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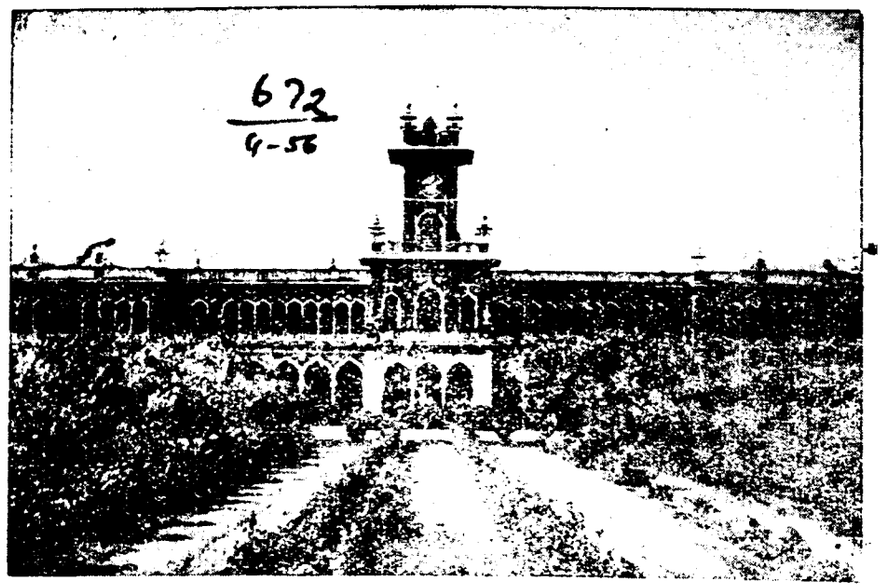

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THE MADRAS AGRICULTURAL STUDENTS' UNION.

This is an association of the students, past and present, of the Madras Agricultural College, and of the officers of the Madras Agricultural Department, the Principal of the Agricultural College being the President, ex-officio. The Union conducts this Journal and celebrates annually the College Day, on which occasion it convenes an Agricultural Conference. The Association has Members, Associates, Honorary Members and Patrons. For detailed particulars apply to the Secretary.

THE MADRAS AGRICULTURAL JOURNAL

A Premier Agricultural Monthly in India

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Editorial

Thirty-Ninth College Day and Conference 1956: This annual function of the Madras Agricultural Students' Union, was celebrated this year with great eclat on the 7th and 8th August. The College Day and Conference was inaugurated on the 7th by Sri M. Bakthavatsalam, Minister for Food and Agriculture, Madras, after Sri R. M. Sundaram, Director of Agriculture, and Dr. K. C. Naik, Principal of the Agricultural College had welcomed the gathering and delivered their introductory speeches on the occasion. A symposium entitled "Modern Trends in Indian Agriculture" was inaugurated on the 8th by Dr. J. S. Patel, Additional Agricultural Commissioner, Planning Commission, Delhi. There was a large gathering of leading agriculturists for the Conference and Symposium, besides officials, students and other members of the public. While initiating the symposium, Dr. Patel delivered a very thought-provoking address on the role of the agricultural research worker and the extension officer in a welfare state.

The Golden Jubilee of the Chemistry Section of the Agricultural Research Institute was celebrated on August 9th, with Dr. V. Subramaniam, Director, Central Food Technological Research Institute, Mysore, presiding. Among those who attended and participated in this celebration were Dr. Gilbert R. Muhr of the American Technical Co-operation Mission and Prof. David V. Ter. Avanesyan of the U. S. S. R. Dr. Subramaniam in the course of his very inspiring address, stressed on the need for scientists to keep in close touch with the problems of the common man. A number of interesting papers were then presented on "Chemistry in aid of Agriculture". On Friday, the 10th August, the Union held its annual General Body Meeting in

the morning and elected the office bearers for the ensuing year, while in the afternoon the Farmers' Day of the Central Farm was celebrated, with Sri M. S. Palaniappa Mudaliar B.A. presiding. A number of progressive farmers participated in the discussion that followed the presidential speech by Sri M. S. Palaniappa Mudaliar, amongst whom special mention may be made of Sri C. L. Sundararajan B. sc. (Ag.) an old student of the Agricultural College, Coimbatore and one of the progressive farmers of Coimbatore at present. Sri Sundararajan recounted some of his observations and experiences during his recent visit to Australia to study the main trends of Australian agriculture.

The College Day Week concluded on the 11th, with the Departmental Officer's Conference.

Perhaps the most remarkable feature amongst the various modern trends noticeable in Indian agriculture is a growing awareness of the fact that the Indian farmer is a complex personality, which necessitates a more effective psychological approach in tacklings problems relating to rural welfare. As Dr. Patel pointed out in the course of his address, the shortest way may not always be the quickest or the best and a due appreciation of all the factors involved is needed for chalking out effective lines of action.

THE THIRTY-NINTH COLLEGE DAY AND CONFERENCE
1956

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Welcome Speech by the Principal, Agricultural College and Research Institute, Coimbatore

Hon'ble Minister for Agriculture, Mr. President, Ladies & Gentlemen,

I deem it as a high privilege, as Principal of this Agricultural College and Research Institute and as President of the Madras Agricultural Students' Union, to welcome you all on this occasion of the Thirty-ninth College Day and Conference. The Union is very grateful to Hon'ble Sri Bakthavatsalam, Minister for Agriculture who has very kindly consented to inaugurate this Conference. The Union as well as the entire Department of Agriculture is indeed very fortunate in having his able guidance and sustained interest and we owe him a deep debt of gratitude for his personal and active help in the development of our department, including the educational side.

We are also happy to welcome on this occasion Dr. J. S. Patel, Additional Agricultural Commissioner, Planning Commission. Dr. Patel is no stranger to us, as he was the first Oilseeds Specialist in our department from 1930 to 1938, when he endeared himself to one and all by his suave manners, adding lustre to this institute by his research achievements. We look forward to his able guidance in our discussions during the Symposium.

We are specially fortunate this year in having our Director of Agriculture to preside over this gathering. For over a dozen years he has been connected with this Institute and department, either as Secretary to Government in the Agricultural Department or as Director. His rich and unique experience, no less than his profound knowledge of agriculture are bound to make this an event of more than ordinary significance.

Agricultural educaion is becoming increasingly attractive to our young men and women and this year the number of students was increased from 108 to 162 in the first year, for which 540 applications were received. The new classes have commenced functioning from the 18th of last month. There are four girl students in the first year class, which also includes four students from Coorg, one from Malaya and one from Africa.

In the final examination of the B.Sc., (Ag.) course held recently, 73 students were successful, out of 78 candidates who appeared for the examination under the new regulations and 14 under the old regulations. The six months' practical training that was included since last year for the final year students under the new regulations continued to work well. The 94 students were divided into batches and distributed for this six months' practical training at the following research stations; Central Farm, Coimbatore and Agricultural Research Stations at Koilpatti, Pattambi, Mangalore, Aduthurai and Tindivanam, on a linguistic basis as far as possible.

The Institute continues to attract a number of students who are eager to take up post-graduate research work, leading to higher degrees like the M.Sc., or Ph.D., of the Madras University. During the year seven students registered themselves for the M.Sc. and Ph.D. degrees and there are now 20 students working for the M.Sc., and five for the Ph.D. Three students secured the M.Sc. degree during the year. There can be no two opinions on the need to improve the facilities available in the Institute for post-graduate work as we are now compelled to reject an increasing number of applicants for want of such facilities in many of the sections.

In this context, I would venture to suggest that a full-fledged post-graduate research centre might be instituted at Coimbatore at an early date. For this purpose, the Freeman Building which is now functioning as the College for the B.Sc. (Ag.) students, can be readily converted with the requisite additional equipment. In the Five-Year Plan, provision has been made at a total cost of about 38 lakhs of rupees for the erection of a new Agricultural College building in the vicinity of the existing one, with the addition of the necessary hostel and other facilities and there can be no more opportune moment than this to set up a separate post-graduate research centre for agricultural research, utilising the Freeman Buildings with its laboratories. The Joint Indo-American Team, which went round the country last year, after a visit to leading centres of agricultural education and research in U.S.A., have stressed upon the urgent need for upgrading agricultural research, suggesting five centres for the purpose, among which Coimbatore is specifically included. A post-graduate research centre at Coimbatore on the lines suggested by the Team would be the most effective way to up-grade the quality and output of

research work in the years to come. In fact, in the context of the rapid developments that are taking place all around us in every branch of science, it is essential to have such a centre if Coimbatore is not to lag behind other centres of agricultural research.

The University of Madras is getting ready to celebrate its centenary next year and on such a happy occasion it would be most fitting that two or three chairs are endowed for research in agricultural sciences, thus providing a fillip for the promotion of research at the highest possible standard.

The post-graduate diploma course in horticulture which had been suspended for a short period was revived from August 1955, with a strength of 31 students. This course comes to an end on 14th August 1956. The refresher course for young farmers started on 25th July 1956 with 30 students on the rolls at present.

The Chemistry Section which completes fifty years of existence is celebrating its Golden Jubilee the day after tomorow. Very soon, it is hoped that this Institute itself will have the opportunity of celebrating its Golden Jubilee.

The Madras Agricultural Journal which forms one of the most useful activities of the Madras Agricultural Students' Union, both to the public and to the workers of this department, continued its publication regularly, in spite of inadequate financial resources. At present the department's publication activities have assumed considerable proportions. Besides the Madras Agricultural Journal which depends upon the public and governmental support there is the South Indian Journal of Horticulture which is also languishing for want of sufficient financial assistance, though receiving an annual grant from the Indian Council of Agricultural Research; the proceedings of the Annual Scientific Conference which is compiled at this Institute but published in the Government Press, the Grow-More-Food Journals which are also compiled partly by the officers of this Institute but published in the Government Press, a large number of leaflets, bulletins, monographs and books published in a similar way, mainly by the efforts of the workers of this Institute. It is a question for serious consideration if it is not possible to canalise all these activities and enhance their usefulness by adequate support of the Government and the Public. I have no doubt that the Madras Agricultural Students' Union will be only too glad to place its services in our endeavour to ensure both regularity of

publication of these and also to enhance the standard of the same. A few years ago we had a very useful publication issued from this Institute by the Association of Economic Biologists. Even though stalwarts like Dr. Patel of the Planning Commission, who will be guiding our discussions now, and Sri K. Ramiah (now working for the Food and Agriculture Organisation in Bangkok) had been associated with that publication, it had to go out of existence for lack of continued financial support. I venture to suggest that a unified agency located at this Institute for all scientific and popular publication activities on agriculture would go a long way to improve their usefulness. The contributions of the Boyce Thompson Institute may well serve as a model of what can be achieved when adequate publishing facilities are provided for an experienced organisation of research workers. Based on the sound principle that prompt publication of research work is as important as the research itself, the workers of the Boyce Thompson Institute purchased space in the Botanical Gazette and American Journal of Botany, but very soon they found it necessary to have a separate journal for their Institute. Nearer home, with increased financial facilities that were made available, the publications of the I. C. A. R. have improved their standard to such an extent that they serve to point the way as to how we too can improve the standard of our publications out of all recognition if sufficient financial help is forthcoming. The Joint Indo-American Team had also recommended that the Indian Council of Agricultural Research and the Government should extend substantial financial assistance to scientific bodies and develop the publication side in agricultural research. A long-standing periodical such as the Madras Agricultural Journal would indeed be a fitting case for such aid from the Indian Council of Agricultural Research or the Government. On behalf of the Madras Agricultural Students' Union and its sister organisation, the South Indian Horticultural Society, I desire to assure the public that we will spare no effort to give an increasingly useful standard of service, provided we are assisted materially by both the public and Government support in the matter of adequate finance.

In conclusion let me once again extend our hearty welcome to you, Sir, to this annual function of ours. as also to our Director and to all other distinguished visitors including the members of the public and other officers of this Department who have assembled here today.

Report of the Secretary, of the Madras Agricultural Students' Union.

I extend to you all a hearty welcome and I have great pleasure in presenting to you on behalf of the Madras Agricultural Students' Union, the report for the year 1955–'56.

It is indeed very fortunate that we are having amidst us today, the Hon. Sri M. Bhakthavatsalam, Minister for Agriculture, Sri R. M. Sundaram, Director of Agriculture and Dr. J. S. Patel, who has kindly agreed to preside over the symposium. I have great pleasure in expressing our feeling of cordial welcome to them and the other officials and non-officials present here.

