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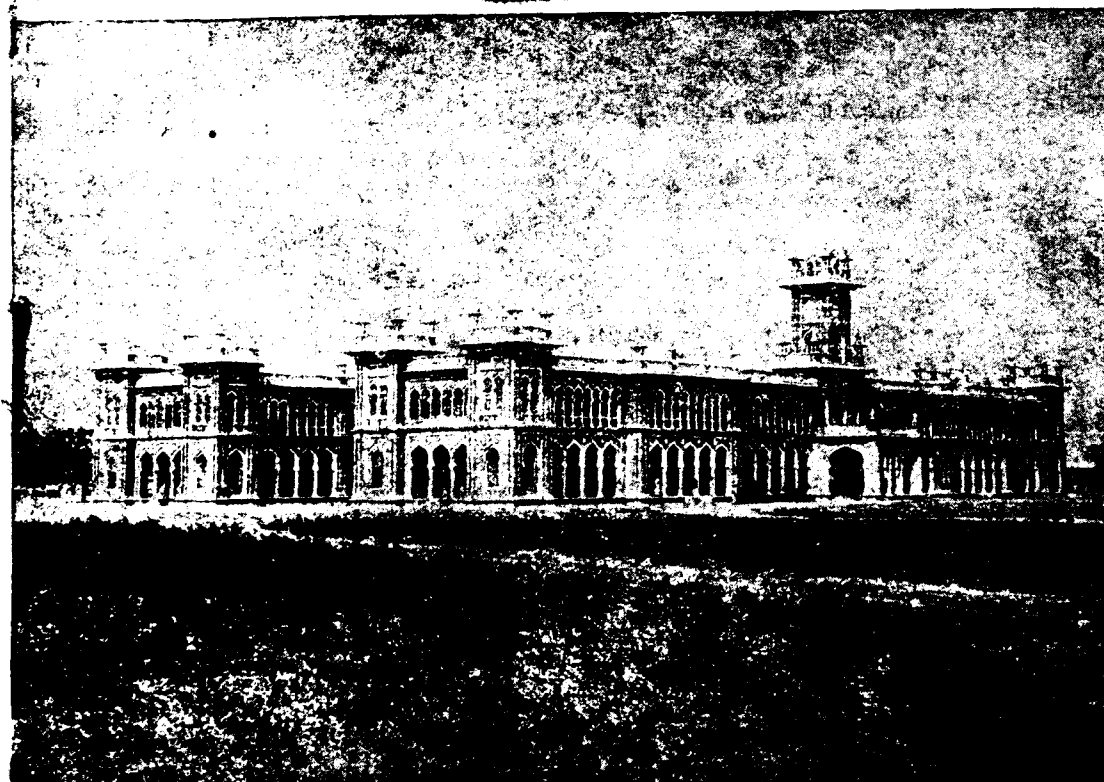
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November 1955

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No. 11



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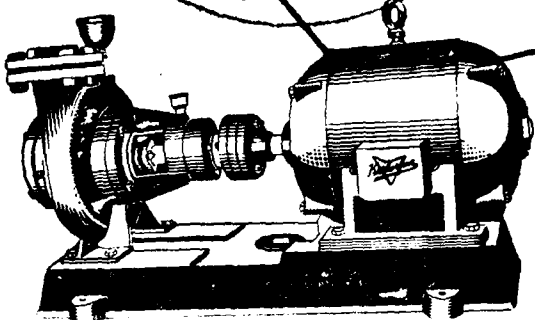
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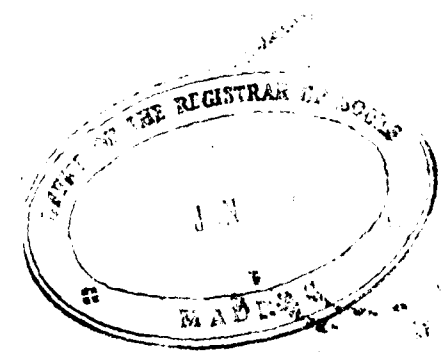


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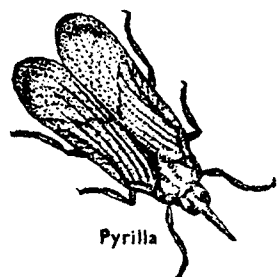


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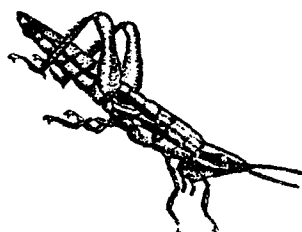
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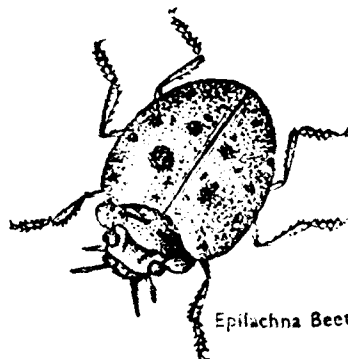
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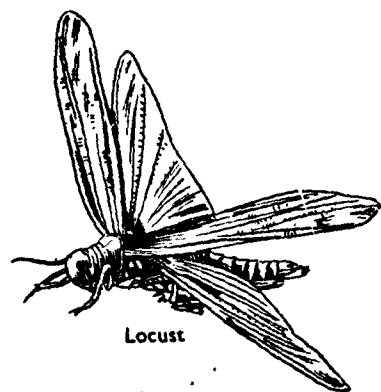
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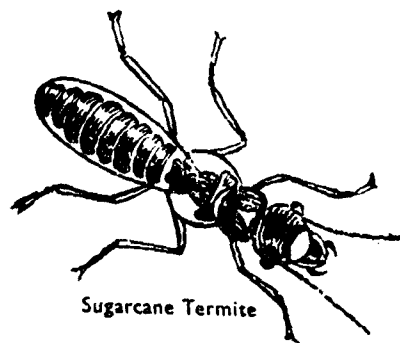
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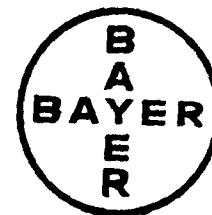
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Vol. XLII

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No. 11

CONTENTS

	PAGE
Editorial ...	471
Original Article:	
1. The Soils of the Lower Bhavani Project Area and means of improving their Fertility. ...	473
(A contribution from the Chemistry Section, Agricultural Research Institute, Coimbatore)	
Research Notes ...	482
Reviews ...	488
Gleanings ...	490
Notes and News ...	493
Weather Review ...	494
Departmental Notifications ...	496
Market Committees Chronicle ...	499

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Editorial

Scientific Research in India: This was the subject of the Thomas Holland Memorial Lecture delivered by Sir Alfred Egerton, F. R. S., on May 19th of this year. Sir Alfred was the Chairman of Egerton Committee which was recently assigned the task of reviewing the work of the National Research Laboratories and Institutes in India. The creation of this chain of National Laboratories in so short a time is a standing monument to the vision, drive and organising ability of the late Sir Shanti Swarup Bhatnagar. In the words of Sir Alfred Egerton, "much was no doubt started in India before it attained independence in 1947, including for example, the Board of Scientific and Industrial Research and subsequently the Council of Scientific and Industrial Research to administer the Industrial Research Fund, but all the same scientific research obtained its full recognition and encouragement only after 1947". The creation of nearly a dozen National Institutes within a short space of five years is no doubt a great achievement of which all Indians may well be rightfully proud, but as pointed out by Sir Alfred in the course of his lecture, these Institutes should be regarded not so much as an achievement in themselves as facilities provided for young Indian scientists to prove their mettle in the scientific field. He emphasised and rightly too, that fruitfulness of scientific research is first and foremost not a matter of money or equipment, but of outstanding men and women. The next sentence in Sir Alfred's address is worthy of very careful attention— "I have full faith in India's young scientists and technologists and I believe that with initiative and integrity, patience and persistence, they will do work in these institutes which will make them a worthy memorial to India's great public servant, Sir Shanti Bhatnagar".

Mark the words— "initiative and integrity, patience and persistence". As most of us would realise, the mere possession of an excellent instrument is no guarantee of excellent results. For instance, the mere possession of an expensive camera is seldom an assurance of beautiful photographs, nor will the possession of a genuine Stradivarius or Amati ensure the divine melodies of Yehudi Menuhin or Dwaram Venkataswami Naidu. In every field of human activity it is the man behind the instrument that is more important than the instrument itself and the newly created National research laboratories are no exception to this principle. Nor is this principle limited to the newly created institutes; even in our existing research institutes there is a real need to remember the basic truth that quality counts for much more than mere quantity and tangible results can be achieved only by sustained hard work, arising out of spontaneous enthusiasm.

The Soils of the Lower Bhavani Project Area and the Means of Improving their Fertility

(A contribution from the Chemistry Section, Agricultural Research Institute, Coimbatore)

Introduction: The Bhavanisagar Dam has now been completed and water has been let in to the fields for irrigation. To make the best use of the land it is necessary to have a correct idea of the soils of the Project area (Lower Bhavani Project area) and to grow only those crops which are best suited to the soils.

The area commanded by the Project consists of a triangular strip of country lying along and to the south of the river Bhavani from the site of the dam upto Bhavani town where the river joins the Cauvery and along and to the west of this from Bhavani town down to Kodumudi. Portions of the taluks of Gobichettipalayam, Bhavani and Erode of Coimbatore district are included in the ayacut. The main soil of the tract is a shallow red soil, lateritic and porous. The rainfall in the tract is scanty and is inadequate even for dry crops like *Cumbu* and *Cholam* and the object of the Project is to ensure sufficient water for garden crops. Paddy and wet cultivation are to be discouraged, at least in the major portion of the ayacut.

In order to take stock of the different soil types and to formulate a comprehensive scheme of crop cultivation a soil survey of the Project area was undertaken in 1933-'34. During the traverse of the tract the following features were noted: (1) the surface features of the land, (2) soil-water conditions including drainage, (3) the texture and colour of the soil, (4) the depth and succession of soil horizons down to the parent rock and (5) the nature of the cropping and the natural vegetation in the tract. After the traverse, soil samples for detailed study in the laboratory were taken at spots roughly about three miles distant from each other.

The Physiography and Geology of the Tract: The commandable area is highly undulating, with numerous elevations and depressions and cut up at intervals by water courses. It is difficult to come across in the tract a level stretch of land a mile or more in length. The landscape all round presents a red and sandy appearance with

This article includes the work of a number of workers in the Chemistry Section, of whom some have retired, while others are no longer alive, hence it is published now as a contribution from the section as a whole.

rocks jutting out here and there. There is not much of vegetation in the elevated places but the hollows and depressions are generally well covered with plants.

The general slope of the country is towards the rivers Bhavani and Cauvery. The shallow red soil, 9—18" in depth and lateritic in character is the predominant soil type of the tract. However, in the depressions between elevations are found deeper soils and this is especially the case where irrigated cultivation has been undertaken with wells. These soils are four feet and more in depth and are more fertile than the shallow red soil. The main soil type of the ayacut, namely the shallow red soil, is red to brown in colour and is often associated with considerable amounts of sand and gravel. A considerable quantity of quartzite pebbles, some of them as big as a human fist, is often found on the surface of the land in the area. These stones are gathered up by ryots into heaps and laid along the bunds of cultural areas to demarcate blocks. Where they are left on the field, it is probably due to the belief that they help in arresting soil erosion and in acting as a mulch to check loss of moisture.

The parent rock in the tract is the gneiss, massive and granitic in character, especially at the lower depths. The parent rock is generally struck at a depth of three to four feet. Between strata of gneiss, one or more veins of quartz are sometimes found. Embedded in these strata of gneiss and quartz are often large blocks of felspar.

The main soil type of the ayacut area is the shallow red soil ranging in depth from 9" to 27", the average being about 18". The profile characteristics of the soil in general may be described as follows:—

0-17 inches	Red loam, often sandy or gravelly.
17-30 "	Layer of broken quartz and crystalline felspar.
30-36 "	Red silty loam.
36-45 (48) "	Weathered friable rock.
More than 45 (48) "	Hard parent rock, mostly gneiss.

The study of the soil profile together with the topographical and climatic features of the tract gives an insight into the pedogenic processes of soil formation. The quartzite nature of the parent rock and the limited rainfall has produced a shallow soil. The

undulating topography has entailed a large run off-and the porous character of the surface soil has allowed considerable leaching to take place, leaving behind a lateritic matrix rich in sesquioxides and poor in bases. The finer particles carried away in the surface run-off have been deposited in the depressions, giving rise to deeper and more fertile soils.

General character of the Soils of the Lower Bhavani Project Area:
The samples collected during the traverse and soil survey of the Lower Bhavani Project area may be divided into two classes.

- (1) The shallow red soil from the drylands comprising the major portion of the tract and
- (2) The garden-land soils in the depressions between elevations.

The soil samples were studied in the laboratory for the following:

- (a) Mechanical composition.
- (b) Water relationships of the soil comprising the determination of the water-holding capacity, and pore space,
- (c) Fertility status and base exchange properties.

(i) *The Dryland soils. Mechanical Composition:* All the samples of soil from the major portion of the commandable area, namely the drylands with shallow red soil were analysed for mechanical composition by a rapid conventional method. In this method the coarser fractions only were estimated by sieving and the finer fractions were obtained by difference. The preliminary treatment to break up soil aggregates consisted of boiling the soil (passed through a 2 mm. round-hole sieve) with water for half-an-hour. The rapid conventional method was adopted in the laboratory in order to complete in a short time, the analysis of the large number of soil samples collected during the survey.

The results obtained indicate the extremely coarse character of the soil. The average clay content is only about 5%, with about 9% of silt and 85% of sand. The clay content is in many cases lower than the average and only in two pits was the surface soil found to contain more than 10% of clay.

The mechanical composition as carried out by the International method on the dryland soils of the Agricultural Research Station, Satyamangalam is given below.

Mechanical composition of dryland soil, Satyamangalam
(INTERNATIONAL METHOD)

		0 — 9"	9" — 18"	18" — 27"
Clay %	...	20.85	24.34	20.31
Silt %	...	2.36	3.75	5.08
Fine Sand %	...	19.50	16.37	14.29
Coarse Sand %	...	58.35	53.78	54.19
Acid Solubles %	...	—	1.76	6.13
Total	...	101.06	100.00	100.00

Even those soils which have been in cultivation for several years can be classed only as sandy loams, with a preponderance of the coarser fractions, especially coarse sand. The dryland soils of the ayacut are therefore coarse and porous.

Water-holding Capacity: The water-holding capacity of the soils is low, the average value being about 26%, with the highest figure for any of the soils being about 35%.

