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Editorial

Crop Competitions for improving Food Production : Madras can well be proud of producing the All-India Champion in rice production. Sri. K. Vellaiya Gounder of Thattampatti village, Krishnagiri Taluk, Salem District, has been declared by the Government of India as the winner of the All-India Prize of Rs. 1,000/- in the paddy crop yield competition for 1950 – '51. He was awarded the prize by the Prime Minister of India at a function held in Delhi on December 19th, for producing the record yield of rice in the whole of India.

Sri. Vellaiya Gounder, to quote the press note issued by the Commissioner of Food Production, produced an yield of 12,000 pounds of paddy (wet weight) from an acre during the fasli year 1360. Sri. Gounder has already been awarded the District, Regional and State Prizes by the Madras Government. The State Prize was awarded, as our readers might recall, by the Food Minister of India, Sri. K. M. Munshi, on the occasion of the Thirty-Fourth College Day and Conference of the Madras Agricultural Students' Union held at Coimbatore in July 1951.

As the Food Minister pointed out, these crop competitions that were started last year have already produced very good results. During the year 1950 – '51, fourteen States participated in the competitions, which were confined to three crops, paddy, wheat and potatoes. The total number of competitors for U. P., West Bengal, Bihar and Coorg, for which figures are available, was 88,368. The highest yield in wheat was 59 maunds or 4855 pounds per acre and the prize for this was won by Sri Padam Singh of Hapur (Uttar Pradesh). The highest yield in India for potatoes was 726 maunds or 59,739 pounds per acre, and the prize was awarded to Sri. Madho Kripal of Uttar Pradesh.

Gratifying as these record yields are, to see in print, we have yet a yawning gap to bridge between production and consumption. And equally wide is the gap that exists between these record yields

and the average yields of the same crops under Indian conditions. For instance, the average yield for paddy is reckoned only at 907 lb. per acre; the average yield for wheat at 800 lb. and the average for potatoes is only 14,800 lb. per acre, all pitifully low when compared with the average yields reported from other countries of the world. In fact, it is quite a familiar feature to find India relegated to the last place, bringing up the tail-end with a ridiculously low figure, in all the graphic representations of the commercial products of the world. Thus the average yield of milk per cow is 20·5 lb. in Holland, 15 lb. in England and 14 lb. in New Zealand, while the average yield of an Indian cow is just over 2 lb. of milk per day. In spite of the fact that we possess nearly one-third of the world's cattle population, we produce only 12 per cent of the world's milk. The same is the tale in the case of nearly every other product. In rice, the average yields in other countries are: Italy 3,000 pounds per acre, Japan 2,300 lb.. Egypt 2,000 lb. U. S. A. 1,450 lb., China 1,400 lb., while India comes last with 907 lb. per acre. In fairness it should be said, however, that about 17 per cent of our cultivated area gives two crops in a year, which fact is not allowed for in these statistics and we have also to allow for the common practice (as for example in the Tanjore area), of reporting paddy yields only after deducting a number of other items, such as for seed, for "mahimai" and for the tenants' quotas. To that extent our actual yields may not be quite so poor as they look on paper, but the fact remains that a very wide margin of improvement is both possible and necessary in the direction of improving our average yields in all crops. What our country needs at present is not so much a mere extension of food-growing areas as an all-round intensification of cultivation methods and improvement in the efficiency of crop production.

Water Requirements of Crops, with Special Reference to Rice

By

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Since all agriculture is dependent on water, it is not surprisng that centres of ancient civilization have all been close to perennial river systems. Later on, people have constructed dams and storage reservoirs. to spread out the water supply from these rivers more uniformly and control the risk of periodical floods and inundations. Tank systems are also similar in their aim and execution. In any system of irrigation however, one has to take into account the quantity of water available and the quantity needed by different crops at different stages of their life cycle.

The present paper is a review of the work done so far in India, on the water requirements of different crops, with special emphasis upon Rice, as it is the most important amongst all our food crops. The material has been culled out from various Annual Reports of different State Departments of Agriculture and Schemes financed by the Indian Council of Agricultural Research (1).

The chief factors influencing loss of water from cropped fields are (1) field evaporation, (2) transpiration by growing plants, (3) seepage losses and (4) the preparatory treatments that the land had undergone, such as flooding etc. These factors are in turn influenced by climatic conditions, the nature of the soil and sub-soil, the depth of ground water table, the length of the irrigation season and the agronomic practices in vogue in the particular tract in question. It is also to be kept in mind that not only do different crops require different amounts of water but that even the same crop needs different amounts of water at different stages of its growth-period.

Amongst the factors that influence water losses, the nature of the soil, the distributing channels and the distance of lead are important, as they determine the " transmission losses " as distinct from loss by evaporation. At Maruteru, in the Godavari delta, the daily loss of water due to transpiration was nearly 0·02 inch. At Aduthurai in the Tanjore delta, the loss by seepage amounted to 0·02 to 0·03 inch per day, that from evaporation to another 0·02 to 0·03 inch, while the loss from actual transpiration of the rice crop varied from ·01 to ·06 inch per day in different seasons and years. Thus the aggregate loss of water was nearly 0·1 inch per day.

An estimate of similar "evaporo-transpiration" figures is given below for other crops, as reported by McKenzie Taylor (1) in an investigation on the rise of water table in the Punjab in the Upper Chenab Canal area.

Crop.	Water consumed (evaporo-transpiration in inches)
Millet	8
Maize	9
Cotton	12
Fodder	14
Sugarcane	38
Rice	22
Rice (In Madras)	26 to 29 inches (over a period of 135 days' duration).

It would be clear from these data that rice is a crop that needs large quantities of water, although it can adapt itself to some extent to insufficient water supplies.

Singh and his co-workers in the Banaras University (2) observed that there were three district periods of high water requirement in paddy, the first during the seedling stage extending over a period of 10 days, the second during the pre-flowering stage covering about 25 days and the third during the time when the grains are formed, covering a period of 5 or7 days.

Bihar : Experiments (2) were conducted to find out the growth of rice plants under varied conditions of water supply, viz.,

(1) Paddy soil with standing water
(2) Paddy soil under puddled conditions
(3) Paddy soil under a cracked condition

and it was found that paddy thrived best under puddled conditions. The water requirements of late or long duration varieties were (as would be expected) definitely higher than that of early or medium duration varieties.

It was also observed that the water requirements of drought-resistant and flood-resistant types of paddy were lower than that for ordinary varieties of the same duration group, the drought-resistant types being the lowest in their water requirements.

Both in late and in early varieties there was a gradual rise in water requirements from the early stages upto the flowering stage, the maximum being attained just before flowering. The actual water requirement just prior to flowering was about two or three times the quantity required 10 to 15 days before flowering or the quantity required after flowering was over. Soon after flowering, there was a decrease in the water requirement.

Manuring was helpful not only in enhancing yields but also in lowering the water requirement. It was further noted that plants receiving farm-yard manure showed a lower water requirement than those receiving artificials like ammonium sulphate.

Once the rice plants had got well established they did not need standing water, but only a moist soil surface for optimum growth and yield. In pot-cultures water-logging was found to retard growth and tillering, but this aspect needs confirmation from field trials.

Assam: Experiments (2) carried out at the Karimganj Farm, to find out the water requirements of rice under varied conditions, showed that (1) the water requirement was somewhat higher in loams than in clayey soils and(2) the water requirement was found to be the least in unmanured plots and the highest in plots treated with Ammophos.

In Bengal, the minimum amount of water for a successful crop of rice was found to be 40 inches of total depth. A certain reduction in the transpiration rate was observed in the case of rice plants manured with phosphates and it was also noted that in years of deficit rainfall, phosphates were definitely helpful in maturing a crop that would otherwise suffer from insufficient moisture.

It was also noted that excessive watering in the early stages of growth was detrimental to tillering in the case of *aus* or autumn paddy, but during the flowering stage frequent watering was necessary.

Similar investigations by Sen (4) in the Calcutta University, have shown that plant height increased with the height of water standing in the field but standing water suppressed tiller formation in rice, the number of tillers decreasing progressively with an increase in the depth of standing water allowed. When the field was allowed to crack by drying out, flowering was delayed in *aus* paddy. Flooding the field after transplanting for a period of three weeks for *aus* varieties and somewhat longer for *aman* or winter varieties that have a longer duration, followed by subsequent de-watering, was beneficial to crop growth but during the later stages of growth, drainage was essential for proper aeration.

The optimum water supply for maximum yields was found to vary with different varieties of rice.

Hector (5) showed that the transpiration rate was a varietal characteristic which remains fairly constant for any given variety over a wide range of moisture levels. The rate of transpiration per unit area of leaf surface was markedly different between two varieties—one early and the other late, that were studied. The transpiration rate was higher in the early type. In the early type, the ratio of leaf to root was much larger than in the late type and further the stomata, though nearly the same in number per unit leaf area, were also demonstrably larger in size.

Experiments at Cuttack in Orissa (2) indicated that where irrigations were given in addition to rainfall, the paddy yields were improved. Thus, two three and four inches of water per acre were supplied to broadcast winter rice, in addition to the usual rainfall that was received during the growth period and it was found that 2 inches of "extra water" gave the best yields.

