.***BOTANY (I).**

Monday, 9th April 1923—7 to 10 A. M.

[Only Five questions are to be answered. You are expected to give examples and sketches whenever necessary.]

I. Give a botanical account of the various parts of a paddy plant. Mention any variations in the floral parts.

II. Describe fully the floral parts of *Arachis hypogaea* and trace the development of its fruit.

III. Write an essay on the process of grafting, pointing out how it differs from propagation by seeds.

IV. Explain clearly how plant breeders have taken advantage of Mendelism.

V. Describe the appearance of plants in F_1 and F_2 generations when crossing is done between *Datura* plants as shown below:—
Purple stemmed and smooth fruit crossed with green stem and spiny fruit, the characters purple and spines being dominant.

VI. Describe the different kinds of pruning of plants, explaining the purpose in every case.

B.Sc. Ag.*Part. II.***BOTANY (II).**

Monday, 9th April 1923—1 to 4 P. M.

[Only Five questions are to be answered. You are expected to give examples and sketches whenever necessary.]

I. Explain clearly, choosing local examples, how weeds establish themselves in arable land.

II. How are plant organs affected by variations in the amount of available water?

III. Describe the methods adopted in rearing plants by water or sand culture. What conclusions can be drawn from these experiments?

IV. Give an account of starch formation in plants.

V. What characteristics of plants have to be considered in selecting them for rotation or mixtures of crops? State your reasons?

VI. What methods are generally adopted in the improvement of crop plants?

B.Sc. Ag.

Part II.

CHEMISTRY (I).

Thursday, 10th April 1923—7 to 10 A. M.

[Only Six questions are to be answered. All candidates must attempt question VI.]

I. Define the term manure and state clearly how their employment benefits the soil and crop. From this point of view how would you classify manures? Give concrete examples.

II. What are the chief phosphatic manures employed in agriculture? Describe their chief chemical and physical properties and contrast the modes of action of superphosphate, basic super, bone meal and basic slag.

III. Give a detailed account of the changes involved in the making and storing of farmyard manure. Why is it advantageous to employ well rotted manure in preference to fresh manure?

IV. Write an essay on the chemical changes occurring during germination and growth of the crop.

V. What do you understand by the terms nitrification and denitrification? Describe in detail the chemical and biological changes involved.

VI. Compare the conditions existing in a paddy soil with those of a dry soil, and discuss the effect of these different conditions on the soil and manure.

VII. What are enzymes? Give an account of their general characteristics and properties.

VIII. Explain clearly the manner in which the retention of water by soils is affected by differences in their physical constitution.

B. Sc. Ag.

Part II.

CHEMISTRY (II).

Thursday, 10th April 1923—1 to 4 p. m.

[Only Six questions are to be answered of which one must be No. VIII].

I. Define the term nutrient when applied to feeding stuffs and fodders. Review briefly the different classes of nutrients found in these substances and state how you would estimate them.

II. What is meant by the term Nutritive Ratio, Starch Equivalent, Digestion Coefficient and Calorific Value? How would you employ these values for the classification and valuation of different types of feeding stuffs and fodders?

III. Discuss the chemical, physical, and biological changes involved during the process of digestion of food by farm animals.

IV. Describe the methods you would employ in order to determine the digestibility of a fodder.

V. What is meant by the term feeding standard? How would you employ such a standard for the calculation of a mixed feed suitable for working oxen?

VI. Give a brief account of the composition and properties of the chief constituents of milk. Describe the methods you would adopt for the estimation of the more important ones.

VII. What is the composition of the normal milk from Indian cows and buffaloes? What variations would you expect to observe between the milks obtained from individual animals? How would you detect the several forms of adulteration to which milk is subjected?

VIII. Describe in detail the chemical, physical, and biological changes involved in the production of butter and cheese.

B.Sc. Ag.*Part II.*

AGRICULTURE (I).

Wednesday, 11th April 1923—7 to 10 A. M.

[Only Six questions are to be answered. All candidates must attempt questions I and II.]

I. A plant requires from the soil a proper supply of water and nutrient salts. Need the soil fulfil any other conditions to guarantee good growth? Discuss your answer.