The values given above were obtained in the laboratory for columns of prepared soil one centimeter in depth. In the field where the soil is deeper and of varying texture and compactness the capacity to hold water would tend to be lower. This is borne out by a separate series of experiments with columns of soil 9 inches deep. The average water-holding capacity for such columns was found to be only 20.6%; with the soil *in situ* the water-holding capacity may be reckoned at 15—16%.

The low water-holding capacity of the soils is due to their porous nature with a low percentage of the finer soil particles and organic matter. Water added to the soils would not be retained and would be lost by percolation and drainage. The water-holding capacity can be increased only by the incorporation of bulky organic manures.

Pore Space: The pore space in a soil is the space between the soil particles. It is of two kinds: (1) the bigger or macro-pore

spaces between the coarser individual soil particles and between the soil crumbs and (2) the smaller or micro-pore spaces between the very fine soil particles and within the soil crumbs. The macro-pore spaces serve as channels for the movement of water and air within the soil, while the micro-spaces are useful for the retention of added water. As the clay and organic matter contents are small there are very few crumbs and a very small percentage of micro-pore spaces in the dryland soils. The average value of 38% of pore space obtained for these soils consists mainly of macro-spaces and water movement in the soils will be rapid.

Fertility Status: The following table gives the results of the chemical analysis of the three depths of a typical dryland soil.

CHEMICALS ANALYSIS OF DRYLAND SOIL (DRY BASIS)

		0 — 9"	9" — 18"	18" — 27"
1.	Moisture %	...	2.17	2.74
2.	Loss on ignition %	...	2.08	2.26
3.	Lime (CaO) %	...	0.54	0.18
4.	Phosphoric acid (P ₂ O ₅) %	...	0.045	0.024
5.	Potash (K ₂ O) %	...	0.29	0.22
6.	Total Nitrogen (N) %	...	0.038	0.038
7.	Organic carbon % (Walkley and Black number)	...	0.19	0.17
8.	Available phosphoric acid (P ₂ O ₅) %	...	0.0017	0.0035
9.	Available Potash (K ₂ O) %	...	0.0028	0.0055
10.	Total soluble salts %	...	0.038	0.033
11.	pH	...	7.51	7.60

The soil in all the three depths has a low fertility status. They are deficient in nitrogen, available phosphoric acid and potash. The soil does not contain adequate amounts of lime and other bases. Organic matter is in short supply. The soils contain only a small amount of water-soluble salts.

The soils have low to medium base exchange capacity and more than 50% of the bases are made up of calcium. Magnesium is the next important exchangeable cation followed by sodium. The mono-valent cation forms 20—25% of the exchangeable bases and efforts

should be made to decrease the degree of alkalisation if the soils are not to become bad. The results of the base exchange studies are given below :

BASE EXCHANGE STUDIES OF THE DRYLAND SOILS.

	0" — 9"	9" — 18"	18" — 27"
	(In milli-equivalents)		
Exchangeable Calcium ...	5.00	7.50	7.40
„ Magnesium ...	0.02	1.76	2.47
„ Sodium ...	1.60	2.25	1.62
„ Potassium ...	0.75	0.74	0.74
Cation Exchange Capacity...	9.8	12.3	12.3

(ii) *Soils of the Garden-Lands:* The garden-lands are generally, though not always, situated in the low-lying areas between elevated places. As a consequence fine particles have been carried down from above and deposited in these places. These depressions are more fertile and conserve moisture better. So they have been under cultivation for hundreds of years. The soils of the garden lands contain a higher percentage of the finer fractions than the dryland soils. The average value of the finer fractions in the garden soils is about 24.6% compared with about 14% in drylands. The average water-holding capacity of the garden-land soils is about 34% compared with 26% for the drylands. The garden-land soils are generally 3 to 4 feet and more deep. The mechanical and chemical composition, and the base exchange properties of a typical garden land soil are tabulated below :

Mechanical composition of a typical garden-land soil.

	0 — 1 ft.	1 — 2 ft.	2 — 3 ft.
Clay % ...	33.78	28.55	17.97
Silt % ...	6.51	6.38	3.25
Fine Sand % ...	15.86	14.30	11.88
Coarse Sand % ...	45.67	53.59	67.56
Acid Solubles % (By difference)	—	—	—
Total % ...	101.82	102.82	100.66

CHEMICAL ANALYSIS OF A TYPICAL GARDEN SOIL (DRY BASIS)

	0 — 1 ft.	1 — 2 ft.	2 — 3 ft.
1. Moisture % ...	3.24	2.77	2.02
2. Loss on ignition ...	2.85	2.74	2.03
3. Lime (CaO) % ...	0.14	0.32	0.73
4. Phosphoric acid (P ₂ O ₅) % ...	0.019	0.017	0.047
5. Potash (K ₂ O) % ...	0.24	0.40	0.64
6. Total Nitrogen (N) % ...	0.036	0.028	0.029
7. Organic carbon % (Walkley and Black number) ...	0.15	0.10	0.05
8. Available phosphoric acid (P ₂ O ₅) % ...	0.0017	0.0026	0.0027
9. Available potash (K ₂ O) % ...	0.0030	0.0056	0.0030
10. Total Soluble salts % ...	0.053	0.083	0.022
11. pH ...	8.54	8.20	8.35

BASE EXCHANGE PROPERTIES OF A TYPICAL GARDEN LAND SOIL.

	0 — 1 ft.	1 ft. — 2 ft.	2 ft. — 3 ft.
	(Milli-equivalents)		
Exchangeable Calcium ...	10.8	7.2	7.0
„ Magnesium ...	2.2	4.18	3.83
„ Sodium ...	2.08	3.59	2.91
„ Potassium ...	0.83	0.88	0.47
Cation Exchange capacity ...	16.0	15.8	14.0

From the tables it is seen that the garden-land soil contains a higher percentage of clay than the dryland soil. The soil and sub-soil can be classified as clay loams. The soil in all the three depths has a higher cation exchange capacity and more than 50% of the cations consist of calcium. As regards the chemical composition it cannot be said that the garden soil is richer in plant nutrients than the shallow dryland soil. But the garden soil is generally more fertile as it is able to retain moisture and manures better than the dryland soil. The garden-land soils are generally on the alkaline range.

Methods of Improving the Soils of the Lower Bhavani Project Area:

Both the types of soils present in the Lower Bhavani Project area, namely the shallow red dryland soil (which constitutes the major soil of the tract) and the garden soil are poor. The shallow red soil is lateritic and highly porous with a low water-holding capacity. It is also poor in all the essential plant nutrients. As its capacity for retaining moisture is very low the dryland soil will lose the major portion of irrigation water let on to it by percolation and drainage. The garden soil which occurs only to a limited extent in the ayacut is deeper and it may, with suitable precautions, be adjusted for wet cultivation.

As both the types of soils are poor in all the essential plant nutrients it is necessary to build up their fertility. But the addition of adequate amounts of organic matter and commercial fertilizers necessary to improve the soils for good crop production, would involve enormous cost and would be beyond the means of most ryots. So a simple method is suggested by which, without much outlay, the soil can be improved. As is well known, leguminous green manure crops grown and ploughed in, increase the soil organic matter and nitrogen. When the legume is given phosphatic manures it makes very good growth and fixes nitrogen most efficiently. It is claimed that when other conditions are at optimum each pound of phosphate given to it enables the legume to fix about three pounds of nitrogen. So the simple process of growing a leguminous green manure crop with phosphatic fertilizer and ploughing it in increases the nitrogen and organic matter status of the soil. When the organic matter of the legume undergoes decomposition in the soil it mobilises soil potassium for the use of succeeding crops. The organic matter also improves the physical condition of the soil, binding together the soil particles into aggregates. The phosphate added to the legume is not lost: it is turned into available forms during the decomposition of the legume ploughed into the soil. So by growing a leguminous green manure crop on the soil with the application of phosphatic manures and then ploughing it in, the soil is improved in tilth and is enriched in all the essential plant nutrients, nitrogen, phosphoric acid and potash. The grain or cash crop which follows the legume will be benefitted considerably. In three to four years, by growing a suitable legume with phosphate before the cash or grain crop the fertility of the soil will be improved to produce good crops. The rotation of legume and crop should be continued every year since the loss of organic matter from tropical soils is considerable, especially in a soil with open texture. For the best performance of the legume it should also be

remembered that it should be inoculated with the specific bacterial cultures before sowing. It has been shown that daincha, dew-gram and pillipesara are very suitable legumes with phosphate for the Lower Bhavani Project Area. The phosphate should be applied to the legume at 30 lb. P_2O_5 per acre in the form of superphosphate.

Summary: There are two types of soil in the Lower Bhavani Project area. The main type is the shallow red soil 9"–2 ft. in depth, lateritic and porous. There are also patches of a deeper red soil three to four feet in depth. The water-holding capacity of both types is low. The soils of the area are of low fertility status, being deficient in all the essential plant nutrients. Their tilth and fertility status can be built up by growing a suitable leguminous green manure crop with application of phosphate and ploughing it in.

Acknowledgement: The traverse and soil sampling in the Project area were carried out by Sri T. Lakshmana Rao and M. R. Balakrishnan in 1933–'34. They also analysed the major portion of the samples for mechanical composition by the rapid method and for water-holding capacity. Their report has not been published. The rest of the data given in the article are of recent dates (1953–'54). As water has been let out for irrigation from the Bhavanisagar Dam it is thought that it would benefit the ryots to have an idea of the nature of their soils and the means of improving them for good crop production.

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Research Notes*Solanum elaeagnifolium*, Cav.

A new weed of cultivated lands in Madras

Introduction: Weeds are unwanted plants which are relatively useless, but cause great damage to crops and sometimes to livestock also, as some of them are very poisonous. Due to the interference of weeds in cultivated lands, crop production is often adversely affected, as weeds deprive the crops of moisture and mineral nutrients. Before finding out suitable methods of eradication of weeds from cultivated lands, it is necessary to understand their growth habits and methods of reproduction. Tadulingam and Narayana (1932) have described a good number of weeds found in South India, indicating control measures for each one of them. Under the family *Solanaceae*, they have mentioned few weeds of the genera *Solanum*, *Physalis*, *Datura* and *Withania*. In this article, the occurrence of an exotic species, *Solanum elaeagnifolium* Cav. as a weed of cultivated lands in Madras State, is recorded. This is a new introduction, which has not been recorded before.

Description of the weed: *Solanum elaeagnifolium* Cav. is native to tropical America, where it is commonly known as 'White horse-nettle' and 'Silver leaf nightshade'. It is a deep-rooted perennial belonging to the family *Solanaceae*. Muenscher (1935) in his description of this species, mentions that it is found as a weed in meadows, pastures and cultivated fields and is most troublesome from Missouri south-westward to Arizona.

The stems are two to three feet tall, branching and usually set with slender prickles. They are erect, arising from deep-seated rootstocks and creeping roots. Leaves are oblong to linear in shape, alternate, stalked and entire or wavy-margined. They are silvery white in colour due to a dense covering of starshaped clusters of hairs. Leaves are also armed with prickles. The flowers are violet and are shaped like a brinjal flower, being borne in cyme-like clusters; calyx with five narrow acute hairy lobes; corolla rotate, mauve in colour, five-lobed; stamens five with tapering anthers. Ovary white, hairy, developing into a globular, smooth, many-seeded yellow berry about half an inch diameter. Seeds are fairly small, nearly circular, flattened, finely granular and yellow to dark brown in colour. The figures of a plant, leaf, flower, inflorescence and a cluster of fruits are found in plate (1).



Reproduction: This weed reproduces itself by seeds and creeping roots. Seeds are produced in abundance and their longevity under ordinary laboratory conditions is reported to be ten years. (Robbins *et al*; 1952). Creeping roots develop a number of adventitious buds which give rise to new shoots and thus the plant is able to spread very quickly. When the aerial portions of the plant are cut, regrowths were found to appear within twenty days from the root portion below. This method of vegetative reproduction makes the control of this weed by any mechanical means impossible.

Occurrence in Madras State: This exotic perennial weed was first observed in a garden-land plot of black clayey soil belonging to one Venkatasamy Naidu in the village of Siddanaikenpalayam of Palladam taluk in Coimbatore district. A few plants left unnoticed in the field a year ago, have multiplied very rapidly and covered nearly an acre of land by means of their creeping roots. Cultivation in this field is very difficult and the crops raised on it are very poor in growth and yields. On excavation of the soil underneath a few

plants, it was seen that the roots are slightly fleshy and thick, ranging from light brown to white in colour. The main roots extend to a depth of over five feet straight down into the soil. Lateral roots are observed to lie at a depth of about two feet from the surface. These extend to about one or two feet, then suddenly turn down and form new plants by the development of vegetative buds. Thus two plants seen close to each other will be connected by their roots. This weed has also been reported from Kangayam taluk where it is found in a two-acre piece of land.

The authors believe that this weed might have come in only through seeds found as admixtures with imported food grains such as wheat, maize etc. Since it is a deep-rooted perennial with creeping roots which serve as a means of rapid multiplication, its eradication is also difficult, as in the case of *Cynodon dactylon* Pers. (Hariali). Trials on the control of this weed with chemical herbicides are in progress and the results will be published elsewhere.

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Occurrence of Bisexual Flowers in Arecanut (*Area catechu* L.)

As a rule Arecanut (*Area catechu* L.) is a monoecious plant with both male and female flowers borne in the same inflorescence. The inflorescence is a spadix, where female flowers are borne generally on the basal half of the branches of spadix and the male flowers are borne on the distal half of these branches (which are modified into special filiform branches) in two rows. The floral structure has been described by Sands (1926) and Nambiar (1949). The male flowers in the spadix open first and then drop off. It takes about a month for all the male flowers to drop off from a particular spadix and then only the female flowers open and become ready to receive the pollen. Hence the fertilization is mostly by cross pollination, as the chances of the pollen fertilising the female flower of the same tree is very remote.

The authors recently came across an areca tree in a garden belonging to Sri S. Krishna Bhat at Adyanadka village in South Kanara District, where bisexual flowers occur in the same spadix, as well as unisexual male and female flowers. The female flowers are borne as usual on the basal half of the spadix and the male flowers and the bisexual flowers are borne on the distal half. The bisexual flowers vary in size and are considerably smaller than the regular female flowers and much longer than the male flowers (Size of bisexual flowers—length 0.5 to 0.9 cms; female flowers 1.0 to 1.5 cms.—male flowers 0.2 to 0.3 cms.) Perianth parts are the same as in female flowers. Stamens are 2-4 in number and mostly 3, with at least one fully developed anther, while the others are rudimentary at different stages of development. Pollen are profuse in the fully developed anthers and a few pollen grains are found even in the partially developed anthers. Stigma is trifid as usual and the ovary is smaller in size than the ovary in the unisexual female flowers. After fertilization, the fruit develops normally but the size of fruits (nuts) developed from such flowers is much smaller than the nuts developed from the female flowers. (Size of normal nuts 4.4 to 4.8 by 2.7 to 2.9 cms; bisexual nuts 2.7 to 3.0 by 1.9 to 2.0 cms.)

