

of ours. But in an important matter such as this, to achieve much it cannot rest entirely with one but all those who have the requisite facilities and opportunities should help the cause. I therefore request you, Sir, coming as you do from the farming class, to exert your influence in making the landed aristocracy take a practical interest in the cattle and lands they possess and endeavour their best to improve them.

The Report of the Managing Committee.

Your Excellency, Ladies & Gentlemen,

The Committee beg to express their sense of deep gratitude to His Excellency Sir K. V. Reddy Naidu Garu for graciously consenting to be in their midst to-day, on this most happy occasion when the Union celebrates the Twenty-fifth year of its existence along with the *Diamond Jubilee* of Agricultural Education in India. The Principal and the Director, have in their speeches referred to the great services rendered by His Excellency to the cause of the agriculturist while he was Minister for Development. The Union most heartily endorses their statements and takes this opportunity to tender its respectful congratulations on his appointment as the Governor of the Madras Presidency. For the Union it is a matter of no small amount of gratification, that one who has been closely associated with Agriculture by tradition and office has been exalted to the highest eminence in the Province. It recalls with pleasure the words uttered by him as President of the Conference in 1923 to the effect that whether as a Minister or member, Agriculture would always be dear to his heart, as he believed that its development was one of the best means of bringing about the uplift of the country. True to his word he has given us a proof of his abiding interest in Agriculture by his presence to-day.

The Minister. To the Minister for Public Works the Honourable Mr. P. T. Rajan whom we venture to claim as one of us, the Committee tender their grateful thanks, not only for consenting to preside over this year's Conference but also for the great interest he has been evincing in the affairs of the Union all these years.

The Madras Agricultural Students' Union. It is appropriate on an occasion like this to give an account of the birth and growth of the Union and recall with gratitude the labours of the early founders of this institution whose devoted attention in laying its solid foundations has enabled successive committees to build the superstructure of which we are rightly proud.

The Union, as such, was founded in the year 1911 when the First Conference under its auspices was held under the distinguished Presidentship of Mr. M. A. Couchman, I. C. S., the first Director of Agriculture of this Province; though an association of Agricultural Students was in existence as early as 1885 at Saidapet, the Union was organised as the result of a resolution passed at an informal meeting on 14th July 1910 and was primarily intended as an organisation to bring together in a common bond of interest the past students of the Saidapet Institution and the students of the Coimbatore Agricultural College. The objects of the Union, as set down in the memorandum were as follows:—

1. To create an *esprit de corps* among its members.
2. To exchange opinions and experiences in matters agricultural and to make a record of the same,
3. To act as far as possible as a bureau for procuring employment of the members of the Union and the objects were sought to be attained by the annual

celebration of the College Day and Conference, the conducting of a Journal and the maintenance of a corrected list of addresses of all the past students.

The credit for founding this institution and nurturing it in its infancy is largely due to the labours of Mr. R. C. Wood and his associates, prominent among whom were Mr. (Rao Bahadur) M. R. Ramaswami Sivan, Mr. (Rao Bahadur) C. Tadulingam, Mr. K. Krishnamurti Rao, the late Mr. D'Silva, the late brothers Rao Bahadur Selvaranga Raju and Dharmaranga Raju and our present Director who joined this band a little later.

Since that time, the Union has had to pass through much difficult times but thanks to the sustained efforts of successive committees it has been able to widen its scope of usefulness, and stand to-day in its adolescence, proud of itself as an organisation which serves not merely as an old boys' association, but as a link between the Department and the public. A brief review of the activities of the Union during these 25 years will not be out of place.

The Union Building. To begin with, the Union had no building of its own. Through the kindness of Mr. Wood, the then Principal, two rooms were placed at its disposal in the College Hostel till the year 1924 when with the aid of contributions from members and patrons, and a grant of Rs. 671 from Government, a small building was constructed in which the Union is now housed.

Conferences. The Union has so far organised 24 annual College Day and Conferences. The Union has always been fortunate in the choice of its Presidents of the Conference and many distinguished officials and non-officials have adorned the Presidential Chair. It has had the privilege of inviting His Excellency Lord Pentland, and His Excellency Lord Goschen while they were Governors to preside over the annual conference in the years 1918 and 1923 respectively.

In these annual Conferences, besides the officers of the Department, a few of the leading non-officials of the Presidency, like the Honourable Mr. Vellingiri Gounder and Rao Bahadur K. S. Venkatrama Ayyar, always took a prominent part, and we would take this opportunity to urge all those who are interested in the progress of Agriculture, to come and attend our Conference, and help us with their suggestions and criticisms.

The Journal. Besides the holding of the annual College Day and Conference, the most important activity of the Union has been the conducting of the Journal. The Journal was first published as a Year Book in 1911, and then as a quarterly till the year 1915 when it was converted into a monthly. The publication of a regular monthly was no easy task. The financial resources of the Union, dependent almost entirely on the voluntary contributions of its members, were strictly limited. And added to this was the absence of a good printing press at Coimbatore. But in spite of all these handicaps the Journal sustained by the enthusiasm of those responsible for its production, managed to hold its own, and after a hard period of struggle has been able to reach a stage when it is more or less able to maintain itself, and its regular publication is no longer a cause of anxiety to the Editorial Board.

The Madras Agricultural Journal, the committee are glad to state, is now recognised all over the world, as an important agricultural publication. It has among its subscribers many Zamindars and other enlightened landowners of the Presidency and the Committee have no doubt the Journal has a great future before it.

1935-36. Coming now to the activities of the Union during the year 1935-36, the Committee, have firstly, to record the melancholy event of the passing away of His Majesty King George V. His death cast a gloom over the entire world and the Union shared with millions of His late Majesty's subjects the great

sorrow, and sent a humble message of condolence to the members of the Royal Family. A meeting of the residents of the College Estate was organised by the Union and other associations, and a resolution expressing our heart-felt sorrow at the demise of the late king, and another expressing our loyalty and allegiance to King Edward VIII were passed.

His Excellency Lord Linlithgow. The Union in its last report expressed the hope that the new Constitution would be worked in the interest of the tiller of the soil who forms the backbone of the country. As if in response to its wish, the appointment of Lord Linlithgow came as a welcome surprise to the members of the Union, whose hearts were gladdened that in the New Viceroy at any rate the poor agriculturist would find a sincere friend and well wisher and one who will safeguard his interests. His Excellency, as President of the Royal Commission, has acquired an intimate knowledge of agricultural conditions in India, and what is more important, with deep insight has understood the psychology of the Indian cultivator, as that excellent little brochure of his 'The Indian Peasant' will show. His Excellency has by his munificent acts set an example, which we are sure, will be emulated by all the leading men of this country in putting the welfare of the agriculturist foremost in their thoughts. The subject of cattle improvement on which His Excellency has set his heart, has at his instance received an impetus, and the Union hopes, that before long his cherished desires will become accomplished facts.

Diamond Jubilee of Agricultural Education. The Union was responsible for the celebration of the Golden Jubilee of Agricultural Education in the year 1926 and encouraged by the fact that the Government helped it with a grant of Rs. 1500 at the time, ventured to draw up an ambitious programme for celebrating the Diamond Jubilee this year in the hope that a similar grant will be forthcoming, but owing to the inability of the Government to come to its aid the Committee had to curtail its original programme to a considerable extent and alter it to suit its financial capacity.

Meetings. Two meetings were held during the year under the auspices of the Union:—

1. Paddy cultivation in Bengal by Mr. K. Banerji, Rice Research Officer, Bengal.
2. Agriculture in Burma by Mr. K. Ramiah, Paddy Specialist, Madras.

The meetings were well attended.

The Journal. The Committee are glad that the Journal was published regularly during the year maintaining the high standard set up in previous years. The Journal has 800 subscribers of whom nearly 200 are non-officials. If all the members of the agricultural Department subscribe to the Journal the Journal will have on its rolls nearly 1000 subscribers, and it will be possible to effect considerable improvement in its present get up. The Committee takes this opportunity to appeal to all those who have hitherto kept aloof to join the Union and thus augment its resources. The Committee would also respectfully request the Government to render a little financial aid which will help us to increase the usefulness of the Journal.

Last Year's Conference. The Twenty-fourth College Day and Conference was held on Friday the 2nd August 1935 under the distinguished Presidentship of the Revenue Member, the Honourable Mr. (Sir) C. A. Souter. The President in his address laid stress on the need for closer contact between the officers of the Revenue and Agricultural Departments. An account of the last College Day and Conference has already been published in our Journal.

Our friends abroad. Three of our members have gone abroad for further studies. They are Mr. K. M. Thomas, Mr. Kochukrishna Pillai and Mr. S. Ramanujam.

The Union wishes them every success. The Union is glad that Mr. C. Ramaswami, Assistant Director of Agriculture, has been chosen as one of the players in the All India Cricket Team visiting England. We wish him good luck.