In Madhya Pradesh (3), experiments were carried by Bal (6) with medium and long duration varieties, growing under three conditions namely, (1) with standing water, (2) watered when needed and (3) no irrigation, and in two types of soils "Dorsa" clay loams and in "Matasi" sandy loams. The best yields were obtained from the late variety growing in standing water, both in the clay loams and sandy loams. In very heavy soils however, the rice crop showed better growth under well-drained conditions rather than when grown in standing water.

In Bombay, the water lost by transpiration during the life cycle of the paddy plant was found to be equivalent to nearly 25 inches of rainfall, whereas Singh and his co-workers at Banaras calculated that the quantity nsed up in transpiration and evaporation amounted to 27·4 inches of rainfall. In Assam, the experiments indicated that transpiration rate was closely following the fluctuations in daily temperature.

This type of evidence does not however clarify the question as to why a wet-puddled and submerged condition are necessary for good growth in rice. It has been suggested that such submerged condition provides certain constituents that are not available in semi-dry or "merely moist" conditions, one such constituent being silicon.

In Madras, irrigation experiments have been carried out by the Agricultural Department in this State, first to ascertain the quantity of water required by crops and then to find out the details of time and quantity of water needed, to secure the maximum yields. In the case of rice the total quantity of rice was determined in the first stage and in the second epoch the best method of distributing a definite quantity of water over the life-time of the rice crop was sought to be determined.

Some of the early experiments were conducted in ryots' fields; some were with flow irrigation from canals, while others were carried out with irrigation from wells. The aim of these early experiments was to find out how much water was needed and at what intervals it should be supplied for different crops like paddy, cholam, ragi, cotton, cumbu, groundnut and sugarcane. Later on, the experiments were confined to Agricultural Research Stations with larger areas and a more detailed set of treatments.

The table below gives the duty of water for different crops at different stations in the Madras State (3), representing different tracts and regions. The duty of water is the irrigation work which a given

quantity of water can perform and is usually shown as the number of acres on which a crop can be irrigated by a continuous flow of water at the rate of 1 cubic foot per second.

TABLE I

Duty of water for various crops

Agricultural Research Station	Region	Soil	Crop	Period of growth	Average duty of water
Maruteru	Godavari and Kriishna deltas	Heavy, black clayey soil	Sugarcane	Mar–Jan.	107
			Banana.	do. do.	136
			Rice first crop.	June–Dec.	81
			Rice second crop.	Feb–Mar.	54
Aduthurai	Cauvery (old delta)	Light clay (alluvial loam)	Rice-Kuruvai	July–Oct.	68
			,, Samba	Aug-Jan.	76
			,, Thaladi	Oct-Feb.	80
Pattukottai	Cauvery (New Delta)	Sandy loam	Rice-Kuruvai	July–Oct.	37
			,, Samba	Aug–Jan.	47
			,, Thaladi	Oct–Feb.	67
Coimbatore	Canal fed, supplemented by wells	Black cotton soils—of a lighter type	Rice	Aug–Feb.	51
			Ragi	May–Sep.	130
			Sorghum	May–Sep.	120
			Cotton	Oct–April	190
Lower Bhavani	Project area	Loose, gravelly soils.	Rice	Aug–Feb.	40
Siruguppa	Tungabhadra Project area	Heavy, black cotton soils	Rice	July–Dec.	60
			Sugarcane	Mar–Feb.	99
			Bajra	June–Dec,	103
			Ragi	July–Oct.	126
			Groundnut	July–Oct.	156
			Sorghum	June–Sep.	163
			Wheat	Nov.–Mar-	235
			Cotton	Aug–Mar.	265

The quantity of water needed for rice varies according to the nature of the soil and locality, the state of the land prior to and at the time of planting the crop, and the quantity and distribution of the rainfall that is received during the life time of the crop. In certain special tracts as in the sandy loams of the Pattukottai area, the duty of water for the *Kuruvai* crop between July and October is as low as 37, whereas in the deltaic areas of Maruteru, where there is an assured supply of irrigation water and also good rains between June to October, the duty of the first crop of paddy may be as high as 81. Even at Pattukottai, and at Aduthirai too, the *samba* and *thaladi* crops have generally a higher duty of water than the *Kuruvai* crops.

At Coimbatore, where a long duration *samba* type of rice is grown under tank-fed irrigation, an average of 51 inches of water is required per acre in addition to the rainfall that is received during the growth of this crop.

The duty of water in the heavy black soils of the Tungabhadra Project area works out to 60, whereas in the loose gravelly soils of the Lower Bhavani Project area, the duty is only 40 for rice.

The next series of experiments, which were continued from 1938 to 1942 are summarised in Table II. The results of these experiments, though they are not very consistent, still serve to indicate the following conclusions :—

At Maruteru Agricultural Research Station (West Godavari System) the results were not significant for the first crop in any year but in the second crop season, it was noted that the yields were in proportion to the quantity and frequency of water supplied. The control plots which received the largest quantity of water nearly always gave the highest yields. A similar result was noticeable in the sandy loams of Pattukottai in the Cauvery Mettur Project area, though here too, the results were not significant in all the seasons. At Aduthurai, due to the fact that the plots where the experiments were laid out were all more or less at the same level, water that was let into any one plot, got distributed by mere seepage to practically all plots, so that no conclusions are possible from the experiments at this Station.

At Coimbatore, where the water supply for the rice crop is from tank-fed channels, supplemented by well irrigation, the differences were not significant in three out of five years, i. e., when the rainfall was normal or above normal. In years of deficient rainfall however, treatment A i. e , 2″ irrigation given at 3-day intervals, gave the best yield and equalled the yield from plots that had standing water throughout. Other treatments, receiving water at wider intervals recorded lower yields.

TABLE II

First set of experiments

Treatments

A — 2″ in 3 days
B — 2″ in 6 days
C — 2″ in 9 days
D — 4″ in 6 days
E — 4″ in 12 days
F — 4″ in 18 days
G — Normal for 4 weeks and 4″ in 12 days
H — Normal — standing water

Results

Yield of grain — Single crop
Paddy Breeding Station, Coimbatore.

Year	A	B	C	D	E	F	G	H	Z test P—0·05	C.D. P—0·05
1938—39	2786	2458	2228	3094	2425	2259	3016	2915	Yes	558·8
1939—40	2840	2663	2319	2819	2566	2394	2719	1300	No	
1940—41	2106	1750	1806	2119	1925	1663	1806	1950	No	
1941—42	4320	3976	3117	4357	3121	2940	3714	4222	No	

Agricultural Research Station
Maruteru—First Crop

Year	A	B	C	D	E	F	G	H	Z test P—0·05	C.D. P—0·05
1938—39	3100	3025	3016	2981	3190	2975	3086	3152		
1939—40	2352	2481	2419	2291	2349	2057	2412	2463	Yes	47·3
1940—41	2863	2844	2370	2710	2653	2233	2612	3025	Yes	88·8
1941—42	2370	3124	2743	3383	3227	2712	3161	3434	Yes	370·3

In a second series of experiments, from 1943 to 1947, (at the Agricultural Research Station, Aduthurai on *Samba* paddy), the treatments were slightly modified, as indicated in Table III.

TABLE III

II. Second set of experiments—Treatments

A	1″ minus rainfall	...	Once in 3½ days
B	1″ ignoring ,,	...	,, 3½ ,,
C	2″ minus ,,	...	,, 3½ ,,
D	2″ ignoring ,,	...	,, 7 ,,
E	2″ minus ,,	...	,, 7 ,,
F	3″ minus ,,	...	,, 7 ,,
G	4″ minus ,,	...	,, 7 ,,
H	3″ of water at all times (Control).		

Yield of grain

Year	A	B	C	D	E	F	G	H	Z test P—0·05	C.D. P—0·05
Paddy Breeding Station, Coimbatore.										
1943—44	1763	1825	1616	1928	1734	1481	1913	2047	No	
1944—45	2467	2755	2717	1713	2656	2725	2931	2825	No	
1945—46	2949	3107	3107	3012	3201	2918	2969	2069	No	
Agricultural Research Station, Aduthurai *(Samba)*										
1943—44	2320	2350	2250	2360	2350	2350	2390	2370	No	
1944—45	2539	2627	2506	2612	2400	2450	2353	2533	No	
1945—46	3806	4130	4250	3865	3900	4030	4940	4100	No	
Agricultural Research Station, Maruteru.										
1943—44										
I crop	3118	3094	3133	3091	3245	2678	3004	3311	No	
II crop	2451	2486	2474	2325	2302	2429	2354	2599	No	
1944—45										
I crop	3211	3289	3276	3070	3063	3298	3131	3189	No	
II crop	2289	2320	2381	2238	2333	2954	2327	2522	No	
1945—46										
I crop	2200	2336	2328	2314	2340	2445	2395	2476	No	
II crop	1670	1697	1932	1464	1472	1692	1562	2035	Yes	258
1946—47										
I crop	2914	2911	3053	2914	2960	2992	3262	2982	No	
II crop	1568	1587	1372	1430	1352	1381	1442	1783	Yes	265

These trials were carried out at Coimbatore, Aduthurai and Maruteru. The Coimbatore trials were inconclusive on account of the failure of monsoons. At Maruteru, the control i. e., "depth of water kept standing at all times", gave the highest yields in two first-crop seasons and was on a par with the treatments receiving water at 3½ days intervals. All the treatments where water was supplied at 7-day intervals, recorded poorer yields. At Aduthurai, the results of this series of experiments too, were inconclusive in all the three years of trial.