Madras Agricultural Students' Union: It was in 1911 that this Union was started by a few enthusiastic workers, to bring together the associates and students of the Agricultural College here, with its predecessor the Saidapet College of Agriculture. The Union, though it was originally started as an organisation to serve as a link between the past and present students, has at present enlarged its scope considerably, having in its fold most of the officers of the department, progressive agriculturists and the students. Through the medium of the Madras Agricultural Journal, and these annual conferences, the Union can claim to have succeeded in a large measure, in bringing together both research and extension workers, as well as practical agriculturists.

Madras Agricultural Journal: The Journal has now come to function as one of the recognised media for the co-ordination of the results of research and for a wider spread of knowledge regarding developments in agriculture. The journal is being published regularly every month, in spite of all difficulties. It has in its exchange list a large number of periodicals, both Indian and foreign, and is being abstracted in leading abstract journals of the world.

Market Committees' Chronicle: The Market Committees' Chronicle was continued to be published in the Madras Agicultural Journal as a supplement devoted to the activities of Market Committees, in the regulation of agricultural markets. We acknowledge with thanks the help rendered by the State Marketing Officer in the publication of Market Committees' Chronicle.

Finance: The publication of the Madras Agricultural Journal is the chief activity of the Union. It is, however, a matter for regret that the income derived by way of subscriptions is not

commensurate with the expenditure incurred in the publicatio of the Journal. A special grant of Rs. 1,800/- has been forthcoming from the Government of Madras since 1947-48, and for this the Union desires to place on record its gratitude to the Madras Government. The above amount was sanctioned by the Government in order to compensate the loss sustained by the Union, by supplying the journal to the students of the Agricultural College at a concession rate of Rs. 3/- per year, though the actual charges come to Rs. 6/- per annum. In view of the increased admissions, this amount may have to be increased correspondingly, for which a separate request is being made. It is our earnest hope that the Government will consider this appeal sympathetically and accede to our request. We are also grateful to the Madras Government for sanctioning in April 1956, a sum of Rs. 1,000/- for bringing out a special number, incorporating all the papers received for the last year's symposium. We request that this grant may be made a perennial one, so as to enable us to publish the special number immediately after the College Day Conference each year.

The College Day Conference, 1955: The 38th College Day and Conference was celebrated from the 19th to 22nd August 1955. The Conference was inaugurated by the Hon. Sri A. P. Jain, Union Minister for Food and Agriculture. Dr. T. S. Sadasivan, Director of the University Botany Laboratory, delivered the presidential address and the subsequent sessions were presided over by him. A Symposium on "What Next in Agricultural Research and Extension" was organised, which aroused considerable interest and keen discussion.

A notable change during last year was the formation of a permanent Central Exhibition in which the main activities of the Institute are depicted to laymen as well as scientists. We were indeed happy to recall that the Hon. Sri K. Kamaraj Nadar, Chief Minister of Madras, inaugurated the Central Agricultural Exhibition of the Institute during last year's College Day Celebrations. All are requested to visit the Central Exhibition.

Ramasastrulu Munagala Prize: The Ramasastrulu Munagala Prize for the year 1956 has been awarded to Sri K. Rajagopalan, Assistant in Paddy, Agricultural College and Research Institute, for his paper "Variability in size and frequency of stomata in leaves of rice varieties and its correlations in drought resistance", which was adjudged the best by a panel of three judges. Our thanks are

due to Sri T. R. Narayanan, Plant Physiologist, Dr. K. Subramanian of the Southern Centre, Botanical Survey of India and Sri D. V. Krishna Rao, Government Agricultural Chemist, Agricultural College, Bapatla. Our hearty congratulations to Sri K. Rajagopalan.

Debating Contest: In response to the request of student members of the Union, a debating contest was introduced this year and we are glad to announce that Messrs. S. Lakshminarayanan and G. Ramanathan were awarded the first and second prizes respectively. Our congratulations to them, and thanks to the three judges, Mrs. Gonsalves, Dr. Naik and Dr. K. Subramaniam.

Patrons: We are extremely happy to record the enrolment of as many as eight Patrons during the year and the Union has great pleasure in welcoming as Patrons: Sri K. Rangachari, Landlord, Saidapet, Dr. T. S. Sadasivan, Director of the University Botany Laboratory, Sri C. M. John, Retired Principal of the College, Sri S. N. Venkataraman, Retired Headquarters Deputy Director of Agriculture and an old student of the College, Sri N. Chandappa of Mettupalayam, Sri V. Venugopal of Coimbatore, Sri Bhaskaran of Pattiveeranpatti and Sri A. Ayae Gownder of Kasipalayam. It is also worthy of mention that the list of patrons is quite a balanced and representative one, including both eminent research workers and progressive Agriculturists.

Retirements: During the year under report, the following members of the Union retired from active Government Service. They are Sri S. N. Venkataraman, Sri M. A. Sankara Iyer, Sri R. Balasubramanian, Sri S. Mayandi Pillai, Sri Katchapeswara Iyer, Sri P. K. Parameswara Menon, Sri T. Radhakrishnan, Sri P. N. Nair, Sri K. M. Venkatachalam Pillai and Sri K. P. Ananthanarayana Iyer. We wish to place on record our sincere appreciation of the services rendered by Sri S. N. Venkataraman, R. Balasubramanian and M. A. Sankara Iyer to the Union as its functionaries. The others are members of long standing who have helped the Union in various ways, for which our thanks are due to them. We wish them all a very happy, peaceful and long life, after retirement.

Obituary: We record with deep regret the premature demise of Sri K. K. Nambiar, Secretary of the Indian Central Arecanut Committee.

Acknowledgments: Now it is my pleasant duty to express on behalf of the Union, our thanks to all those who have helped the

Union in different capacities during the year. We are deeply grateful to Sri A. P. Jain for inaugurating the conference last year. To Professor T. S. Sadasivan, who delivered the presidential address and conducted the proceedings of the Symposium as well as the Scientific Workers' Conference with marked distinction, we render our heartfelt thanks. To Sri M. S. Sivaraman and Sri P. P. I. Vaidyanathan, two Directors of Agriculture during the year, the Union is grateful for their kind help and guidance in all the matters of the Union. To Sri R. Balasubramanian, Retired Principal, the Union expresses its heartfelt thanks for his valuable help in making the College Day and Conference last year, a grand success. Our thanks are also due to all the ladies and gentlemen, who helped in various ways for the success of the College Day and Conference 1955 and during this year.

Speech delivered by Sri R. M. Sundaram, I. C. S., Director of Agriculture, Madras

Hon. Mr. Bhakthavatsalam, Ladies & Gentlemen,

I am grateful to the Madras Agricultural Students' Union for giving me this opportunity to preside over the College Day and Conference. I am not a stranger to you and I am particularly grateful to the Hon. Minister for Agriculture for giving me this opportunity to serve the agriculturists of Madras for a second term as Director of Agriculture.

In a country in which over 75% of the population is engaged in agriculture, it is needless to stress that the greatest industry is agriculture and the economic prosperity of the State cannot be increased unless the agricultural wealth of the country is developed. During the First Five-Year Plan, agriculture was given the most prominent place and the emphasis was on "Grow More Food." During the Second Five-Year Plan emphasis has been laid not only on the Grow More Food but also on increasing the production of every type of crop. The broad aims of the Second Five-Year Plan have been laid down as "increasing the living standards of the people, rapid industrialisation and social justice". If the standard of living of the people is to be raised, it goes without saying that the standard of living of the agriculturists who form 75% of the population is the most vital factor to reckon with. It has been recognised that during the Second Five-Year Plan period enormous sums of money

have to be spent on numerous projects and there is bound to be inflation. To combat this inflation consumers' goods have to be produced. The most important consumer goods that the ordinary man wants are food and clothing. If every man in the village is assured of two square meals a day and is adequately clothed, it can be claimed that the standard of living has been raised. The other necessaries in life are only secondary. The import of other consumer goods, however desirable, has to be restricted if our economy is to be based on a sound foundation.

During the second Five-Year Plan period there is bound to be a gap in the foreign exchange position and this has to be bridged only by the export of agricultural products. While we are aiming at self-suficiency in the matter of food and clothing, we have also to aim at producing a surplus in crops like oilseeds, tobacco, pepper, coffee, tea and rubber. Emphasis has therefore been laid in the second Five-Year Plan period on the diversification of agriculture. Originally the idea was that the target should be raised by 15%, but we are now aiming at an increase of 40%. Plans have been modified accordingly and it is our hope that with the co-operation of the agriculturists in the State we may achieve good results.

In this effort it is very necessary that not only the large landholder and the enlightened agriculturist should take his share, but it is essential to enthuse even the smallest cultivator in the country. Social justice will have no meaning if all the facilities for increasing production are confined to the well-to-do ryots alone. Our main object in all schemes of National Extension and Community Projects is to afford an opportunity to the smaller agriculturists to take their share in the development of the country as a whole. Efforts in this direction have to be intensified. Co-operative aocieties have to be formed in very large numbers, both for financing the agriculture of the small man as well as the marketing of his produce. There is criticism that our efforts in Madras in this direction have not been adequate but I do hope that in the second plan period, this criticism will disappear and that we would march along with the other States in India.

I am very happy to note that in the agenda for the Symposium you have included the subject "Modern trends in Indian Agriculture". There used to be the criticism that agricultural research in India was quite well advanced but there was a gap between agricultural research and agricultural development and that the results of research were not speedily translated into field

practices. I venture to submit that this criticism no longer holds good. Our research workers have succeeded in translating their results into practice very quickly. The sole aim of all agricultural development is maximisation of agricultural production. We can claim that Madras State can show much higher yields per acre in rice, sugarcane, cotton and some of the millets than the other States in India. But in view of the fact that our population is also increasing at a very fast rate, we have got to find ways and means to step up production still higher. It will not be enough to grow two blades of grass where one grew up till now, but it is now necessary to grow even four blades of grass instead of one.

Soil, irrigation and seeds are the three key factors to successful agriculture. Manuring for our crops both under irrigated conditions as well as rainfed conditions present a number of problems. It is very necessary that soil-testing stations should be located in almost every district to determine the nature of the soils and for recommending manurial schedules. Manurial schedules have to be prepared for various conditions, both of soil as well as irrigation. In the same district or even in the same village we come across different types of soils which call for different types of treatment. One of the most important problems to be faced by the modern research worker therefore is testing of soils and offering of advice on the use of suitable manures with proper proportions of N., P_2O_5 & K_2O. We know that by the application of green manures higher yields are made possible. Use of chemical fertilisers also gives increased yield. The use of improved seed increases crop production as also timely transplantation, irrigation and other cultural practices. If supposing increased yield due to green manure is A, that on account of chemical manure is B, on account of improved seed C, on account of improved agricultural practices D, would it be proper to assume that if all these practices are adopted, the increase in production should be A+B+C+D? Obviously agriculture is not simple arithmetic and it is for the scientist to tell us how far this theory will prove true. This is important for testing our achievements against the targets that we have assumed.

The view has been widely held that the proper preparation of the soil is most vital not only for maximisation of production, but also for avoiding pests and diseases. Today there are enlightened agriculturists who feel that the use of chemical fertilisers are responsible for the increase in the incidence of pests and diseases. How far this view can be supported is for the research workers like you to answer. It is no doubt evident that these modern trends

in agricultural production have brought in their train several difficulties also, which call for immediate remedial measures.

In the matter of improved seeds we have to acknowledge the deep debt of gratitude to our Research Stations that have continued to work actively for the past two decades, to produce better strains of paddy, cotton, millets, sugarcane and so on. Local problems like attack of pests in particular areas or the presence of salinity in the soil or the availability of water for short periods of time have all been solved by the evolution of suitable strains of improved seeds. Even a few days saved in the maturing of the crop is a matter of substantial improvement to the agriculturist. Short-term varieties of paddy have played a very important part in the prosperity of the agriculturist and they have enabled him to improve his production by growing two crops where he was able to grow only one before. It has been estimated that in the production of better strains of cotton—the long-staple variety—crores of rupees have been saved for this country by avoiding imports of foreign cotton. The Coimbatore varieties of sugarcane have become famous all over the world. In millets high-yielding strains resistant to disease and strains of short-duration varieties have been evolved. These modern trends have paid ample dividends to the ryots. In combating pests and diseases, agricultural scientists have played a very important part by introducing pesticides and insecticides. But every day fresh problems crop up and it will always be our endeavour to come to the rescue of the agriculturists and give him satisfaction.