M. Sc., Degree. Mr. T. Varahalu was awarded the Degree of M. Sc of the Madras University for his thesis on the Chemistry of Jaggery making.

Retirement. During the year under report, Mr. F. H. Butcher and Mr. T. Lakshmana Rao retired from service. In their retirement the Department loses the services of two experienced and able officers.

Titles. To Rao Bahadur Mr. S. Sundararaman our Vice-President, Rao Bahadur Y. Ramachandra Rao and Rao Sahib C. Narayana Ayyar, Mr. F. H. Butcher, O. B. E. the Union tenders its congratulations on the titles conferred on them by the Government in recognition of their services to the Department.

Obituary. The Union sustained a heavy loss during the year in the deaths of Mr. M. Rajagopala Ayyar one of its active members, Sir M. Ramachandra Rao one of its former Presidents and a sincere well wisher of the Agricultural Union, Sir Frederick Nicholson who till his last day was in intimate touch with the Union and Student Dharmarajan, and our heart-felt sympathy go to the bereaved relatives.

Acknowledgments. It is now our pleasant duty to record our thanks to all those who have helped the Union during the year. To Sir Charles Souter the Union owes a debt of gratitude for presiding over the last year's Conference and to Mrs. B. G. Holdsworth our thanks are due for distributing the prizes on the sports day. To Mr. R. C. Broadfoot and Mr. Littlewood who as ex-officio Presidents have identified themselves with the Union, the Managing Committee offers its heart-felt thanks for guiding the affairs of the Union during the year. To Rao Bahadur D. Ananda Rao, the Director, the Committee tenders its grateful thanks for his sympathy and invaluable help rendered in the arranging for the celebrations of the Jubilee. To Mrs. Cherian, Mrs. Charley and Mrs. Raghavan and all those ladies and gentlemen who helped to make the last Conference a success and helped the Committee during the year in many ways, our thanks are herein recorded.

Conclusion. This brings us to the close of our report but before we conclude, the Managing Committee have one more duty to perform and that is to bring to the notice of the public and the Government that a large number of Agricultural Graduates are without employment. The Union has time and again reiterated that the talents of these young men should not be allowed to run to waste. It is a pity, that in a country where almost the entire population is dependent on Agriculture, and at a time when the whole atmosphere, so to speak, is surcharged with enthusiasm for agricultural improvements, the services of these trained men are not harnessed by the State and the people.

His Excellency's Speech.

"Let me thank the organisers for the opportunity they have given me to be here once more in your midst. I say once more, because, as has been told you just now by almost all the speakers that have preceded me, this is not the first time that I come to this place nor am I a stranger to you all. In their generosity, they have been pleased to say very kind things of me for the little assistance that I gave for the humble efforts I made as the first Minister of Agriculture in this province. True, it was my privilege and I may assure you that

I am still proud, legitimately proud, pardonably proud of being the first Agricultural Minister in this province. As you have been told a little while ago in quoting one of my own speeches, I belong to the agricultural community. *Kappu* is my caste. It means an agriculturist. Let me be a Member of Government or occupy some higher place, I shall never be ashamed of being called a farmer or a farmer's son.

Personal Reminiscences. "And now let me turn to the diamond jubilee of agricultural education in this province and the silver jubilee of the Union and congratulate you on attaining this age. You have just now listened to a very excellent account of agricultural education in this province, how from a little school in a granary of a model farm, so called by courtesy, because it was not much more than prickly pear and the sands to which reference has been made, from that state it has developed into this magnificent building in which so many bright and brilliant faces are seen, learning their lessons in agriculture with the object of benefiting what has been called the backbone of the nation. And then the Union's history has been given. But before I refer to the Union, let me refer to one or two personal reminiscences of friends who have come from this very humble school in the midst of prickly pear and sands. Opposite to me sits my old friend, Mr. Sivan, who has come from this very prickly-pear college and yet has risen to occupy the Principal's place in this magnificent building. So did my friend Mr. C. Tadulingam whose absence here we are all very sorry for. As for the Union, you have listened to the excellent work which they have done during all these years. And the journal has been publishing the results of their researches in the College and on the farm of which I should think anybody could be legitimately proud."

"In congratulating you on the progress which you have made, I think it would be of considerable interest, if I were to mention briefly some concrete examples of what the Government has done for the Agricultural Department and of what the Department has done for the agriculturist during the period that has elapsed since the introduction of the Montague-Chelmsford Reforms.

"Figures make uninteresting reading and I will not burden you with them more than I must, but I may point to an increase in the personnel of the Department excluding the Director and his office from 337 in 1921 to 916 this year and in its cost, from under 5 lakhs in 1921 to over 10 lakhs in 1936. Whereas in 1921 we had 164 Farm Managers, Assistant Managers, Agricultural Demonstrators and Assistant Agricultural Demonstrators costing Rs. 1,51,313 we have at present 290 of them, costing Rs. 4,05,796. In 1921 the proportion which the total expenditure on the Agricultural Department bore to the total expenditure of this Province was one rupee in 118. Last year, it rose to one

rupee in 89. Add to this, that since 1921 no fewer than ten new Research Stations have been opened in various parts of the Presidency and I think you will agree that the Government has shown a convincing interest in the progress of the Department.

The Achievements of the Department. "Turning now to what the Department has achieved for the benefit of the agriculturist, I would remark that the aim and object of the Department in general has been to secure increased crop returns, increased fertility of soil and better quality of crop output, both for domestic consumption and for market. To this end, we have our specialists who carry out research into the improvement of specific crops such as paddy, cotton, millet and oil seeds and our other specialists who investigate the cause and cure of crop pests and diseases and delve into the mysteries of the biological, bacteriological and chemical analysis of the plant and the soil and in every branch of its activity, the Department can point with pride to the solid achievements for the benefit of the ryot. Take for example paddy, our most important crop. Here the Department has evolved new strains giving increased yield of from 8 to 25 per cent and has introduced economic methods of planting and improved manurial treatment. In 1921, the total acreage under these various improvements was under seven lakhs. To-day it has risen to nearly twenty-seven lakhs and the gain to ryots resulting directly from these improvements which was in 1921 estimated at some 26 lakhs of rupees is now estimated at nearly a crore and a quarter of rupees. Or again, take sugarcane, the most profitable crop and one that has benefited by research work perhaps more than any other. In 1921 the total area under various improvements recommended by the Department was less than 8,000 acres, to-day it is nearly 90,000 acres which represents almost the whole of normal acreage of land under this crop and the estimated gain to the ryot has risen from something over five lakhs of rupees to as much as 24 lakhs. It is true that the imposition of import duty on foreign sugar is to some extent responsible to this large increase but the influence of the results of research work of the officers of this Department cannot be over-estimated. May I in this connection take the opportunity of congratulating my old friend, Mr. Venkataraman on the splendid work he has been doing.

Gentlemen, I could quote similar figures for our other crops but if I did so, I would weary you. Here in Coimbatore your chief interest is in cotton and you are all familiar with the improved Cambodia strain, which the Department has evolved which gives a clear increase of 15 per cent yield over the bazaar strain. Or, I could mention groundnut whose yield has been increased by as much as 20 per cent or millets, the poor man's food-crops, which are the subject of intensive research into their special peculiarities.

Improvement of Live-stock. "Finally, I would come to the subject of cattle-breeding. For nearly 20 years now, the Madras Government have maintained cattle farms with the object of building up pedigree herds of the best types of cattle with a view to improving cattle throughout the country by means of stock of good stud bulls. Progress has been slow but something has been achieved. Though our experiment with Ayreshire bulls has unfortunately not been a great success, other and local kinds of stud bulls are maintained at the Agricultural Farms, at the Veterinary College, Madras, and at veterinary hospitals in the districts. Grants are given by Government towards the cost of maintenance of good breeding bulls. Bulls are loaned by the Department to local bodies and co-operative societies and here in Coimbatore as I was saying the other day, we have a model scheme, whereby with the help of a grant from the Government, stud bulls are purchased by the District Board and supplied to approved ryots and institutions every year. The number of bulls so purchased annually has risen from one in 1921 to one hundred in 1935. It will be seen from this statement of our progress, that we have been able to do something in the interests of agriculture and the agriculturist.

A Great Opportunity. "But it is equally clear that it is not enough. We have just touched the fringe and there is a vast deal more indeed to be achieved. It is a Himalayan task and Everest has yet to be conquered. Fortunately, however, for us, ready to inspire us, we have an intrepid leader. The destinies of this country are now in the hands of a Viceroy who is not only thoroughly acquainted with the condition of our agriculturists and their industry but has shown so deep and abiding an interest in their material welfare in their crops, in their cattle, in their stud bulls and milch cows and in the health of their children, that it may confidently be asserted that the future of the agriculturist is assured. His Excellency has started a campaign and has given it such momentum that it is bound to have far-reaching results in benefiting the farmer to an extent, never attempted before. It is a great drive that he has undertaken, it is a nation-wide drive. It affects 80 per cent of the population of this great country. It means material prosperity of almost the entire people; it means increased production, more national wealth, more food and more milk, healthy children and so healthy men.