Generally when the male flowers drop off, that portion of the filiform branches where male flowers are borne, dries up and falls off or remains dried. But in this case, the nuts developed from bisexual flowers hang out distinctly from the main bunch (those developed from the female flowers) and give the appearance of a string of beads hung from the bunches, as the difference in size of these two kinds of nuts is very marked.

There is every possibility of these bisexual flowers being self-fertilized as both the sexes are found in the same flower. May be it is a freak or may be it is a hereditary character. All these aspects require further investigation. Bisexual flowers in areca was noticed in Assam by Raghavan and Murthy (1953). However, this is the first occurrence of such a phenomenon in areca trees in South India. There is only one tree showing such flowers in the above-mentioned garden and even that tree is affected by stem-breaking symptoms. Efforts are being made to keep the tree alive by providing artificial supports. The tree is said to be a profuse bearer with upto four bunches every year, with each bunch producing 500 to 750 nuts. The owner has been kind enough to spare seednuts from this tree and the seedlings from these will be raised for future study.

Acknowledgment: The authors are highly grateful to the Indian Central Arecanut Committee for having partly financed a scheme under whose auspices this work was carried out.

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N. R. ADYANTHAYA and
K. SHAMA BHAT.

Value of Lupins as Green Manure for Potato

The importance of organic manures, either as cattle dung, green leaf or compost for agricultural economy, is well-known. Though chemical fertilizers result in quick and increased crop returns, regular applications of organic manures are essential to maintain the permanent fertility of the soil.

So far as the potato farmer in the Nilgiris is concerned, farm-yard manure is always in deficit. This is because he does not keep animals for field work as the ryots in the plains do, since the steep slopes on which potatoes are raised are not easy for cattle traction. Hence the alternatives open to him are (1) the preparation of compost from green leaf and (2) the growing of a green manure crop *in situ* for incorporation into the soil.

Plenty of green leaf is available by cutting from the forests that abound in the hills. But then the question of labour, which is costly, comes in. Being a thinly populated region, there is not much labour even for routine field operations. Hence, the better way is to raise a crop of green manure. Blue bitter lupins have been found to be the best, as a result of trials and experience at the Agricultural Research Station, Nanjanad.

Raising a green manure crop of lupins between successive crops of potatoes resulted in consistent and significant potato yield increases, as recorded below, in the course of rotational trials at the Agricultural Research Station, Nanjanad.

Year of trial	Acre yield of potato in lb.		Increased acre yield of potatoes in lb. due to green manuring
	(a) After fallow	(b) After lupins	
1942-'43	24,550	28,283	3,733
1944-'45	22,467	25,433	2,966
1946-'47	24,567	27,417	2,850

	First Year	Second Year
(a) Two year rotation	.. Potato—Fallow	Potato—Fallow
(b) " "	.. Potato—Lupins	Potato—Lupins

All the three potato crops, the main, the second and the irrigated, can be supplied with lupins for green leaf.

The main potato crop is lifted in August. Seeds of lupins, at 60 lb. per acre, can be immediately sown and covered. The plants come up quickly with the help of the North-east monsoon rains and can be ploughed in after four months, when the crop is in flower. The main potato crop of next year will get the benefit of such application.

The fields intended for the second potato crop, which is planted in August, can be sown to lupins in March-April, as soon as a good soaking shower is received. Good growth takes place with the spring and early South-west monsoon rains and the crop can be forked in during July.

In regard to the irrigated potato crop, the lupins can be sown directly after lifting in May-June and the resulting crop ploughed under in November, to be available for the next irrigated potato crop, due for planting in January-February.

An yield of three to five tons of green manure is possible if the practice recommended is followed.

The stalks of lupins do not turn woody. The plants branch well and are profusely leafy. Other good points in favour of lupins are (1) the crop covers the ground against erosion of soil and water during heavy rains; (2) weed growth is considerably smothered; and (3) the crop is not damaged or eaten by cattle since the stalks are bitter.

Besides cropping in the fields, lupin seeds can be sown over the uncultivable wastelands and along the bunds for seed. Seeds obtained therefrom will be helpful to meet the requirements of the next season. When mature, the pods burst quickly and the seeds are scattered all round. Thus, without further sowings, it is possible to obtain seeds from such plants over a number of years.

The benefits of lupins as the ideal green manure for potatoes are now being realised by the potato farmers in an increasing way.

Agricultural Research Station,
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K. SAPTHARISHI.

Reviews

Methods of collecting current Agricultural Statistics: by R. D. Narain, *Economic Division, Food and Agriculture Organisation of the United Nations, March 1955, Rome, Italy, 15 sh. (Orient Longmans Ltd., Mount Road, Madras).*

This sumptuous loose-leaf volume represents the results obtained from a programme undertaken by the Economics Division of the Food and Agriculture Organisation of the United Nations. The programme was commenced in 1947, when the Food and Agricultural Organisation took the lead in organising a world agricultural census and gave assistance to a number of countries in carrying out that programme. The next step was the establishment of training centres on Agricultural Statistics in different parts of the world under the expanded Technical Assistance Programme, manned by experts sent to various countries to assist the Governments in setting up statistical organisations and in applying the best statistical methods.

The present loose-leaf handbook incorporates the information assembled according to a standard pattern for the classification of methods that were found acceptable by most countries. This pattern enables broad comparisons to be made and enables a comparative understanding of the methods used in different countries and would go a long way in helping countries to view their own statistical systems in a broader perspective and thereby stimulate thought and action towards further improvement.

It is hardly to be expected in a work of this complexity and magnitude, that short-comings will not exist in the completeness of data shown for different countries, but one of the main purposes of this manual is to afford a starting-point for better and more accurate information. The manual is also somewhat incomplete in one or two other aspects, in its being limited to the basic items of current agricultural statistics, and not including such important items as agricultural prices, agricultural incomes, agricultural labour and wages. Secondly a few of the large countries have not been included, because the information that was made available from them was too meagre to be presented in the pattern evolved for description. But this, it is hoped, will be rectified in the near future.

The printing and get-up conform to the usual high standards of F. A. O. publications.

[T. R. N.]

Report on 1950 World Census of Agriculture Vol. 1. Census results by countries. *Food and Agriculture's Organisation of the United Nations, Rome, Italy, 1955. 10 Shillings (Orient Longmans Ltd., Madras).*

This is the first volume of a series to be published in instalments. The entire report when completed is intended to deal with three different aspects of a world census of agriculture, (1) census results by countries (2) a methodological study of the various national censuses, and (3) analysis of the main subjects included in the census.

The importance of this work has been recognised since 1950 when a preliminary programme was prepared and submitted to Governments, reviewed by technicians and discussed at conferences of technicians from various countries of Europe, America and countries concerned with statistical programmes in less developed areas. Nearly 100 countries and territories have thus participated in the census. The results published in the present first volume of the series have been classified under the following headings:—

- (a) Holding and Tenure.
- (b) Land Utilisation.

- (c) Agricultural population.
- (d) Employment in Agriculture.
- (e) Crops.
- (f) Livestock and Poultry.
- (g) Agricultural Technology.
- (h) Fertilisers and soil dressings.
- (i) Irrigation and drainage.
- (j) Fragmentation (of holdings).
- (k) Wood and Fishery Products.

The report is bound to be quite a useful one, coming as it does with the authority of the United Nation.

A perusal of the list of countries dealt with in this volume reveals however, that most of them are very small ones, except perhaps Alaska, West Germany and Northern Rhodesia. India and Pakistan are very significant omissions, though it is likely that the subsequent volumes might include these and other countries as well. The printing and get-up are very good. [T. R. N.]

Arid Zone Research. Plant Ecology—Reviews of Research. UNESCO. *Printed in France. 1955; pages 1-379. with 10 plates and four ecological maps of Australia and one of Iran, Israel and Turkey; with numerous text illustrations. Price 45 shillings. (Orient Longmans Ltd. India. Madras.)*

The present volume is a sequel to the report on hydrology issued in 1954. It comprises a review of work on the arid zones of the world excepting the Soviet and Chinese Republics. From a perusal of the report, it is seen that no continent is free from this ecological condition, viz. arid and semi-arid. In many countries, deserts and desert land conditions are seen to be gaining the upper hand, mainly man-made. The vegetation that once covered such areas have now disappeared. In the agriculture of such countries, it becomes a matter of prime importance to control the spread of the desert conditions, the drying-up of natural waterways and the swallowing up of fertile lands. A symposium of the sort presented in this book enables us not only to understand the causes which have contributed to the creation of such arid, semiarid and desert-land conditions, but also to find out means of combating the further spread and the reclamations of such lands so that they may be again brought under agriculture. It has been attributed in these reports that the degradation of the arid zone lands is in the main due to human factors such as over-grazing, denudation of forests for fuel etc. The review gives in the introduction, a summary of the work done so far in the different countries, contributed by several authors. It also brings out the fact that certain countries like the U.S.A., Canada and Australia have advanced far in the study of ecology of the plants and the related sciences, while there are other countries which lag woefully behind. An interchange of workers as suggested by some of the authors between such countries would certainly benefit this international problem. As suggested by the South American authors, an international organisation on the study of the arid and semi-arid zones, maintained independent of the governments of the States concerned, would go long way in solving this urgent problem. This review itself brings before the reader the various kinds of problems that are found in the different countries, what the extent of these arid zones are, what methods are being developed to combat these conditions, the vegetations that are now covering these areas and other meteorological conditions prevalent. The UNESCO has done a great service in accomplishing the difficult work of getting together the work in various countries into a single volume. The book, brought out in English and French, is of great interest not only to botanists but to all biologists and workers in the field.

N. K. S.

Gleanings

Cotton Cultivation in Rice Fallows in Coimbatore District: Investigation conducted during 1954 and 1955 at the Central Farm, Coimbatore on the cultivation of cotton as a well-irrigated summer crop, in the tank fed wetland block, after the harvest of paddy, gave very encouraging results. The varieties selected were P. 216 F, P. 23 F, Madras Cambodia Uganda 1 and Madras Cambodia Uganda 2 in 1954 and P. 216 F, P. 23 F and Madras Cambodia Uganda 1 in 1955. Sowing was done on 9-2-1954 and 6-3-1955 in the respective years. The cotton crop came to harvest in the second week of June and completed by the middle of August, in both the years. The results are as under:—

Variety	Yield of seed cotton per acre in lb.	
	1954	1955
P. 216 F	1,249	1,480
P. 23 F	1,080	1,293
MCU. 1	672	749
MCU. 2	779	(Not tried)

In the spacing trials conducted with P. 216 F and P. 23 in both the years, a closer spacing of 1½ feet between the rows and 4½ inches between the holes in the row gave the maximum yield i.e. 1,411 lb. of kapas in 1954 and 2,023 lb. of kapas in 1955 in the case of P. 216 F cotton. The two Punjab varieties viz., P. 216 F and 23 F have a halo length of 24 to 25 mm. with a ginning per cent of 34 to 35 as against a halo length of 28 to 29 mm. and a ginning per cent of 34 to 35 in the control variety Madras Cambodia Uganda 1.

Record Cholam Yields: Among the irrigated types of cholam, strain Co. 12, (Mottai Vellai Cholam) is very popular. It has the shortest duration, viz., 85 days. The earheads are compact and oval in shape and the grains are chalky white in colour; the straw is pithy and sweet. The strain has been found suitable to the districts of Coimbatore and Tiruchirappalli. In the Udukkanpalayam village of Udumalpet Taluk, Sri P. Kandaswamy Gounder obtained an acre yield of 6,250 lb. of grain with this strain. This yield of 35 bags of grain (each 60 M.M.) per acre is a record for the State. The entire produce from a three-acre block was distributed under the village seed farm scheme at a function held on 21-8-1955 with the Head-quarters Deputy Director of Agriculture (Inspection) presiding. This achievement has spotlighted the strain and increased its popularity.

Ceylonese Varieties of Paddy for Wynad: Wynad is a high-lying tract of Malabar District, which is characterised by a heavy annual rainfall of over 90 inches and a high humidity range. Both these features are not quite ideal for the full development and maturity of the common South Indian paddy varieties as compared to their performance in the plains. Normally, incidence of serious pests and diseases, such as the case worm and jassids and Helminthosporium and paddy blast among the various types of diseases is a common feature in this tract. Sterility and improper development of grain which are attributed to the prevalence of high humidity and abrupt climatic changes also characterise the cultivation of paddy in this region. With a view to secure varieties suitable for the topography and climatic conditions of Wynad, introductions were made from several countries including China, South Africa, Ceylon etc. Of these, two varieties viz., Maranellu and Chennellu, (introductions from Ceylon) have recorded outstanding results consistently over three successive seasons. Maranellu has given a mean yield

ranging over 2,000 lb. of grain per acre while Chennellu has given a still better record of 2,200 lb. of grain per acre. Both the varieties were unique in their freedom from major pests and diseases. The yields of these varieties were definitely more than the yield of the local varieties by 10 to 15 per cent and they returned a net profit of Rs. 160/- to Rs. 180/- per acre, which compares favourably with the profit realised from the local varieties. The varieties were suitable for the first crop season commencing from May-June to December-January and their duration has varied from 195 days to 208 days under Wynad conditions. These varieties deserve recommendation for extended cultivation in Wynad.

Magnesium Fertilisation of Potatoes: A trial to study the influence of magnesium, applied both to the soil and to the crop as a spray, on the yield of potatoes was carried out on the main potato crop of 1955 at the Agricultural Research Station, Nanjanad. The soil applications were made at four levels, viz., A (1): Control (No magnesium), A (2): Magnesium sulphate at 30 lb. per acre at planting, A (3): Magnesium sulphate at 60 lb. per acre at planting and A (4): Magnesium sulphate at 90 lb. per acre in two doses (60 lb. at planting and 30 lb. after a month). Similarly, the spray applications were also made at four levels viz., B (1): Control (No magnesium), B (2): Magnesium sulphate at 10 lb. per acre, sprayed 45 days after planting, B (3): Magnesium sulphate at 10 lb. per acre, in two doses, spraying 45 and 60 days after planting and B (4): Magnesium sulphate at 20 lb. per acre, in two doses sprayed 45 and 60 days after planting. For the spray treatments, the chemical was dissolved in 100 gallons of water per acre, per spray.

The mean acre yields of tuber in lb. for the above eight treatments were as follows: A (1): 12,450, A (2): 14,500, A (3): 14,400, A (4): 14,400, B (1): 13,700, B (2): 13,350, B (3): 15,300 and B (4): 14,600. In general, applications of magnesium, either to the soil or as crop sprays, had resulted in increased yields, the maximum being recorded with the crop-spray application at 10 lb. magnesium sulphate twice (treatment B (3)). The trial will be followed up in two more seasons for confirmation.