Without flattering our agricultural workers I may claim that in this province even the ordinary agriculturist has become modern-minded in agriculture. Even in the remotest village we can hear the ryots talk of our improved strains as Co. 25, Adt. 9, ASD 1 in paddy, Co. 419 in sugarcane, CO 12 and CO 18, cholam in CO 7 in ragi & hybrid cumbu etc. We hear of the Japanese method of paddy cultivation all over the countryside, we see tractor ploughing to bring waste lands under cultivation and electric pumps for lifting water. In many places we see filter point wells and pumping. This shows the co-operation of our agriculturists with the workers both in research and in administrative sections of the agricultural department. More propaganda is needed today for making our agriculturists still more modern-minded and I am sure that the efforts of this department will bear fruit in all directions with the active co-operation of our agriculturists.

Speech of the Minister for Agriculture while inaugurating the 39th College Day and Conference of the Agricultural College and Research Institute, Coimbatore on 7—8—1956

Friends,

I am very happy to be here with you all to-day and participate in the 39th Agricultural College Day ond Conference. The College Day for this institution is different from the College Days of similar institutions in that it is not a mere annual social function but serves more or less as a forum for the free exchange of ideas and experiences between research workers, extension workers, agricultural students and progressive agriculturists and also for dispassionate assessment of the achievments as well as the shortcomings of the Agricultural Department during the previous year. This year's conference is unique because it synchronises with the Golden Jubilee of the Chemistry section.

2. The Chemistry Section is one of the oldest and largest sections in the Research Institute. There has been considerable evpansion in the strength and activities of this section during the last two decades in the various fields of agricultural chemistry such as soil physics, plant nutrition and manures, plant physiology and microbiology. I am aware that this section has built up a good reputation for itself and that the Expert Committee appointed by the Government in 1949 to report on agricultural research in this State bore testimony to the fact that this section has been of considerable service to the public.

3. I am glad that the Golden Jublee celebrations of the chemistry section are to be presided over by Dr. V. Subramaniam, Director of the Central Food Technological Research Institute and Chairman of the Soil Science Committee of the Indian Council of Agricultural Reseasch. He is an eminent agricultural chemist with a national reputation and it is therefore but fitting that he should have been chosen to preside over the Jubilee celebrations.

4. I commend the idea of holding a symposium on "Chemistry in aid of agriculture" as part of the Jubilee celebrations and I hope that during the discussions in this symposium, many valuable suggestions for increasing the usefulness of the chemistry section to the Government and that public will be thrown out. I find that as a permanent memento of the Jubilee celebrations it is proposed to institute a rolling shield to be awarded to the best scientific worker

or research student in the field of agricultural chemistry in the Agricultural Department. I wish the Chemistry section many many more years of useful service.

5. This year the college has started with increased strength. The requirements of the varions development schemes in the Agricultural Sector of the Second Five-Year Plan and the anticipated increased demand from the private sector have made it imperative that the total output of agricultural graduates should be substantially increased. We have therefore increased the admissions from 108 to 162 with effect from this year. I am aware that all the requisite amenities in the shape of additional buildings, etc. consistent with the increase in strength have not yet been provided. But every effort if being made to provide them as early as possible.

6. In this connection I may mention that during the discussions at ihe recent International Labour Organization Conferenc at Geneva which I attended as the leader of the Indian delegation, vocational training in agriculture was a subject on which delegations from European countries showed considerable interest.

7. This year's subject for discussion in the symposium of the Madras Agricultural Students' Union is "Modern Trends in Indian Agriculture". You could not have chosen a better subject considering that we are now in the first year of the Second Five Year Plan under which we have to step up agricultural production to the utmost extent possible. Unless modern trends in agriculture in various parts of the world in which conditions more or less similar to those in our own country are prevailing, are studied and we copy those methods of improved cultivation which have proved very successful elsewhere, we cannot make rapid progress. I may mention as an instance the spectacular results that have been achieved in a remarkable short period by our adoption of the Japanese method of paddy cultivation.

Presidential address delivered by Dr. V. Subramanian, Director, Central Food Technological Research Institute, Mysore, on the occasion of the Golden Jubilee Celebration of the Agricultural Chemistry Section at the Agricultural Research Institute, Coimbatore on 9—8—1956

I consider it quite a privilege to be with you on this historic occasion. Coimbatore has had a succession of brilliant chemists during the past fifty years and by a strange twist of good fortune,

I have met and known every one of them, though, in the case of Dr. Harrison,, I met him for the first time, only at the Pusa Institute in Bihar. Some of your chemists like Drs. Norris and Viswanath and Mr. Shiva Rao I have known quite intimately. Your section at Coimbatore has had a brilliant record of work to its credit and there is practically no branch of agricultural chemistry which it has not touched on, at some time or other.

Agricultural Chemistry is by definition, the branch of of chemistry that deals with everything relating to Agriculture — soils, crops, manures and all allied subjects. Every other branch of Agriculture is dependent on it. From the very early days, Coimbatore had given a valuable lead in several lines, so much so, that several leading scientists and, particularly, both Sir John Russell and Dr Bernard Keen expressed their warm appreciation of the excellent work being done at this important centre.

If we look up the practical developments in agriculture in different parts of the World, we will find that they have occurred in spurts, as influenced by some adverse condition or other. Scientific work may remain merely as publications or even as reports till there develops some situation which necessitates rapid application. We are today applying with considerable benefit, the practical findings of the past 30 or 40 years and in this direction, Coimbatore can be rightly proud of its record.

The mystery of the puddled soil and its relation to the nutrition of the rice plant: Rice is the most important crop to us and to more than half the population of the World. It should be said to the lasting credit of Coimbatore that pioneering work on the mode of decomposition of organic matter in the puddled soil and its bearing on the respiration and nutrition of the rice plant was done at this centre. In fact. Coimbatore has been a leader in the production and application of green manures, both by themselves and in combination with artificials. We know a great deal today, but we are still far from answering the basic query as to what the puddled field gives which the ordinary dry-cultivated land does not provide. I have always held that the apparently extravagant water requirement has a nutritional significance. One constituent in which the rice plant is is richer than most other grain crops, is silicon, which forms a large part of the ash, especially that of the husk. We do not quite know its significance. There may also be other things including some soluble forms of organic matter and certain essential minerals which

are derived from the puddled soil. If only we can unravel this mystery, we would have laid the foundation for a new and possibly revolutionary method of rice cultivaton.

While still on rice, one may refer to another pioneering line started at Coimbatore, viz., the nutritive value of different varieties as influenced by manures, seasons, irrigation, etc. Rice contains a good protein, but the quantity is very small. The over-all nutritive value of the rice diet is very low. It is up to us to develop a variety of rice which even in the raw polished state will contain at least 9 – 10% protein. This can be achieved by the joint efforts of the breeder and the chemist, The Rice Research Institute at Cuttack has already started some work in this line.

The problem of organic manures — Application of plant hormones: Excellent work has been done in regard to the conservation and utilisation of different organic manures. A lot of work on poudrette-making and composting of different wastes has also been done. Some outstanding problems still remain to be covered. One is the control of the decomposition of the organic matter so that the plant benefits to the maximum extent. Because of high temperature and other features, our soils go on decomposing organic matter and we are not able to maintain a sufficiently high level comparable with the soils of Europe and America. We have not also done much in regard to the application of plant hormones. These lines, in which Coimbatore has already done some work, deserve to be pursued and developed.

The utility of providing some soil cover during periods of fallow has exercised the mind of workers in different countries. Our soils are like shallow tanks exposed to the hot sun and they go on losing organic matter whether there is any crop or not. Under almost similar conditions, the soils of Queensland are able to maintain permanent grass. Coimbatore should take a lead in this line of study.

Studies on new fertilisers — Importance of trace elements: During recent years, a large number of new fertilizers have come on the World's market. Some of them have worked well in our hands, while others have presented problems, especially on certain types of soils. There is also the problem of utilising concentrated fertilizers like urea which decompose very quickly. We also have the difficult problem of providing phosphatic fertilizers that will not get lost in our laterite soils. We have to do more work on potash and calcium. The influence of different types of sprays and other methods of

administering essential trace elements deserve to be followed up. We do not know as to how fast our soils are getting depleted.

Importance of animal nutrition: The importance of quality in crops not only in relation to different industrial uses, but also in relation to human and animal nutrition has attracted the attention of several Coimbatore workers. Some of these subjects are now being developed intensely under other auspices, but the link with the Agricultural Chemist is still badly needed. We have to depend to a very large extent, on our cattle, both for our milk and for ploughing and other work in our farms. Agricultural Chemistry and Animal Husbandry should come close together both in collecting and and spreading knowledge. The type of work done by the late P. Venkataramiah desserves to be continued.

Another subject which has been lately much neglected is microbiology in relation to soil fertility and plant nutrition. We should get microbiologists of high calibre who could apply their minds intensively to this problem. Fresh ideas and new developments will come only if there are favourable conditions for work and steady, zealous effort on the part of the workers.

Coimbatore has a tradition for active association with plantation crops on the one hand and horticultural crops on the other. Although these crops are now being sought to be developed under other auspices, it will be for the good of all concerned if the Government sees to it that a proper liaison is maintained.

Best scientists should be attracted to continue in research: Fifty years is a relatively short, though important span, in the history of an institution. A great deal of work still remains ahead of us. If we have to maintain the high reputation and the excellent traditions of the past, the following would deserve very special consideration. Firstly, the posts of Agricultural Chemists and Assistant Agricultura Chemists should be made sufficiently attractive so that the best people will be drawn to them. There should be scope for advancement in the same line, so that people will not be tempted to seek administrative posts. During recent years, there have been several changes and these are not favourable to the continuity of either thought or work. The Research sections should be distinct from the routine branches, and the programmes should be so drawn up that not only practical but also fundamental problems of far-reaching importance will be tackled.

Today, we are reaping the benefits of the efforts of our chemists during the past 50 years. If the succeeding generations are to correspondingly benefit by our present efforts, we should maintain quite high standards and attach special importance to problems of long-range importance. Even one or two findings of significant value will make a tremendous difference to our agricultural economy.

List of Papers Received for the College Day and Conference — 1956.

Symposium on "Modern Trends in Indian Agriculture".

1.	Modern Trends in Indian Agriculture.	Dr. K. C. Naik.
2.	Changing Scenes in Rice Research and Extension.	Bhavani Shankar and P. C. Sahadevan.
3.	Modern Trends in Cotton production and Research in India.	N. Kesava Iyengar.
4.	Modern Trends in Indian Agriculture (Millets and Pulses improvements.)	B. W. X. Ponniah and A. Subramaniam.
5.	Modern Trends in Indian Agriculture with reference to the cultivation of Oil Seeds.	Abdul Samad.
6.	Modern Trends in Fruit Preservation.	Kumari S. Malathi Devi.
7.	Modern Trends in Indian Agriculture, Plant Pathology.	C. V. Govindaswami.
8.	Modern Trends in Indian Agriculture.	C. Balasubramaniam.
9.	Some Modern Trends in Agricultural Teaching, Research and Extension in India.	Dr. S. Krishnamurthy.
10.	The role of land colonisation as a means of Agricultural Development (with special reference to Wynad Land Colonisation Scheme).	K. Fazllula Khan and C. N. Jayasankaran.

11. Modern Trends in Agriculture, (water use and irrigation problems.) — A. H. S. Sarma.
12. Modern Trends in Indian Agriculture. — M. J. David.
13. Modern Trends in Indian Agriculture with special reference to spread of improved strains of Oilseeds. — S. G. Aiyadurai.
14. Modern Trends in Agriculture Extension Service. — N. Ranganathachari.
15. Modern Trends in Indian Agriculture. — Dr. A. M. Kulandai.
16. Modern Trends in Indian Agriculture with reference to potato industry in the Madras State. — M. D. Azariah.
17. Mechanisation of groundnut cultivation. — V. Subbiah.
18. Modern Trends in Indian Agriculture with special reference to the control of "Degeneration" of Potatoes on the Nilgiris. — K. Radhakrishna Alwa.
19. Modern Trends in Indian Agriculture. — R. Govindarajulu.
20. Modern Trends in Indian Agriculture. — P. K. R. Menon.
21. Modern Trends in Indian Agriculture "The Pinch in progress and the basic Balm or Panacea". — T. Srinivasan.
22. Farming and the Scientist. — R. M. Savur.
23. Modern Trends in Agriculture. — C. L. Sundararajan.