"My Government and I are determined to play our part in this great campaign. We are ready to give it our unstinted support and wholehearted co-operation." In that memorable address, which His Excellency the Viceroy recently delivered before the Imperial Council of Agricultural Research Institute, he gave us the watchword, "the road is clear, full steam ahead." It is for us to seize the advantage and to take our place in the race. And let not the Madras Presidency fall behind other provinces in the running of it.

Appeal to Countrymen. I most urgently impress upon those who are present here and upon all whom my words may reach, that here is an opportunity, which, taken at its ebb, will lead us on to great things, to the increase of material prosperity of our countrymen, to a better standard of living, to a fuller life and to greater happiness and joy in the homes of those that form the backbone of our nation. I appeal to all our countrymen to put their shoulder to the wheel and do all they can in furthering this splendid aspiration and effort of a noble soul who is determined to help India to the utmost possible extent. (*Loud and prolonged applause.*)

Minister's Opening Speech.

The Hon. Mr. P. T. Rajan, in inaugurating the proceedings, thanked the organisers of the function for the honour done to him. He said he was no stranger to this institution because two of his uncles had been the alumni of this institution and he was glad that connection with the College had continued in his presiding over the Department which was intimately connected with their institution. Almost the first thing he did as Minister was to consider the idea of introducing a short course in agriculture so as to prepare the students belonging to families of agriculturists and give them a training which would enable them to make the land yield more. He believed that that short course had become popular. What the results were it was too early perhaps to say. Nevertheless, he hoped that as time went on, students would take advantage of it more and more.

Minister's Concluding Speech.

Ladies & Gentlemen:

Now that we have come to the end of our labours, I wish to congratulate both on your behalf and mine all the learned lecturers on the lucid and interesting manner in which they dealt with the technical and dry subjects and thank them for the same. Let me also congratulate the Secretary and the Members of the Madras Agricultural Students' Union on the successful manner in which they have conducted the proceedings of the Conference and on the happy conclusion of their celebration of the Diamond Jubilee of the introduction of Agricultural Education in India and the Silver Jubilee of their Union. When the Secretary read his report he appealed to the past students to join the Association in greater number and support its journal. I wish to add my appeal to his so that your Union and its Journal may continue to carry on the good work in promoting agricultural education and interests. (*Cheers.*)

As soon as I entered the portals of the College on the 29th morning I saw the Guard of Honour provided by the students, drawn up in front of the portico in honour of His Excellency and their smart turn

out struck me very much. They are the products of this institution which is second to none both in Education and Research in this country. As they were standing in the sun, clad in civilian clothes, my first impulse was that they should be brought under the shade till His Excellency's arrival, but suddenly I realised that they are preparing themselves for their occupation later in life which will expose them to the rigours of the sun and rain. The hard training they get here has made them a sturdy and cheerful lot and it was indeed a pleasing sight to me to see them. I feel that this Institution could naturally feel proud of these young men and I am happy to think that I have been connected with such an Institution for the last five years and more. As sons of the soil and alumni of this college they have to deal mainly with the land and its problems and in doing so their training here will come in very handy.

I am glad to state that the results of the research work conducted here in various directions and under various heads have been many and good and it is up to you, my young friends, to carry them to the very doors of the ryot so that he may derive the maximum benefit from them. The Department has hitherto been dealing with the problem of helping the ryot to get the maximum out of the land with minimum of cost and labour but of recent years the additional and arduous task of finding suitable markets for the ryot to dispose of his produce has been thrown upon it. The problem of marketing the goods now-a-days is not an easy one especially to a Provincial Government which has no control over imports and exports, means of communications and currency. Prices of produce especially of commercial crops even in the most remote corners of this Province are controlled not by the fluctuations in Indian markets but, thanks to science which has so reduced time and space, by the ruling rates in the markets of far off cities like New York, Berlin and London. This problem is not merely provincial and national but also international. Instead of there being international co-operation there is international competition for armaments. Any moment the war clouds might burst, and if it does, I can only say "God help mankind". All this armament is meant merely to obtain special trade concessions for individual nations. What was more horrible was the attempt of various nations to requisition the services of science not to help humanity on its onward progress but to destroy mankind. I hope India's past civilisation, culture and her traditions will help scientists and others in this country to put the results of scientific research to better purposes than the one to which it had been put in the recent Great Wars. However, this problem has been receiving the close attention of both the Government of India and Madras Government and the Marketing Officers appointed by the respective Governments are making a complete survey of the marketing conditions throughout this land. As soon as it is finished the problem will be tackled in all its bearings on an All-India

basis. As far as this Province is concerned the Local Government have got a Marketing Board to advise them on marketing questions and in the case of cotton crops have established a market at Tirupur and the activities of its committee are being closely and carefully watched.

Another item which affects the ryots intimately is the problem of Life-Stock. This is also receiving the attention of the Local Government and the recent example set up by His Excellency the Viceroy in presenting two fine stud bulls and the great interest he has evinced in this matter has given a fillip to it. His appeal to the aristocracy and the leading men of landed classes has not been in vain. Madras has given, I believe, the lead in this matter, in that some gentlemen have announced their intention to purchase and maintain stud bulls at their cost. The Department on their behalf is arranging for the purchase of animals suitable for the respective localities. Some local bodies also are interesting themselves in this direction. I would appeal to Mr. R. M. Palat, President, District Board, Malabar, who is present here to interest himself in this matter. In fact there are two or three big schemes under consideration of this Government and their expert advisers just now for improving the different breeds in this province.

For want of time I have mentioned only two or three items now. As regards the work of the Agricultural Department itself in helping the ryot to better his position if I were to enumerate them to you it will be like sending coal to New Castle.

The one problem that is causing great anxiety to all the Provincial Governments as well as the Central Government is the unemployment amongst the educated young men. Within the last 10 years or so not only arts colleges but also professional institutions have turned out more men than Government and private employers could absorb. It has been suggested that a change in the present system of education might remedy this evil. I am doubtful whether even a radical change will bring about the desired result. Nevertheless, the fact remains that there are a large number of educated young men whose services could be utilized with great advantage to themselves and the nation. Further, the State has a right to the service of all able bodied men and women, educated and otherwise, at all times. If during times of war their services could be requisitioned, as was the case in Europe and other countries during the last Great War, why could they not be utilised in times of peace also. Their employment even on a bare sustenance allowance might cost the nation a considerable sum and the present finance of this Province might not admit of it. This question requires careful handling and it will be almost the first task of the Ministry under the new dispensation. All the same this Government are fully alive to their responsibility and are arranging for the training of 150 educated men in the agricultural farms in the various districts for a period of 4 months. I hope and trust that this offer will be fully

availed of by young men and they in their turn will help agricultural improvement. This is only an earnest of the Government's interest in this problem and the first step in its solution. (cheers).

The Secretary of the Union in the concluding paragraph of his report has stated that a large number of agricultural graduates are still without employment. I am fully aware of this. I may mention that three years back I informed the Director of Agriculture and the Director of Veterinary Services to inform the intending candidates that they should not expect any employment under Government. Be that as it may, I may just inform you that Government are considering the question of giving effect to the programme of having a demonstrator in each taluk. As soon as the Legislative Council accepts the proposal about 40 new demonstrators will be recruited. I believe this will give relief to some extent to the unemployed agricultural graduates (cheers).

I wish to take this opportunity to congratulate our young friend Mr. Mahadevan, an ex-student, who has started a private farm at Kotagiri, on his venture, a venture which deserves our praise and help. Several speakers who took part in the discussions the previous day stated that Government did not give sufficient encouragement to private enterprise. I may at once tell these critics that Government gave help whenever and wherever there was a need for it. I can quote instances, though I cannot give figures off hand now where Government gave help to several institutions both in the shape of monetary grant and services of officers. So long as this help was forthcoming everything went well but the moment this was withdrawn, as it could not be continued indefinitely, the whole fabric of those Institutions crumbled to pieces. Let me take the case of Chintaldevi Cattle Farm. As a measure of retrenchment this farm had to be closed about 1932, distributing the work done there to other farms elsewhere. As Minister in charge of Public Works, I had to dispose of the building. Before so doing I sent for the Director and asked him whether he could not persuade the agricultural graduates and others to settle down there and start an Agricultural Colony. His attempts to do so failed and I am sorry to say failed miserably. Mr. Mahadevan told his friends while persuading them to follow his example that farming requires hard work. I quite agree with him that it is not an easy matter. Self help is the best help and God helps those who help themselves. Government however will be only too glad to help those who come forward to start any venture which will be in the interest of the nation. As regards Mr. Mahadevan I am quite sure the Departments of Agriculture and Co-operation will give him all the help they can.