II. Criticise cattle breeding as conducted in your home village from the points of view of:—

- (a) producing good cattle,
- (b) a business undertaking.

III. Would you expect an oil-cake which is the best of several as a food stuff to yield the best dung manure? Explain your answer.

IV. What do you consider to be the commonest defects of black cotton soil?

V. What is a ledger? Explain the term "Depreciation" and how would you account for it in your farm books?

VI. You are a landowner possessing 200 acres of dry crop land. The only business you are in the habit of doing in connection with your land is to arrange for its lease. Discuss the possibility of improving the property of your tenants and of increasing your own income from your land.

VII. Describe with diagram the action of a cream separator and the principles on which it works. What would be the result of passing separated milk through the separator?

VIII. Describe two methods of laying out fields for watering garden crops. Discuss their relative merits.

B.Sc. Ag.*Part II.*

AGRICULTURE (I).

Wednesday, 11th April 1923—7 to 10 A. M.

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VII. Describe with diagram the action of a cream separator and the principles on which it works. What would be the result of passing separated milk through the separator?

VIII. Describe two methods of laying out fields for watering garden crops. Discuss their relative merits.

B.Sc. Ag.*Part II.***AGRICULTURE (II).**

Wednesday, 11th April 1923—I to 4 p. m.

[Only Six questions to be answered. All candidates must attempt questions I and II.]

I. What factors determine the quantity of seed used per acre in putting in a crop? Give illustrations.

II. In a red soil tract with an annual rainfall of 20 inches most of which falls during the S. W. monsoon period, the cost of irrigating an acre of ragi from a well with a double bullock whote is Rs. 25. What water rate should the cultivator of this tract be prepared to pay for water from a Government channel closed only in May for

- (1) Paddy.
- (2) Garden crops.
- (3) Irrigated dry crops.

Give reasons for your answer and in the case of (2) and (3) name the crops which could be grown. The soil is a medium loam.

III. What are the points of a good dairy cow? What treatment should she be given before, during and after calving?

IV. Name ten of the most important pasture plants of this Presidency. Field 26 of the Central Farm has to be laid down to pasture. Select a suitable mixture for the purpose from your list and state how you would do it. How would you manage the pasture after it is established?

V. What is the chief defect of the main systems of Agriculture of this Presidency? Can it be remedied? If not, why? If so, how?

VI. Reproduce the cultivation sheet of a field of Karanganni cotton (drilled). Show how you arrive at the rate charged for a pair of bullocks.

VII. What equipment is required for the following holdings:—

- (1) 20 acres of black cotton soil, unirrigable.
- (2) 15 acres of red garden soil with one well.
- (3) 3 acres of wet land.

What factors determine the amount of equipment required?

Show how they operate in each of these cases.

VIII. A field of paddy was divided into small plots and the produce of each harvested separately. The figures shown below represent the the grain yields of the plots. How many plots must be put down to test whether the application of 1 cwt. of bone meal per acre to the paddy crop is profitable?

Plot yields.

9	8	8	7	8
11	9	8	8	7
9	13	10	8	8
12	10	13	9	11
11	11	10	7	10
7	11	11	8	7
11	12	12	9	7
12	9	11	9	10
10	11	8	10	11
11	13	12	11	12
7	8	11	13	9
9	9	10	10	9
11	13	9	7	9
10	11	11	11	9
11	12	12	7	9
8	10	10	9	11
14	13	11	8	12
12	12	12	13	11
13	10	12	10	13
12	12	10	12	13

B.Sc. Ag.*Part II.***AGRICULTURE (ESSAY.)**

Thursday, 21st April 1923—7 to 10 A. M.

Write an essay on—“*The formation, maintenance and commercial possibilities of a supply of pure cotton seed.*”

B.Sc. Ag.*Part II.***PRACTICAL CHEMISTRY (FIRST PAPER.)**

Monday, 16th April 1923. 3 Hours.

I. The Solution A contains sucrose and a reducing sugar. Identify the latter and estimate the concentration of each carbohydrate in the solution.