In a third set of experiments commenced in 1948, the time of planting was varied and the water allowed was given to different depths, this quantity being further split up into different phases of crop-growth. The main indications from this series were that the yields were more dependent on the time of planting, than on the quantity of water supplied. The inter-actions between different planting periods and different quantities of water supplied were also not significant.

Another set of experiment was carried out for 2 seasons (1946 and 1949) to find out how far drying out of paddy fields would affect the ultimate yields as compared to the ryots' practice of keeping a film of water standing throughout the season. This intermittent drying out was suggested as an anti-malarial measure to aid in destroying mosquito larvae that are usually found in the standing water in rice fields. The results indicated that yields were the highest in plots where water was always kept standing. In the 1949 season, keeping the fields 'dry' for two days appeared actually to improve the grain and straw yields. Keeping the field dry for three days before letting in water, had no adverse effect on yields, but drying for 4 days was slightly harmful, while drying for 5 days was definitely so, lowering the yields by nearly 20% from controls. A similar trend was noticeable in the straw yields also and it may be concluded therefore, that paddy fields should not be kept without standing water for more than three days at a stretch.

Irrigation experiments on rice have also been conducted at the Siruguppa Agricultural Research Station in the Tungabadhra Project Area. These showed that irrigating the heavy, black, clayey soils of the the Tungabadhra Project area did not lead, as apprehended at the outset, to any rise of deleterious salts from the sub-soil to the surface as a result of irrigation. It was also noted that a single crop of long duration rice could be grown to better advantage in the Tungabhadra Project area, than a double crop of two short-duration varieties. Where sugarcane was grown in rotation with rice, both the crops were seen to be benefited on account of the fallow period that intervenes once in two years, between September to June.

Another observation was that better yields could be secured when rice was grown in the well-drained, shallower soils in the Tungabhadra Project area, than on the stiff, black clayey soils where drainage was

more difficult. In order to bring the land into proper condition, any system of cropping and particularly so for rice, must include deep ploughing and drying out of the soil during the fallow period. To this end it is necessary to devise an integrated system of co-operative planning in the in the Tungabadhra Project area, according to a zonal pattern, so that soil moisture could be maintained at optimum levels at the right time, in the various places to be served by the Tungabhadra Project. And for this, sufficient experimental data and basic knowledge regarding the water requirements of different crop plants are essential, since wastage of water would only add to the sub-soil reservoir and lead to water-logging and eventually reduce the usefulness of the irrigation system itself.

Discussion: It would be noted from the above summary of work that the experiments so far conducted have all been more or less on empirical lines. Numerous factors that are concerned in the water requirement of crops have been omitted from consideration. The main results from all the experiments reviewed so far are only that (1) rice needs more water than any other agricultural crop, (2) that more water is needed by a rice of longer duration than a short duration type, and (3) that the quantity of water needed depends to a large extent on the type of soil as well. An integrated picture of the behaviour of the rice plant in regard to its water requirement is still lacking and a good deal of further study is still needed to attain this end. The main lines along which studies may be carried out are indicated below.

Three aspects are involved in any study of the water requirements of crops, namely the soil, plant and the atmosphere and none of them may be ignored in any scheme of investigation on this subject, particularly when paddy is the crop plant that is proposed to be investigated. The rice plant is in several respects rather peculiar and differs from other crops in requiring a special set of soil-water conditions before it can thrive.

In spite of the fact that it is one of the oldest and best studied among crop plants, a number of problems remain still unsolved, such as :—

(1) how far puddled conditions are essential or advantageous for rice growth,

(2) how far the presence of an algal film is necessary for good growth of rice

(3) the inter-relations of these with the water requirement of rice plants at different stages of the life cycle.

(4) Basic knowledge regarding the water requirements of all the different varieties (or at least the most important types) under a standard set of soil, moisture and atmospheric

conditions (i. e., temperature, light and humidity) should be gathered first, before any attempt is made to extend the study to the variations in water requirements brought about by a different set of soil and moisture conditions, and also the effect of different manurial treatments.

In view of the fact that no amount of care can duplicate in pot cultures the same conditions that exist in the field, the findings from pot culture studies have necessarily to be verified and confirmed by field tests. However pot-culture studies may be made to approximate to field conditions by making use of lysimeters of large surface and soil capacity. A further advantage in these will be that they can be kept under controlled conditions of light, temperature and humidity so that the experiments of one season can be repeated in other seasons with a greater expectation of reproducible results. Under such controlled conditions, observations on the micro-climate in and around the crop can be recorded and conclusions drawn therefrom, within a shorter period of years than under field conditions.

It is therefore suggested that this line of investigation is one that merits serious attention if the problem of utilising the available water supply to the best advantage in crop production in general and rice production in particular, is to be solved in a satisfactory manner.

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BIBLIOGRAPHY

1. McKenzie Taylor ,et al — (1941) — Ind. J. of Agri. Sci. Vol. XI.
2. Singh, et al — (1935) — Proc. of Ind. Acad. Sci. Series I - B., P. 472.
3. Annual Reports of Rice Research Schemes and Annual Reports of States — (1330 to 1945).
4. Sen — (1937) — Ind. J. of Agri. Sci. Vol. VII P. 89.
5. Hector — (1920 - 1926) — Annual Reports of Bengal Dept. of Agri.
6. Bal, D. V. — (1932) — Agri. and L. Stock in India Vol. II.
7. Report on water requirements of Rice, Iowa State Bulletin — (1939).

Rainfall at Coimbatore as Influenced by Other Meteorological Factors

By

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Introduction: No aspect of climate has greater economic significace than rainfall. It is a recognised fact that success in crop production is mainly due to the receipt of timely rains in required quantities. So the importance of precipitation to agriculture hardly needs to be emphasized.

Material and Methods: The meteorological data collected in the observatory attached to the Agricultural College and Research Institute, Coimbatore, for a period of 37 years were taken up to assess the relative influence of the various meteorological factors like relative humidity, maximum and minimum temperatures and wind velocity on the rains received in the locality where the Institute is situated.

At first simple correlations between various factors were worked out for different months of the year Then the mean co-efficients of correlation were worked out between rainfall and other factors, for all possible combinations of the variables taken in pairs, after which the partial correlations were worked out to assess the relationship between rainfall and relative humidity by removing the interference due to other meteorological factors.

Results and Discussion: The results of analysis of the weather data are furnished in tables I, II and III. They reveal the following features :—

Of all the possible combinations of the five elements of climate studied, a high degree of positive correlation exists between rainfall and relative humidity and a significant negative correlation between rainfall and maximum temperature.

The partial correlation between rainfall and relative humidity after eliminating the other three factors, namely, maximum temperature, minimum temperature and wind velocity is + 0·3959, while the total correlation without the elimination of these three factors is + 0·5321. This proves the importance of these three elements of climate as influencing precipitation. Further, it becomes evident that no one climatic factor acts alone.

There exists a significant total negative correlation between relative humidity and maximum temperature. Eliminating the effects of minimum temperature and wind velocity, either singly or in combination, the degree of negative correlation between relative humidity and

maximum temperature is enhanced and the coefficient of correlation becomes highly significant. High wind velocity, especially when accompanied by low atmospheric humidity, reduces chances of precipitation.

There is a positive significant total correlation between relative humidity and minimum temperature and there is an apparent increase in the value of the coefficient of correlation, when the effects of maximum temperature and wind velocity are removed, but it is not significant. Low wind velocity seems to form conditions favourable for condensation of clouds.

Conclusion: Rainfall is a vital factor which goes a long way in accentuating crop production. The other factor of climate like relative humidity, air temperature and wind velocity are important in influencing the precipitation.

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TABLE I

Total and Partial Correlations of all possible combinations of Factors Taken in Pairs.

1 = Rainfall, 2 = Relative Humidity
3 = Maximum Temperature. 4 = Minimum Temperature.
5 = Wind Velocity,

S. No.	Factors between which correlation has been worked out	Total Correlation.	Partial Correlation	
1.	Rainfall and Relative Humidiay	+ 0·5321**	r12·345	+ 0·3959*
2.	Rainfal and Maximum Temperature	— 0·4652**	r113·245	— 0 3378*
3.	Rainfall and Minimum Temperature	+ 0·1405*	r14·235	+ 0·1047
4.	Rainfall and Wind Velocity	— 0·0182	r15·234	+ 0·0356
5.	Relative Humidity and Maximum Temperature.	— 0·4005*	r23·145	— 0·2453
6.	Relative Humidity and Minimum Temperature.	+ 0·2060*	r24·135	+ 0·1923
7.	Relative Humidity and Wind Velocity.	— 0·1259*	r25·134	— 0·1621
8.	Maximum Temperature and Minimum Temperature.	+ 0·0809	r34·125	+ 0·2012
9.	Maximum Temperature and Wind Velocity.	— 0·0503	r35·124	+ 0·0010
10.	Minimum Temperature and Wind Velocity.	— 0 0844	r45·123	— 0·0606

Note:— * Significant. ** Highly Significant.