In the course of the discussions reference was made to the Provincial Economic Council and the District Economic Councils for

rural reconstruction. These bodies are meant to help the villager to improve his lot. In this, the Department of Agriculture can play a great and important part. Now, gentlemen, I wish to acknowledge the help and co-operation readily and willingly given to me by the officers of the Department ever since I assumed ministerial responsibility. Might I also acknowledge the services of Mr. S. V. Ramamurthi as Director of this Department. He gave a new orientation to the work and out-look of the Department; and this he was able to do because he enjoyed the full confidence of the officers of the Department and received their co-operation and help freely. (*Cheers*).

Now, ladies and gentlemen—In the last two decades after the Great War every nation has been looking to its younger generation for reconstructing the society. Though India had not suffered to the same extent as other nations, yet, she too has been putting her faith in the younger generation. We of the past and the present generation are holding India's destiny and future in trust for you and we shall hand it over to you the moment you are ready to take up the responsibility. In this view I appeal to you, my young friends, the students and the graduates of this great Institution to spend your energy and time in creating a new rural India where dirty and filthy hovels called villages and their miserable occupants will disappear and in their place shall arise new villages and a new generation of men who will devote themselves to the service of humanity and to the glory of India. In this arduous but noble task that is ahead of you, you have the blessings of your elders and I for my part wish you every success. (*Cheers*).

The Cecil Wood Memorial.

(Portrait Unveiled)

Mr. K. Ramiah, Paddy Specialist, made a statement in connection with the portrait in the course of which he recalled the services of Mr. Wood to the cause of promoting agriculture in the Province. Mr. Wood as Principal of this College, the speaker continued, had been responsible for all the developments associated with this institution for the first twelve years. He was a disciplinarian and an officer of boundless energy. He always laid great stress on practical agriculture and in the maintenance of field observation books. He compelled students to take part in some game or other and himself took part in them. Being a hard worker himself, he always expected a very high standard from his subordinates. Mr. Wood was the first President of the Union and had played a great part in moulding its early activities. Some of his old friends desired to perpetuate his memory in the College to which as Principal he had done so much. A committee was appointed which passed resolutions for instituting a suitable memorial for Mr. Wood, that an oil painting be presented to

the college, that a medal be awarded to the best student in the College, that an endowment be made for scholarship to be granted to a deserving student in the College and that a prize be awarded annually for the best paper on agricultural and economic life of any tract in this Presidency. In response to the appeal, a large number of donations had been collected. Realising the importance of this occasion, it was decided to present the portrait for unveiling to-day. It was very appropriate that the present Director who was closely acquainted with Mr. Wood should unveil the portrait. He appealed to all old students of Mr. Wood and his colleagues to come forward with donations so that the Committee could carry out its objects, set forth above. The amount so far collected was Rs. 255.

Director's Speech.

Mr. Ananda Rao, in unveiling the portrait, said that his acquaintance with Mr. Wood started from the day he started his official life in the Department. Mr. Ramiah had said so much that little remained for him, the speaker, to say further about Mr. Wood. As had been said, Mr. Wood was remarkable for industry and organisation. Many things that Mr. Wood did had stood the test of time. His interests in students and their sports was very great. He was also of a very sociable nature. This function, the speaker thought, was long overdue. He was glad that he had been given the privilege of unveiling the portrait and he had great pleasure in performing it.

He then unveiled the portrait of Mr. Wood amidst cheers.

Vote of Thanks

The Principal Mr. R. W. Littlewood in proposing a vote of thanks, at the close of the session said :—

It now devolves on me as President of the Madras Agricultural Students' Union and as the head of the Agricultural College to offer my heartfelt thanks to you Sir, the President of this Conference, for presiding over and conducting the deliberations and bringing them to a successful close. It is very gratifying that one who is born in the Agricultural community and who is Minister in charge of the portfolio of Agriculture, should have graced us with his presence on this occasion, and evinced a keen interest in all the events.

To you Sir, as Development Secretary, in the midst of your multifarious duties, your presence here on this occasion is very much appreciated.

To you, Sir as Director of Agriculture, we are grateful indeed for all the keen interest you have evinced in the successful running of the College Day and Conference.

To all Ladies and Gentlemen, who have responded to our invitation and helped us in several other ways on behalf of myself and that of the Union, I offer my sincere thanks.

Proceedings.

Proceedings of the General Body Meeting of the Madras Agricultural Students' Union held on Saturday 1st August 1936 with Mr. R. W. Littlewood in the chair. 90 Members were present.

The Secretary read the minutes of the last General Body meeting, which was passed by the General Body.

The Annual Report and the Auditor's Report were then presented by the Secretary. Dr. J. S. Patel moved and Mr. K. Krishnamurthi Rao seconded that the report be adopted.

The Budget for the next year was then taken up. Several people took part in the discussion, Messrs. M. S. Kylasam, M. R. Balakrishnan, T. Varahalu and P. Bagirathi Padi being the prominent, the chief point on which information was elicited being on budget provision of Rs. 400 under establishment. The Secretary and the Treasurer answered the points raised. Mr. M. R. Balakrishnan moved and Mr. Adishesha Reddy seconded that 'Rs. 450 under College Day be increased to 650 to enable the committee to either repair or replace the curtains and other fittings for the stage.' This was passed and the budget as so modified was adopted. Rao Sahib V. Muthuswami Iyer then moved the following resolution; "That this General Body meeting requests the Director of Agriculture to move Government about making statutory provision for the free grant of lands wherever available and the necessary funds to agricultural graduates to form colonies in rural areas, so that these may serve as demonstration centres." He made a lengthy statement, stressing on the necessity of finding employment for graduates, the duty of Government, the availability of cultivable waste land and quoted instances from Denmark where in such schemes Government had taken the initiative.

Several people Messrs. K. Ramiah, K. Krishnamurthi Rao, K. Unnikrishna Menon, Bagirathi Padi, M. U. Vellodi, Rao Sahib T. V. Rajagopalachari and K. Raghavachari took part in the discussion, the general sense being that while the General Body was in sympathy with the spirit of the resolution preliminary work must be done by the Union or a recognised body to marshal facts and figures, before Government and the Director of Agriculture are approached, so that we may equip ourselves to meet arguments. It was also felt that a real desire to go back to the land was not evinced by the Agricultural graduates. Mr. R. W. Littlewood mentioned the instance of Chintaldevi also quoted by the Development Minister, and the Secretary mentioned his experience that not one Agricultural graduate answered an advertisement the previous year to work up a private Mirasdar's lands. Mr. K. Unnikrishna Menon and Mr. Bagirathi Padi brought two amendments the former to add "and for employment in the Co-operative and Registration Departments" and the latter to add "and for employment as Panchayat officers and as District Board Educational officers." These amendments were later withdrawn at the suggestion of the President, as it was generally felt that the spirit of relief sought in the original resolution was not the same as that of the amendments. Mr. G. Jogiraju then brought another amendment as follows "to delete all the portion of the sentence after Agricultural graduates in the resolution, and to add" that a committee consisting of V. Muthuswami Iyer, T. V. Rajagopalachari, K. Krishnamurthi Rao, G. Jogiraju, the Secretary and the Vice President of the Union be formed to prepare an elaborate note as to how the objects could be achieved, for forwarding with the resolutions to the Government."

The amended resolution was passed by a large majority.

The Secretary then brought to the notice of the General Body instances where "old boys" on the unemployed list wished to be given the concession rates of subscription available for students. After some discussion Mr. M. R. Balakrishnan moved and Mr. K. Krishnamurthi Rao seconded "that this General Body

empowers the Managing Committee to extend to such unemployed old boys of the College as require it, the concession rate of subscriptions applicable to students under rule 2." The resolution was passed unanimously. The forthcoming office bearers were then elected for the coming year.

Council.

President.
Resident Vice President.
Editor.
Secretary.

Mofussil Vice Presidents.

Mr. K. Gopalakrishna Raju.
Mr. K. Unnikrishna Menon.
Mr. G. Jogiraju.

Mofussil Members.

Mr. K. T. Alwa.
„ C. V. Saravayya.
„ C. Ramaswami.
„ K. S. Ramanna Rai.

Resident Members.

Rao Sahib Dr. T. V. Ramakrishna Iyer.
„ V. Muthuswami Iyer.
„ T. V. Rajagopalachari.
Mr. D. V. Krishnaswami Naidu (Student).

Editorial Board.

Mr. V. Ramanatha Iyer—Editor.
Secretary.
Manager.

Dr. J. S. Patel—Member.

Mr. K. Ramiah.

„ M. U. Vellodi.

„ T. K. Subrahmaniam (Student).

Managing Committee.