Prizes awarded during the College Day & Conference

Name of the prize	Particulars of the award	Name of the prize winners
	Medal Prizes	
1. The Robertson Prize Medal	For obtaining the highest number of marks in Agriculture in the Final Examination of the University in the B. Sc., (Ag.) and qualifying for the degree at the first appearance.	P. R. Ananda Rao
2. The Clogstoun Prize Medal	For obtaining the highest number of aggregate tatal marks in all the College Terminal Examinations and passing all the University Examinations at the first appearance.	M. Stephen Dorairaj
3. The Kees Prize Medal	For obtaining the highest number of marks in Chemistry of the Final Examinations of B. Sc. (Ag.)	K. P. Rajaram
4. The Dewan Bahadur R. Raghunatha Rao Prize Medal	For obtaining the highest number of marks in practical Agriculture of both College Terminal and University Final Examinations of the B. Sc., (Ag.)	N. Sundaram
5. The D'Silva Memorial Prize Medal	For obtaining the highest number of marks in Animal Hygiene of the University Second Examination of B. Sc., (Ag.)	V. K. Vamadevan

Name of the prize	Particulars for the award	Name of the Prize winners
6. The Goschen Prize Medal	For obtaining the highest number of marks in Agricultural Zoology of the University Second Examination of B. Sc., (Ag.)	M. Aravindakshan
7. The Anstead Prize Medal	For a student who stands first in class II in plot cultivation and passing the First and Second University Examinations at the first attempt.	P. Annamalai
8. The Rao Bahadur K. S. Venkataramana Iyer Prize Medal	For obtaining the highest number of marks in the aggregate of the First University Examination.	S. Venugopalan
9. The Sampson Agricultural Botany Prize Medal	For obtaining the highest number of marks in Agricultural Botany of the Final University Examination and qualifying for the degree at the first appearance.	G. Soundarapandian
10. The Dewan Bahadur L. D. Swamikannu Memorial Prize Medal	For obtaining the highest number of marks in the aggregate in all the three Examinations of B. Sc. (Ag.) and passing the Annual Examination at the first appearance.	M. Stephen Dorairaj
11. The Food and Agricultural Organisation Prize Medal	For obtaining the highest number of marks at the Second University Examination of B. Sc., (Ag.) at the first appearance.	S. Venugopalan

Name of the prize	Particulars for the award	Name of the Prize winners
12. The Food and Agricultural Organisation Prize Medal	For the best student who obtained the highest number of marks in Agricultural Chemistry in both the College Terminal and University Examination of the Second year B. Sc. (Ag.) put together.	S. R. Sreerangaswami
	Book Prizes	
13. The M. K. Nambiar Prize Book	For the best student who obtained the highest marks at the second B. Sc. (Ag.) Examination held in January 1956 at the first appearance.	K. P. Srinivasan
14. The Gupta Memorial Prize Book	For the best student who secured the highest number of marks in the subject of Agricultural Engineering in the Second Examination of B. Sc., (Ag.) at the first appearance in the subject.	K. Karunakaran

Notes and [illegible]

Sports:

The Annual College Day Sports was held [illegible] August 1956. The prizes were given away by Mrs. Nandi, wife of the [illegible]nder, Air Force College, Coimbatore. Mr. P. K. Ramachandran N[illegible] the Championship Cup. The following were the prize-winners in the d[illegible]s :—

1. *Cross-country Race:* (5 miles) (Th[illegible]) (34 minutes 56 sec.)
   (1) S. Rajasekharan. (2) Annamalai. (3) Vijayan Nair.

2. *Pole Vault:* (8 ft. 8 inch.)
   (1) Ganapathy. (2) Ramachandran Nambiar. (3) Gadhadaran.

3. *110 Metres Hurdles:* (The Ramaswami Sivan Cup) (18-4/5 sec.)
   (1) Ramachandran Nambiar. (2) K. R. Natarajan. (3) C. V. Ramachandran.

4. *Shot Put:* (33 ft. 11½ inch.)
   (1) Ramachandran Nambiar. (2) Mathias. (3) Perumal.

5. *100 Metres Dash:* (The Saidapet Old Boys' Cup) (12 1/5 sec.)
   (1) S. Pitchai. (2) Ramachandran Nambiar. (3) Rajasekharan.

6. *Long Jump:* (18 ft. 8 inch.)
   (1) S. Pitchai. (2) Ramachandran Nambiar. (3) Muthu)

7. *Discus Throw:* (91 ft. 9½ inch.)
   (1) Ramachandran Nambiar. (2) Perumal. (3) Varadhan.

8. *200 Metres Hurdles:* (30 1/5 sec.) (Naganna Gowd Cup.)
   (1) Natarajan. (2) Muthu. (3) C. V. Ramachandran.

9. *High Jump:* (4 ft. 11¾ inch.) (The Tadulingam Cup.)
   (1) Jagadesan. (2) Ramachandran Nambiar. (3) Vijayan Nair.

10. *200 Metres Race:* (26 sec.)
    (1) Ramachandran Nambiar. (2) Muthu. (3) S. Pitchai.

11. *Invitation Race:* (800 Metres.)
    (1) Joseph Varkey, P. S. G. College. (2) K. Arumugam, (St. Michaels High School.) (3) M. Palaniswami, (North Coimbatore Municipal High School.)

12. *Hop, Step, and Jump:* (37 ft. 4¾ inch.)
    (1) Pitchai. (2) Muthu. (3) K. Ramaswami.

13. *Old Boys Competition:*
    (1) S. Varadarajan. (2) G. V. Ramanan. (3) K. Varadachari.

14. *400 Metres Race:* (The Prince of Wales Cup.) (58-1/5)
    (1) K. R. Natarajan. (2) Rajasekharan. (3) S. Pitchai.

15. *Javelin Throw:* (143 ft. 1½ inch.)
    (1) K. Ramaswami. (2) Ramachandra Nambiar. (3) M. J. Tom.

16. *Staff Race for Men:* (100 Yards Dash.)
    (1) K. C. Chandy. (2) S. Varadarajan. (3) G. V. Ramanan.

17. *1500 Metres Race:* (4-52 sec.)
    (1) V. Muthu. (2) Annamalai. (3) Vijayan Nair.

18. *Hammer Throw:* (73 ft. 9 inch.)
    (1) Ramachandran Nambiar. (2) K. R. Natarajan. (3) Perumal.

19. *Obstacle Race:*
    (1) T. S. Theetharappan. (2) K. Nellaiappan. (3) K. S. Sundaresan.

20. *Lime and Spoon Race for Women:*
    (1) Mrs. Samathuvam. (2) Hemalatha. (3) Vijayalakshmi.

21. *Musical Chair for Women:*
    (1) Rani Victor. (2) Mrs. Samathuvam. (3) Mrs. Gonsalves.

Proceedings of the General Body Meeting held on 10-8-1956

The Annual General Body Meeting of the Madras Agricultural Students' Union was held this year at 9 A.M. on 10—8—1956 at the Freeman Hall of the Agricultural College, with Dr. R. C. Naik in the chair.

120 Members were present for the meeting. The Minutes of the General Body Meeting held on 18—8—1955, the Audit Report for 1955—'56, and the Budget Estimates for 1956—'57 were read and adopted. The following were decided upon.

(1) To conduct a benefit performance to enhance the resources of the Madras Agricultural Students' Union.

(2) To change the name of the Madras Agricultural Students' Union to "Madras Agricultural Union". This was proposed and carried unanimously.

The following office-bearers were elected for 1956 —'57

Dr. K. C. Naik, President, (Ex-Officio)
Sri T. R. Narayanan, Resident Vice-President
,, A. H. S Sarma, Editor
,, John Dorairaj, Secretary

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Rice in Coorg

by

C. K. SUBRAMANIAM
(Micronutrient Research Station, Gonicoppal P. O., Coorg)

Rice *(Oryza sativa)* is one of the earliest crops to come under cultivation in Coorg. The time-honoured religious festival *Huthri*, celebrating the harvest of paddy gives some indication as to the great antiquity of this cereal here. From olden times each family has been assigned a block of unalienable paddy land and the agricultural economy is closely linked with various aspects of paddy cultivation.

Area: Rice covers about fifty percent of the cultivated area today. There has been a small but steady increase in area, from 66, 896 acres in 1870 to 92, 778 acres in 1953.

Climate: Coorg is a hilly country perched on the Western Ghats between 11° 56' and 12° 50' North longitude and 75° 22' and 76° 12' East latitude receiving the benefit of the South-West monsoon and a fair quantity of the North-East monsoon. The annual rainfall varies from about 40 inches in the eastern border to nearly 200 inches on the western zone. The heaviest rainfall recorded is 386 inches in Bhagamandala in 1924 and the lowest in Fraserpet, 29 inches in 1918. Throughout the growing season the atmosphere is quite humid and the temperature ranges from 40°F to 92°F. Rice thrives well in all zones, but in the colder places the same variety takes a longer time to come to maturity. Drought conditions are sometimes experienced due to failure of rains. No frosts have been reported.

Season: Only one crop is raised in most places, from July to January and a second crop is grown between November and March wherever there is enough water supply, especially in Sampaje and a few valleys in North Coorg. Dry paddy or *Bithne* as it is called, is sown behind the plough in April and harvested in October in some parts in the north-eastern zone. Although a second crop of rice is a distinct possibility in many places, this has not come into vogue due to cattle trespass and the fear of thunderstorms in March-April, when the crop would be ready for harvest.

Water: Rice needs an abundant supply of water and it is the major factor in determining the variety and the season

for the crop. The water requirement of paddy is estimated at 23,000 gallons of water per acre and it needs a constantly changing supply of water throughout its growth. The major area of rice falls under purely rainfed conditions. About 2,500 acres are irrigable during the final stages, if the monsoon fails. While the uplands have to depend purely on rainfall the lowlands get the benefit of the seepage water and the innumerable springs. In spite of the high rainfall which sometimes cause damage to the crop as well as to the fields, there are instances where crops have failed for want of water during the maturing period. Although light, the North-East monsoon is decisive of yields. Coorg presents special problems in planning out irrigation schemes. Storing the rain and and seepage water in small tanks and reservoirs adjoining the fields and pumping it out during the scarcity periods is feasible. An attempt at utilising the ground water in the valleys where the water table is high during the summer for raising a second crop needs further investigation.

Drainage: Drainage is as important as irrigation and there is evidence that improper drainage has led to reduced yields in some areas. Notably a vast fertile tract in Begur Collie gets submerged with water till October. Transplanting is considerably delayed and even then is quite hazardous. Providing efficient drainage may be very expensive but possibilities of introducing flood-tolerant varieties need consideration.

Soil: Rice is usually grown in the valleys which are of considerable breadth and some miles in length in South Coorg and rather small and narrow in North Coorg. The lower broader fields and called *bailu gadde*, while those terraced up along the slopes depending chiefly on the rainfall are called *mani gadde*. Rice is grown at altitudes from 1,000 to 4,900 feet above mean sea level.

The soil in Coorg has been formed by the weathering of the metamorphic rocks and in the valleys it is usually a lateritic debris very deep and easily drained. The top ploughed layer is usually sandy loam, greyish-white in colour. In the lower depths the profile is a heterogenous mixture of reddish and greyish sandy loam and clay with concretions of iron and manganese. Mica, felspar and quartz are found in varying proportions. An yield survey has indicated high fertility on the river banks. The remaining area is intrinsically poor. But during the monsoon the fields receive the decomposition products of the neighbouring forests and the leached

nutrients from the slopes, which probably account for the good yields.

The results of analysis of two typical samples of the plough layer from paddy fields are given below:

		Gowdhalli	*Kalkeri*
		%	%
Loss on irrigation	...	8·31	5·50
Insolubles	...	83·54	92·85
Iron and alumina	...	6·36	1·63
Lime	...	0·08	0·08
Potash	...	0·52	0·12
Phosphoric acid	...	0·20	0·16
Available phosphoric acid	...	0·07	0·009
Available potash	...	0·08	0·03
Nitrogen	...	0·12	0·20
pH	...	6.5	5·8

There would also appear to be some zonal differences, perhaps due to the climatic conditions and environments. The soils of Napoklu and Merkara nads in the heavy rainfall zone are highly leached and show remarkable absence of lime. Soils of Virajpet and Somwarpet are more fertile and have a comparatively better texture. Soil of Ponnampet are sandy with patches of waterlogged areas. In the Fraserpet zone receiving lower rainfall, there is a certain amount of calcium in the soils which are mostly clayey. Because of the constant leaching they are all deficient in exchangeable bases and available nutrients.

Varieties: There are said to be more than 50 varieties popular here. The important among them are listed below:

	Estimated acreage	*Duration in days*
Kirbiliya	... 30,500	165
Kiggatbiliya	... 18,000	165
Mambiliya	... 18,4[illegible]	[illegible]
Doddabiliya	... [illegible]	[illegible]
Doddi	... [illegible]	[illegible]
Chendubiliya	... [illegible]	145
Sannabatha	... [illegible]	175
Kembatti	... [illegible]	[illegible]
Kesakki	... 1,400	145
Kajebiliya	... 1,100	175
Ponnabatha	... 1,[illegible]	[illegible]

	Estimated acreage	*Duration in day*
Andrewsail ...	900	145
GEB 24 ..	500	155
Kaima ...	300	175
Kesari ...	200	110
Kavadedoddi ...	100	135

(Among these *Andrewsail* GEB 24 are exotic varieties, *Kembatti* ha red grains and *Sannabatha* is a fine variety.)