TABLE II.

Correlation Between Rainfall and Relative Humidity showing the Successive Values of Partial Correlation after the Elimination of other Factors.

S. No.	Particulars of the factors correlated	Total Correlation	After eliminating one factor	After eliminating two factors	After eliminating three factors
1.	Rainfall and Relative Humidity	r12 + 0·5321 ‡	r12·5 + 0·5343 ‡	r12·45 + 0·5222 ‡	
			r12·4 + 0·5194 ‡	r12·43 + 0·3953 *	r12·345 + 0·3959*
			r12·3 + 0·4204 ‡	r12·35 + 0·4248 ‡	
2.	Rainfall and Maximum Temperature	r13 — 0·4652 ‡	r13·5 — 0·4670 ‡	r13·45 — 0·4839 ‡	
			r13·4 — 0·4831 ‡	r13·42 — 0·3378 *	r13 245 — 0·3378*
			r13·2 — 0·3250	ri3·25 — 0·3210	
3.	Rainfall and Minimum Temperature	r14 + 0·1405*	r14·5 + 0·1395	r14·35 + 0·1990	
			r14·3 + 0·2018	r14·23 + 0·1036	r14·235 + 0·1047
			r14·2 + 0·0373	r14·25 + 0·0409	
4.	Rainfall and Wind Velocity	r15 — 0·0182	r15·4 — 0·0064	r15·53 — 0 0315	
			r15·3 — 0·0470	r15·23 + 0·0236	r15·234 + 0·0356
			r15.2 + 0·0581	r15·24 + 0·0605	

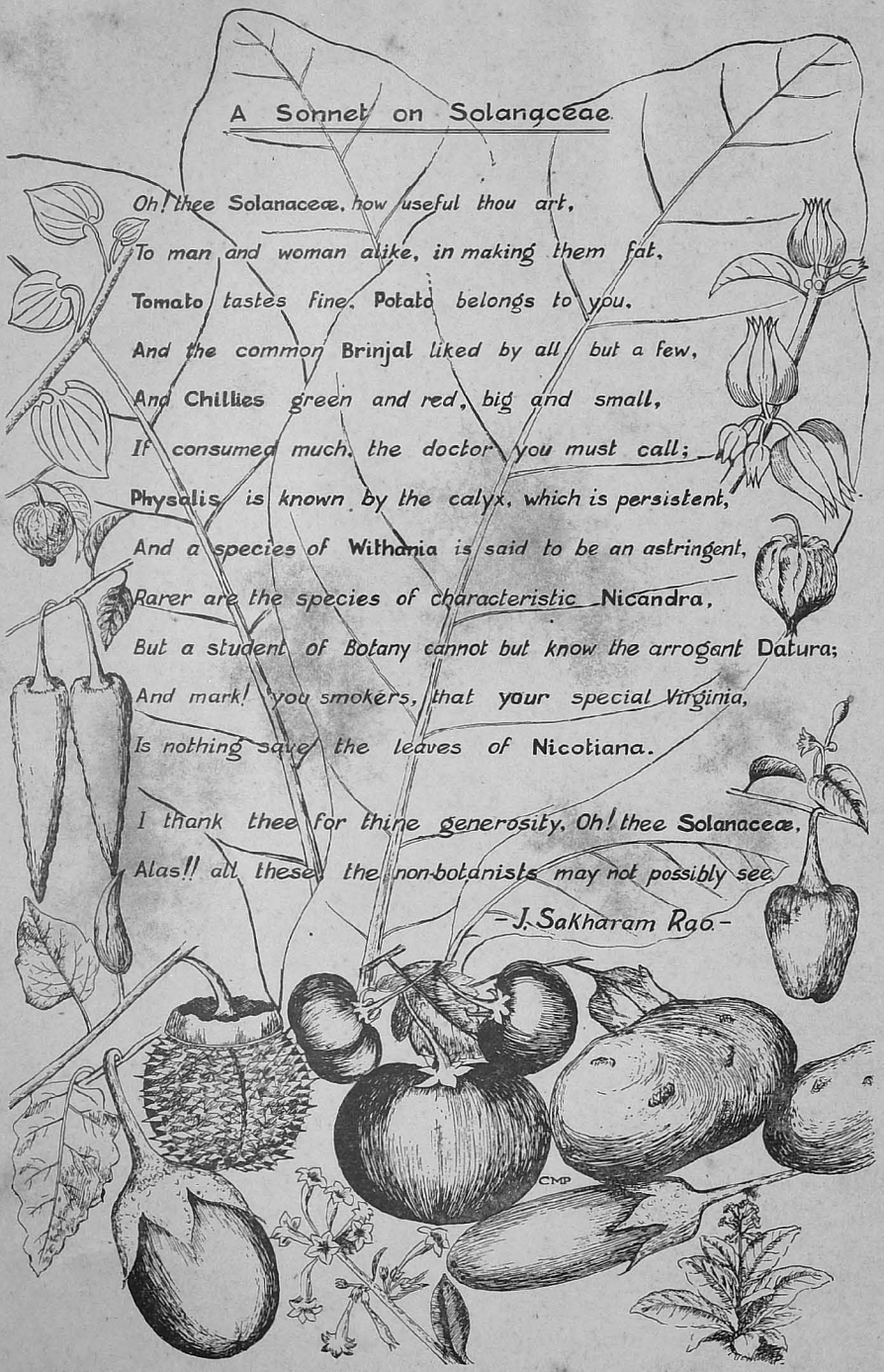
Note:— * Significant. ‡ Highly Significant.

TABLE III

Correlation Between Relative Humidity and Maximum Temperature Showing the Successive Values of Partial Correlation after the Elimination of Certain Factors.

S. No.	Particulars of factors correlated	Total Correlation.	After eliminating one factor	After eliminating two factors	After eliminating three factors
1.	Relative Humidity and Maximum Temperature	r23 — 0·4005*	r23·1 — 0·2040		
			r23·4 — 0·4278 ‡	r23·45 — 0·4358 ‡	r23·145 — 0·2453
			r23·5 — 0·4107 *		
2.	Relative Humidity and Minimum Temperature	r24 + 0·2060*	r24·1 + 0·1565		
			r24·3 + 0·2611	r24·35 + 0·2523	r24·135 + 0·1923
			r24·5 + 0·1977		
3.	Relative Humidity and Wind Velocity	r25 — 0·1259 *	r25·1 — 0·1373		
			r25·3 — 0·1596	r25·34 — 0·1613	r25·134 — 0·1621
			r25·4 — 0·1269		

Note:— * Significant. ‡ Highly Significant.



A Sonnet on Solanaceae

Oh! thee **Solanaceæ**, *how useful thou art,*
To man and woman alike, in making them fat,
Tomato *tastes fine.* **Potato** *belongs to you,*
And the common **Brinjal** *liked by all but a few,*
And **Chillies** *green and red, big and small,*
If consumed much, the doctor you must call;
Physalis *is known by the calyx, which is persistent,*
And a species of **Withania** *is said to be an astringent,*
Rarer are the species of characteristic **Nicandra**,
But a student of Botany cannot but know the arrogant **Datura**;
And mark! you smokers, that **your** *special Virginia,*
Is nothing save the leaves of **Nicotiana**.

I thank thee for thine generosity, Oh! thee **Solanaceæ**,
Alas!! all these the non-botanists may not possibly see.

– J. Sakharam Rao –

Two New Berry Fruits — Blackberry and Raspberry (Rubus spp.) for the Hill Ranges of South India

By

U. NARASINGA RAO,
Fruit Specialist, Coimbatore.

and

V. S. RANGACHARLU,
Assistant Fruit Specialist, Coonoor,

Among the better-known bush fruits, Cape gooseberry and strawberry are at present grown on a more or less field scale in hill regions of South India between elevations of 5,000 and 7,000 feet. Blackberry and raspberry were introduced for trial at Coonoor in 1946. In the first two or three years, the plants made very slow growth. Their later performance, however, proved to be promising, and they can now be deemed as two valuable additions to the bush fruits suitable for cultivation on the hill ranges of South India. These should prove of particular appeal since their cultural requirements are far less fastidious than other crops like the strawberry.

Description: Both blackberry and raspberry are low, straggling and prickly shrubs popularly known as brambles. The former bears small, globular and irregularly-shaped, soft fruits which become purplish dark when fully ripe, each fleshy carpel of the fruit (botanically the fruit is an aggregate of drupelets) containing a small stone inside. The juicy fruits have a mild and pleasant, sub-acid flavour. Raspberry, on the other hand, bears much softer fruits than the blackberry with characteristic cone-shaped fruits with a hollow centre and are bright pink in colour when fully ripe. Raspberries have a somewhat woolly flesh, and possess a more agreeable taste than blackberries, being less acidic. The fruits, in either case, are about $\frac{1}{4}$" to $\frac{1}{2}$" in diameter and are borne either on sides of long, straggling branches known as "canes" or on their tips.