Mango—Air-layering: In order to observe whether mango, which is a member of *Anacardiaceae*, would also respond to air-layering treatment in the same way as the cashew, a few observational trials were conducted at the Cashewnut Research Station, Mangalore. Two varieties namely Bennet Alphonso and Kalapadi were worked as follows:—

	Date of operation	No. done
1. Bennet Alphonso	.. 4-2-1955	25
2. Kalapadi	.. 4-5-1955	10

A ring of bark, ½ inch wide was removed from shoots of a thickness slightly more than a pencil and moist moss was covered over the exposed wood and wrapped with 100 gauge Alkathene film (6" x 5") piece (per layer); the ends of the film were secured with twine. No watering was done subsequently. In Bennet Alphonso, six layers were successfully separated of which four had rooted in 40 days. The separation was, however done at the end of the two months in progressive stages. Of the ten shoots of Kalapadi, nine rooted, of which five were separated in 90 days and planted in the field immediately. The remaining four will be separated in the course of a fortnight. Rooting was as profuse in the two varieties of mango as is usually obtained in cashew. It may cost about four annas to produce a layer by this method, which is cheaper than the normal methods of grafting.

Cultivating A Coconut Garden: A coconut garden has to be regularly inter-cultivated to increase the yield and maintain it at a high level. Some points, however, have to be remembered.

Heavy soils should be cultivated when the moisture is just right for the purpose. Otherwise, the structure of the soil will be spoiled. A sandy soil, on the other hand, can be cultivated any time without any bad effects on the soil structure. Inter-cultivation on sloping lands must be done after the heavy rains are over. Otherwise the top soil will be eroded and lost. The operation should invariably be done across the contours. The object of interculturing a garden is to prevent the matting of roots on the surface. This will interfere with the free movement of water and air in the soil. Cultivation also helps in removing weeds. The depth to which the garden has to be cultivated and the frequency of the operation depend on the condition of the soil... [I C A R.]

Poultry Diseases—Early Protection Advised: Though most poultry-keepers know the usefulness of vaccinating their birds against Ranikhet disease and fowl pox, it is common for them to wait till the birds are old.

It is better that vaccinations are done early. Vaccination against Ranikhet disease can be done when the birds are eight weeks old. Poultry-keepers are advised to get their birds vaccinated when they are between two and three months of age. When buying, it is safer to buy birds which are guaranteed to have been protected against Ranikhet disease and fowl pox... [I C A R.]

'Damping' Off in Seedlings—Cause and Method of Prevention: Young vegetable seedlings often rot at or below the surface of the ground, and fall over or wilt. This disease is called 'damping off'. Damping off is commonly seen in nurseries of tomato, brinjal, cauliflower, cabbage, etc. The disease can be prevented by providing proper drainage of the nurseries, sowing the nurseries thin and watering the plants carefully. Sprinkling coarse sand or charcoal powder over the surface of the soil has also been found to prevent the disease.

Deterioration in Orange Trees—Insufficient Soil Moisture and Nutrition
Main Causes: Lack of soil moisture and insufficient nutrition have been found to be the major causes of the deterioration of mandarin orange trees reported from several orchards in Madras and Coorg. Trees in such orchards slowly deteriorate and die out in a few years. Investigation conducted by the Madras Government with financial assistance from the Indian Council of Agricultural Research in a large number of orchards in Malabar (Wyanad) showed that the local farmers' practice of digging round the trees twice a year was harmful to the trees. Covering the soil with dry leaves is being recommended as a substitute for this practice. Trees in these localities can be improved and fruit production increased, by applying such manures as farmyard manure (75 lb.) groundnut cake (10 lb.), superphosphate (1 lb.), potash 1½ lb. and wood ash (20 lb.) per tree in two doses, in June and November... [I C A R.]

Notes and News

Under the auspices of Students' Club a debate was held in English, Tamil, Malayalam and Kannada on 14th October 1955. The subject for the debate was "The Formation of States must not be on linguistic basis". The judges were: Mr. A. H. S. Sarma, Mr. M. Sundaram, Mr. Madhava Menon and Mr. K. S. Shetty. The following students were selected as the best among the speakers: R. Krishnamurthy, U. S. Sriramulu (English), C. Gopal, Sundaresan (Tamil) Karunakaran (Malayalam) Rajaram Upadyaya (Kannada).

Another debate was conducted on 28-10-1955, with Sri Sankaranarayana Reddy, Dr. A. Mariakulandai and T. R. Narayanan judges. Mr. R. Govindarajulu and R. Krishnamurthy were selected as the two best speakers. The topic for discussion was "The recommendations of the States Reorganisation Commission, if implemented will run counter to the best interests of our country".

The second year students went on tour from 16th of September to 22nd of September. They visited the agricultural Research Stations at Pattambi, Taliparamba and Mangalore as well as other agriculturally important places. They studied the cultivation practices and the important crops of the West Coast.

Under the vegetable scheme of the Government of Madras, the students are now cultivating vegetables in Field No. 54 of Central Farm. Mr. C. A. Sivaraman is selected as the Secretary and he is now looking after the cultivation of vegetables. The main vegetables grown are Bhendai, Clusterbeans, Tomato, Brinjal and Gourds. The produce is used in the Students' Hostel.

Under the Social Service League of the Students' Club, milk distribution is being carried out for the poor children of the nearby village Poojaripalayam. A Night School for the children is also being run. During the recent Divisional Sports conducted by the Madras University our College won the third place by obtaining 35 points. Mr. Marappan and Ramachandran Nambiar were the top scorers.

Sri T. R. Subramanian, B.Sc., (Ag.), Assistant in Entomology, has been awarded the M.Sc. degree by the University of Madras, for his Thesis entitled "Studies on the Systematics and Biology of some weevil pests (*Curculionidae*) in South India".

Weather Review — For the month of October, 1955

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 (Meenam-bakkam)	8.1	- 3.9	38.9	South	Madurai	10.2	+ 2.8	30.2
	Tirur-kuppam*	8.2	- 0.6	40.1		Pamban	4.3	- 4.2	19.3
	Vellore	2.7	- 4.1	30.3		Koilpatti*	2.9	- 3.2	15.8
	Gudiyatham*	7.3	+ 1.8	32.0		Palayam-cottai	5.2	- 1.9	15.6
						Amba-samudram*	0.6	- 5.9	19.4
East Coast	Palur*	5.8	- 2.4	41.7	West Coast	Trivandrum	11.2	+ 0.5	70.2
	Tindivanam*	5.6	- 0.6	33.8		Fort Cochin	20.2	+ 6.8	137.1
	Cuddalore	3.8	- 7.7	38.8		Pattambi*	14.8	+ 2.6	95.1
	Nagapattinam	9.1	- 1.5	34.9		Kozhikode	22.9	+ 11.8	150.8
	Aduturai*	8.6	+ 2.3	35.1		Taliparamba*	14.2	+ 6.1	136.7
Central	Pattukottai*	8.6	+ 2.7	28.4		Wynaad*	10.8	+ 1.5	74.8
	Salem	6.3	- 0.1	33.7		Nileshwar*	11.4	+ 3.7	175.1
	Coimbatore (A. M. O.)*	1.9	- 3.3	14.9		Pilicode*	13.0	+ 6.3	149.5
	Coimbatore	2.1	- 4.2	17.3		Mangalore	11.5	+ 4.2	148.5
	Tiruchirappalli	9.3	+ 3.0	35.8		Kankanady*	11.8	+ 5.7	149.4
					Hills	Kodaikanal	12.3	+ 2.1	65.6
						Coonoor*	10.9	+ 2.9	40.3
						Ootacamund*	13.4	+ 4.9	62.4
						Nanjanad*	6.9	- 1.4	56.7

Note:— * Meteorological Stations of the Madras Agric. Dept.

The month began with a depression over Orissa. Rainfall was fairly widespread in Malabar, South Kanara and somewhat localised in Travancore-Cochin in the first three days of the month. A fresh westerly wave was found over the Andaman Sea on 4-10-1955. In the succeeding two days there was no large change in the weather conditions. On 7-10-1955 the change-over from the South-west monsoon conditions to the North-east monsoon conditions was felt throughout the country. Rains were fairly widespread in Malabar-South-Kanara and scattered in Tamilnad on 8-10-1955 and the next day also.

A cyclonic storm in the Bay of Bengal was noted on 10-10-1955, about 350 miles east of Visakapatnam. It became severe the same evening and crossed the coast close to Visakapatnam the next day morning and subsequently became weak. An easterly wave was found approaching the south Andaman sea on 12-10-1955. On 13-10-1955 the South-west monsoon withdrew from the region except in the extreme south of Travancore-Cochin. On 15-10-1955 the North-east monsoon established itself on the east coast. In the succeeding four days rainfall was fairly widespread in many parts of the Madras State. The monsoon became strong in the South-east Arabian sea on 20-10-1955. Two days later the monsoon got strengthened along the coastal Andhra-desa by a shallow depression in the West Central Bay of Bengal. From 23-10-1955 to the end of the month thundershowers were widespread in Malabar-South-Kanara and fairly so in Travancore-Cochin and heavy but localised in various parts of Tamilnad.

Considering the month as a whole, the rainfall was below normal for practically the entire State, except the districts of Madurai, Tiruchirappalli, Malabar, South-Kanara, the Nilgiris and Kodaikanal hills. In fact, this sub-normal rain in October has depressed the enthusiasm of the cultivators, particularly in rain-fed tracts.

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

Noteworthy Rainfalls			Zonal Rainfall			
Date	Place	Rain-fall in inches	Name of Zone	Rainfall for the month	Departure from normal	Remarks
9/10/55	Nagapattinam	4.0	North	6.6	- 1.7	Below normal
17/10/55	Mathurai	4.0	East Coast	6.9	- 1.2	do.
do.	Trivandrum	4.0				
18/10/55	Alleppey	4.0	Central	4.9	- 1.2	do.
do.	Kodaikanal	3.0	South	4.6	- 2.5	do.
19/10/55	Ootacamund	3.0				
22/10/55	Fort Cochin	4.0	West Coast	14.2	+ 4.9	Above normal
27/10/55	Tiruchirappalli	6.0				
29/10/55	Kozhikode	4.0	Hills	10.9	+ 2.1	do.

Agricultural Meteorology Section,
Lawley Road P. O.,
Coimbatore, 11-11-1955.

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

REQUEST TO MEMBERS AND SUBSCRIBERS

Members and subscribers are kindly requested to clear their arrears of subscription. Change of address may be intimated immediately so that the Journal can reach your hands in time. The Departmental Officers are also requested to redirect the Journals to the addressees which will also help the Union a great deal.

Secretary,

Madras Agricultural Students' Union.

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Name and present post	Posted as
R. Balasubramaniam, Retd. Principal, Agricultural College, Coimbatore,	Principal, Agricultural College, Coimbatore
Kunhiraman Menon, P., Agricultural Assistant Chemist,	Gazetted Assistant, Lecturer, in Chemistry, Coimbatore
Mohammed Sulaiman, S., (D. A. O., on other duty),	Regional Dy. Director of Agriculture.
Meenakshisundaram, K., Additional D. A. O., Madurai,	D. A. O., Guindy.
Ranganathachari, N., D. A. O., Kozhikode,	Additional D. A. O., Madurai.
Syed Mohammed, P. P., (D. A. O., on other duty),	Regl. Dy. Director of Agriculture.
Thangavelu, T. K., D. A. O., Guindy,	Regl. Dy. Director of Agriculture, Vellore.

Upper Subordinates

Name and present post	Posted on
Athmarama Iyer, P. S., A. to D. A. O., Cuddalore,	A. D., Theni.
Abdul Khader, M., P. P. A., (Myco), Tirunelvely,	Instructor in Agricultural Grama Sevak Training Centre, Pattukottai.
Appadurai, R., Millet Assistant, Koilpattt,	Millet Assistant, Tirupathur.
Balasubramaniam, H., A. D., Vellore,	A. D., Thirukalukundram.
Balakrishnan, N. P., Paddy Assistant, Patambi,	Paddy Assistant, Taliparamba.
Dorai, S., Mysore,	Special A. D., Cotton, Sattur.
Gopinath, M., A. D., Quilandy,	Instructor in Agricultural Grama Sevak Training Centre, Taliparamba.
Jose, P. C., Extension Officer in Agriculture, Ooty,	Entomology Assistant, Kasargode.
Jayaraju, R., Instructor in Agricultural Grama Sevak Training Centre, Pattukottai,	P. P. A., Myco, Tirunelveli.
Kunaraswami, C., A. D., Kilayanur,	Oil Seed Development Assistant, Cuddalore.
Kunjamma, V. K., Librarian, Coimbatore,	Pulses Assistant, Coimbatore,
Kelukutty Menon, Paddy Assistant, Taliparamba,	Paddy Assistant, A. R. S., Pattambi.
Lingiah, N. K., Teaching Assistant, Economics, Coimbatore,	Extension Officer in Agriculture, Ooty.

Name and present post	Posted as
Malathy, M., Olavakode,	Botany Assistant, Coimbatore.
Mohammed Ghouse, A. D., Theni,	A. D., Mailam.
Madhava Menon, P., Assistant in Millets, Coimbatore,	Librarian, Agricultural College, Coimbatore.
Meenakshisundaram, D., Paddy Assistant, Patambi,	Paddy Assistant, Coimbatore.
Mammoo Koya, A. D., Gangaikondan,	Paddy Assistant, Pattambi.
Nagarathnam, A. K., Pulses Assistant, Coimbatore,	Millets Assistant, Ariyalur.
Narayanakutty Nair, T., Horticulture Assistant, Coimbatore,	Supervisor for Sample Survey, on Pepper.
Nagarajan, S. S., Assistant in Paddy, Coimbatore,	Assistant in Plant Physiology, (Ground-nut) Coimbatore.
Padmanabha Nambiar, K. P., Fruit Assistant, Taliparamba,	Supervisor for Sample Survey, on Pepper.
Ramachandran, P. K., F. M., Bhavanisagar,	Oil Seed Assistant, Bhavanisagar.
Raghavan, K., Special A. D., Sriperambudur,	Extension Officer for Agriculture, Sriperambudur Block,
Radhakrishna Reddy, A., A. D., Villivakkam,	A. D., Guindy.
Shanmugam, C. T., Oil Seed Assistant, Bhavanisagar,	F. M., Bhavanisagar.
Sethuraman, M. S., P. A., to D. A. O., Salem,	P. P. A., Entomology, Salem.
Sethupathi, S., P. P. A., Salem,	A. D., Avoor.
Srinivasan, K. V., Special A. D., Tirukalukundram,	A. D., Jayankondan.
Subramaniam, T. R., Pollachi,	Assistant, in Entomology, Coimbatore.
Vaidyanathan, R., A. D., Madurai,	A. D., Ayyampalayam.
Veeraswami, R., Millet Assistant, Tirupathur,	Millet Assistant, Koilpatti.