Some of the other varieties which are grown in smaller area are: Deddakaima, Bonka, Kolikododdere, Jeerigesanna, Gandasal Haribatta, Valubatha, Haludoddi, Rajakaima, Minegekesar Karisanna, Honnesoge, Honnesinghe, Anekesari, Hasade, Kartha Pandikartha, Porikolame, Kalme Halubiliya, Harangi, Mulla Mothepugge, Athikraya, Bilakki, Kolikedoddi, Munikesari, Puttu batha, etc.

At the Rice Breeding Station, Ponnampet, a search for bette quality rice with higher yields is being made.

Cultivation: *Seeds:* Usually a heavily manured plot i earmarked for seed paddy and the produce from that plot i harvested and thrashed separately. The harvested sheaves are lef exposed to the sun and dew for three nights and three days and the thrashed and winnowed and the seed is packed in a straw baske and kept dry along with the other produce. Some growers soak i in water before sowing to separate the lighter ones. The good seed are kept moist for three days and after germination are sown in th nurseries. But when the seed is drilled it is sown at the rate o 60-100 lb. per acre before germination. Soaking the seed in sal water to ensure well-filled and heavy grains and treating them wit a fungicide is becoming increasingly popular nowadays.

Nursery: About ten cents of land for every acre of transplante paddy is ploughed six times and about 2-3-tons of farmyard manur or compost are applied evenly on it. The field is puddled well an about 60-100 lb. of seed is sown after letting out all the water s that the seed is just embedded in the soft mud. After about 20-3 days when the seedlings have attained a height of about a foot th plants are ready for transplanting. However, progressive farmer sow 15-20 lb. seeds thinly in narrow seedbeds and manure ther heavily to give sturdy seedlings to transplant an acre. Som damage occurs due to insects and diseases in the nursery stage, bu these are effectively controlled.

Preparation of the field and transplanting: On a propitious day, *Vishnu Sankramana* in April, ploughing is commenced with religious rites. Ploughing is done six times, two in the dry stage and the rest in the wet condition. Ploughing is usually done between 6 and 10 in the morning and it normally takes a pair of bullocks three days to cover an acre. Ploughing after harvest and before April is tabooed on religious grounds. But ploughing the land after harvest would increase the yields. Farmyard manure is transported and stored in heaps and protected against the sun in summer months and spread and incorporated at the wet ploughing stage. About 2-3 tons of farmyard manure or compost and about 2000 lb. of green leaves are applied per acre by the majority of the people. In certain areas in South Coorg where the holdings are rather large, the preparatory cultivation is not so thorough and the use of a rotavator could be seriously considered. The seedlings are transplanted in July - August, 5-20 per hole, 9-12 inches apart. Seedlings are pulled out by womenfolk and tied up in handy bundles and are deposited conveniently all over the field. Transplanting is done by men, usually the owners themselves with the help of neighbours and hired labourers. While transplanting, the rows are kept straight and the distance between rows fairly uniform. About seven women can pull out enough seedlings in an afternoon to transplant an acre by seven men on the following day. Seedlings are planted closer in a poor soil and further apart in a richer soil. In areas subject to floods more seedlings are planted per hole. Weeding is done only once, four weeks after transplanting. It is recommended that robust seedlings are planted only one or two per hole and weeding done more frequently to give increased yields.

Manuring: As already stated the fields get only a small amount of farmyard manure and green leaves. This is largely due to the fact that most of the fields yield enough produce for the consumption of the owner who also invariably possesses some plantation crop which gives more net profit per acre than rice. A combination of ammonium sulphate and groundnut cake with superphosphate or bonemeal to give upto 40 lb. Nitrogen and 40 lb. Phosphoric acid per acre has been found to give increased profitable yields by the growers. Good response to lime applications has also been noticed in the central zone running north to south. There has not been any evidence so far of response to potash.

In calloboration with the Indian Council of Agricultural Research and the Indian Agricultural Research Institute, the State

Department of Agriculture is conducting a systematic soil survey and simple manurial experiments in ryots' holdings and complex experiments in the farms to evolve a manuring scheme for the dfferent zones.

Pests: *Stem borer (Schoenobius incertellus):* The adults are nocturnal and therefore a light trap may be found useful. Clipping off leafblades to remove eggs which have bren deposited already and dipping the seedlings in 0·2 percent BHC at the time of transplanting will reduce the damage. In later stages spraying with DDT minimises the loss. The pest is severe only in the Sampaje zone. *Hairy Caterpiller (Nisaga simplex)* is serious in the terraced fields of the high rainfall areas of Mercara zone. DDT sprays repeated fortnightly controls the pest. The bunds should be trimmed to destroy eggs laid on them. *Hispa (Hispa armigera)* is a serious pest in the northern parts of the State. Dusting with BHC has been found to be effective in controlling this pest. *Leptispa (Leptispa pygmoea):* Maximum incidence of this pest is found in the early stages of rice growth and is severe in the drilled areas in North Coorg. Dusting with BHC has been found to be good. *Gall Fly (Pachydiplosis oryzea)* is not a serious pest in Coorg although it is found here and there. *Rice Case Worm (Nymphula depunctalis)* causes severe damage in the heavy rainfall zones of the State and are controlled by spraying with BHC. Gunnies dipped in kerosene is placed at the mouth of irrigation drains so that a thin film of oil is spread over the standing water in the field and a long pole held at the ends by two men is run over the standing crop causing the cases to dislodge and fall down where they are killed. *Rice Bug (Leptocorisa acuta)* is severe only in Sampaje zone and is effectively controlled by dusting with BHC. *Grasshopper (Hieroglyphus banian)* is also a serious pest in the Sampaje zone and dusting with BHC is helpful.

Diseases: *Piricularia oryzae. Helminthosporium oryzae. Sclerotium oryzae* and *Ephalis oryzae* have been identified to cause damage to the rice erop but the damage due to the last three diseases is negligible. *Piricularia* or 'blast' is sometimes severe in the very humid areas and in fertile fields or those which receive a unusually heavy dose of chemical nitrogenous fertiliser. All

Implements: The agricultural implements are very few and quite ancient. The plough consists of a wooden ploughshare with a iron point *(gula)*, a handle of pali wood, a pole of sago palm or bamboo for the yoke. It is light and can be easily carried on the shoulder. This does not plough deep but is popular because the weak cattle that exist here can pull it easily. Another implement is the *tawe* or harrow which is only a simple board to which a thin bamboo is attached to connect it with the yoke. The cultivator stands on the board to level the wetland or pulverise the dry land after ploughing. A *mammuti* or hoe is used for trimming the bunds and a small sickle with or without a serrated edge is used for harvesting. A seed drill 4–6 tyned called *Kurige* and a single furrowed one, *Sadde*, is also popular in North Coorg. The iron plough, the puddler, tbe Japanese intercultivator and a hand-thresher are being popularised now.

Harvesting: The paddy is ready for harvest in November-December when a seven-day harvest festival *Huthri* is celebrated to bring in new rice, *pudiari*. The water is drained off the fields and the plants are cut close to the ground and left on the spot for 5 or 6 days. They are then tied up in sheaves and carried to the threshing floor and stacked with earheads inwards in a circular heap. Absut 7–8 labourers (men and women) can harvest an acre in a day. A month or two later the sheaves are spread on the ground with panicles topmost around a pole and are beaten with a pole and trampled by bullocks or buffaloes. The grain is winnowed and stored in large wooden attics or bamboo bins.

Some damage occurs due to rains during harvest and sometimes due to lodging of the crop.

Production and Utilisation: The total estimated production of paddy is about 75,000 tons of paddy or 50,000 tons of clean rice, out of which 13,000 tons get exported to Malabar and Travancore-Cochin and about 7,000 tons to Mysore. About three to four thousand tons are reserved for seed purposes. About 4000-5000 tons are sold in the internal markets while the rest is consumed by the cultivators and labourers. Some quantity is of course, lost in storage and shrinkage and some consumed by dogs and other pets. Rats and other pests do some damage to the stored grain.

Rice is the staple food of the people here. Parboiled rice is used to a limited extent only. A very small quantity is made into

beaten rice *(avalakki)*. The straw is mainly used as cattlefeed and for thatching dwellings. The straw does not possess sufficient strength for making into baskets, hats, etc.

Paddy is husked by wooden pestle and mortar or by *Rate*, which yields a higher percentage of broken grains. There are 19 rice mills which dehusk paddy. The husk is used as a fuel in the mills and the burnt ash as manure for paddy fields. The bran is used as cattle and poultry feed.

Acknowledgements: Grateful acknowledgements are due to Sri B. S. Varadarajan, B. Ag., Agricultural Officer, Coorg, for his valuable and helpful criticisms. Thanks are also due to my colleagues in the department and the rice growers who willingly gave useful information. I am indebted to Dr. K. M. Aiyappa, M. Sc., Ph. D., Horticulturist, Coorg, for reviewing the manuscript.

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Research Note

A review of some Recent Manurial Trials on Potatoes at the Agricultural Research Station, Nanjanad.

Optimum requirements of Nitrogen and Phosphoric Acid: Ten bags of commercial fertiliser mixtures (2,000 lb.), of the value of nearly Rs. 350/-, are normally required to raise an acre of potatoes on the the Nilgiris. These are mainly based on the formula of the Nanjanad Mixture, evolved as a result of studies at the Agricultural Research Station, Nanjanad, as the most suitable for optimum and economic yields. The composition and the chemical analysis of the Nanjanad Mixture are as follows:

Ingredients per acre.		Containing lb. of			Analysing to (%)
Name	Quantity. in lb.	N	P_2O_5	K_2O	
1. Groundnut cake meal	500	35	..	..	
2. Bonemeal	350	10	80	..	N = 4·37
3. Ammonium sulphate	200	40	..	..	P_2O_5 = 11·00
4. Superphosphate	672	..	134	..	K_2O = 5·55
5. Potassium sulphate	224	..	..	108	
	1946	85	214	108	

Russell and Garner (2) have recommended three to four cwt. of ammonium sulphate for normal nitrogenous manuring, and less than three cwt. for light and up to four cwt. for heavy soils, of superphosphate. They also considered two cwt. of potassium sulphate as a normal level. Smith (4) reported that the yields, resulting from an application of 2400 lb. of a 5–10–10 fertiliser mixture, averaged 52 bushels more per acre than the 1,200 lb. application. Hoagland (1) found that, although the maximum gross returns were reached at 2000 lb., maximum net returns beyond the cost of the fertilisers were reached at between 1,500 lb. and 1,800 lb. per acre. Fertiliser studies with potatoes by Sanyasi Raju *et al*, (3) at the Agricultural Research Station, Nanjanad, during 1949–51, led to the conclusion that the Nanjanad Mixture contained the minimum of ingredients necessary for good yields of potatoes on the Nilgiri Hills and that no further reduction in either the nitrogen or phosphoric acid content seemed possible.

In the trial now reported, and which was run on a replicated basis in the main crops of 1953 and 1954, a total of 24 combinations, consisting of four levels of nitrogen as ammonium sulphate

(at 60, 80, 100 and 120 lb. of nitrogen per acre), permuted with six levels of phosphoric acid as superphosphate (30, 60, 120, 180, 200 and 240 lb. of phosphoric acid per acre), was employed; potash being kept unvaried at 224 lb. of potassium sulphate, as in the Nanjanad Mixture. The 'Control' for the above 24 treatments was the usual Nanjanad Mixture.

Statistical examination of the yield data revealed that, though the combinations of (1) 10 lb. N + 240 lb. P_2O_5 and (2) 120 lb. N + 240 lb P_2O_5 had recorded the maximum yields for the years 1953 and 1954 respectively, they were not significantly higher than the values returned by the Control (Nanjanad Mixture). The results, therefore, were in accord with the earlier trials on manuring, reported by the Government Agricultural Chemist, Coimbatore (3).

Effects of different carriers of phosphoric acid: During the years 1951 and 1952, trials were conducted at the Agricultural Research Station, Nanjanad, to study the beneficial effects, if any, of replacing the superphosphate content of the Nanjanad Mixture with (1) fused phosphate and (2) a semi-acidulated rock phosphate (Kotka phosphate, processed by Parry & Co., Ltd., Madras), to see if these two would prove more acceptable to the potato crop in the acid soils of the Nilgiris. Fused phosphate analysed to 22·22% P_2O_5, while Kotka phosphate contained 25·43%.