Climatic and Soil Requirements: Both blackberry and raspberry are suited for growing under temperate or subtropical conditions of climate as exist at elevations of 5,000 to 7,000 feet. Climatic conditions which favour the growth of fruits such as apple, pear and plum, may be considered as congenial to them also. They are not fastidious as to the soil, but grow best on well-drained loams supplied with plenty of organic matter. Lighter soils with adequate manuring and proper attention are also suitable. Judged by their growth and cropping at Coonoor (5,800 feet) on the Nilgiris, most of the hill regions of our State characterised by similar climatic features may be expected to prove suitable for the cultivation of the blackberry and raspberry.

Culture: The simplest method of planting is in rows five feet apart with two feet from plant to plant, The plants (root suckers or tip-layers) are set out in pits dug in well-prepared and manured land. Planting in moderately rainy weather aids in quicker establishment of the plants. When once the plants are well established and begin to produce "canes" which form the main fruiting branches later, no elaborate inter-cultural operations are necessary, except periodical removal of weeds and an occasional hoeing.

The plants usually produce a number of root suckers which should be periodically thinned, till the plants attain the bearing age. Otherwise they are likely to weaken the main plant and make it too straggling in growth. As the plant grows, a number of branches or 'canes' are produced, which should be tied to wires, trellises or stakes, keeping the shape open. Just before spring. the canes are cut back to firm wood to induce the formation of side branches that will yield sprays of fruit later on. The canes of one season produce fruit in the following season, after which they are cut down. Thus three to five new canes are allowed to form for the following season, and when harvest is over, these are removed and others allowed to emerge for subsequent fruiting. The process is thus repeated annually for producing new canes year after year. Excessive shortening of the fruiting canes should be avoided, particularly in the raspberry, which carries its crop near the tips of branches. In blackberry too, which bears most of its crop laterally on either side of long canes a severe cutting back appears unnecessary; only really old wood need be removed, tipping the other growths to the minimum extent necessary.

The plants, soon after the harvest is over may be manured with about 5 to 10 lb. of cattle manure and one-fourth to half a pound of oil-cake or other organic manure per plant. By such systematic attention to pruning, manuring and other cultural operations it is possible to obtain uniformly good yields over prolonged periods.

No major pest or disease has been observed on the crops at Coonoor.

Cropping: Blackberries usually begin to bear from the second year after planting, while raspberries come to yield about a year later. The former are available for harvest from May onwards and the crop lasts for about a month after that, while raspberry fruits a little later in the season and continues to yield till about the end of June, or middle of July.

Under Coonoor conditions, the yield of raspberry has averaged about 50 to 100 fruits per plant, while that of blackberry has been appreciably larger with a mean yield ranging from 200 to 300 berries per

plant, of which nearly 120 to 150 fruits of the former and 90 of the latter go to a pound. On the above basis an acre yield up to nearly 3,000 lb. from raspberry and about 6,000 to 10,000 lb. from blackberry may be expected.

Propagation: Both the fruits can be propagated either through root-suckers which are abundantly produced around each plant from the time the plants are established or from "tip-layers". The latter gives better results, and high-yielding canes are best perpetuated in this manner.

The method of tip-layering is briefly described below :—

Small holes are made in the ground near the parent plant about three to four inches in depth. A small quantity of manure is placed at the bottom of each hole and the tips of selected canes buried into the holes about an inch deep, covered by soil and trodden down firmly. It may be necessary to peg down each layered cane in order to keep it in position. Care should be taken to see that the canes are not unduly bent while layering. The tip-layers are ready for separation in about two to three months' time. It is better to leave them as they are in the ground for sufficient development of roots and sever them only at the time of planting, as this would ensure better and quicker establishment of the plants after final planting in the field. The best period for tip-layering at Coonoor has been found to be September—October.

Uses: The fruits of both blackberry and raspberry can either be eaten out of hand or made into preserves, as jams, jellies or other forms to suit different tastes. The fresh fruits when eaten with cream make a fine table dessert. They are sometimes mixed with strawberry while serving with cream, which makes a delightful combination. It is also reported that raspberry leaves contain a valuable principle "fragarine", which has high medicinal properties. During World War II, raspberry "leaf-tea" is reported to have been largely used in welfare clinics and obstetric medicine. Blackberry and strawberry leaves also have similar medicinal properties.

Correspondence

Dear Editor,

I have read with interest your latest editorial on the subject of practical training in Agricultural education, and have also taken note of the consensus of opinion on the subject, from a perusal of the relevant proceedings of the Conference of Research Officers of the Madras Agricultural Department held in May 1951 at Coimbatore. While it will be generally conceded that a more intensive practical training in farming methods should be imparted to Agricultural graduates, I believe there is an enlightened, though yet unvoiced, body of opinion against the idea of extending the Agricultural degree course by six more months, over and above the present curriculum of three years, to achieve the above objective.

A distinction has already been recognised between (1) extending the Agricultural degree course by six more months to cover the period of training and (2) imparting practical training for six months on an Agricultural Research Station to graduates entering service in the Agricultural Department. The latter may be considered as a matter of administrative convenience determined by the needs of the Department, while the former is of greater academic importance. The proposal for the extension of the B. Sc., degree course in Agriculture, to cover a total period of $3\frac{1}{2}$ years leads one to seriously consider, whether any alternative suggestions for imparting the necessary intensified practical training within the present three-year period, by a suitable adjustment of the syllabuses, have been examined and with what result.

Recently, it is increasingly pronounced in responsible quarters, that the present Agricultural education is inadequate to meet the specialised needs in the various branches of research or extension work. Hence it is suggested, that any scheme for the reorganisation of Agricultural education should now recognise the need to produce graduates distinctly trained for research or extension work. The bifurcation of the degree course at the end of two years and provision for specialised training in extension or research divisions in the third year would obviate the necessity to extend the period of the degree course. The necessary practical training, which is proposed to be given in the extended period of six months can as well be given in the third year of the B. Sc. degree course, to such of those graduates who are to make their future as agricultural advisers to the farming public. The students choosing a research career may be trained in the individual branches of science during this period. This bifurcation and specialised training will result in properly equipped scientific personnel in the different branches of agricultural science.

Lawley Road P. O.,
Dated, 7th Dec. 1951.

V. SANTHANAM,
Assitant in Cotton.

Agriculture News Letter, Madras

The Expansion of Rice Growing. Although a comparative newcomer among Australian grain crops, rice is now a well-established and flourishing primary product. It has been responsible for much of the development of the Murrumbidgee Irrigation Area of New South Wales, and in the future may lead to a fuller utilization of parts of Northern Australia. From a commercial beginning of 157 acres in 1924, the area under rice in the Murrumbidgee Irrigation Area expanded to 20,000 acres by 1930, but a limited water supply and fears of over-production kept the acreage to between 23,000 and 25,000 acres in the pre-war years. There are probably 100,000 acres of suitable land for rice in the Murrumbidgee Irrigation Area, but a good rotation is essential to maintain high yields. Most farmers follow a three or four-year crop rotation with wheat, oats and other cereals. The improved condition of the soil after growing rice has resulted in higher yields from other cereal crops and, in addition, the sowing of temporary pastures has led to an extension of fat lamb raising throughout the area.

During the war, extension of the acreage under rice was encouraged to meet military requirements, and a new area at Wakool, irrigated from the Murray River, was brought into production. After the war water supply problems dictated a a reduction in acreage and only in the last two years have acreages approached the peak of 1943–44. The crop is acquired by the Rice Marketing Board which allocates agreed quotas to the various millers who sell both locally and overseas through private traders subject to government commitments. Since early in the war, export commitments by the Government had absorbed all but minimum quotas for

RICE PRODUCTION

	Area sown to rice	Production	Yield
	'000 acres	Million bushels	bushels per acre
1943/44	41	4·0	98·67
1948/49	33	2·7	83·79
1949/50	38	3·8	100 78
1950/51	41*	4·5*	112*

Estimates only. One bushel rice "paddy" is 42 lbs.

resident Asiatics and persons on special diet. Rice became generally available on the local market only late last year.

The harvest of 76,000 tons of "paddy" rice completed in June, should, when processed, provide 25,000 tons of polished rice for local requirements and a further 25,000 tons will be available for export, mostly to Malaya, Papua, New Guinea, New Zealand, and Pacific islands, The export demand for Australian rice has been very strong since the war, for production in the rice-exporting countries of Burma and Indo-China has been interrupted by political instability and civil war, and expanded output in Siam and elsewhere has not been able to match the rapid increase in population in Asia. The Australian Government has therefore been called on to supply as much as possible to rice-eating peoples of the British Commonwealth who would normally draw supplies from the world market. Expanded demand for rice has therefore prompted examination of some of the vast acreas of Northern Australia which experts claim to be suitable for rice-growing. The extensive flooding of many of these areas in the monsoon seasons has led many to believe that rice could be cultivated with very little effort over wide areas particularly in the Northern Territory and Kimberley district of Western Australia. A survey by a New South Wales Department of Agriculture specialist in 1949 confirmed the potentialities of such

areas as the Fitzroy and Ord River plains of Western Australia, and the Adelaide, Marrakai and Daly River plains in the Northern Territory, but pointed out the impracticabilty of commencing operations until detailed statistics of flood levels and durations were obtatined and unless a suitable variéty of rice seed was available for use.