**THE ASSOCIATION OF THE UPPER SUBORDINATE OFFICERS
OF THE
MADRAS AGRICULTURAL DEPARTMENT
LAWLEY ROAD, P. O., COIMBATORE**

The 26th Annual General Body Meeting of the Association was held at the Agricultural College on 20-10-1955. Sri P. N. Muthuswamy presided over the meeting. Sri S. Muthuswami, Secretary, presented the Annual Report for the year 1954-1955 and appealed to the Upper Subordinate Officers to enrol themselves as members and strengthen the Association. The following resolutions were passed for submitting to the Government.

1. To revise the scale of pay of upper subordinates to Rs. 125-5-150-10-350.
2. To increase the posts of District Agricultural Officers so as to have a ratio of not more than 1:10 between gazetted and non-gazetted officers in the general section.
3. To give due weight for seniority in promotions of Upper Subordinates to the District Agricultural Officers' cadre.
4. To fix the ratio between gazetted and non-gazetted posts in the Department so as to give fair chances for all subordinates to get promotions without undue stagnation or alternatively to institute a run-on grade of Rs. 150-5-200-10-300-15-450 in the place of gazetted and non-gazetted distinctions.
5. To increase the Fixed Travelling Allowance for Agricultural Demonstrators to Rs. 75/- per mensem.
6. To enhance the Daily Allowance to non-gazetted officers by at least 50% over the existing rates.
7. To show special preference to Agricultural Upper Subordinates for the posts to be created to enforce the Agricultural Income-tax Bill, Crop Insurance Bill and Minimum Wages Bill.
8. To show special preference to Agricultural Officers for the higher posts in the Community Projects and National Extension Service schemes.
9. To permit such of the Upper Subordinates who have put in 20 or more years of total service and who wish to retire from service, to retire on full pension or at least on proportionate pension without getting themselves invalidated.
10. To abolish the system of maintaining confidential dossiers.
11. To reinstitute the Indian Agricultural Service as in the case of All-India Services for other Departments.
12. To recognise the Heads of Research sections as guides for Research students.
13. To promote Upper Subordinates in the Research sections to Assistant Research Officers' posts by consulting records of service and work done and not by personal interview at every time, as it involves monetary difficulties.
14. To enable the teaching staff members of the Agricultural College to avail of penultimate Saturdays as hitherto.

The following were elected as Office bearers for the next year.

President: Sri P. N. Muthuswamy.
Secretary: " K. Kuppanmuthu.
Treasurer: " M. V. Jayaraman.
Members of the Managing Committee: " S. Muthuswami and
" Varisai Mohamed.
Auditors: " K. R. Nagaraja Rao and
" V. Mahadeva Iyer.

The Meeting terminated with a Vote of Thanks proposed by the Secretary.

A deputation of the Association met the Director of Agriculture, Madras on 3-11-1955 and submitted its points on the various resolutions passed and sent up.

A large number of Upper Subordinates especially in the Districts have not yet enrolled themselves as members in this Association which works for our welfare. I once again appeal to them all to become members of the Association and strengthen our cause.

Subscription for Life membership Rs. 5/- which can be paid in instalments. Entrance fee As. 8.

Union is Strength!

United we Prosper!!

S. Muthuswami,
Honorary Secretary.



Sannhemp Fibre from Shiupur

by

T. K. VISVANATHAN, B. sc. (Ag.),
Inspector, Sannhemp Grading, Shiupur (Banaras)

Sannhemp (*Crotalaria juncea*) fibre has been an export item for many years and earns foreign exchange to the tune of one to two crores of rupees annually. In this paper a brief account is given of its handling and trade at Shiupur for foreign and local markets.

Sannhemp is grown on a large scale in Uttar Pradesh as a 'Kharif' crop. Soon after the commencement of the monsoon in the latter half of June, seeds are broadcast and a ploughing is given. The crop is harvested after about three months, just before the flowering stage. The harvested green stems are retted in ponds for three to four days and the bark, which forms the fibre is then extracted, cleaned and dried.

Assembling: Shiupur, near Banaras in Uttar Pradesh is the leading assembling centre for sannhemp fibre, accounting for nearly 65,000 bales out of over a lakh of bales pressed in the whole of India in a year. At Shiupur, the bulk of this consists of "Benares" type of hemp and 3,000 to 5,000 bales are of 'green' also known as 'Ganjam' type. Balers purchase sannhemp brought to Shiupur by small dealers. Some of the up-country merchants also send sannhemp to Shiupur for sale to balers through brokers. Big balers send their buying agents to outside markets also, for purchasing hemp. The hemp is mostly brought on camels from villages not connected by good roads, and on bullock carts, from within a radius of 10 to 15 miles. From centres upto about 50 miles lorry transport is also

used. From longer distances, the crop arrives by rail. The following are the main supplying areas:—

S. No.	Description	State	District	Approximate quantity of loose hemp calculated in terms of finished bales
1.	Benares Hemp	Uttar Pradesh	Banaras	22,000
		"	Pratabgarh	15,000
		"	Azamgarh	7,000
		"	Allahabad	6,000
		"	Fatehpur	6,000
		Bihar	Saran etc.	2,000
		Others		1,000
			Total	60,000
2.	Green Hemp	Uttar Pradesh	Shajahanpur	
			Philibit	
			Moradabad	
			Etawah etc.	2,500
		Madhya Pradesh	Jubbulpore	
			Betul	
			Chindwara	
			Mandla etc.	2,500
			Total	5,000

There are four hydraulic presses (similar to those used for pressing cotton) at Shiupur, with a combined pressing capacity of about 650 bales in an eight-hour day. Presses work to capacity generally from the middle of October to middle of April. Sometimes the peak period extends up to the end of May. During the other months the rush of work at the presses is very much less.

Grading: At each one of these presses there are a number of packers who are authorised to 'Agmark' sannhemp. The work of cleaning the fibre free from adherent materials like broken stems, leaves etc. of sannhemp plants to bring down the refraction within the specified limits, and of grading the same in accordance with Agmark specifications, is entrusted by the packers to contractors, who are paid on piece-work basis.

'Benares' hemp is greyish or light-brown to white in colour and comes in a tangled form. The loose hemp bundles and *kacha* bales are opened and cleaned with the help of spiked boards known locally as '*Kantas*'. These consist of wooden boards 2 feet by 1 foot on which are fixed 30 to 40 spikes 12 inches high, made of half-inch-diameter mild steel rounds. In this process most of the refraction is

removed. The cleaned fibre is then sorted into three Agmark grades, on the basis of colour shades and amount of refraction still left in the fibre, namely Benares 1, Benares 2 and Benares 3. The loose graded fibre is then made into '*Morahs*' of 9 to 10 lb. each by giving a slight twist. Nine such morahs are fastened with a '*Chhote*'* of the same grade of fibre to make a '*Bohja*'. About 4 to 5 such '*Bohjas*' go to form a bale of 400 lb.

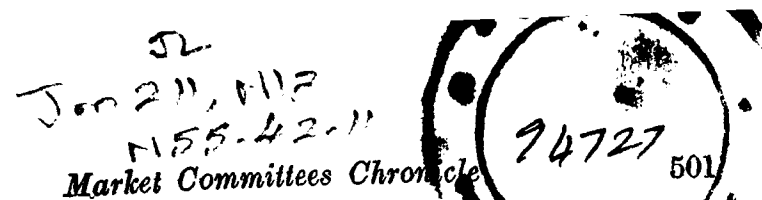
From certain areas, the white fibre arrives in the form of long line fibres instead of in a tangled form as a result of greater care taken at the time of extraction of fibre. This is prepared into '*Chapra*' grades by further straightening and cleaning the fibres.

The green or Ganjam hemp consists of straight line fibres. There are five qualities under green sannhemp, viz. (1) C. P. (2) U. P. (3) Kantabanji Raigarh (4) Dohad and (5) Philibit. Variations in characters, lustre, softness and strength distinguish them from one another. The qualities have come to be associated with certain areas, irrespective of their centres of production.

Each of the first-named four qualities is graded into five grades viz. (1) Itarsi Fine (2) Seoni Fine (3) Jubbulpore Fine (4) Jubbulpore No. 1 and (5) Shorts. The factors taken into consideration for determining the grades are (a) colour, (b) length (c) refraction. Philibit quality is harsher and dirtier than others and is graded into Philibit Extra fine, Philibit Fine and Philibit No. 1. Some times green hemp is dressed or scutched i. e. combed by passing through '*Kantas*' which are different from those used for hackling Benares Hemp. The spikes are spaced more closely, there being about 100 spikes to the same area. They are also thinner and are made of hard steel to make them last longer. The dressed green hemp is graded into 1. Red Dressed, 2. Green Dressed, 3. Black Dressed and 4. Cross Black Dressed. When the green hemp is dressed the weaker and shorter fibres get separated as tangled mass. This is again sorted mainly according to colour and refraction into 1. Red Tow 2. Green Tow 3. Black Tow grades under each quality viz. C. P., U. P. and so on.

The usual rates per finished bale paid by balers to contractors for cleaning and grading are Rs. 3/- for Banares and undressed Green Hemp grades, Rs. 7-5-0 for Chapra Grades, Rs. 3-8-0 for Tows, and Rs. 3-8-0 for Dressed grades.

* '*Chhote*' is made by twisting strands of loose hemp.



Packing: The balers keep the graded loose hemp 'Bohjas' in their premises in lots of 50 bales or less. Prior inspection of material is made by Government Inspectors. Representative samples are drawn from each lot and examined for quality and refraction content and if found to conform to Agmark standards, the lot is allowed to be pressed. A close supervision is also kept at the time of pressing. Agmark labels serially numbered are securely affixed to each bale at the time of pressing, which would enable one from any corner of the world to trace the packer.

A certain percentage of finished bales is opened by the Chief Inspector, Sannhemp Grading, for checking of the grade. If the first bale so opened is found to be below the mark, the baler is given the option to offer two more bales to be opened from the same lot for further check-sampling. If the average quality and refraction of the material of these three bales are below the prescribed standards, the lot is rejected. The baler then has to cut open all the bales and regrade the fibre or, as an alternative, can get all the bales of the failed lot endorsed to the appropriate lower grade. Thus, on account of the inspection service provided by the Government of India for quality control, the consumer is assured of standardised quality. Disputes and arbitrations have become negligible.

The current pressing charge is Rs. 5/- per finished bale, and this includes charges for carrying loose hemp from packers' godown to the press premises, pressing the hemp, stacking the bales and loading them into railway wagons. Three of the presses are provided with railway sidings. This facilitates easy unloading of incoming loose hemp and loading finished bales.

The number of bales Agmarked at Shiupur under various grades during the past three years are given below:

Sl. No.	Particulars	Grade	1952-'53 Nov.-Oct. %	1953-'54 Nov.-Oct. %	1954-'55 Nov.-Jun. % (8 months)
I	Benares Hemp	B-1	.. 13,248	24 17,236	30 31,807
		B-2	.. 27,426	51 22,835	52 28,553
		B-3	.. 13,318	25 10,693	18 6,887
		Total	.. 53,992	100 57,764	100 67,247
					100
II	Chapra Grades	Ch. 2	.. 56	..	25
		Ch. 3	.. 471	1,406	5,269
		Total	.. 527	1,406	5,294

Sl. No.	Particulars	Grade	1952-'53 Nov.-Oct. %	1953-'54 Nov.-Oct. %	1954-'55 Nov.-Jun. % (8 months)
III	Green undressed grades	Itarsi Fine		26 ..	54
		Seoni Fine		593 ..	958
		Jub. Fine		2,154 ..	1,925
		Jub. No. 1		1,045 ..	1,064
		Shorts		593 ..	810
		Philibit		35 ..	..
		Total		4,446 ..	4,811
IV	Green dressed grades	Red Dressed	.. 13 ..	44 ..	204
		Green "	.. 192 ..	326 ..	511
		Black "	.. 222 ..	825 ..	299
		Gross Black			..
		Dressed	.. 8 ..	34 ..	..
		Total	.. 435 ..	1,229 ..	1,014
V	Green Hemp Tows	Red Tow	.. 28 ..	26 ..	145
		Green Tow	.. 178 ..	266 ..	320
		Black Tow	.. 156 ..	314 ..	162
		Total	.. 362 ..	606 ..	627
		Grand Total	.. 55,316	65,451	78,993

The trend of packings under various grades more or less indicates the average quality of the crop for that season. The 1952-'53 crop was poor yielding only 24% of B (Banaras)-1 grade, while the output of B-3 grade came to a high figure of 25%. The 1953-'54 crop was somewhat better, giving a lesser outturn of B-3 and slightly higher percentage of B-1 grade. The crop of 1954-'55 was one of the best seen for some years due to favourable seasonal conditions. The packings during the first eight months for which figures are available at the moment gave 47% under B-1, 43% under B-2 and only 10% under B-3. The increase in *chapra* grades during this year is also significant.

The Agmark grading has created confidence in the buyers and has considerably enhanced the reputation of Indian Sannhemp in foreign markets.