The yield values of the replicated trials were examined and resulted in the following conclusions:

(1) *Fused phosphate:* Tried over two seasions (the main and the secend crops of 1951). Treatment effects on yields were not significant;

(2) *Kotka phosphate:* Run in the second crop of 1953. No increase in yields was evident on the replacement of superphosphate by Kotka phosphate.

All the trials, reported above, were designed by the Government Agricultural Chemist, Coimbatore, to whom the writers' thanks are due.

Agricultural Research Station,
Nanjanad.

M. D. AZARIAH,
K. SAPTHARISHI.

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Book Reviews

1. *The work of F. A. O. 1954-'55. (Orient Longmans Ltd., Madras,) Price: 5 shillings.*

One of the heartening signs in the present day unquiet world is the solid achievement of the Food and Agriculture Organisation of the United Nations. The present reports gives a very clear account of the problems met and work accomplished during 1954-'55 and seems to indicate the growing integration of the advisory services with the existing fundamental programmes. As an additional aspect in the activities of the F. A. O. comes the expanded Technical Assistance Programme and in this, the need is all the more pressing for the closest integration of programmes within the country that receives technical assistance.

Starting with an introductory preamble on its nature and purpose, the Report given a lucid summary of work done on (1) Agriculture, including agricultural instruction and services, rural welfare, land and water use, plant and animal production. The next deals with into economics followed by fisheries, forestry and nutrition. The final two sections deal with fnformational and educational services, and administrative and financial developments.

2. *The State of Food and Agriculture 1955. (Review of a decade and outlook) (Orient Longmans Ltd., Madras. Price. 12 sh. 6 d).*

This publication conforms to the high standard we have now come to expect in all F. A. O. publications, both in regard to the subject matter, presentation and general get-up. It marks the tenth anniversary of the foundation of the

F. A. O. These ten years have been crowded with events of great significance and witnessed the transformation from the devastation and threat of famine of the postwar period to a stage where agricultural surpluses are once more causing concern in some countries of the world. This decade has also seen rapid advances in the technical methods adopted in agriculture, forestry and fisheries. As mentioned in the foreword by the Director General, the report aims at a critical analysis of the main postwar developments and an appraisal of the results achieved, together with a survey of the problems that still remain to the tackled.

3. **Common Cultivated Crops of South India:** *by V. T. Subbiah Mudaliar. (Published by the Amudha Nilayam (Private) Ltd., 91 Mount Road, Madras. (Rs. 15/-) 1955.*

This book is a very welcome addition to the not-so-numerous group of handbooks on Indian Agriculture and is bound to serve a real need for all those who desire to know something about our South Indian crops. The author has had the advantage of a long and close association with agricultural research and education and he has utilised it to the full in the preparation of this useful compendium of information on the field crops of South India. The book is bound to be very helpful to teachers of agricultural subjects in secondary schools as well as the staff employed in the National Extension Service and Community Project areas.

Other books received are:

Agriculture in the World Economy F. A. O. Rome. November, 1955.

Report of the third Special Meeting on the Economic Aspects of the Rice Industry - Bangkok (F. A. O. Rome. 1955. (Orient Longmans Ltd., Madras).

Students' Club News

Under the auspices of the Students' Club, an address on "Agriculture in Australia" was delivered on 27—7—1956 by Dr. Siddappa, Senior Scientific Officer, Central Food Technology Research Institute, Mysore. Dr. K. C. Naik, the Principal and President of the Students' Club, presided over the function.

Dr. Siddappa, during the course of his address said that Agro-Horticultural industries had made tremendous headway in Australia. Working mainly on a co-operative basis this industry had been taken up in an intensive manner and the country has achieved remarkable progress. One striking feature of these industries, he said, was that the people of Australia were able to produce finished goods at a very much cheaper rate, although labour charges are comparatively high. This, he pointed out, was mainly to the business line being carried on a co-operative basis. The success of these industries was due not to chance but to the rigid application of their research findings, which enabled them to hit the mark every time. Continuing his speech, the speaker described the various

outstanding industries of the country such as the sugarcane industry, grapevine industry, milk industry and so on. The country stands on its own legs for everything, including the manufacture of processing equipments. At the close of his speech, Dr. Siddappa, said how the maximum wage given to superior officers did not differ very much from the minimum wages, paid to labourers. In the end the students and the officers put a number of questions relating to the subject "Agriculture in Australia", to all of which Dr. Siddappa gave very informative replies.

The vote of thanks at the close of the function was proposed by Sri V. Rajaguru, the acting Club Secretary, after the President's concluding remarks.

* * *

This year, the Madras Agricultural Students' Union had decided to have an essay or debating contest for the students, the prize for which will be awarded to the winners on the College Day and Conference. In accordance with this, a debating contest was arranged on 2nd August 1956, the subject being 'Agriculture rather than Industry'. This debate was open to all the students of the College. Among several speakers, Mr. S. Lakshminarayan of the final year class, who spoke for the motion, got the first ranking by the judges and Mr. G. Ramanathan of the final year class who spoke against the motion, got the second prize.

Dr. K. C. Naik presided over the function. In addition to Dr. K. C. Naik, Mrs. Gonsalves and Dr. K. Subramaniam, Regional Botanist, Botanical Survey of India, also acted as judges. The vote of thanks was propsed by Sri V. Rajaguru at the close of the function.

* * *

A meeting of the Managing Committee of the Students' Club was held on 14—8—1956 with Dr. K. C. Naik in the chair. The Vice-President announced that the following members are nominated for the posts noted against their names.

Mr. C. Gopal - Secretary, Debating Society.

Mr. Khalil Ahmed - II year class representative.

Mr. Moosad - I year class representative.

It was decided that a rolling cup donated by Sri Piyasena would be awarded to the best student photographer. The Committee has also decided to increase the pay of the Club Boy by two rupees per month.

(G. RAMANATHAN)

Weather Review — For July, 1956

RAINFALL DATA (IN INCHES)

Division	Station	Total rainfall for the month	Departure from normal	Total since 1st January	Division	Station	Total rainfall for the month	Departure from normal	Total since 1st January
North	Madras (Meenambakkam)	4·0	+ 0·4	12·1	South	Madurai	0·2	— 1·8	6·2
	Tirurkuppam*	3·8	— 0·8	9·8		Pamban	0·2	— 0·3	2·2
	Vellore	4 2	— 0·4	15·9		Koilpatti*	0·1	— 0·6	7·1
	Gudiyatham*	3·3	— 1·3	10·4		Palayamcottai	0.1	— 0·2	4·4
East Coast	Palur*	1·7	— 1·1	11·7	West Coast	Ambasamudram*	0·6	— 0·2	7·0
	Tindivanam*	1·2	— 2·4	9·1		Trivandrum*	4·3	— 3·5	29·1
	Cuddalore	1·5	— 1·1	9·3		Fort Cochin	11·1	—12·2	83·3
	Nagapattinam	3·1	+ 1·4	7·8		Pattambi*	13·7	— 9·6	56·5
	Aduthurai*	1·7	— 0·6	8·6		Kozhikode	19·0	—15 3	85·5
	Pattukottai*	1·1	— 2·6	8·2		Taliparamba*	30·3	—14·1	93·1
Central	Salem	3·5	— 0·3	10·3		Wynaad*	15·4	— 5·5	50·3
	Coimbatore (A. M. O.)*	1·6	— 0·4	7·9		Nileshwar*			77·4
	Coimbatore	1·0	— 0·7	6·5	Hills	Pilicode*	25·1	—18·0	88·1
	Tiruchirapalli	Nil	— 1·1	3·9		Mangalore	38·6	— 0·8	105·1
						Kankanady*	41·4	— 1·2	108·4
						Kotekar*	38·1	— 4·4	£
						Kodaikanal	0·9	— 3·8	18·1
						Coonoor*	1·1	— 2·0	12·8
						Ootacamund*	3·1	— 3·1	18·7
						Nanjanad*	7·5	— 3·1	24·0

Notes:— 1. *Meteorological Stations of the Madras Agric. Dept.
2. £ = It is a new station. The raingauge was installed in March 1956.

In the first two days of the month the monsoon was vigorous on tne West Coast and fairly active elsewhere in the region. For four days from 3—7—1956 the monsoon was fairly active in the West Coast but elsewhere the weather was mainly dry. A well-marked low appeared over Gangetic West Bengal and neighbourhood on 7—7—56. The rainfall was fairly widespread in Malabar and South Kanara and localised and scattered in Travancore-Cochin and portions of Tamilnad for five days from 7—7—56. On 12—7—56 only the West Coast had widespread rains while the weather was dry in other parts of the State. Even in the West Coast the vigour of the monsoon abated considerably on 13—7—56. Only scattered showers were received on the West Coast on 13—7—56 and in the subsequent two days while Travancore-Cochin and a few places in Tamilnad received only mild showers during this period. The weather was mainly dry on 16—7—56. The Arabian Sea branch of the monsoon became weak on 17—7—56. For two days from 17—7—56 localised showers were received on the West Coast while other regions had very mild showers. On 19—7—56 the Arabian Sea branch of the monsoon became active with the result that for five days from this day rains were fairly widespread in the West Coast and scattered and localised elsewhere. The monsoon was inactive on 24—7—56 with the result that for five days from this day

only a few places in the West Coast had fairly widespread rains while the showers were highly localised elsewhere. In the remaining three days of the month rains were fairly widespread in Malabar and South Kanara and localised in Travancore-Cochin, while the weather was mainly dry in Tamilnad. The month ended with a favourable condition for the formation of a depression in the Bay of Bengal.

Considering the month as a whole the West Coast and hilly regions had poor rains. The other districts also had only sub-normal rains with the exception of Madras (Meenambakkam) and Nagapattinam area of Tanjore district.

The noteworthy rainfall and the zonal rainfall in inches are furnished below:—

Noteworthy Rainfalls			Zonal Rainfall			
Date	Place	Rainfall in inches	Name of Zone	Rainfall for the month	Departure from normal	Remarks
1/7/56	Mangalore	6·0	North	3·8	— 1·9	Below normal
1/7/56	Kozhikode	5·0	East Coast	1·7	— 1·1	do
2/7/56 & 21/7/56	Mercara (Each day)	4·0	Central	1·5	— 0·6	do
			South	0·2	— 0·6	Far below normal
20/7/56	Palghat	2 0	West Coast			Below normal
27/6/56	Mercara	5·0	Hills	3·2	— 3·0	do

Agricultural Meteorology Section,
Lawley Road P. O.,
Coimbatore, 14—8—1956

C. B. M. & M. V. J.

Departmental Notifications

Gazetted Service — Postings and Transfers.

Name and present post	Posted as
Mrs. Girija Balasubramaniam, Assistant in Botany, Coimbatore,	Fodder Research Officer, Coimbatore.
Krishnan, C. S., Assistant Cotton Specialist,	Gazetted Assistant to Cotton Certification Officer, Rajapalayam.
Narayanan, N. G., Gazetted Assistant to Certification Officer, Rajapalayam,	Cotton Certification Officer, Rajapalayam.
Ranganathachari, N., (on leave)	Additional Lecturer in Agronomy, Coimbatore.
Sakharam Rao, J., Assistant Lecturer in Botany, Coimbatore,	Additional Lecturer in Botany, Agricultural College.
Thandayutham, K., Agricultural Engineering Supervisor, under training at Ooty,	Assistant Agricultural Engineer, Soil Conservation Scheme, Gudalur.