Rao Bahadur G. N. Rangaswami
Iyengar—Resident Vice President.
Editor.

Secretary, Mr. S. M. Kalyanaraman.

Treasurer, „ M. A. Sankara Iyer.

Manager, Mr. R. Balasubramaniam.

Mr. C. S. Krishnaswami—Member.

„ T. S. Lakshmanan „

„ S. Ramachandran „

„ Pinto (Student) „

The President thanked the various committees, who helped in the celebration of the College Day and Conference, including the Hostel Warden, the Superintendent of Central Farm, the Estate Mechanical Engineer and the Principal of the Forest College.

Rao Bahadur S. Sundararaman proposed a hearty vote of thanks for the President Mr. R. W. Littlewood. Rao Sahib V. Muthuswami Iyer proposed that the thanks of the General Body be recorded to the retiring committee.

THE REPORT OF THE MANAGING COMMITTEE

The Managing Committee have great pleasure in presenting their report for the year 1935-36.

Membership. The strength of the Union as it stood on 31st May is 550 (with 120 subscribers.)

Meetings. There were two meetings, one on Agriculture in Burma, by Mr. K. Ramiah, and Rice cultivation in Bengal by Mr. Banerjee.

Another meeting was convened under the auspices of the Union and other associations to move a resolution of condolence on the death of His Majesty.

Working Committee meetings. 10 meetings of the Committee were held.

Jubilee celebrations. The Committee began making preparations for this event immediately after the last College Day, and supported by the Director of Agriculture sought a financial grant of Rs. 3000 from Government. But unfortunately our request was negatived and the Union had perforce to fall back on its own resources, to meet the expenditure in connection with the event. A meeting of the Council, to which were invited representative officers of the department was convened and it was informally agreed that His Excellency the Governor be invited to inaugurate the proceedings and the expenses regarding Lunch and Tea be borne by the well wishers of the Union. (Our Director kindly undertook to provide the Lunch and the Gazetted officers the Tea for His Excellency during his stay). We take this opportunity to thank them for rendering this aid to the Union.

Ramasastrulu Munagala Prize. Four papers were received and Mr. T. Varahalu was awarded the medal for his thesis on 'Studies in sugarcane, effect of environmental conditions on the growth of cane'. The thanks of the Committee are due to Mr. Munro, (President), Rao Sahib T. V. Rajagopalachari and Dr. V. K. Badami for acting as judges in this competitions.

The Journal. The Journal maintained the high standard set up in previous years and the Managing Committee have great pleasure in recording the invaluable services rendered by Mr. K. Ramiah and the members of the Editorial Board who were responsible for the publication of the journal. The Committee have also to record their appreciation of the promptness of our printers, The Scholar Press.

Finance. The auditor's statement is before you. Our finances have shown improvement and we had on 31st May a cash balance of Rs. 1196-4-4 after meeting our liabilities up to date. No doubt a little of this surplus will be utilised to meet the expenses of the Jubilee celebrations, but the financial situation is encouraging and we hope that future Committees will endeavour to stabilise it more firmly. Our Vice President, Mr. S. Sundararaman was conferred the Title of Rao Bahadur and Mr. C. Narayana Iyer the Title of Rao Sahib and Mr. F. H. Butcher, O. B. E. We tender our congratulations to these gentlemen.

Our heart-felt thanks are due to Mr. R. C. Broadfoot and Mr. R. W. Littlewood who as Ex-Officio Presidents, took very great interest in the affairs of the Union, and guided it during the year. To Mr. R. W. Littlewood our thanks are specially due for he had to bear the brunt of the heavy work involved though he assumed charge just a month previous to the Jubilee celebrations.

The Union owes a deep debt of gratitude to Rao Bahadur D. Ananda Rao without whose sympathetic support in our endeavour to celebrate the Golden Jubilee of Agricultural Education and the Silver Jubilee of the Madras Agricultural Students' Union, the function would not have been a success. Our thanks are due to the various Committees who helped us during the College Day last, to Mrs. Cherian, Mrs. Charley and Mrs. Raghavan and to Mr. Davis of the Forest College.

List of Winners of Different Prizes for the year 1935-1936.

1. **The Robertson Prize.** *The premier prize* of the College and is awarded to the student who obtains the highest number of marks in the subject of *Agriculture* in the *Final Examination* for B. Sc. Ag. Degree at the first appearance. Won by A. Raghavan.

2. **The Clogstoun Prize.** This prize is for '*General Proficiency*' and is awarded to the student who obtains the highest number of marks in all the College Terminal Examinations of the B. Sc. Ag. Course. Won by G. Venkataramana.

3. **The Keess Prize.** The prize is awarded to the student who obtains the highest number of marks in *Agricultural Chemistry* of the final examination of the B. Sc. Ag. Degree. Won by K. Rajabapanayya.

4. **The Sampson Memorial Prize.** This is awarded to the student who obtains the highest number of marks in the subject of *Botany* in the final examination of the B. Sc. Ag. Degree. Won by T. Arunachalam.

5. **The Dewan Bahadur R. Raghunatha Rao Prize.** Awarded to the student who obtains the highest number of marks in *Practical Agriculture* as judged on the highest number of marks obtained in all the College Terminal Examinations and in Practical Agriculture of the final examination of the B. Sc. Ag. Degree. Won by A. Raghavan.

6. **The D'Silva Memorial Prize.** Awarded to the student who obtains the highest number of marks in *Animal Hygiene* of the Second Year Examination of the B. Sc. Ag. Degree. Won by S. Mahadeva Ayyar.

7. **The Goschen Prize.** Awarded to the student who obtains the highest number of marks in *Agricultural Zoology* of the Second Examination of the B. Sc. Ag. Degree. Won by T. N. Anantanarayanan.

8. **The Anstead Prize.** Awarded to the student who stands first in B. Sc. Ag. Class II in *Plot Cultivation* (Wet, Dry & Garden), provided he passes the first and second year B. Sc. Ag. classes at the first appearance. Won by P. M. Syed.

9. **The Rao Bahadur K. S. Venkatarama Ayyar Prize.** Awarded to the best student in B. Sc. Ag. Class I as judged from marks obtained in the First Examination of the B. Sc. Ag. Degree. Won by P. Narayanan.

10. **The Certificate Course Cup.** Presented to the student who obtains the highest number of marks in *Agriculture* in the Second Examination of the B. Sc. Ag. Degree. Won by J. Raghottam Reddy.

11. **Old Cuddapah Dt. Agrl. Association Prize.** In the form of books is awarded to the best student coming from the Ceded Districts comprising Bellary, Kurnool, Anantapur and Cuddapah Districts and Taluks of Vayalpad and Madanapalle of the Chittoor District. Won by (i) Shaik Abdul Hafiz, (ii) A. V. Parthasarathi, (iii) R. Ali Hyder.

12. **Sir T. Vijayaraghavachariar Medal.** Awarded to the student who obtains the highest number of marks in *Agricultural Engineering* of the Second Examination of the B. Sc. Ag. Degree. Won by S. Krishnananda Sastri.

13. **M. K. Nambiar Prize.** Awarded in the form of books to a student who obtains the highest number of marks at the Second Examination of the B. Sc. Ag. Degree at the first appearance. Won by T. N. Anantanarayanan.

Exhibition.

In connection with this Years' College Day and Conference a comprehensive exhibition illustrating the various activities of the Department and the results achieved was put up in the Freeman Building. The exhibition was opened by His Excellency the Governor on 29th July and was kept open for the public until 2nd August. Among the notable visitors may be mentioned Hon'ble The Minister for Public Works, The Hon'ble Home Member, The Secretary to Government Development Department, The Collector, Coimbatore, Hon'ble V. C. Vellingiri Gounder and the local members of the Madras Legislative Council. The exhibition was made up of several sections according to crops and departments of research, arranged by the Heads of Sections in the Research Institute. Exhibits of Crops sent by circle officers were grouped along with the exhibits of particular crop specialists but such of them not handled by research officers were grouped into a general section arranged by the Superintendent, Central Farm. An account of the exhibits put up in the different sections is given below :

Chemistry. This section exhibited results of work in a few of the many lines of work, which were of immediate interest by means of posters, diagrams and material exhibits.

The Cream Jaggery stall showed jaggery made by the new process using paddy husk carbon, from cane juice and coconut and palmyrah juices. The jaggery made by the old process were shown side by side to show the attractive colour of the product made by the new process. In the same stall were shown details of the process of making active carbon from paddy husk, and its many and varied uses.

The Nutrition stall had posters of the requirements of animals, and a collection of human and animal foods with details of composition. The "Molascake" Exhibit showed samples of a compact and easily handled brick made out of

molasses oil cake and mineral mixture. This cake was made to contain 125 grams of digestible protein in one pound brick, one brick, fed with straw *ad-lib* being sufficient for the maintenance of a bullock of 1000 lbs. live weight as found by experiment here. This method of making use of molasses, now a step-son of the sugar industry, has great possibilities.