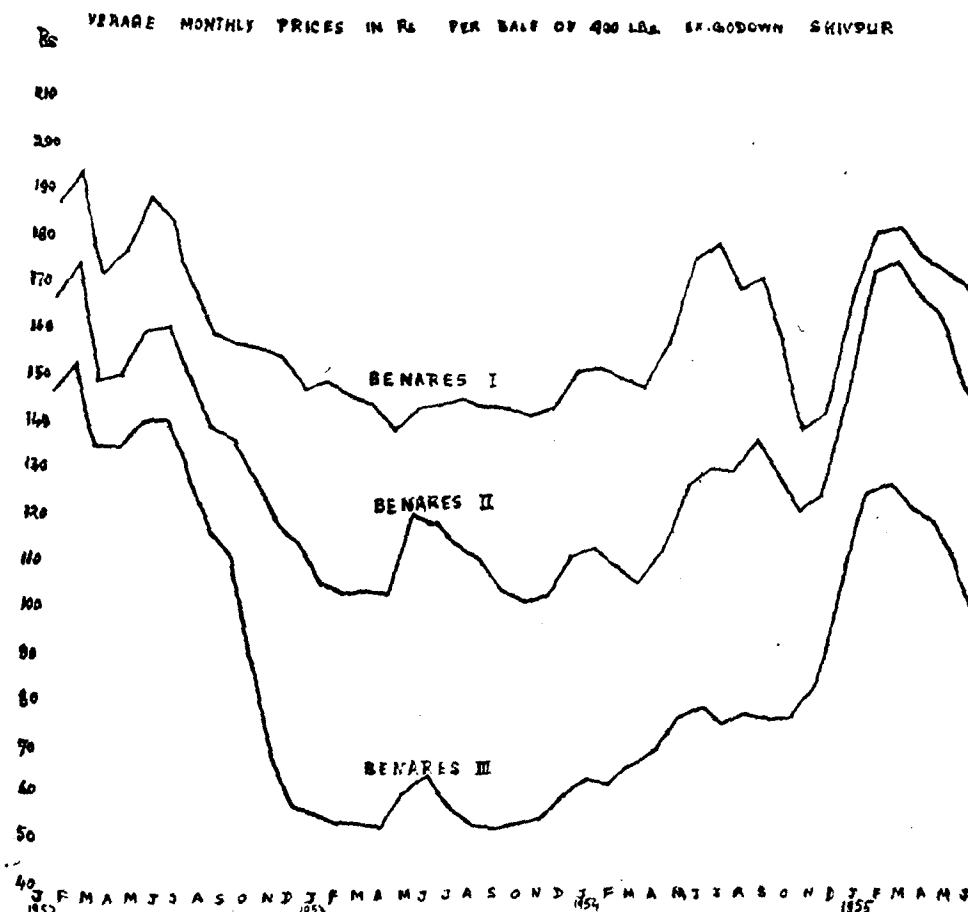
Shiupur Sannhemp Market: Most of the balers sell their bales at Shiupur itself to shippers while a few export them directly. The bulk of the sales is on forward contract system though spot sales are also common. Prices are quoted in rupees on Agmark grade basis per bale of 400 lb. f. o. r. Kidderpore Docks—the point of the embarkation at Calcutta. Sales take place through the local brokers on stipulated contract forms, and sellers receive payment on production of railway receipts. The balers also get credit facilities from banks upto 70% of the value on hemp kept in godowns at Shiupur for loose as well as pressed hemp.

Prices: The monthly average prices of sannhemp at Shiupur during the past three years are given in the appendix. The accompanying chart represents the price trends during this period. Prices at Shiupur depend on a number of factors, interacting on one another, such as foreign demand, quantity and quality of our own crop in relation to competing crops of foreign growths like True Hemp (*Cannabis sativa*) flax (*Linum usitatissimum*) etc. High prices prevailed in Shiupur during 1952 due to the Korean war and B-1 grade touched Rs. 194-8-0 per bale in February 1952. With the easing of world tension in 1953 prices of all commodities including sannhemp declined. An improvement in foreign demand in 1954 was reflected in the recovery of prices from January 1954. B-1 grade fetched Rs. 179-2-0 in Junn 1954. The 1954-'54 season crop was good qualitatively and quantitatively. With the arrival of this crop into the market the prices showed initially a sagging tendency. A partial failure of the Italian crop, however, stimulated a higher demand for Indian hemp and prices began to look up once again. The quotations for B-1 grade rose from Rs. 139-4-0 in October, 1955 to Rs. 183-6-0 in February, 1955. The price differential between B-1 and B-2 grade narrowed to less than Rs. 7/- due to higher output of B-1 grade as against a price difference of Rs. 18/- witnessed in October, 1954. The overseas demand slackened again in February, 1955 and stagnant conditions prevailed during next half year and prices began to show a gradual fall.

The Indian sannhemp is preferred in foreign countries owing to its relatively low cost. According to Wigglesworth & Co., London, the following were the prices in London during the year 1953 and 1954:—

Prices in £ per Ton C. I. F. Ports

Month	Indian True Hemp		Yugoslavian Hemp Swing hemp-1		Indian Jute Crack Daises 2/3		Indian Sannhemp	
	Grade S. B.						Jubbulpore Fine Benares-2	
	1953	1954	1953	1954	1953	1954	1953	1954
January	275	203/10	..	..	81	101	..	72
February	264	203/10	..	..	81	..	..	72-74
March	264	203/10	..	..	81	..	..	62
April	264	203/10	..	..	81	96	58	70-72
May	264	203/10	..	174/5	84/5	103	58-61	62
June	264	203/10	..	174/5	93	103	67	62
July	..	203	..	173/10	91	96	64	67
August	..	203	..	173/10	..	93	65	64
September	264	203	..	..	90/4	102	65	74-78
October	203/10	230	..	..	84	105	63	60
November	203/10	241/5	..	173/10	96-98	105-110	63	75-78
December	203/10	241/5	..	..	100	..	67	58
			..	188	..	115	67	59
							80-85	60
								78-80



Exports: Nearly 90% of Benares hemp and almost all the green hemp baled at Shiupur are exported to U.K., U.S.A., Belgium, Germany, Greece, Holland etc., with U. K. absorbing the bulk of the exports. Shippers usually consign their parcels to principal brokers at London. The latter book orders from the manufacturers and call for quotations from the Indian Shippers. Negotiations are carried on by cablegrams and a deal is completed in 24 to 48 hrs. The same brokers also effect sales on the European continental markets. The exports are on the increase. The demand from Indian Paper Mills has hitherto been moderate but it is improving.

Utilisation of Sannhemp: The Benares hemp is used mainly in the manufacture of paper. It is also made into a paste by mixing with tar and other ingredients and used as 'Oakum' for filling seams of ships. The Chapra and green hemp undressed grades are

made into twine, ropes and fishing nets. Dressed green hemp is used for the manufacture of canvas, fire hose and other similar products. Locally mattings, twines, ropes and fishing nets are prepared out of sannhemp.

APPENDIX

Average monthly prices of Sannhemp in rupees per bale of 400 lb. ex-godown Shiupur.

		Benares I	Benares II	Benares III
1952				
January	...	187 0 0	167 0 0	147 0 0
February	...	194 8 0	174 8 0	153 8 0
March	...	172 8 0	150 0 0	153 4 0
April	...	177 8 0	150 12 0	135 12 0
May	...	189 8 0	160 4 0	141 0 0
June	...	184 12 0	161 8 0	141 4 0
July	...	170 4 0	150 4 0	130 4 0
August	...	159 8 0	139 8 0	116 8 0
September	...	157 8 0	137 8 0	110 8 0
October	...	156 12 0	128 8 0	89 8 0
November	...	154 12 0	118 12 0	68 8 0
December	...	147 12 0	114 12 0	58 0 0
1953				
January	...	149 4 0	116 0 0	56 12 0
February	...	146 12 0	114 0 0	54 12 0
March	...	144 10 0	114 10 0	54 10 0
April	...	139 0 0	113 8 0	53 8 0
May	...	143 12 0	121 0 0	61 4 0
June	...	144 4 0	119 8 0	64 12 0
July	...	145 12 0	114 4 0	57 12 0
August	...	144 12 0	111 0 0	54 0 0
September	...	144 0 0	104 12 0	53 0 0
October	...	142 12 0	102 12 0	54 0 0
November	...	143 4 0	103 8 0	54 12 0
December	...	152 4 0	112 4 0	60 4 0

		Benares I	Benares II	Benares III
1954				
January	...	152 14 0	114 0 0	63 14 0
February	...	150 6 0	110 0 0	62 2 0
March	...	148 10 0	106 12 0	66 10 0
April	...	157 8 0	112 6 0	69 12 0
May	...	176 8 0	127 8 0	77 10 0
June	...	177 2 0	131 0 0	79 12 0
July	...	169 12 0	130 6 0	75 6 0
August	...	172 0 0	137 4 0	77 12 0
September	...	158 12 0	122 12 0	77 2 0
October	...	139 4 0	121 4 0	77 4 0
November	...	143 0 0	125 0 0	83 4 0
December	...	168 12 0	148 14 0	107 2 0
1955				
January	...	182 4 0	174 4 0	126 0 0
February	...	183 6 0	176 4 0	128 0 0
March	...	177 12 0	168 8 0	122 4 0
April	...	174 8 0	164 8 0	119 8 0
May	...	171 8 0	150 12 0	107 8 0
June	...	162 8 0	142 0 0	97 8 0

Review of Market Conditions of Commercial Crops in the areas of Market Committees, for September, 1955

I. Cotton Stocks: 1. *Tiruppur*: The cotton market at Tiruppur started with an opening stock 7,601 cdis. of Cambodia and 2,953 cdis of Karunganni lint in the month. Arrivals during the month accounted for 4,189 cdis. of Cambodia and 1,176 cdis. of Karunganni lint as against 6,292 cdis. of Cambodia and 2,086 cdis. of Karunganni during August 1955. These include 988 cdis. of Cambodia and 78 Cdis. of Karunganni lint ginned locally. Despatches from Tiruppur were 3,512 cdis. of Cambodia and 216 Cdis. of Karunganni lint which were mostly to Orissa, Bombay, Travancore-Cochin State and to other districts within the State. The closing stock at the end of the month amounted to 8,278 cdis. of Cambodia and 3,913 of Karunganni lint.

The kapas market at Tiruppur opened with a stock of 12,881 pothis of Cambodia and 2,614 pothis of Karunganni as the carry-over stock of previous month. Arrivals during the month accounted for 10,408 pothis of Cambodia and 2,472 pothis of Karunganni kapas as against 13,158 pothis of Cambodia and 3,747 pothis of Karunganni during last month. Disposals amounted to 15,827 pothis of Cambodia and 3,096 pothis of Karunganni kapas. The market closed at the end of the month with a stock of 8,002 pothis of Cambodia and 1,990 pothis of Karunganni kapas.

Notwithstanding the general brisk transactions in the Tiruppur market, there was no tendency for the prices to rise.

2. *Koalpatti*: In Koilpatti market there was an opening stock of about 500 pothis of Karunganni kapas at the beginning of the month. Fresh arrivals from neighbouring villages amounted to 1,000 pothis as in the previous month. The total quantity ginned during the month amounted to 1,500 pothis. There was no stock as kapas at the end of the month.

Though the season for Karunganni has come to a close it is estimated that about 3,000 candies are still left with the producers unsold. About 4,000 pothis of Uganda kapas were received during the month from Sankarankoil Market. Uganda arrivals have declined since the season has advanced. The demand from local Mills in the State continued to be slack.

3. *Ramanathapuram District*: The three markets of Virudhunagar, Sathur and Rajapalayam put together opened with a stock of 1,000 edys. of Karunganni lint alone. Arrivals during this month were 6,910 edys. of various varieties (1,960 edys. of Karunganni, 4,700 edys. of Uganda and 250 edys. of Cambodia) as against 6,120 edys. of lint of various cotton during previous month. Disposals took away 7,060 edys. which included 2,960 edys. of Karunganni 250 edys. of Cambodia and 3,850 edys. of Uganda lint. There remained 1,653 edys. of lint at the close of the month which included 800 edys. of Karunganni and 850 edys. of Uganda lint.

The market on kapas in the above three centres opened with a carryover stock of 7,600 pothis (1,100 pothis of Karunganni and 6,500 pothis of Uganda). Arrivals during the month amounted to 29,850 pothis (which included 5,750 pothis of Karunganni, 22,300 pothis of Uganda and 1,800 pothis of Cambodia) as against 35,550 pothis during August 1955. 30,450 pothis comprising of 6,550 pothis

of Karunganni 22,300 pothis of Uganda and 1,600 pothis of Cambodia were disposed of during the month leaving a closing stock of 7,000 pothis consisting of 300 pothis of Karunganni, 6,500 pothis of Uganda and 200 pothis of Cambodia.

4. *South Arcot District*: During the month the markets of South Arcot district opened with a stock of 105 pothis of cotton kapas while the receipts amounted to 870 pothis. 805 pothis in all were despatched to Tiruppur in Coimbatore district leaving a month-end stock of 34 pothis.

2. *Prices*: 1. *Cotton lint*: The prices of cotton lint showed a downward trend at Tiruppur market. During the month the prices of Cambodia lint which was prevailing at Rs. 940/- at the beginning gradually declined by about Rs. 30/- in the middle and regained the original level at the end of the month. The prices in general were less by Rs. 20/- per cdy. when compared to shown the previous month. Prices in respect of Karunganni had not any perceptible fluctuations.

Prices of Karunganni continued to be steady in spite of poor demand for it. Transactions centred round to inferior types at prices varying from Rs. 525/- to 560/- per cdy. The top prices as between different qualities ranged between Rs. 550/- and Rs. 700/- while the lowest prices ruled between Rs. 550/- and Rs. 650/-. Prices of Uganda lint opened at Rs. 1,140/- per cdy. and closed at Rs. 1,120/- at the end of the month. Uncertified lint fluctuated narrowly around Rs. 1,000/- per cdy.

The Karunganni cotton lint market in the three places of Virudhunagar, Sathur and Rajapalayam opened at the rates of Rs. 650/- to Rs. 686/- for the 1st crop, Rs. 580/- to Rs. 630/- for 2nd crop, Rs. 530/- to Rs. 575/- for Tinny and Karunganni mixture at Rs. 480/- to Rs. 525/- per cdy. for Kamuthi tinny. These markets maintained a steady level till the end of the third week, but in the last week the prices had shown a slight recession and stood at Rs. 653/- to Rs. 684/- for 1st crop Rs. 580/- to Rs. 630/- for 2nd crop. Rs. 520/- to Rs. 560/- for Tinny Karunganni mixture and Rs. 456/- to Rs. 515/- for Kamuthi tinny. The prices of Madras Uganda cotton lint in these markets opened at the rates as below:

Rs. 1,266/- M. U. 2 seed farm per candy.
 Rs. 1,236/- to 1256 M. U. 2 certified „
 Rs. 1,141/- to 1156 M. U. 1 certified „
 Rs. 1,020/- to 1026 M. U. 1 uncertified „

The market was not active during the month for Uganda cotton and the prices were more or less steady. The approximate quotations are as follows:

M. U. 2 Certified	Rs. 1,205/- to 1,220/-
M. U. 1 „	Rs. 1,100/- to 1,120/-
Uncertified	Rs. 980/- to 1,000/-

The Cambodia lint in these markets opened at Rs. 725/- to 750 per candy and later on showed a slight recession towards the closing of the month.

2. *Kapas*: The price of Cambodia kapas in Tiruppur Market fluctuated within narrow limits of Rs. 109 to 113 per pothy. The prices of Karunganni kapas both for Cambodia and Karunganni prevailed during the corresponding month of last year were of the order of Rs. 121 and 100 per pothy.

The price of Karunganni kapas opened at Rs. 74 for the best quality and continued to be steady in the same level. The price of second quality kapas ranged between Rs. 68 to 70 per pothi. Price of Uganda kapas ruled uniformly steady at Rs. 120 per pothi.