The Old River plains have long been under consideration as an irrigation project, and their use for rice-growing has been considered in relation to this larger scheme. The other areas of the Northern Territory could possibly be used with a less expensive system of levee banks to give some flood control. Quarantine restrictions on the importation of tropical varieties of rice known to be suitable to these climatic conditions are a big handicap, but it has been suggested that one of the research stations in the Northern Territory be used as a plant quarantine station to assist in this work. In the meantime, a private organization has already begun experimental sowings on the Liveringa Plains, on the Fitzroy River, south-east of Derby, Western Australia, and although using a "temperate" variety of rice, hopes to gain sufficient experience to be able to enlarge its activities within a few years. If these experiments are successful, the value to Australia of an agricultural industry in a hitherto purely pastoral area will be considerable. Provided tropical rice has the same beneficial effects on soil as other varieties have had in the Murrumbidgee Irrigation Area, it may be possible to introduce other crops in a new rotational system,

The 1951–52 Wheat Harvest. Despite reasonably satisfactory seasonal conditions throughout the growing period, except in Queensland, the coming wheat harvest is likely to be smaller than in any year since 1945/47. Yields are expected to be good from most areas, but the reduction in acreage sown has been so great that production will probably not exceed 155m. bushels. The acreage has fallen more in New South Wales than in any other State the area sown being estimated at only 2·9m. acres, a drop of 13% from last year. Acreages in Victoria and South Australia have been reduced by slightly smaller amounts, while Western Australia and Queensland much the same areas as last year were sown, The total acreage under wheat in Australia is estimated at 10·5m. acres, a fall of of 11·5% from last year's 11·86m. acres and 19% less than the pre-war average.

The Australian Wheat Board will have great difficulty in meeting its commitments for the coming year. The amount of wheat retained on the farms for seed will reduce the total quantity available to the Board to 145m. bushels, whereas minimum requirements for local use and export commitments are 170m. bushels. Unless carry-over stocks are sufficient to meet this deficit of 25m bushels, Australia will have no option but to request a reduction in her International Wheat Agreement quotas. which now stand at 89m. bushels. In any case, there will be no "free market" wheat available from the 1951/52 harvest. This will reduce returns to Australian wheat-growers, which are an average of returns from low-priced locally-consumed wheat sold under the International Wheat Agreement at 16s·1d. per bushel, and "free" weat which sold last year at about 18s. per bushel. Wheat growers are guaranteed a return equal to the cost of production assessed by the Commonwealth Bureau of Agricultural Economics, and this has determined the home consumption price. Yet even with substantial quantities sold overseas at higher prices, average returns to farmers have been insufficient to keep up the acreage sown to wheat when more profitable alternative uses of land are available, such as woolgrowing and, in some cases, other grains which do not come under government control.

Crop and Trade Reports

Cotton: The sowings of cotton crop are reported to have been delayed in the districts of Krishna, Anantapur, Cuddapah, Nellore, North Arcot, Coimbatore, Tiruchirapalli, Ramanathapuram and Tirunelveli due generally to delayed rains. The area under the crop is expected to be above normal in the districts of Krishna, Kurnool, South Arcot, Chittoor, Madurai and Malabar due partly to intensive propaganda for extension of cotton cultivation and partly to attractive prices prevailing of cotton. The condition of the standing crop is reported to be generally satisfactory in all the districts except Krishna, Anantapur, Chittoor, North Arcot and Ramanathapuram where the crop is reported to have been generally affected by inadequate water supply. The crop in West Godavari district is also reported to be not satisfactory. In Ramanathapuram district the crop is reported to have been affected by pests. The wholesale price of cotton lint per imperial maund of 82 2/7 lb. (equivalent to 3.200 tolas) as reported from important markets on the 3rd November, 1951 was Rs. 80—14—0 for Cocanadas, Rs. 93—10—0 for White Northerns, Rs. 94–13–0 for Red Northerns, Rs. 82–14–0 for Westerns (Mungari), Rs. 87—1—0 for Westerns (Hingari). Rs. 105—13—0 for Coimbatore Cambodia, Rs. 95—8—0 for Coimbatore Karunganni, Rs. 15—9—0 for Tinnevellies and Rs. 63—0—0 for Nadam Cotton. Compared with the prices published in the last report (i.e.) those which prevailed on 13th October, 1951 these prices reveal a rise of approximately 0 1 per cent in the case of Cocanadas, 1·3 per cent in the case of Westerns (Mungari) and 1·2 per cent in the case of Westerns (Hingari), a fall of approximately 0 6 per cent in the case of Tinnevellies, the prices remaining stationary in the case of other varieties.

Gingelly: The gingelly crop is reported to have been affected by heavy rains in July 1951 in West Godavari and Krishna districts. In the districts of Kurnool, Anantapur, Cuddapah. Chittoor, Salem, Coimbatore, Mathurai, and Ramanathapuram the crop was affected due to inadequate rains during the period of its growth. The yield per acre is expected to be normal in the districts of Srikakulam, Visakhapatnam, East Godavari, Guntur, Bellary, South Arcot, Tanjore, Malabar and South Kanara and below the normal in the other regions of the State. The wholesale price of gingelly seed per imperial maund of 82 2/7 lb. as reported from important market centres on 3—11—1951 was Rs. 33—7—0 in Cuddalore, Rs. 32—15—0 in Tirunelveli, Rs. 32—4—0 in Rajahmundry, Rs. 31—2—0 in Visakhapatnam, Rs. 30—12—0 in Eluru, Rs. 30—9—0 in Tuticorin, Rs 30—6—0 in Salem, Rs. 29—10—5 in Tiruchirapalli, Rs. 29—2—0 in Kakinada and Rs. 28—14—0 in Vizianagaram. Compared with the prices published in the last report i.e., those which prevailed on 6—10—1951 these prices reveal an increase of 3 per cent in Tirunelveli and a decrease of 6 per cent in Tuticorin and 5 per cent in Eluru. the prices remaining stationary in Cuddalore, Tiruchirapalli, Kakinada and Vizianagaram.

Sugarcane: The condition of the standing crop is reported to be generally satisfactory in all the districts except Kurnool, South Arcot, Chittoor, North Arcot and Coimbatore where crop is reported to have been affected by inadequate water supply and the yield is expected to be reduced considerably in consequence. In West Godavari district, the standing crop, though affected by heavy rains in the early stages, is reported to have rallied as a result of heavy manuring. The wholesale price of jaggery per imperial maund of 82 2/7 lb. at important markets on the 3rd November 1951 was Rs. 20—9—0 in Mangalore. Rs. 18—12—0 in Rajahmundry, Rs. 18—1—0 in Visakhapatnam and Vijayanagaram Rs. 18—0—0 in Bellary, Vellore and Salem, Rs. 17—10—0 in Tiruchirapalli, Rs· 16—7—0 in Kakinada, Rs. 16—0—0 in Coimbatore, and Rs. 15—8—0 in Chittoor. Compared with the prices published in the last report i.e., those which prevailed on the 13th

October 1951 these prices reveal a fall of approximately 3·1 per cent in Chittoor, a rise of approximately 3·6 per cent in Coimbatore the prices remaining stationary in the other markets.

Groundnut: The winter crop of groundnut is reported to have been affected by heavy rains in July 1951 in West Godavari District and by drought and delayed rains in the districts of Guntur, Kurnool, Anantapur, Cuddapah, Nellore, North Arcot, Coimbatore and Mahurai. The crop was affected in Guntur district by plant lice which was effectively checked in time. It was affected by insect pests in Bellary and Salem districts. It was affected by insect pests in Bellary and Salem districts. The condition of the crop is generally satisfactory in the other regions of the State. The wholesale price of groundnut (machine shelled) per Imperial Maund of 82-2/7 lb. as reported from important market centres on 3rd November 1951 was Rs. 31—3—0 in Cuddapah, Rs. 31—2—0 in Guntur, Rs. 31—0—0 in Adoni, Rs. 30—11—0 in Tadpatri, Rs. 30—4—0 in Nandyal, Rs. 30—2—0 in Erode, Rs. 29—12—0 in Salem, Rs. 29—9—0 in Vellore, Rs. 29—7—0 in Coimbatore, Rs. 29—5—0 in Cuddalore, Rs. 29—2—0 in Vizianagaram, Rs. 28—13—0 in Bellary. Compared with the prices published in the last report i. e. those which prevailed on 6th October 1951 these prices show an increase of 9% in Vellore, 8% in Erode, 7% in Salem, 6% in Nandyal, 5% in Coimbatore, 3% in Bellary, and one per cent in Guntur and a decrease of 3% in Vizianagaram, the prices remaining stationary in Cuddalore.