The microbiology stall had a working model of the activated sludge plant, showing the various parts and the mode of aerating the sewage. Other exhibits of the stall consisted of diagrams, photographs of the legume nodule and the effect of inoculation on growth and yields and another exhibit showed the deterrent effect of the Saprophyte-*Aspergillus* on the paddy foot rot fungal parasite *fusarium*.

The Malting stall had exhibits of malt foods made from Cholam, and their comparative value when compared with imported malt foods. An Exhibit of bread made by blending malt Cholam with wheat flour was also shown. Charts and posters of the malting process, showed the simple process pictorially.

Mycology. Among the mycological exhibits put up at the show the following important items are worthy of mention.

Fungus diseases of crops and fruit trees. Mahali disease of Arecanuts, Budrot of palms, Blackshank of tobacco, Footrot of paddy, and Sarut and Redrot of sugarcane—Charts and live specimens showing the symptoms of the disease and posters indicating the remedial measures were put up.

Virus diseases. Charts showing Mosaic of sugarcane, cardamom, plantain, and maize and sterility disease of cotton were exhibited.

Fruit diseases. Charts—Plantain wilt and fruit rot, Citrus folliocellosis and pink disease, scab etc. were shown.

The technique about the use of fungicides and sprayers was explained.

In addition to the above, the various processes in microtome sectioning of materials and the apparatuses used in the determination of H-ion concentration of solutions were also shown. A demonstration of the latter was also conducted.

Entomology. A special feature of the Entomological Exhibition was the display of live insect pests in all their developmental stages with their appropriate food crops. This facilitated a layman to get to know them in their perspective and association and appreciate the remedial measures suggested under each item. These were further supplemented by self explanatory coloured plates and posters.

The exhibits included a wide range of pests and useful insects and the following were a few of them.

The orchard pests like the fruit flies *Dacus cucurbitae*, Coq and *D. ferrugineus incisus*, Bez. the fruit sucking moth *Ophideres materna*, L., and the mango hoppers *Idiocerus* spp which are a menace to successful fruit cultivation, were well represented to show in what phase of their life, they are harmful. There was shown the much dreaded groundnut red hairy caterpillar *Amsacta albistriga*, M which is a menace to groundnut cultivation in most of the districts especially S. Arcot, Salem, etc., the remedial measures were aptly indicated with appropriate coloured plates. There were then the pests of garden crops. The chillies leaf curling thrips *Scirtothrips dorsalis*, Hd, and the brinjal leaf eating lady bird beetle *Epilachna* formed instructive exhibits showing the nature of damage done to each crop.

Pests of sugarcane formed an equally interesting exhibit. The moth borers *Diatraea sticticraspis*, *D. venosata*, W and the top borer *Scirpophaga monostigma* were set up to show how as larvae they bore into the stems and cause dead hearts. The nature of damage done by cane fulgorid *Pyrilla perpusilla* which is a bad pest in S. Arcot was well indicated.

That plants are equally susceptible to virus diseases was well exemplified by the exhibited diseased cholam plants affected with 'freckled yellows and stripes' for which the cholam shoot bug *Dicranotropis maidis* (*Pundaluoya simplicia*) is the insect vector.

The cotton bollworms both the pink and the spotted and the pests of paddy like the paddy grasshopper *Hieroglyphus banian*, Fb. and the rice bug *Leptocorisa acuta* very vividly brought out the nature of the damage to cotton bolls and paddy crop; coloured plates were exhibited to show how to combat these crop pests.

To demonstrate the possibilities of employing natural enemies of the crop pests to subdue them, the classic instance, i.e., the imported Australian lady bird beetle *Vedalia cardinalis* against the devastating fluted scale *Icerya purchasi* and the Bethyrid parasites *Pereiserola serinopæ* against the familiar coconut leaf eating caterpillar *Nephantis serinopa* were well exemplified by appropriate specimens.

Useful insects which form the basis of some of the cottage industries like Bee-keeping, Lac culture and Sericulture, formed fascinating exhibits. Of these cottage industries, Bee-keeping was particularly instructive. Hives with bees and live specimens of the different varieties of Indian honey bees and their enemies formed an interesting aspect of the exhibition. Along with these, bee-keeping appliances such as honey extractor, etc., and samples of honey from different sources attracted considerable interest.

Coming to sanitation, the control of the ever menacing housefly *Musca nebulo* in both the adult and maggot stages was indicated with instructive models and drawings.

The common insecticides in use together with dusting and spraying appliances formed yet another interesting section of the exhibits.

Paddy. Among the many exhibits put up in the paddy section illustrating the improved methods of paddy growing and the general plant breeding technique, may be mentioned the following:

Specimens of the strains evolved at the Coimbatore Paddy Breeding Station and at the Sub Stations of Maruteru, Pattambi and Aduturai with their rice samples and charts showing the areas in the different parts of the Province where particular strains have been found to do well. A map of the Presidency illustrating the spread of the above strains in the different districts, with posters showing the value of the increased yield estimated by the extent of such spread. Mounted charts, and plant specimens of strains evolved by hybridisation for higher yield with definite economic value as (a) stiff and long straw (Co. 3 Burma variety) and (b) with the capacity to resist (piricularia) a fungus disease which is responsible for a great loss in the Tanjore delta. Exhibits of raw, shelled, polished and par-boiled rices together with posters explaining the nutritive value of non-polished rices. Cooking investigations in relation to the quality of the produce stored in different ways attracted the attention of the onlooker. Rice seedlings grown in wooden boxes and mounted specimens of heads as well as photographs drew the attention of the public regarding the changes that could be brought about by X-rays—a recent method to induce germinal changes in plants. Among the several mutants obtained by subjecting the seed to X-rays, there was also one showing greater prolificacy and extended duration. The special mutant where the gene controlling the geotropic movement of the shoot had been disturbed by X-ray was also shown. Potted plants of wild and interspecific hybrids illustrating the possibilities of introducing vigour and resistance to drought, disease etc. in the cultivated varieties by repeated back crossings. Progenies of an intervarietal cross in chillies for the investigation of size and pungency and the obtaining of big fruits with greater pungency. Green manure plants of *Sesbania Speciosa* (4 month's duration) reaching

a height of over 12 feet. This crop a new introduction from Kenya, the seeds of which were kindly supplied by Mr. H. C. Sampson, is full of promise.

Millets. The Millets Section put up an instructive exhibition illustrating the general features of millets and the work of the section. Millets occupy about 14 million acres in the presidency. They are grown in areas of poor rainfall. In the districts, the area under millets is generally found to be inversely proportional to the area under paddy. Millets are peculiar in flowering, to a great extent, during night time. Suitable charts were displayed to bring out these peculiar features of millets.

Earheads, grain and rice or flour samples were exhibited in all the eight millets--*cholam*, *cumbu*, *ragi*, *tenai*, *arika*, *samai*, *panivaragu* and *kudiraivali*. In the first four major millets a number of varieties both Indian and foreign were on show. Varieties in sorghum which were good for popping, malting, or resistant to striga were also exhibited. The various strains evolved in sorghum both at the Millets Breeding Station and at the Research out-station at Nandyal were displayed. In *ragi* there were three good strains of three different durations. In *cumbu*, the new introductions, the Punjab *cumbu* and the Jamnagar giant attracted much attention. Earheads of the millet strains grown in the fields of ryots in the neighbouring taluks were received from the Deputy Director of Agriculture, VIII Circle, and exhibited.

There was a small section devoted to the poor man's pulses, lablab, horsegram and cowpea. Many varieties in each of them were on show.

Cotton. The importance of the cotton crop to the Indian agriculturist and the efforts that are being made by the Cotton Specialist and his staff to improve the condition and prospects of this crop were well brought home to the public by exhibits of various kinds, like posters, placards, illustrated charts, cartoons, a large number of actual samples and a few live specimens.

The important cotton varieties of the Presidency were exhibited in neatly designed wooden boxes with full details regarding their commercial qualities. The present position of India among the cotton growing countries and of Madras among the several provinces formed the subject of a series of illustrated charts which showed how India, though second in production only to U. S. A., occupies a vulnerable position because of her short staple and what Madras with its wealth of high-stapled varieties can do to restore her balance.

Other aspects of cotton culture—such as rotation, protection against pests, clean and profitable marketing and the several ways by which the section is attempting to increase the profits of the ryot through increased knowledge also received their due share of attention.

The future of Indian cotton was the central theme of an interesting carton of a world cotton parliament, pointing to the great and immediate need for fortifying India's position against the present day dictators and her probable competitors.

Samples of two interesting side lines—Red and Bengal grams—to which also the attention of the section is devoted—were exhibited, showing the multitudes of forms and variety of colours that are present.