The Karunganni kapas market in the three markets of Ramathapuram district opened at the rates of Rs. 83/- to Rs. 85/- per pothi for 1st crop, Rs. 48/- to Rs. 75/- for 2nd crop and Rs. 35/- to Rs. 44/- for Tinny. There was a general increase in the prices of inferior quality kapas as a result of sustained demand. The prices at the end of the month were as follows:—

Rs. 78—12—0 to 85—8—0 for I crop per pothi.
Rs. 61—12—0 to 74—8—0 for II crop per pothi.
Rs. 44/- to Rs. 52/- Tinny per pothi.

The Uganda kapas market opened at the rates of Rs. 132 to Rs. 136/- for M. U. 2, Rs. 122/- to Rs. 131/- for Uganda 1st quality Rs. 105/- to Rs. 118/- for 2nd quality, and Rs. 140/- to Rs. 156/- for M. U. 2 seedfarm kapas. The prices ruled steady during the month and the prices at the end are as follows:—

Rs. 140/- to Rs. 148/- for M. U. 2 Seed farm.
Rs. 131/- to Rs. 136/- for M. U. 2 certified.
Rs. 122/- to Rs. 127/- for I quality Uganda.
Rs. 105/- to Rs. 118/- for II quality Uganda.

The Cambodia kapas market opened at the rates of Rs. 80/- to 97-8-2 per pothi and closed at the end of the month at Rs. 53/- to Rs. 73-8-0.

The prices of kapas in South Arcot district ranged between Rs. 74-4-0 to 80-4-0 per pothi.

3. *Cotton Seeds*: The price of cotton seeds in Koilpatti Market opened at Rs. 25-8-0 per pothi and gradually advanced to Rs. 25/- in the third week and after a sudden spurt reached Rs. 29/- at the end of the month. The price of Uganda seeds moved between Rs. 19/- to Rs. 25/-.

The price for Karungani cotton seed in the markets of Virudhunagar, Sathur and Rajapalayam which opened at the rates of Rs. 22/- to Rs. 24/- per pothi, closed down at the end of the month at Rs. 24/- to Rs. 26/- per pothi. The price for Uganda seeds, opened at Rs. 15/- per pothi at the beginning of the month, closed at Rs. 21/- to Rs. 23/- at the end of the month. The price for Cambodia cotton seeds was steady during the entire month and was placed at Rs. 16/- to Rs. 17/- per pothi.

II *Groundnut*: (In this Section: Candy = 531 lbs. of Kernels; Bag = 80 lbs. of Pods) The Groundnut markets in South Arcot District opened with a stock of 5,650 tons of Groundnut kernels at the beginning of the month. Total arrivals into the eight regulated markets of South Arcot district amounted to 5652 tons which included 801 tons received from other districts like Coimbatore, Tiruchirapalli etc. and 43 tons received from other States. Disposals for crushing to oil mills and country *chekkus* amounted to 5130 tons and 237 tons respectively. A total of 1484 tons were despatched from this district which included 1482 tons despatched to outside the districts and 2 tons despatched to outside the State. The market closed at the end of the month with a stock of 1770 tons.

The prices of Groundnut kernels in several markets of South Arcot district ranged between Rs. 97-7-0 to Rs. 106-5-0 per candy during the month. The prices of Groundnut kernels in North Arcot district ranged between Rs. 95/- to Rs. 105/- per candy where as the prices of pods ruled at Rs. 8/- to 11-8-0 per bag. The prices in Virudhunagar prevailed at Rs. 110/- to Rs. 112/- per candy of Goundnut kernels.

III. *Gingelly*: (In this Section: Bag = 168 lbs.) The stock of gingelly in all the markets of South Arcot district at the commencement of the month was 946 bags. Receipts during the month in the

five markets amounted to 2362 bags of which 2219 bags were received by Virddachalam market alone. Arrivals from outside the district amounted to 31 bags. Crushing by oils mills and village *chekkus* accounted for 6 bags and 1,204 bags respectively. Disposals by way of despatches to other districts and other States amounted to 1,062 bags and 40 bags respectively and the month ended with a stock of 1,062 bags.

The prices of gingelly in the several markets ruled steady during the month, ranging from Rs. 29-12-0 to Rs. 37-11-0 per bag.

IV. Coconut and its Products: 1. *Coconut*: The four markets of Malabar district (namely Kozhikode, Ponnani, Badagara and Tellicherry and Dharmadam) opened with 8.8 million nuts at the beginning of the month. Receipts in all the markets amounted to 8.2 million nuts during the month while disposals by way of despatches and local sales accounted for 7.2 million nuts and 0.3 million nuts respectively. The month-end stock was 9.5 million nuts.

Prices of coconuts as between the different markets ranged during the month from Rs. 70/- to Rs. 128/- per 1,000 husked nuts. The prices in Mangalore Market both for raw nuts and for dry nuts ranged between Rs. 150/- to Rs. 170/- and Rs. 165/- to Rs. 210/- respectively per 1,000 nuts.

2. *Copra*: (In this Section, Candy=700 lbs.) The two markets of Kozhikode and Badagara of Malabar district started with a carry-over stock of 1,846 clys. of copra. Arrivals during the month amounted to 3,397 clys. while despatches accounted for 2,540 clys. 1,155 clys. were locally sold leaving at the end of the month a closing stock of 1,548 clys.

There was good demand from local millers and up-country areas. The prices of copra ranged as between the different varieties in different markets during the month are extracted below:—

Varieties	Prices in Rs. per cdy.			
	Kozhikode		Badagara	
	Maximum	Minimum	Maximum	Minimum
Office	295	285	295	290
Edible	315	315	320	315
Rajpur	370	365	375	375
Madras	—	—	340	330
Gola	346	330	—	—

Prices of copra in Mangalore Markets ranged between Rs. 290/- to Rs. 335/- per candy of 700 lb.

V. Arecanut: (In this Section: Bag = 100 lb.) The stock of arecanut in Mangalore market at the opening of the month was 3078 cwts. and 6,000 cwts. were added to it by way of receipts. Exports during the month amounted to 6420 cwts. leaving a closing stock of 2658 cwts. at the end of the month.

The price ranges of arecanuts in Mangalore markets are indicated below:—

Varieties	Prices in Rs. per cwt.	
	Max.	Min.
Choll	190	160
Koka	130	85

The stock of arecanut in Kozhikode and Ponnani markets opened with a quantity of 3,674 bags at the beginning of the month and 12,233 bags were arrived and added with this. Disposals for despatches and local sales amounted to 10,903 bags and 70 bags respectively, leaving a month-end stock of 4934 bags.

The prices of arecanut (*choor*) in Palghat ranged between Rs. 144/- to Rs. 158/- per bag.

VI Tobacco: (In this Section: Candy = 500 lb.) The markets in Coimbatore district opened with a stock of 11,776 clys. of chewing and 6775 clys. of cheroot tobacco at the beginning of the month. Despatches were mostly to places like Madura, Palghat, Dindigul, Ramnad, Travancore-Cochin State, Tanjore, North Arcot, Malabar, Pudukkottai, Madras, Chittoor, Tiruchirapalli, Tirunelveli and South Arcot amounted to 4115 clys. of chewing and 2120 clys. of cheroot tobacco. The markets closed at the end of the month with a stock of 10355 clys. of chewing and 6350 clys. of cheroot tobacco.

The prices ruling for different varieties and different grades are extracted below:—

Variety	(Price per Candy)		
	I Grade Rs.	II Grade Rs.	III Grade Rs.
1. Chewing tobacco - Sun-cured:			
(a) Meenampalayam	450 to 565	365 to 435	265 to 335
(b) Other varieties	355 to 400	250 to 300	185 to 215

Variety	I Grade	II Grade	III Grade
2. Cheroot varieties - Sun-cured:			
Grown in Erode & Bhavani Taluks	280 to 390	225 to 275	160 to 200
3. Chewing varieties - pit-cured:			
Grown in Palladam & Sular areas	210 to 280	140 to 210	70 to 140

State Marketing Officer.

Review of the Activities of Market Committees During September 1955.

1. Of the seven Market Committees in the State, only five, in the districts of North Arcot, South Arcot, Coimbatore, Malabar and South Kanara continued to be actively functioning. The activities of the Committees at Ramanathapuram and Tirunelveli districts continued to be restrained due to the injunction order of the Madras High Court.

2. The following progress was made by the Market Committees during the month in the issue of licences under Madras Commercial Crops Markets Act.

	Section 5(1)		Section 5(3)		Weighmen		Broker	
	A	B	A	B	A	B	A	B
NAMC	60	889	13	370	13	309	—	10
SAMC	198	1653	192	1844	166	1136	4	9
TMC	—	—	—	—	—	—	—	—
CMC	110	466	125	558	93	478	—	7
MMC	13	418	86	1277	14	221	—	5
SKMC	7	220	6	181	—	38	—	—

3. The total volume of transactions in commercial crops in 13 Regulated Markets in the State during September 1955 is extracted below:

Crop	Quantity	No. of regulated markets
Groundnut kernels	... 6,506 tons	8
Gingelly	... 2,257 bags	5
Cotton lint	... 1,041 candies	3
Kapas	... 5,986 pothies	3
(Candy: = 784 lb; Pothi: = 280 lb; Bag: = 168 lb.)		

II. Meetings: A meeting of the Coimbatore Market Committee was held in the office of the Collector of Coimbatore on 29-9-1955, presided by the Collector for the election of the Chairman and the Vice-Chairman.

A meeting of the Committee of Malabar Market Committee was held on 28-9-1955 which was attended by the State Marketing Officer, Madras and Assistant Marketing Officer, Coimbatore. The following were the important subjects considered at the meeting.

1. Decided that By-law 19(b) be substituted with the following viz., the rate of commission for arecanuts including all remunerations for services rendered such as godown rent and other incidental expenses in handling and sale may continue at 4% on the price of arecanuts at Palghat and 3% in other places.

2. As regards amendment to section 2(ii) of the Madras Commercial Crops Markets Act defining the term 'grower', the Committee decided to request the Secretary to examine the definition of the term with reference to Malabar tenancy act and also to obtain legal opinion in the matter in view of the complicated land tenure system obtaining in Malabar.

One meeting each of the Executive Sub-committee and the special sub-committee for draft model by-laws was also held on 17-9-1955.

III. Quality Appraisal: The South Arcot Market Committee continued its work on studies of the quality of groundnut kernels marketed in all its regulated markets including Panruti on the basis of random sampling. A total of 528 samples of kernels

was drawn from the arrivals of 23,679 lots of kernels comprising 75,963 bags (bag: 177 lb.) of kernels and each lot was analysed for quality factors. The details of the analysis comprising determination of dry age and total refractions (including (i) dirt and foreign matter (ii) nuts in shell (iii) splits (iv) damaged (v) broken and (vi) shrivelled) are of interest and are extracted below:

Particulars	Panruti	Cuddalore	Villupuram	Tindivanam	Tirukoilur	Vridhachalam
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. <i>Dryage:</i>						
2% and below	—	6	—	2	3	73
Above 2% and upto 3%	—	13	1	—	—	36
Above 3% and upto 4%	4	22	4	11	17	18
Above 4% and upto 5%	5	27	4	25	—	11
Above 5% and upto 10%	81	74	31	3	36	—
Over 10%	10	5	3	3	—	—
2. <i>Total Refraction:</i>						
4% and below	7	36	6	14	28	117
Above 4% and upto 8%	86	92	22	20	25	18
Above 8%	7	19	15	10	3	3

The total common refraction was below 4% in 208 samples, 5 to 8% in 263 samples and above 8% in 57 samples. In respect of dryage Cuddalore, Tirukoilur, Villupuram and Panruti recorded higher percentages ranging between 6 and 10% in 74 samples, 36 samples, 31 samples and 81 samples respectively. Out of 147 samples, 56 and 43, out of 100 samples analysed in the markets of Vridhachalam and Tindivanam respectively accounted for low moisture content in more than 50% of the samples.

233 entries were secured during the month for the summer crop quality competition in groundnut kernels marketed in South were secured Arcot district.

State Marketing Officer.

Review of Market Conditions of Commercial Crops in the Areas of Market Committees for October, 1955

1. *Cotton Stocks:* 1. *Tiruppur:* (In this section = 784 lb; Pothi = 280 lb.) *Lint:* The cotton market at Tiruppur started with a stock of 8,278 candies of Cambodia and 3,913 candies of karunganni lint in the month. Arrivals during the month amounted to 4,934 candies of Cambodia and 2,166 candies of karunganni lint as against 4,189 candies of Cambodia and 1,176 candies of karunganni lint during the previous month. The arrivals include 769 candies of Cambodia and 56 candies of karunganni lint ginned locally. Despatches from Tiruppur were 6,946 candies of Cambodia and 2,547 candies of karunganni lint sent to Travancore-Cochin State, Bombay, Orissa and to districts within the State. The market closed with a stock of 6,266 candies of Cambodia and 3,532 candies of karunganni lint at the end of month.

Kapas: The kapas market of Tiruppur started with an opening balance of 8,002 pothies of Cambodia and 1,990 pothies of karunganni during the month. Arrivals in the month accounted for 12,672 pothies of Cambodia and 142 pothies of karunganni as against 10,408 pothies of Cambodia and 2,472 pothies of karunganni during the previous month. Disposals during the month amounted to 13,444 pothies of Cambodia and 819 pothies of karunganni kapas. There was a closing stock of 7,230 pothies of Cambodia and 1,313 pothies of karunganni.

Koilpatti: The market at Koilpatti started with a nil balance. There were arrivals of 1,000 pothies of Uganda kapas as against the same quantity during the previous month. The arrivals were entirely ginned and there was no stock as kapas at the end of the month. However, about 633 candies of lint is estimated in stock with the trade at the end of the month.

Due to floods in cotton growing tracts in North India the off-take for local cotton by the mills (local) was brisk.

Ramanathapuram district: *Lint:* The three markets of Virudhunagar, Sathur and Rajapalayam put together opened with a stock of 1,650 candies of Uganda. Arrivals in the month were 3,565 candies which include 880 candies of karunganni, 1,980 candies of Uganda and 705 candies which of Cambodia as against 6,910 candies in all during the previous month. Disposals in the month amounted to 4,120 candies which consisted 1,335 candies of karunganni 2,080 candies of Uganda and 705 candies of Cambodia. These markets

closed with a stock of 1,095 candies (345 candies of karunganni and 750 candies of uganda) at the end of the month.