II. Genuine milk may be taken to contain not less than 4.2% of fat and 8.80% of solids—not fat. Examine the given sample and report on the extent of adulteration, if any.

B.Sc. Ag.*Part II.***PRACTICAL CHEMISTRY (SECOND PAPER.)**

Monday, 16th April 1923. 3 Hours.

I. Determine the pore space and calculate the specific gravity of the given sample of soil.

II. Determine the percentage of water-soluble phosphoric acid in the manure supplied.

B.Sc. Ag.*Part II.***Practical Examination, in Agriculture.**

The following details of work on the Samalkota Farm on 10th July 1922 are given.

Prepare the D. R. Sheet for the Day.

Proper wages, areas and prices are to be assumed.

F. No.	Men. Boys. Women.
1. Hand watering vegetables ...	0 1 0
2. Hoeing coconut seedlings ...	0 3 0
3. Removing side shoots and dry leaves in plantains ...	4 0 0
4. Weeding paddy seed beds ...	0 0 6
5. Puddling for paddy (second time) $\frac{1}{2}$ pairs.	4 0 0
6. Do. (third time) 3 pairs ...	3 0 0
7. Do. (first time) 2 pairs ...	2 0 0
10. Trimming bunds ...	4 0 0
11. Passing levelling board $\frac{1}{2}$ pair ...	$\frac{1}{2}$ 0 0
12. Passing levelling board and trimming bunds $\frac{1}{2}$ pair ...	5 $\frac{1}{2}$ 0 0
13 to 16. Guiding water ...	1 0 0
17. Transplanting (Rasangi) singles 4" apart	1 0 12
18. Do. (Konamani) do 6" apart	1 0 10
21. Applying castor cake 820 lbs. ...	16 0 16
22. Wrapping canes (second time) fixing bamboos (800) and removing rubbish ...	16 8 0
23. Pulling out paddy seedlings ...	6 0 0
Measuring experimental plots ...	0 2 0
Removing flowering plants on bunds ...	0 0 4
Cleaning irrigation channels ...	4 0 0
Drying and clearing grains ...	0 0 3
Impounding stray cattle ...	0 2 0
Watering flower plants in Rest House compound ...	0 1 0
Stores ...	1 0 0

Watchmen	...	...	3	0	0
Boat	...	...	1	1	0
Looking after cattle	...	...	2	1	0

Sold plantains 352 lbs. @ 6 pies per pound. 64 lbs. daincha seeds; 160 lbs. wild indigo seeds; 1064 lbs. paddy seeds, 2 monsoon ploughs, 3 spare shares, 4 share points were sold. Paid wages Rs. as. ps. to coolies cashed cont bill for Rs. 257-1-0. D. D. I Circle, 3 ryots from Kirlampudi visited the farm.

B.Sc. Ag.

Part II.

PRACTICAL BOTANY I.

Time—Three hours. 1 to 4 P. M. 19-4-23.

1. Describe with necessary sketches A (*Panicum miliaceum*) and B (*Cajanus indicus*). Refer them to their families, giving reasons.
2. Write biological notes on C (*Tragus racemosus*), D (Rootsucker of *Millingtonia hortensis*), E (*Portulaca quadrifida*), F (*Indigofera trita*) and G (*Acacia auriculiformis* fruits).
3. Sort out and identify the seeds in H (Paddy, Chillies, Gingelly, Gogu, Red gram, *Phaseolus mungo*, Tenai, Cholam, Kattu cumbu, Panivaragu and *Phaseolus* sp.)
4. *Viva voce*.

B.Sc. Ag.

Part II.

PRACTICAL BOTANY II.

Time—Three hours. 8 A. M. to 11 A. M. 20-4-23.

1. Cut transverse and longitudinal sections of A (Stem of Cambodia cotton) and leave your preparations for inspection. Explain with sketches the various parts.
2. Demonstrate the nature of the reserve material in B (Castor seed), C (Coconut endosperm) D (Ragi grains) and E (Onion bulbs).
3. Identify the weeds F (*Portulaca portulacastrum*), G (*Arista lochia bracteata*) and H (*Clerodendron trilobularis*) and explain briefly their life-history and the way they multiply.
4. *Viva voce*.