UPPER SUBORDINATES

Name and present post	Posted as
Ananthachari, P. S., P. A., to D. A. O., Vellore,	Special A. D., Vellore.
Ananda Rao, P. R., Dharmapuri,	A. D., Sangaree.
Alfred William, Trainee at Ooty,	Under D. A. O., Salem.
Bhaskharan, A. R., Trainee at Ooty,	Soil Conservation Assistant, Coonoor.
Bhagavathiappan, N., Nagercoil,	A. D., Peralam.
Bhanu, K., Coimbatore,	A. D., Kumarakshi, (Chidambaram).
Balasubramaniam, V., Kanal,	A. D., Kuttalam.
Balakrishnan, R., Pappanaickanpudur,	Chemistry Assistant, Coimbatore.
Chelliah, P., Keelapatnam,	A. D., Tuticorin.
Chockalingam, M., Trainee at Ooty,	Soil Conservation Assistant, Coimbatore.
Dhanapalan, M. S., K. S. A., Sivakasi,	Assistant in Chemistry, Coimbatore.
Gnanavaram, I., Trainee at Ooty,	Soil Conservation Assistant, Dharapuram
Hariharan, S. V., Trainee at Ooty,	Soil Conservation Assistant, Vellore.
Hydross, S., Palayamkottai,	A. D., Vaniambadi.
Haja Sherrif, Edayakottai,	A. D., Aiyampalayam.
Jesudasan, K. M., Nanguneri,	Entomology Assistant, Udangudi.
Krishnamurthy, F. M., Bhavanisagar,	A. D., Gudiyattam.
Kothandaraman, G. V., Annasagaram,	Oil Seed Assistant, Tindivanam.
Kandaswami, P., Coimbatore,	Oil Seed Assistant, Pollachi.
Krishnankutty Nair, Trainee at Ooty,	Agricultural Engineering Supervisor, under D. A. O., Kozhikode.
Krishna Rao, R., Trainee at Ooty,	Soil Conservation Assistant, Vellore.
Lakshmanan, P. K., Sivakasi,	A. D., Reddiapatty. (Ramnad).
Mahalingam, N., Tirukoilur,	A. D., Sankarapuram.
Murugian, S. K., Mewani,	A. D., Pernambur.
Marappan, K., Maruppatti,	A. D., Salem.
Muthu Mangiah Muthiah, Edayakottai,	A. D., Sithalai.
Muthumani, P., Mukudal,	A. D., Chetpet.
Muthiah, A. D., Tirunelvelly,	Instructor in Agriculture, Coimbatore.
Morachan, Y. B., Trainee at Ooty,	Soil Conservation Assistant, Coonoor.
Murthy, P. A., Trainee at Ooty,	Soil Conservation Assistant, Satyamangalam.
Navakodi, K., Sanankuppam,	Oil Seed Assistant, Tindivanam.
Narayanan, S. S., Srivaikuntam,	Cotton Assistant, Koilpatti.
Narasimhan, A., Madurai,	A. D., Aravakurichi.
Narasimhan, V. S., Trainee at Ooty,	Soil Conservation Assistant, Avanashi.
Navaneetha Krishnan, T. V., P. A., to D. A. O., Tanjore,	Assistant Lecturer in Agronomy, Coimbatore.
Palaniappan, T. A., Thudupathi,	Oil Seed Assistant, Pollachi.
Parthasarathy, K. Pongalur,	Marketing Assistant, Coimbatore.
Perumal Raja, R., Rajapalayam,	A. D., Nellikuppam.
Rangaswami, V. K., Vellalapalayam,	A. D., Punjaipuliyampatti.
Raman, M., Nanjanad,	Special A. D., Palladam.
Ranganathan, D. V., Coimbatore,	Special A. D., Cotton, Coimbatore.
Rafique Ahmed, Madurai,	A. D., Jeeyapuram, Trichy.
Ramanathan, T., Mullipet,	Oil Seed Assistant, Tindivanam.
Raju, M., Marampalayam,	A. D., Ulundurpet.
Ramanathan, G., Trainee at Ooty,	Soil Conservation Assistant, Wallajah.
Ranganathan, P. S., P. P. A., Entomology, Vellore,	A. D., Saidapet.

Name and present post	Posted as
Sriraman, K., Special Assistant Marketing Officer, Trichy,	On leave.
Soundarapandian, G., Bodinayakanur,	Assistant in Chemistry, Coimbatore.
Stephen Dorairaj, M., Somarasampatti,	Assistant in Cotton, Coimbatore,
Sayed Javad Hussain, Coimbatore,	Assistant in Cotton, Palur.
Soundararajan, J., Madurai,	A. D., Vedasandur.
Sethumadhavan, R. P., Dharapuram,	A. D., North Arcot Dt.
Kumari V. Savithri, Coimbatore,	Entomology Assistant, Coimbatore.
Selvaraj, V., Aruppukottai,	Cotton Assistant, Srivilliputhur.
Shanmugam, P., Tirupur,	A. D., Walajah.
Srinivasan, S., Kalampatti,	Millet Assistant, Koilpatti.
Sankaranarayanan, C., Special A. D., Cotton, Coimbatore,	Instructor in Agriculture, Coimbatore.
Shanmuganainar, T. P., Trainee at Ooty,	Soil Conservation Assistant, Perambalur.
Sundaram Pillai, K,, Trainee at Ooty,	Soil Conservation Assistant, Avanashi.
Vijayam, P. K., Under Training at Delhi,	Assistant in Paddy, Pattambi
Vaidyanathan, J., J, Special A. D., Vellore,	P. A., to D. A. O., Vellore.
Viswanathan, S. T., Tiruvadaimaruthur,	Allotted to Tanjore Dt.
Vasantharaj David, P., Madurai,	A. D., Oddanchatram.
Venkatesan, S., Coimbatore,	P. P. A., Pattukottai.
Viswanathan, B. S., Ootacamund,	A. D., Gingee.
Venkatnarasimhan, C., Trainee,	Agricultural Engineering Supervisor, Soil Conservation Scheme, Vellakoil.
Tyagarajan, A., Coimbatore,	A. D., Pennadam.

(25)

Review of Market Conditions of Commercial Crops in the Areas of Market Committees for the month of June, 1956

Cotton: (In this Section: Candy = 784 lb. Pothi = 280 lb.)

Cotton Stocks: Tirupur: Lint: The arrivals of lint in Tirupur Market showed a slight decline compared to April and May, '56. The lint market opened with 7,364 cdys of Cambodia and 1,324 cdys of Karunganni lint. The arrivals totalled 9,321 cdys of Cambodia and 1,480 cdys of Karunganni which included 2,157 cdys of Cambodia and 253 cdys of Karunganni produced from ginneries. Total despatches of lint from Tirupur Market accounted for 9,518 cdys of Cambodia and 1,312 cdys of Karunganni, which included 2,757 cdys of lint sent to Pondicherry, Travancore-Cochin State, Bombay, Orissa, Madras, Madurai and Tirunelveli. There was a closing stock of 7,067 cdys of Cambodia and 1,492 cdys of Karunganni on 23-6-56.

Kapas: The cotton market both for lint as well as for kapas, though not active, remained firm during the month. The market commenced with a carry-over stock of 36,672 pothis of Cambodia and 3,627 pothis of Karunganni at the beginning of the month. The arrivals into the market of both Cambodia and Karunganni Kapas amounted to 17,329 pothi and 1925 pothis respectively. These arrivals include 985 pothis of Kapas got from Salem, South Arcot, Tiruchirapalli and Madurai districts. 31,676 pothis of Cambodia and 4,221 pothis of Karunganni were disposed, after leaving a closing stock of 22,325 pothis of Cambodia and 1,331 pothis of Karunganni on 23-6-56.

Koilpatti: Lint: The cotton market at Koilpatti opened with a stock of 148 cdys of Karunganni lint. Arrivals during the month amounted to 300 cdys from surounding areas. Disposals in the month amounted to 350 cdys after leaving a closing stock of 98 cdys towards

Kapas: The kapas market here started with 1600 pothis. Receipts from the neighbouring villages amounted to 2,500 pothis. Disposals during the month took away 3,000 pothis, leaving a month-end stock of 1,100 pothis. The arrivals, declined during the month, consequent on the restriction imposed in the supply of electricity. The Uganda cotton started arriving into Sankarankoil market in substantial quantities. About 3,000 pothis of Uganda kapas were received during the month in Sankarankoil Market. Merchants from Rajapalayam and Virudhunagar are active in this market. At the end of the month the market closed with a stock of 500 pothis.

Ramanathapuram District: Lint: The karunganni lint market in the three places of Virudhunagar, Sattur, and Rajapalayam continued to be dull during the month and transactions were limited, mostly in inferior cotton. No transactions of Uganda lint have so far been reported in these places. Type samples are purchased by the firms for determining quality of the stuff and transactions are excepted to commence shortly. The stock at the beginning of the month in the three markets of this district was 700 cdys with which 2200 cdys were added from receipts. The total sales effected during the month were 1,655 cdys, leaving a closing stock of 1,245 cdys at the end of the month.

Kapas: The arrivals of karunganni kapas in the market of Virudhunagar and Sattur went down sharply during the month. There were practically no arrivals in the market at Rajapalayam. On account of the failure of seasonal rains, the second crop of Karunganni has completely failed in this district which helped the mundy merchants and leading agriculturists to hold their stocks anticipating a better price. The kapas market in this district in general was dull. Uganda kapas are just arriving into markets in a small scale. The three markets of Virudhunagar, Sattur and Rajapalayam put together started with an opening balance of 5,500 pothi of kapas at the beginning of the month. The receipts during the month amounted to 10,850 pothis while disposals accounted for 14,050 pothis. The closing balance at the end of the month was 2,300 pothis.

South Arcot District: Kapas: The condition of the standing cotton crops is not very satisfactory in this district. Pickings will be dealyed in account of recent rains. During the month 114 pothis of kapas arrived in Villupuram market, the produce being the remnants of stock of the previous year.

Cotton Prices: Tirupur: Lint: The prices of cotton lint in this market were ruling almost at the ceiling level.

Kapas: The kapas market also was steady during the month. Prices maintained a steady level

Koilpatti: Lint: The prices of lint in this market opened at Rs. 870 to 875 for the best quality and gradually advanced to Rs. 880/- to Rs. 890/- towards the middle of the month. The prices declined later on as a result of resistance from the mill owners and touched Rs. 850/-, in the third week of the month. The low tone of the market is ascribed to the limited transactions being centred round inferior varieties.

Kapas: The prices of kapas declined from Rs. 108/- and Rs. 124/- to Rs. 100/- and Rs. 115/- per pothi. The fall in the prices of kapas was in consonance with the fall in prices of lint.

Seeds: The price of karunganni seeds advanced in the beginning of the month, but declined gradually from the middle of the month in sympathy with the fall in prices of kapas and lint. The prices which opened at Rs. 42 to Rs. 44/- at the beginning of the month advanced to Rs. 45 to 47/- towards the end of the first week and later on showed a recession at Rs. 38/- to Rs. 40/- per pothi at the close of the month.

Ramanathapuram District: Lint: The prices of lint in all the markets of this district have shown a slight recession by about Rs. 20/- per cdy over the prices of last month. The opening and closing prices of different varieties of cotton lint per cdy are extracted below:

		Opening Rates	*Closing Rates*
Karunganni	...	Rs. 857 to 870	Rs. 831 to 851
Tinny Karunganni	...	Rs. 830 to 840	Rs. 815 to 830
Tinny	...	Rs. 790 to 820	Rs. 780 to 800

Kapas: Kapas prices also have declined by Rs. 20/- per pothi during the month. The following are the opening and closing prices of kapas during the month. Prices per pothi:

		Opening rates	*Closing rates*
Karunganni	...	Rs. 104 to 112	Rs. 104 to 112
Tinny Karunganni	...	Rs. 96 to 102	Rs. 96 to 102
Tinny	...	Rs. 85 to 94	Rs. 66 to 94
Uganda		N. R.	Rs. 103 to 120

(*N. R: Not reported*)

Seeds: The prices of different varieties of cotton seeds in the three markets of this district during the month are extracted below.

	Opening rates	*Closing rates*
Karunganni	12/5 to 12/10	11/10 to 12/8
Uganda	N. R.	10/- to 10/10

(Price per maund of 82-1/3 lb.)

South Arcot District: Kapas: The prices of cotton kapas ruled steady in the markets of this district.

II. **Groundnut:** (In this section: Candy = 531 lb. of kernels. Bag = 80 lb. of pods.)

South Arcot district: Stocks: Welcome showers were received in this district during the month which helped late-sown summer crops of groundnut and facilitated digging operations of early irrigated groundnuts and preparatory cultivation of dry lands for winter sowings. Late rains have delayed harvests of the irrigated groundnut crop. Arrivals of groundnuts in all the markets of the district were very low during the month compared to that of corresponding month of last year. Flow of produce will gain momentum only after the middle of July and may maintain a steady level till the middle of September. The transactions of groundnuts that took place during this month in district are indicated below.

Opening balance at the beginning of the month	...	3,468 tons.
Arrivals into all the markets	...	2,544 ,,
Receipts from other districts of North Arcot, Salem, Tanjore and Tiruchirapalli,	...	777 ,,
Imports from other States like Andhra	...	134 ,,
Despatches to other places to Salem, Tiruchirapalli etc.	...	763 ,,
Exports to other States like Pondicherry etc.	...	100 ,,
Consumption by oil mills	...	2290 ,,
Consumption by *chekkus*	...	231 ,,
Appropriate wastage	...	68 ,,
Closing stock at the end of the month	...	3471 ,,

Prices: The average prices of groundnut kernels in several markets ranged between Rs. 148-8-0 and Rs. 161-5-0. Easy conditions prevailed during the month. Big mill-owners were not active during the month as a result of scarcity of current. Sustained buying interest shown by the indigenous crushers coupled with the restricted arrivals were responsible for the firm market conditions during the month.