Cotton Raw in the Madras State: The receipts of loose cotton at presses and spinning mills in the Madras State from 1st February 1951 to 2—11—1951 amounted to 2,48,890 of 392 lb. lint. The receipts in the corresponding period of the previous year were 2,90,569 bales. 3,70,536 bales mainly of pressed cotton were received at spinning mills and 10,353 bales were exported by sea while 1,03,553 bales were imported by sea mainly from Karachi and Bombay.

[Public (Economics and Statistics) Department.]

Gleanings

Poultry Meat Tainted by BHC—Treated Grain: Tests carried out by the Poultry Branch of the Department of Agriculture and Stock have shown that the flesh of fowls fed on grain treated with the commercial grade of the insecticide benzene hexachloride (BHC) may have a musty flavour when the birds are slaughtered.

BHC has proved to be very effective in protecting wheat, maize and other grains against insect damage. It is compulsory to use it on hybrid maize, grain sorghum and French bean seed submitted for certification, and in view of the current shortage of carbon bisulphide some other grains are also being treated with this insecticide. While it in no way harms grain intended for sowing, it should not be used on grains which are to be fed to poultry, as in addition to its flesh-tainting properties it may also give eggs a musty flavour.

There is some evidence that milk may be tainted, and so it is tentatively recommended that BHC—treated grain be not fed to milch cows.

Deodorised BHC is marketed by the trade, but its use as an insecticide in stored grain appears to be too costly where a large quantity of grain is concerned. (Queensland Agricultural Journal, (September 1951. Vol. 73. Part 3).

M. A. S.

Review

Cytogenetic Studies in Yeasts. A considerable amount of work has been done on the cytology and genetics of yeasts in the Indian Institute of Science, Bangalore. We are in receipt of six reprints of publications on this subject as listed below, being pages 1 to 128 of Vol. 32, Part A of the Journal of the Indian Institute of Science, 1950. Four of the papers deal with mutation processes, two with mutation, one with cytoplasmic inheritance in yeasts. The papers are by Dr. M. K. Subrahmaniam and his associates.

The subject studied is of great interest and is a modern development, an extension of cytogenetics to micro-organisms. Owing to the great economic importance of yeasts, the study has also practical possibilities.

The papers on mutations discuss the present knowledge on the subject comprehensively and suggest new interpretations based on the work done at Bangalore. A peculiar feature found in yeasts is their great plasticity in vegetative cell form and the apparent frequency with which mutations take place. The three papers on chromosome constitution and cytoplasmic inheritance are a review and discussion and do not include new experimental work. There is a good deal of controversy on this aspect and some workers in other countries do not accept the Bangalore work on chromosome constitution in yeasts. These papers give the most reasonable interpretation of yeast cytogenetics, providing the basic observations are accepted. These important contributions to cytogenetics would be more generally acceptable if accurate experiments are carried out on sporulation, single spore cultures and the biochemistry of mutant forms. Fresh observations on chromosomes in yeasts in different cultures are also highly desirable, as all the conclusions are now derived from observations on "giant colonies".

1. Krishnamurthy, S. N. and Subrahmaniam, M. K. (1950) Further observations on Reverse Mutations in Yeasts; Jour., Ind. Inst. Sci. Vol. 32 A. p. 1—28.
2. Subrahmaniam, M. K., (1950) The problem of haploidy in Yeasts; Ibid pp. 29—40.
3. ,, ,, Haploidy and the Species Concept in Yeasts; Ibid. pp. 41—50.
4. Ranganathan, B. and Subrahmaniam, M. K., ,, Studies on the mutagenic action of chemical and physical agencies on Yeasts; Ibid. pp. 51—72.
5. Subrahmaniam, M. K , ,, A critical evaluation of the question of cytoplasmic inheritance in Yeasts; Ibid. pp. 73—90.
6. Ranganathan, B., ,, Studies on the mutagenic action of chemical and physical agencies on Yeasts; Part II. Mutations induced in Yeasts by temperature shocks; Ibid. pp. 91—111.
7. Mitra, K. K., and Subrahmaniam, M. K., ,, Studies on the Mutagenic action of chemical and physical agencies on Yeasts; Part III, Further Observations on the general effects of Chrysene on Yeasts; Ibid. pp. 113—128.

C. G.

Weather Review — For November 1951

RAINFALL DATA

Division	Station	Total rainfall for the month	Departure from normal in inches	Total since 1st January in inches	Division	Station	Total rainfall for the month	Departure from normal in inches	Total since 1st January in inches
Orissa & Circars	Gopalpur	2·2	—1·7	49·6	Central Contd.	Coimbatore	7·0	+3·0	24·1
	Calingapatnam	5·2	+1·8	40·0		Tiruchirapalli	7·2	+0·2	32·0
	Visakhapatnam	3·1	—1·6	42·4	South	Nagapattinam	11·9	—5·6	32·7
	Araku Valley*	4·1	+2·1	67·1		Adutural*	7·6	—2·8	28·3
	Anakapalle*	3·1	—0·1	47·1		Pattukottai*	8·9	+0·6	25·6
	Samalkot*	1·7	—1·8	36·6		Madhurai	4·3	—1·4	37·2
	Kakinada	4·7	—0·2	45·2		Pamban	14·8	+3·1	33·5
	Maruteru*	2·1	—1·5	52·8		Koilpatti*	8·8	+2·8	26·0
	Masulipatnam	0·6	—5·2	34·1		Palayamcottai	9·7	+2·3	25·4
	Guntur*	0·1	+1·9	28·3		Ambasamudram*	11·8	+1·3	37·0
	Agri. College, Bapatla*	0·3	—3·7	26·6	West Coast	Trivandrum	15·9	+8·9	73·9
	College Farm Bapatla*	0·8	X	29·1		Fort Cochin	10·0	+3·3	101·0
	Rentachintala	1·0	—0·9	18·6		Kozhikode	6·6	—0·8	101·3
Ceded Districts	Kurnool	0·0	—1·2	27·2		Pattambi*	9·0	+4·1	87·0
	Nandyal*	0·0	—1·5	23·1		Taliparamba*	5·6	+0·6	117·0
	Hagari*	0·2	—1·5	21·1		Nileshwar*	6·0	+0·4	118·2
	Siruguppa*	0·3	—1·0	19·0		Pilicode*	4·2	—1·0@	114·5
	Bellary	0·5	—1·5	23·9		Mangalore	3·3	—0·6	119·7
	Cuddapah	1·7	—1·8	20·2		Kankanadi*	2·1	—1·0	115·6
	Kodur*	4·4	—3·4	22·1					
Carnatic	Nellore	7·3	—4·4	22·6	Mysore & Coorg.	Chitaldrug	0·5	—1·9	25·9
	Buchireddipalem*	7·4	—4·9	20·4		Bangalore	2·2	—0·5	35·6
	Madras (Meenambakkam)	10·4	—3·6	20·5		Mysore	1·0	—1·7	31·5
	Tirurkuppam*	6·1	—5·5@	27·1		Mercara	4·5	+1·5	121·7
	Palur*	20·4	+8·6	45·2	Hills	Kodaikanal	9·4	—0·8	72·7
	Tindivanam*	8·7	+1·4	27·7		Coonoor*	17·9	+3·5	66·0
	Cuddalore	36·3	+20·8	54·5		Ootacamund*	2·5	—3·4	44·1
Central	Vellore	6·5	—1·2	31·4		Nanjanad*	2·8	—2·3	62·5
	Gudiyatham*	7·1	+2·7	25·5					
	Salem	3·9	+0·1	29·9					
	Coimbatore* (A. M. O.)	6·0	+1·3	19·1					

Note:—

1. * Meteorological Stations of the Madras Agricultural Department.
2. @ Average of nine year's data for Pilicode, and eight year's data for Tirurkuppam, and seven years' data for Arakuvalley is given as normal.
3. Average of ten years' data is taken as normal.
4. X The farm was started only this year.

Weather Review for November 1951

The low pressure area that existed over the West Central Bay of Bengal on 31—10—51 shifted slightly southward on 1—11—51 and persisted as a shallow closed low till 6—11—51. Another trough of low existed in the South East Arabian sea over the Comorin area and along and off the Malabar Coast on 7—11—51, passed westwards and became unimportant on the next day The North East Monsoon slightly strengthened along the Coromandal coast on 7—11—51 causing widespread rains in coastal Tamil Nad and local rain in the rest of the region, and weakened on 13—11—51. During this period on 12—11—51 unsettled conditions existed in the neighbourhood of Latitude 9° North and longitude 60° East in the South-East Arabian Sea, intensified into a cyclonic storm on 14—11—51 while moving northwards, became severe on 16—11—51 near about latitude 18½° North and Longitude 66½° East, weakened rapidly on the very next day to a shallow depression which got filled up on the 19th.

In the meanwhile 17—11—51 conditions were markedly unsettled in the South-West Bay off Ceylon, tried to strengthen, but passed as a low pressure wave across the Cormandel Coast. Under its influence the North-East Monsoon has been active in the North Tamil Nad and the adjoining parts of coastal Andhradesa causing widespread and locally heavy rains. Cuddalore recorded a rainfall of 10·5″ on the 18th. On the 18th itself a trough of low appeared over the South-East Arabian Sea off the Malabar Coat, persisted till 22—11—51 and became less marked on 23—11—51. A low pressure wave moved westwards across the South-East Bay on 21—11—51, causing unsettled conditions in the South-East Bay of Bengal, which concentrated into a depression with its centre near about latitude 12½° North and longitude 85½° Est on 24—11—51. This moved towards North, North West and weakened into a trough and became unimportant on 27—11—51. This caused widespread rains in Tamil Nad and coastal Andhradesa as it moved from South to North.