Oil-Seeds. Live plants and seeds of groundnut varieties, Local Mauritius, Saloom, Gudiyatham Bunch, *Arachis mozambiquaræ*, *Arachis rosteiro* were exhibited. A chart indicated the performance of A. H. 25, Saloom groundnut in different districts. Live plants and photographs of different forms of habit were exhibited; and among these the most interesting was the trailing type evolved through hybridization. The photographs of the root systems showed that the Saloom variety had better root system than the Local Mauritius and generally the roots

of bunch types penetrated deeper than the roots of the spreading types. Coffee made out of the parched groundnuts and the biscuits made out of the groundnut cake were some of the new products exhibited.

There were live demonstrations of the rotations to be followed and the mixtures to be grown along with the groundnut.

Different types of coconuts, dwarf and tall coconut seedlings and various grades of copra were exhibited. Among the F_1 s of the crosses, the crosses between the dwarfs and tall types were outstanding. Attractive playcards drew attention to the necessity for (a) clean cultivation of the coconut and (b) for, manuring with 3 lb. of ammonium sulphate and 20 lb. of ashes per palm.

Different varieties of castors, gingelly and cashew nuts were exhibited.

Sugarcane. A feature of this section was the specimens of canes from the districts, the outstanding varieties being Co. 419 and Co. 421 which were exhibited along with the standard canes Poovan, P. O. J. 2878 and Co. 213. The variety Co. 419 is a typical wet land cane which has been reported to have done well at the Padegaon Experiment Station in the Bombay Presidency, at Jorhat in Assam and at Pyinmana in Burma. At Anakapalle and Samalkot it is expected to replace varieties like J. 247 (247 B), B. 208, and Purple Mauritius. Co. 421 is a variety which grows vigorously under relatively dry or semi-irrigated conditions and has given a very satisfactory account of itself in more than one experiment station in North India. In South India it is worth a trial in places where Co. 213 is being or proposed to be grown. Specimens of canes grown at Anakapalle were also exhibited.

The rapid increase in sugar production during the last six years from 311,000 to 770,000 tons, the fall in the import of foreign sugar from 940,000 to 223,000 tons the increase in the number of sugar factories from 35 to 155, the increased profit to the cultivator by growing the Co. canes and the spread of Co. canes which now occupy over 61% of the total area under this crop, were vividly brought out by interesting charts to show the present position of the Indian Sugar Industry.

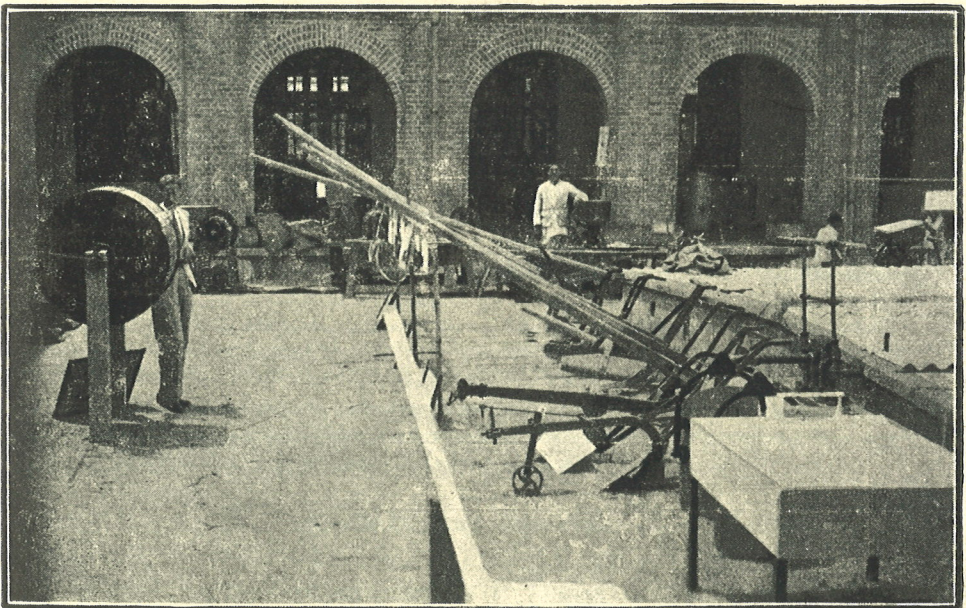
Not the least interesting were the charts showing the methods adopted at the Imperial Sugarcane Station, Coimbatore, for evolving improved sugarcane varieties. It is the increased yields thus obtained that has yielded the needed raw material for the recent renaissance in the Indian Sugar Industry.

Engineering. The Agricultural Research Engineering Section exhibited a wide range of implements and machines designed or adapted to meet the particular requirements of the ryot. The exhibits included light and medium weight cast chilled and steel ploughs, guntakas, bucksrapers, light steel ridge ploughs, harrow, ball bearing mhote wheel, chaffcutter and fodder chopper, McCormick Deering 5-typed expanding cultivator, a bund forming implement, cast iron fire bars for jaggery furnaces, a Richmond and Chandler groundnut decorticator, a grain polishing and cotton seed delinting machine, a turmeric polishing machine, a hand-operated paddy hulling machine of Japanese manufacture, a Persian wheel bucket wheel and buckets, a model of the improved circular mhote water lift, a mechanical seed drill, a 2 tons capacity rubber-tyred cart, and a Burmese puddling implement.

Systematic Botany. A. *Madras Bananas.* Banana fruits of all the 51 known varieties of the Presidency preserved in their natural colour by a special process with photographs and life-cycle charts for each, along with their standardised names. The fruits of the wild parents of both the rounded and angular bananas collected from the Hills of the West Coast with their viable seeds. A dozen banana bunches with "trees" of the most promising varieties such as, *Kapur*, *Thattilla Kunnan*, *Chakkarakeli*, *Ayiranka Rasthali*, *Batheesa*, *Monthan*, etc., with

COLLEGE DAY EXHIBITION

1936



(Views of the Agricultural Section & Research Engineer's Section).

short descriptions. Flour of 6 varieties of bananas along with an analytical chart comparing this composition with wheat and rice. The flour of one variety, *Adakka Kunnan*, contains protein double that of the flours of the other varieties. It is this flour that is used as an infant food in the West Coast. Banana products from the ripe fruits, such as, Jam, Jelly, Halva, "Figs" and from the unripe fruits, such as, Crisp, Banana "nut", etc. and painting showing the stage in which the bananas are to be eaten banana "figs" and fruits received from the Agricultural Research Stations of Aduturai and Samalkot.

B. *Forage Plants*. 10 indigenous fodder grasses in pots along with their chemical analysis. Of these, the following are the hill grasses that are thriving in the plains:—*Sehima nervosum*, Stapf., *Chionachne semiteres*, Fisch., *Chionachne Koenigii*, R. Br. and *Enteropogon monostachyos*, K. Set.

10 varieties of Lucerne in pots received on exchange relations from Lenin-grad. Of these, the Armenian type has a spreading habit and therefore it may prove a good mixture in the pastures.

General. This general section consisted of posters and photos of Livestock to show the importance of cattle breeding, the use of good stud bulls, the advantage of having pedigree animals and the progress and help given by the department to improve livestock by giving premium, also posters showing proper rations for milk animals, dry animals, breeding bulls and work animals. Similarly information on Poultry-keeping was also supplied. Eggs of different quality were exhibited. Handling of milk was exhibited and practical demonstration of testing milk for quality was given. The most attractive portion in this section was the display of the various kinds of fruits and fruit preserves and a large collection of vegetables both indigenous and english. The material included both those grown at the Central Farm and those brought by the Curator, Government Gardens, Ootacamund. A good collection of potato varieties from the Nanjanad Station was also exhibited in this section. Coffee plants, tea of various grades, cardamom, arecanuts, etc. from the seventh circle were also on show.

Horticulture. Besides the exhibits of fruits in the General Section the Superintendent, Fruit Research Station had organised a miniature orchard with live material explaining the various aspects of fruit growing from the preparation of the nursery, sowing of seeds, etc., to the picking and packing of fruits.

Some of the local practices observed in the orchards and the comparative proper methods to be followed were demonstrated. In the plots prepared for the purpose. The exhibits started with the propagation by seed from the extraction and selection of good seed; defective and proper methods of preparing the nursery to sowing and transplanting of seedlings under various stages. Vegetative propagation by cutting, layering, gotteling, budding and grafting with different operations involved were also demonstrated, but with special reference to budding and grafting. Selection of reliable and good plants for orchards, various methods of planting, irrigation and manuring, clean cultivation and pruning, formed some of the instructive items of demonstration. The local and standard methods of picking, grading and packing of fruits were also exhibited.

Placards with instructive notes on various pomological operations were kept in the stall as a guidance to the visitors and due attention was given to the practical demonstration of all aspects of fruit growing.

College-day Sports.