Kapas: The kapas markets started with 7,000 pothies consisting of 300 pothies of karunganni 6,500 pothies of Uganda and 200 pothies of Cambodia. Arrivals during the month were 9,800 pothies including 1,400 pothies of karunganni, 5,650 pothies of Uganda and 2,750 pothies of Cambodia as against 29,850 pothies in all during the preceding month. About 13,350 pothies, comprising 1,600 pothies of karunganni, 9,150 pothies of Uganda and 2,600 pothies of Cambodia were estimated to be the disposals during the month, leaving a carry-over stock of 3,450 pothies which consisted 100 pothies of karunganni, 3,000 pothies of Uganda and 350 pothies of Cambodia at the end of the month. Though the demand from mills for Uganda kapas was good, demand for lint was not much.

South Arcot district: The markets of South Arcot district opened with a stock of 34 pothies of kapas during the month. During the month 3,339 pothies of kapas arrived in the various markets as against 870 pothies during the previous month. Despatches, in all, took away 3,120 pothies leaving a closing stock of 253 pothies at the end of the month.

Cotton prices: Lint: Tiruppur: The cotton market in general was dull due to slackening of the season. The prices of Cambodia lint fluctuated between Rs. 870/- and 981/- per candy as among the different qualities. Transactions in respect of karunganni lint were limited during this month and the prices ruled steady which stood at Rs. 730/- per candy.

Koilpatti: Prices of cotton lint at Koilpatti market have shown a little rise during this month on account of demand from the local millowners. Transactions ranged between Rs. 700/- and Rs. 720/- for first quality of first crop of karunganni and Rs. 600/- and 680/- per candy for the second quality. Inferior types varied round Rs. 525/- to Rs. 550/- per candy. Prices of Uganda lint remained steady around Rs. 1,120/- per candy for the certified quality and Rs. 900/- to Rs. 1,000/- per candy for uncertified quality.

Ramanathapuram district: The cotton lint marketed in the three centres of Virudhunagar, Sathur and Rajapalayam opened at the rates of Rs. 682/- for K-2 karunganni, Rs. 646/- to Rs. 655/- for first crop, Rs. 580/- to Rs. 630/- for first and second crop mixture, Rs. 520/- to Rs. 570/- for second crop and Rs. 466/- to Rs. 520/- for tinny. The prices gradually increased to Rs. 700/- to Rs. 726/- for

K-2 karunganni, Rs. 660/- to Rs. 686/- for first crop, Rs. 620/- to Rs. 650/- for first and second crop mixture, Rs. 560/- to Rs. 610/- for second crop and Rs. 480/- to Rs. 550/- for tinny. The Uganda lint opened at the rates of Rs. 1,191/- to Rs. 1,216/- per candy for MU 2 certified, Rs. 1,090/- to Rs. 1,116/- for MU 1 certified and Rs. 986/- to Rs. 996/- for uncertified and the rate was steady till the third week of the month. The prices of Cambodia lint ruled more or less steady and were placed at Rs. 600/- to Rs. 630/- per candy for low types and Rs. 700/- to Rs. 725/- for the good quality.

Kapas: Tiruppur: The prices of Cambodia kapas at Tiruppur market were Rs. 116/- to Rs. 121/- per pothi during the month. Due to the variations in the quality of Cambodia cotton, the chief arrivals were from South Arcot and Salem districts. Prices of karunganni kapas were ranging between Rs. 80/- and Rs. 86/- per pothi.

Koilpatti: During the month in the market no transactions took place in respect of kapas.

Ramanathapuram district: The kapas price for karunganni variety in the three markets of this district opened at the rates of Rs. 80-8-0 to 84-0-0 per pothi for first crop; Rs. 64-4-0 to 75-12-0 for second crop and Rs. 48-12-0 to 56-12-0 for tinny. The prices gradually increased to Rs. 84-8-0 to 81-6-0 for second crop and Rs. 52-8-0 to 65-0-0 for tinny. The increasing local demand in the absence of adequate stocks to meet the requirements has caused the rise in the prices. Prices in respect of Uganda kapas opened at the rates of Rs. 122-8-0 to 133-0-0 for best quality and Rs. 96-0-0 to 118-0-0 for second quality. The prices have registered some improvement in latter part of the month. Prices for M. U. 2 seed farm kapas ruled at Rs. 140-0-0 to 148-14-0 per pothi. The Cambodia kapas which opened at the rates of Rs. 52-8-0 to 78-12-0 increased to Rs. 52-8-0 to 87-8-0 in the middle of the month and then declined to Rs. 48-0-0 to 78-14-0 per pothi at the end of the month.

South Arcot district: The average price of kapas in the different markets of South Arcot district ranged from Rs. 74 to 74-4-0 per pothi.

Cotton seeds: Koilpatti: The price of karunganni seeds and Uganda seeds were firm during this month at Rs. 30 and Rs. 23 to 25 per pothi respectively.

Ramanathapuram district: The prices of karunganni seeds in the three markets of this district opened at the rates of Rs. 27-0-0 to 29-0-0 per pothi of 252 lb, decreased gradually to Rs. 25-8-0 to 28-4-0 at the close of the month. Prices of Uganda seeds opened at the rates of Rs. 23-0-0 to 24-0-0 and closed at Rs. 21-8-0 to 23-0-0 per pothi of 252 lb. The prices of Cambodia cotton seeds opened at the rates of 17-0-0, prevailed at Rs. 20-8-0 to 21-8-0 in the middle of the month and closed at lower rate at Rs. 19 to 20 at the end of the month.

2. **Groundnuts:** (Candy in this section means 531 lb. of kernels and bags = 80 lb. of pods).

Stocks: The groundnut markets in South Arcot district started with an opening balance of 1770 tons of groundnut kernels at the commencement of the month. Arrivals into the eight regulated markets of South Arcot amounted to 6,037 tons which included 1,201 tons and 9 tons received from other districts and States respectively. The receipts were mostly from Coimbatore and Tiruchirapalli and from Andhra. Crushings both by oil mills and country *chekkus* accounted for 4,317 tons and 224 tons respectively. There were some despatches to other districts like Tanjore, Madurai, Tiruchirapalli, Chingleput, Salem, Ramnad etc. which accounted for 1,149 tons. A quantity of 191 tons were locally disposed of as wastage. The month closed with a stock of 3,116 tons.

Prices: (a) The average price of groundnut kernels marketed in South Arcot district ranged from Rs. 93-8-0 to 105-8-0 per candy.

3. **Gingelly:** (In this section: bag = 168 lb.)

Stocks: The markets of South Arcot district opened with a stock of 1,062 bags of gingelly at the beginning of the month. Receipts into the five markets of South Arcot district amounted to 5,327 bags of which 5,215 bags were received by Virdhachalam market alone. Receipts from Tiruchirapalli district amounted to 427 bags. Country *chekkus* and mills crushed 1,508 bags and 13 bags respectively for oil. Despatches to other districts in the month were 3,849 bags, leaving a closing stock of 1,446 bags at the month end.

Prices: The average price of gingelly marketed in the several markets of South Arcot district ranged from Rs. 37-0-0 to 43-4-0 per bag.

4. **Coconut and its products:** (In this section: Candy: = 700 lb.)

Stocks: The four markets of Malabar district (viz. (i) Kozhikode, (ii) Ponnani, (iii) Badagara and (iv) Tellicherry and Dharmadam) opened with 9.6 million nuts at the commencement of the month and 8.3 million nuts were added to this by arrivals. Despatches and local sales were 8.2 million nuts and 1.1 million nuts respectively, and the month closed with a stock of 9.2 million nuts.

Prices: (a) Prices of coconuts as between the different markets ranged between Rs. 80 and 123-8-0 per thousand nuts.

(b) Prices in Mangalore for coconuts, both for raw and dry nuts, stood at Rs. 145 to 170 and 165 to 215 per thousand nuts respectively.

Copra: Stocks: The two markets of Kozhikode and Badagara started with a carry-over stock of 1,548 candies at the beginning of the month and 4,208 candies arrived during the month. Disposals by way of despatches and local sales amounted to 2,207 candies and 1,520 candies respectively leaving a closing stock of 2,029 candies at the month end.

Prices: The demand for copra from the up-country areas was steady during this month also. The price ranges as between the different qualities and different markets are extracted below:

Varieties	Kozhikode		Badagara	
	Maximum	Minimum	Maximum	Minimum
Office	295	262	295	288
Edible	325	315	320	320
Rajpur	375	360	375	365
Madras	330	320	325	320
Gola	345	330	N. F.	N. F.

(N. F.: Not furnished)

(b) The prices of copra in Mangalore ranged at Rs. 280 to 325 per candy.

5. **Arecanut:** (In this section: Bag = 100 lb.)

Stocks: Malabar district: The two markets of Kozhikode and Ponnani started with an opening stock of 4,934 bags in the month. Receipts in the month amounted to 9,448 bags while the disposals accounted for 9,189 bags both by way of despatches and local sales, the majority being the despatches. There was a closing stock of 5,193 bags at the end of the month.

Mangalore Market: The stock of arecanut (*Supari*) in Mangalore market at the beginning of the month was 2,658 cwts. 12,800 cwts. was added to this from out of receipts. Exports during the month amounted to 13,500 cwts, leaving a closing stock of 1958 cwts. in the end.

Prices: Malabar district: The prices of arecanuts (*choor*) in Palghat ranged from Rs. 146 to 160 per bag.

Mangalore: The price ranges of arecanuts as between the different varieties in Mangalore market are extracted below:—

(Price in Rs. per cwt.)

Varieties	Minimum	Maximum
Koka	05	130
Choll	165	190
Malabar Supari	105	135
Mangalore Supari	112	158

6. Tobacco: (In this section: Candy = 500 lb).

Stocks: The markets in Coimbatore district opened with a stock of 10,355 candies of chewing and 6,350 candies of cheroot tobacco at the beginning of the month. Despatches during the month amounted to 2,453 candies of chewing and 1,390 candies of cheroot tobacco mostly to Malabar, Tanjore, North Arcot, South Arcot, Madras, Chittoor and Travancore-Cochin State. The markets closed at the end of the month with a stock of 9,786 candies of chewing and 3,450 candies of cheroot tobacco.

There was a slight recession in the prices in respect of superior varieties. The price range for different varieties are extracted below:—

(Prices in Rs. per candy)

Variety	I grade Rs.	II grade Rs.	III grade Rs.
1. Chewing tobacco—sun-cured:			
(a) Meeenampalayam	435-500	350-400	250-320
(b) Other varieties	330-375	245-260	155-200
2. Cheroot varieties:			
Sun-cured (grown in Erode and Bhavani taluks)	335-400	280-335	165-225
3. Chewing varieties:			
Pit-cured (grown in Palladam and Sular areas)	210-280	140-210	70-140

Review of the Activities of the Market Committees during October, 1955

Of the seven Market Committees in the State, only five, in the districts of North Arcot, South Arcot, Coimbatore, Malabar and South Kanara continued to function actively. The activities of the other two Market Committees viz. Ramanathapuram Market Committee and Tirunelveli Market Committee continued to be restrained on account of some legal aspects.

The following progress was made by the Market Committees during the month in the issue of licences under Madras Commercial Crops Markets Act.

	Section 5(1)		Section (5)		Weighmen		Broker	
	A	B	A	B	A	B	A	B
NAMC	—Report not received—							
SAMC	275	1928	264	2108	319	1455	—	9
TMC	—	—	—	—	—	—	—	—
CMC	121	587	131	689	118	596	—	7
MMC	9	498	99	1348	6	213	—	5
SKMC	6	226	4	185	2	40	—	—

The total volume of transactions in commercial crops in 13 regulated markets in the State during October 1955 is extracted below:—

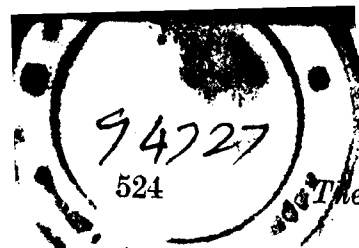
Crop	Quantity	No. of regulated markets
Groundnut kernels	5,371 tons	8
Gingelly	3,930 bags	5
Cotton lint	799 candies	3
„ kapas	4,612 pothies	3

(bag = 168 lb; Candy = 784 lb; Pothi = 280 lb.)

Meetings: The first meeting of the Coimbatore Market Committee was held on 19-10-1955 when fourteen subjects were discussed. The committee in a resolution, appointed a sub-committee comprising of three members including the Chairman to consider the extension of the Market yards to Pollachi and Gobichettipalayam. The sub-committee also met at Pollachi on 31-10-1955.

A meeting of the South Arcot Market Committee was held on 31-10-1955 when 12 subjects were disposed off out of 39 subjects.

One meeting each of the Main Committee and appointment sub-committee of Malabar Market Committee was held on 28-10-'55.



Among the several subjects considered by the Committee the important ones are extracted below:

(a) Seeking permission of the Government through the Director of Agriculture to visit Bangalore, Bowringpet, and Shimoga of Mysore State by the Chairman and the Secretary of the Market Committee to contact the arecanut traders there about the new regulated market opened by the Committee.

(b) Opening of two weighing centres for arecanut at two places in Ponnani taluk on obtaining Government sanction.

(c) Sanction for revised estimate for 1955 and budget estimate.

Quality appraisal: The analysis of the quality of the groundnut kernels was continued to be done by the South Arcot Market Committee. A total of 445 samples of kernels was drawn from arrivals of 11,107 lots of kernels in 55,562 bags (bag = 177 lb.) was analysed for quality factors. The details of analysis are extracted below:

Particulars	Cuddalore	Villupuram	Tindivanam	Vridhachalam	Panruti	Tirukoilur
1. Dryage:						
2% and below	3	—	—	54	1	4
Above 2% & upto 3%	13	—	—	36	—	—
" 3% " 4%	26	—	17	10	10	11
" 4% " 5%	23	—	13	18	15	—
" 5% " 10%	74	24	7	—	59	15
" 10%	5	—	—	—	7	—
2. Total refraction:						
4% & below	8	—	12	75	1	12
above 4% & upto 8%	90	17	19	40	87	8
above 8%	46	7	6	3	4	10

Out of the 445 samples analysed, 108 samples accounted for refraction reduced to a common basis within 4%, 261 samples within 5 to 8% and 76 samples above 80%. Dryage was at its minimum at Vridhachalam, as also refraction in general. Both dryage and refraction was moderate at Tirukoilur and Tindivanam, while they were high at Cuddalore and Panruti.

Twelve entries were secured for the summer crop and winter crop quality competition in groundnut kernels marketed in South Arcot district.

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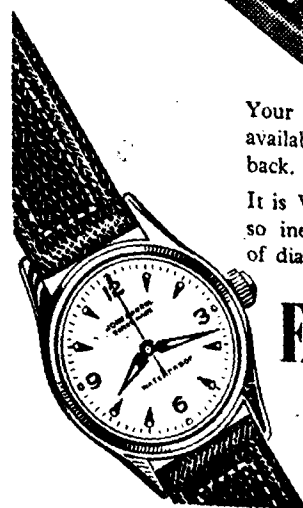
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