South Arcot District: Stocks: The removal of cut in electricity failed to impart the anticipated enthusiasm in the trade of groundnuts in this district. Most of the crushers had completed their first quotas and they were reluctant to enter into the market for further purchases. The opening balance with the traders in this district during the month was 1,688 tons of pods and 1,254 tons of kernels. The receipts during the month amounted to 178 tons of pods and 228 tons of kernels.

Disposals came to 379 tons of pods and 592 tons of kernels, leaving a closing stock of 1487 tons of pods and 890 tons of kernels with the trade at the end of the month.

Prices: The prices of groundnut kernels started at Rs. 163/- per cdy at the beginning of the month and continued to maintain the same level with slight variations till the end of the month. The prices during the corresponding period of last year were Rs. 88-98 per cdy.

Ramanathapuram District: Stocks: The wide-spread rains received in the south facilitated the harvest of summer groundnut in this district. Imports from other districts were limited to local requirements based on the demand in the oil market. The markets of this district started with an opening balance of 900 cdys of kernels alone. Receipts during the month amounted to 1100 tons of pods and 1350 tons of kernels, while disposals accounted for 1100 tons of pods and 1750 tons of kernels. The market closed with a stock of 500 cdys of kernels only.

Prices: The prices of kernels declined during the month by about Rs. 5/- per cdy. The opening and closing prices of groundnut pods, kernels and oil that ruled during the month in this district are extracted below.

		Opening rate:	*Closing rate:*
Groundnut pods (per Md. of 82⅔ lb)	...	Rs. 18 to 18/8	Rs. 16 to 18/8
Groundnut kernels per cdy	...	Rs. 160 to 168	Rs. 155 to 175
Groundnut oil (35 lb)	...	Rs. ... 22/4	Rs. 22/4 to 22/8
Groundnut oil cake (per Md. of 82⅔ lb)	...	Rs. 9/5 to 9/10	Rs. 9/8 to 9/10

III. **Gingelly:** (In this section: Bag = 168 lb.)

South Arcot District: Stock: Arrivals of gingelly into the four markets of the district amounted to 186 bags besides 234 bags held as closing balance of last month. The two markets of Tindivanam and Viruddachalam alone accounted for 174 bags of arrivals. Receipts from other neighbouring non-notified areas were 73 bags. Stocks with the producers were exhausted. Indigenous crushers were the main buyers.

Prices: On account of scarcity of stocks resulting from the failure of the crop and absence of free movement from outside, prices soared high. The average prices were ranging between Rs. 65/- and 80 in the different markets of the committee per bag. This record price of gingelly has been mainly due to bottlenecks in transport outside the Madras State.

IV. **Coconut and its products:** (In this section: Cdy = 700 lb.)

Coconuts: Stocks: Arrivals of coconuts in the markets of alabar district were heavy during the month. With the commencement rains, steamers have ceased to call at Malabar ports, as the sea is too ugh. Exporters have to send the goods by rail up to Cochin for ipment from Cochin port. The transactions of coconuts in the arkets of Malabar and South Kanara are extracted below.

(*In thousands*)

	Opening balance	Arrivals	Disposals	Closing balance
alabar District:				
Kozhikode ...	7,465	5,600	5,400	7,665
Badagara ...	778	2,310	2,270	818
Ponnani ...	Not Reported (N. R.)			
Tellicherry & Dharmadam ...	651	897	236	612
South Kanara District:				
Mangalore ...	75	220	215	80

Prices: Prices were lowest for coconuts in Malabar as a result of increased transport charges. Low level in prices and dull trading is expected to continue till about the end of August when the rains will subside. In South Kanara also prices have declined by Rs. 5/- per 1000 nuts and the trading is dull. The maximum and maximum prices of coconuts in the markets of Malabar and South Kanara districts are extracted below:

Malabar District: (Husked, per 1000.)

	Minimum	*Maximum*
Kozhikode ...	Rs. 100	Rs. 90
Ponnani ...	,, N. R.	,, Nil
Badagara ...	,, 130	,, 85
Tellicherry & Dharmadam ...	,, 125	,, 100

South Kanara District: (per 1000 nuts.)

		Maximum	*Minimum*
Mangalore, Raw	Rs. 145	Rs. 115	
do. Dry	Rs. 185	Rs. 140	

Copra: Stocks: With the beginning of the monsoon in Malabar district the arrivals declined and continue to be poor. Purchasers were only the local millers. The stock particulars of copra both in Malabar and South Kanara districts are given below.

Market	Opening balance	Arrivals	Disposals	Closing balance
Malabar district: (In cdys.)				
Kozhikode ...	5,488	1,800	2,025	5,263
Badagara ...	510	2,050	1,910	650
South Kanara District:				
Mangalore (In tons)...	116	469	500	85

Prices: Prices of copra in the markets of Malabar district have not improved during this month even though the supply is poor. The prices of different varieties of copra ruled in the markets of Malabar district are extracted below.

(*Prices per candy*)

	Kozhikode		*Badagara*	
Variety	Minimum	Maximum	Minimum	Maximum
Office ...	Rs. 290	Rs. 280	Rs. 290	Rs. 280
Edible ...	,, 300	,, 300	,, 300	,, 300
Madras ...	,, 300	,, 300	,, 300	,, 300
Rajpur ...	,, 325	,, 320	,, 325	,, 315
Gola ...	,, 302	,, 290	—	—

The prices of copra in Mangalore market ranged between Rs. 275 to 305 per candy.

V. **Arecanuts:** (In this section: Bag = 100 lb.)

Stocks: Curing of arecanut in Malabar district has started in all important centres. Transactions in raw arecanut commenced at the regulated market at Thalakadathur from 15-6-56. The stock particulars of arecanuts in the markets of Malabar and South Kanara districts are extracted below:

District,	*Opening Stock.*	*Receipts*	*Disposals*	*Closing Stock.*
Molabar District: (In Bags)				
Kozhikode ...	1,246	1,086		163
South Kanara District:				
Mangalore (in cwts.) ...	22612	11,900	24,200	10,312

Prices: There were keen demand for arecanuts of South Kanara district. Due to large exports the prices improved by Rs. 13/- per cwt. The market trade is uncertain because of good stocks in the market. The prices of arecanut *(supari)* in Mangalore market as between the different varieties are extracted below.

(Price in Rs. per cwt.)

		Minimum	*Maximum*
Koka	...	Rs. 80	Rs. 125
Choll	...	No stock.	
Malabar Supari	...	,, 130	,, 145
Mangalore ,,	...	,, 145	,, 174

The prices of arecanuts in the markets of Malabar district ranged between Rs. 70 to 73/4 per bag of 115½ lb.

VI. Tobacco: (In this section: Cdy = 700 lb.)

Tirupur: Stocks: The tobacco markets in Tirupur started with an opening balance of 11,012 cdys of chewing tobacco and 2,150 cdys of cheroot tobacco at the beginning of the month. About 50 cdys of beedi tobacco were imported from Bombay and Mysore. Despatches during the month amounted to 4575 cdys of chewing and 700 cdys of cheroot varieties made to places like Travancore Cochin State, Mysore, Malabar, Madurai, Tiruchirapalli, Tanjore, South Arcot and Madras. At the end of the month there was a closing stock of 16,875 cdys of chewing tobacco and 2,500 cdys of cheroot tobacco.

The prices of different varieties of tobacco in Tirupur market during the month are extracted below.

(Prices in Rs. per cdy of 500 lb.)

Variety		*I grade*	*II grade*	*III grade*
1. *Chewing Tobacco,* (*Sun-cured*):				
a. Meenampalayam	...	300 — 360	200 — 260	100 — 180
b. Other varieties	...	240 — 290	160 — 200	90 — 120
2. *Cheroot varieties* .				
Sun-cured (grown in Erode and Bhavani Taluks.)	...	240 — 300	200 — 230	120 — 160
3. *Chewing varieties:*				
Pit-cured (grown in Palladam and Sulur		0	175 — 250	100 — 150

Crop and Trade Reports

Potatoes — Second Forecast Report — 1955 - ,56 — Madras State: The potato crop is grown mainly in the Nilgiris district and to a small extent in Salem and Madurai districts. The area under the crop upto 25th May 1956 is estimated at 20,100 acres as against the final area of 19,000 acres for 1954-'55 representing an increase of 5·8 percent. Information in regard to winter and summer crops is given below:

Winter Crop: The area under the crop of potato is estimated at 1,500 acres as against the final area of 1,270 acres for 1954-'55 representing an increase of 18·1 percent. An increase in area is estimated in the districts of Salem and the Nilgiris. The area in Madurai district is little or negligible. The seasonal factor for the State as a whole works out to 95 percent and the total yield is estimated at 4,480 tons. Compared with the yield of 3,350 tons for 1954-'55, this shows an increase of 33·7 percent.

Summer Crop: The area under summer crop is estimated at 18,600 acres as against the final area of 17,730 acres for 1954-'55 representing an increase of 4·9 percent. An increase in area is estimated in the districts of Nilgiris and Madurai. The area in Salem district is little or negligible. The condition of the standing crop is reported to be satisfactory. The wholesale price of potatoes per standard maund of 82 2/7 lbs. or 3,200 tolas at Mettupalayam on 2—6—1956 was Rs. 15—8—0. Compared with the price of Rs. 12/- that prevailed on 3—6—1956, it shows an increase of 29·1 percent.

Bengalgram — Third and Final Forecast Report — 1955 - '56 — Madras State: The area sown with Bengalgram in the Madras State in the year 1955 - '56 is estimated at 4,410 acres. Compared with the actual area of 3,859 acres for the previous year, this is an increase of 14·5 percent. The present estimate is less than the average area of 4,730 acres for the five years ended 1954 - '55 by 6·8 percent. The area under the crop is nil or negligible in the districts of Tanjore, South Kanara and the Nilgiris. A decrease in area is estimated in the districts of Tirunelveli and the Nilgiris and an increase in the other districts of the State except Chingleput and Malabar where the area estimated is the same as that of last year. The crop has been harvested in most districts of the State. The yield per acre is expected to be normal in the district of South Arcot and slightly below normal in the other districts of the State.

The seasonal factor for the State as a whole works out to 97 percent of the normal as against 96 percent for the previous year. On this basis the total yield works out to 950 tons. Compared with the yield of 820 tons estimated for last year and an average estimated production of 840 tons calculated for the five years ended 1954 - '55, this is an increase of of 15·9 and 13·1 percent respectively. The wholesale price of bengal gram (dhall) per standard maund of 82 2/7 lb. or 3,200 tolas for the week ending 11—5—1956 was Rs. 14—6—0 at Salem and Rs. 15—3—0 at Coimbatore. Compared with the prices which prevailed in the corresponding period of last year, the current prices reveal an increase of 32·9 percent at Salem and 42·9 percent at Coimbatore.

Redgram — Third and Final Forecast Report — 1955 - '56 — Madras State: The area sown with redgram in the Madras State in 1955 - '56 is estimated at 159,800 acres. Compared with the actual area of 155,700 acres in the previous year, this is an increase of 2·6 per cent. The crop is mainly grown in the districts of South Arcot, North Arcot, Salem, Coimbatore and Tiruchirapalli. The area under the crop in the Nilgiris district is nil or negligible. A decrease i

area is estimated in South Arcot, Tanjore, Madurai and Malabar districts a
an increase in area in all the other districts of the State. The seasonal fac
for the State as a whole works out to 93 per cent of the normal as against 95
cent for the previous year. On this basis the total yield works out to 22,500 t
of cleaned grain, which is the same as that estimated for the previous ye
Compared with the average of 18,700 tons of cleaned gram calculated for the
years ending 1954-'55, the current year's yield shows an increase of 20 3 percent.

The wholesale price of *Tur*-dhall per standard maund of 82-2/7 lbs
3,200 tolas on 11th May 1956 was Rs. 24—8—0 in Tirunelveli, Rs. 21—4—(
Vellore, Rs. 18—12—0 in Tiruchirapalli and Rs. 18—6—0 in Salem, Compa
with the corresponding prices which prevailed on 14th May 1955, these pri
show an increase of 34.9 per cent in Salem, 36.1 per cent in Tirunelveli, 41.5
cent in Tiruchirapalli and 59.7 percent in Vellore.

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