The athletic sports in connection with the 25th College Day were held under the auspices of the Union on Saturday, the 1st August '36. The ground was gaily decorated and the Union Jack hoisted in the middle of the ground. Further attempts to add to the adornments of the ground by way of flags and streamers

were frustrated by a strong breeze which persisted throughout the day. The entirely new set of athletic equipment contributed its share to the elegant appearance of the course. The weather conditions were very favourable though interrupted by two spells of light showers which however did not seriously interfere with the conduct of the sports.

The sports commenced punctually at 3 P. M. and all the 22 items were gone through by 6-15 P. M. Each one of these was very keenly contested though no new records were created. The astonishing feature of this year's contests is that the champion was undecided till the last individual event was over. Messrs. M. Mukundan and K. Kunhiraman Menon went all out to win the coveted honour but Mr. Mukundan succeeded in retaining the title which he won last year by securing 42 points as against 40 scored by Mr. Menon. It is interesting to mention that Mr. Mukundan secured three first places and four third places to attain the aggregate of 42, whereas Mr. Menon scored four first places to total 40.

After the sports were over Mrs. R. W. Littlewood very kindly distributed the cups, medals and prizes to the respective winners. Rao Bahadur S. Sundara Raman, Vice President of the Union thanked Mrs. Littlewood for readily accepting the invitation to preside at the function, and called for three hearty cheers which were enthusiastically responded.

The sports committee takes this opportunity to convey its thanks to all the gentlemen who rendered invaluable help in conducting the sports by readily accepting the various offices to which they were elected and discharging their duties connected therewith ungrudgingly.

List of Prize Winners.

- | | |
|-----------------------------|---|
| <i>Cross Country :</i> | <i>Half a mile :</i> |
| i. S. K. Sastry. | i. T. M. Kini. |
| ii. T. M. Kini. | ii. D. V. Rajagopal. |
| iii. Md. Zainulabudeen. | iii. Zainulabudeen. |
| <i>100 Yds. dash :</i> | <i>Javelin Throw :</i> |
| i. K. K. Menon. | i. M. Mukundan. |
| ii. P. M. Somanna. | ii. T. M. Kini. |
| iii. M. Mukundan. | iii. P. K. S. Mani. |
| <i>Long Jump :</i> | <i>Half Mile (Invitation) :</i> |
| i. M. Mukundan. | i. Anthony Joseph (St. Michaels). |
| ii. T. M. Kini. | ii. Dominique (Government College). |
| iii. P. M. Somanna. | iii. Ramanatha Rao (Union High School). |
| <i>Shot Put :</i> | <i>120 Hurdles :</i> |
| i. K. K. Menon. | i. K. K. Menon. |
| ii. T. Somasundaram. | ii. T. M. Kini. |
| iii. M. Mukundan. | iii. M. Mukundan. |
| <i>High Jump :</i> | <i>One Mile :</i> |
| i. M. Mukundan. | i. S. K. Sastry. |
| ii. P. M. Somanna. | ii. T. M. Kini. |
| iii. P. K. S. Mani. | iii. D. V. Rajagopal. |
| <i>Quarter Mile :</i> | <i>Obstacle Race :</i> |
| i. K. K. Menon. | i. T. P. S. Nainar. |
| ii. S. K. Sastry. | ii. P. K. S. Mani. |
| iii. M. Mukundan. | iii. M. G. Rajaraman. |
| <i>Cricket Ball Throw :</i> | <i>Intertutorial Tug of War :</i> |
| i. M. Mukundan. | Mr. C. Narasimha Iyengar's wards. |
| ii. P. M. Somanna. | <i>Intertutorial Relay Race :</i> |
| iii. T. M. Kini. | Dr. J. S. Patel's wards. |

Messages.

R. D. Anstead. On the occasion of the Diamond Jubilee of Agricultural Education in India, and the Silver Jubilee of the Madras Agricultural Students' Union I note with great pleasure that an old friend of mine will inaugurate the proceedings—Sir K. V. Reddy Garu. I have most pleasant memories of the work with him when he was Minister for Development, and I know how much his heart was in the work of the Agricultural Department, and how earnestly he had at heart the welfare of the ryots. That he is now officiating Governor gives me the greatest pleasure.

The history of Agricultural Education in the Madras Presidency and the part the Union have played in the Education, and of the Madras Agricultural Department is a thing to be proud of, and I feel sure that the future is bright, especially under the aegis of the present Viceroy, who as Chairman of the Agricultural Commission, had a unique opportunity of seeing the work of the Agricultural Departments of India.

As one who played his small part in the work of the Department and who has happy memories of that work and his colleagues I offer my most sincere congratulations and good wishes to you all.

* **Thomas Ramaswami Ramanujam.** *Voice Record.* "This is Great Britain Calling: The conquest of Nature by Science has made it possible for a voice to be heard from beyond the seas and to convey to the Jubilee gathering at Coimbatore, the greetings of fellow members of the Union now in Great Britain. Though exiled several thousand miles away, our hearts are one with you at this great epoch in the history of the Union. Besides wishing the Jubilee Celebrations every success, we send our hearty congratulations to all concerned on the very useful work the Union has done during a quarter of a century, and wish it a career of enhanced usefulness in the future."

Rao Bahadur Y. Ramachandra Rao. I wish to convey on this great and happy occasion my heartiest wishes for the well-being of the Union, and would pray to the Almighty to grant it long, long years of increasing and extensive usefulness to the cultivating public and the students past and present of the Agricultural College, Coimbatore.

Rao Bahadur C. Tadulingam, F. L. S. It gives me, one of the humble organisers of the Union, immense pleasure to note that His Excellency Sir K. V. Reddi Naidu, to whom the Department and the Union owe a deep debt of gratitude, has kindly consented to inaugurate the proceedings.

Wishing the Jubilee Celebrations, Conference and the College Day Sports every success.

K. M. Thomas. On behalf of the members of the Department now in England (Messrs. Ramaswamy, Ramanujam, Sankaran, Pillai and myself) I send our best greetings to our fellow members of the Union and colleagues in the Department. We wish the Jubilee Celebrations, the best of success and trust that what we have achieved in the past will goad us to launch a more ambitious programme for the future.

R. C. Broadfoot. I regret I cannot be present to share in the success of the Diamond Jubilee Conference, which I feel is assured. Anyway you have my very best wishes for the success of the functions during College Week.

Allan Carruth, O. B. E. This year the celebration of College Day has a special significance in that it is the Silver Jubilee of the Union. From small beginnings the Union has grown in strength and usefulness, and I see no reason why developments should not continue.

Greetings to all our members and best wishes for the success of College Day.

* The voice record was played on the gramophone on the opening day.

R. C. Wood. I wish you all success. It seems a long time to my Coimbatore days—after all it is a good many years, and I am getting nearer the time when I am due to retire, but I have very pleasant recollections of the time I spent there.

Telegraphic Messages were received from: Rao Bahadur B. V. Nath, P. H. Rama Reddy, Principal Lyalpur Agricultural College and others.

Messages were received from: Mr. K. Gopalakrishna Raju; The Vice Chancellor, Andhra University; Director of Agriculture Hyderabad State; Director of Agriculture, Bombay; and Mr. Kasiviswanatha Thampuram.

CULTURAL METHODS OF CONTROLLING PLANT DISEASES

BY RUDOLPH D. ANSTEAD, M.A., C. I. E.,

Retired Director of Agriculture, Madras Presidency.

Since the day, sixty years ago, when the Madras Agricultural Department was born, views on many agricultural problems have undergone a profound change. This is especially the case in those branches of the subject which deal with the pests and diseases of crops. During the past fifty years enormous strides have been made in medical knowledge of all kinds, including the health of plants.

An incessant war is carried on between man and insects, fungi, and bacteria, and many are the methods which have been recommended to combat these pests which take an enormous annual toll of our crops and stored products, and also of life of man and beast.

Despite this agricultural practices have been remarkably little influenced. It seems so obviously the right thing to ascertain the nature and life history of a pest and then to attack its weakest and most vulnerable phase. This, however, does not get to the real root of the problem, and in most cases is only a palliative. The hosts of the enemy remain, undiminished at their source, and the remedies have to be constantly applied. It is now being realised that direct attack by assault and battery is nearly always useless, and entomologists and mycologists are being rapidly transformed into plant pathologists, bringing these subjects into line with new developments of medical thought. A more insidious technique has begun to appear, which may be called perhaps the "cultural" method of preserving plants in health. The presence of the pest is ignored in this technique, and no direct attack is made on it.

In his Presidential Address to the Agricultural Section of the British Association at Toronto as long ago as 1924 Sir John Russell said: "these cultural methods of dealing with plant diseases and pests offer great possibilities, and the close study jointly by plant physiologists and pathologists of the response of the plant to its surroundings, and the relationships between the physiological conditions of the plant and the attack of the various parasites would