Again a shallow trough appeared off the Malabar Coast on 27—11—51 which became less marked on the very next day but persisted upto the end of the month, as a low pressue wave moved over the Maldives region on th 29th November.

Three western disturbances passed over North-West India during this period.

Niight temperatures were generally above normal over the region.

The particulars regarding the noteworthy falls and the zonal rainfal have been furnished below.

ZONAL RAINFALL

S. No.	Name of zone	Actual rainfall	Departure from normal	Remarks.
1.	Orissa & Circars	2·3	— 1·1	Below normal.
2.	Ceded Districts	1·0	— 1·7	Far below normal.
3.	(a) Carnatic	7·8	— 4·6	Far below normal.
4.	(b) South Arcot Districts	21·8	+ 0 3	Far above normal.
5.	Central	6·3	+ 1·0	Just above normal.
6.	South	9·7	Nil	Just normal.
7.	West Coast	7·1	+ 1·7	Just above normal.
8.	Mysore & Coorg	2·1	— 0·7	Just below normal.
9.	Hills	8·2	— 0 8	Just below normal.

Note-worthy Falls during the month

S. No.	Date	Place	Rainfall in inches for past 24 hours.
1.	6—11—51	Kakinad	2·3″
2.	8—11—51	Kallakurichi	2·6″
3.	10—11—51	Pamban	2·6″
4.	,,	Nagapattinam	2·3″
5.	11—11—51	Fort Cochin	2·4″
6.	13—11—51	Trivandrum	2·9″
7.	18—11—51	Cuddalore	10.5″
8.	19—11—51	Madras (Nungambakkam	6·5″
9.	,,	Vellore	2·7″
10.	,,	Nellore	3·3″
11.	,,	Meenambakkam	2·7″
12.	24—11—51	Nagercoil	3·4″
13.	25—11—51	Calingapatam	3·1″
14.	,,	Vizagapatnam	2·1″

Agricultural Meteorology Section,
Lawley Road Post, Coimbatore.

M. B. V. N., C. B. M. & M. V. J.

Departmental Notifications

POSTINGS AND TRANSFERS

Gazetted Service

Name of officers	From	To
Sri Anantha Raman, S. E.	On leave,	Asst. Agrl. Engineer, Madras
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,, Kunhiraman Menon, K.	Asst. in Chemistry, Coimbatore,	Asst. Agrl. Chemist, Tanjore
,, Kanakaraj David, S.	Asst. Lecturer in Entomology, Bapatla,	Asst. Entomologist, Coimbatore
,, Narasimhamurthi, B. L.	Asst. in Millet, Coimbatore,	Asst. Millet Specialist, Coimbatore

Name of officers	From	To
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,, Raghava Rao, N.	Asst., Entomologist, Ootacamund,	Asst. Lecturer in Entomology, Bapatla
,, Radhakanth, P. K.	Asst. Agrl. Engineer, Madras,	Asst. Agrl. Engineer, Coimbatore
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,, Sambamurthi, K.	Asst. in Fruits, E. R. S., Kodur,	Asst. F. S., Coimbatore
,, Srinivasa Rao, N.	On leave,	D. A. O., Kozhikode
,, Subbaiah, M. S.	Asst. Entomologist, Coimbatore,	Asst. Entomologist (for Bee-keeping), Coimbatore
,, Thirumala Rao, W.	Asst. in Chemistry, Coimbatore,	Asst. Agrl. Chemist, Coimbatore

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,, Anantham Pillai, S.	A. D., Tindivanam,	A. D., Aranthangi
,, Balasubramaniam, P.	F. M., A. R. S.,	Cotton Asst., Nandyal
,, Chockalingam, M.	F. M., under Engineering Training, Coimbatore,	Addl. A. D., Coimbatore
,, Gopalan, S.	Addl., A. D., Pudukottai,	A. D., Musiri
,, Gaurangamurthi, K.	A. D., Pithapuram,	A. D., Kakinada
,, Govindan Nair, K. V.	On leave,	F. M., A. R. S., Nileshwar
,, Govinda Kurup, K.	F. M., Satyamangalam,	Special A. D., Sugarcane, Namakkal
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,, Kothadaraman, S. E.	A. D., under Engineering training, Coimbatore	A. D., Saidapet
,, Lakshminarayana, E.	On leave,	Inspector, Fruit Products, Kodur
,, Narayana Iyer, N.	On leave,	A. D., Chingleput
,, Narasimhaswami, V.	Addl. A. D. Nellore,	Addl. A. D., Kovur
,, Natarajan, L. R.	Addl. A. D., Trichy,	Marketing Asst., Trichy
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,, Ramanathan, P.	A. D., Chingleput,	Addl. A. D., Saidapet
,, Radhakrishna Reddy, A.	A. D., Saidapet,	A. D., Tiruvellore

Name of officers	From	To
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,, Raghu Chetty, V.	A. D., Udipi,	F. M., Nileshwar, II
,, Raman, N. V.	Horticultural Trainee,	Entomology Asst., Coffee Borer seheme, Ootacamund
,, Radhakrishnamurthi, P.	A. D., Nellore,	Fruit Asst., Kodur
,, Satyanarayanamurthi, K.	Paddy Asst., A. R. S., Maruteru,	A. D., Tuni
,, Subramania Iyer, R.	On leave,	A. D., Pudukottai
,, Subramania Chetty, R.	Addl., A. D., Kovur,	Addl., A. D., Puthur
,, Swaminathan, S.	Addl., A, D., Lalgudi,	Addl., A. D., Pudukottai
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Sreemathi A. Leela David,	Asst. in Entomology, Bapatla,	Asst. in Entomology, Coimbatore
Sri Suryanarayanamurthi,	On leave,	Asst., in Millets, Tirupattur
,, Santhanam, S. R.	On leave,	A. D., Kumbakonam
,, Somalingam, R.	A. D., under Engineering Training, Coimbatore	Addl., A. D., Trichy
,, Vittal Hegde, Y.	F. M., Nileshwar, II	A. D., Udipi

The following candidates are appointed as Upper Subordinates and are posted to the vacancies against each :—

Names	To
Balakrishnamurthi, S.	Asst., in Chemistry, Coimbatore.
Meenakshisundaram, K.	Inspector, Cotton Certification Scheme.
Shiva Rao, Y.	Assistant in Chemistry, Coimbatore.

The following promotion of Lower Subordinates as Upper Subordinates is ordered with effect from 1—4—1951 in the following order of seniority :—

Names	To
Sri Alagiriswami, M.	Asst., A. D., Nilakottai.
,, Achuthan Nair, E.	,, Badagara.
,, Samu Iyer, P. V.	,, Manures, Trichy.
,, Pappaiah, B. P.	,, Polavaram.
,, Ratnavelu, M.	Sub-Asst., in Paddy, Coimbatore.

THE MADRAS AGRICULTURAL JOURNAL

Hints to Contributors

The pages of the Madras Agricultural Journal shall be open ordinarily only to the members of the Madras Agricultural Students' Union.

All articles for publication should be addressed to the Editor, Madras Agricultural Journal, Lawley Road P.O., Coimbatore.

In view of the high cost of printing contributions should be as concise as possible and should conform to the best usage in the leading Journals published in India and abroad.

Manuscripts should be typed with double spacing on one side of the paper only and with wide margin. They should not ordinarily exceed 5,000 words or 12 pages of printed matter including tables and illustrations in the Journal. Manuscripts should be carefully revised; numerical data and calculation checked. Main headings in the text should be typed in capitals with paragraph indentations and followed by a period and two hyphens. Sub-heads should be lower case and be underlined to indicate italics. Latin nomenclature and local terms etc, should be in italics. Original papers must conclude with summary of not more than 300 words drawing attention to the main facts and conclusions.

Tables: The number of tables should be restricted to those absolutely necessary, as numerous tables detract from the readability of the article. Each table should be numbered consecutively from 1 up and must have a heading stating its contents clearly and concisely. The tables are to be typed on separate sheets with their positions marked in the text.

Illustrations: Wherever possible illustrations shuld be made with pen and Indian ink for reproduction as line blocks. The name of the author, title of the article and figure number should be written on the back of each figure in blacklead pencil. Each figure should have a legend typed on a separate sheet.

Photographs: Photographs and wash drawings are more expensive as half-tone blocks are necessary. The cost of blocks is chargeable to the author of the article. Photographs submitted as illustrations should be unmounted, glossy prints of good quality, with strong contrasts, trimmed so as to include only the essential features to be illustrated. They should preferably be of the same size as desired in the printed paper. Photographs should always be packed flat, never rolled or folded.

Line drawings: Line drawings, and charts should be prepared in twice the scale desired in the printed from. All letterings, figure numbers and explanatory in graphs should be light face and large enough to be 1/16″ high in the finished illustrations.

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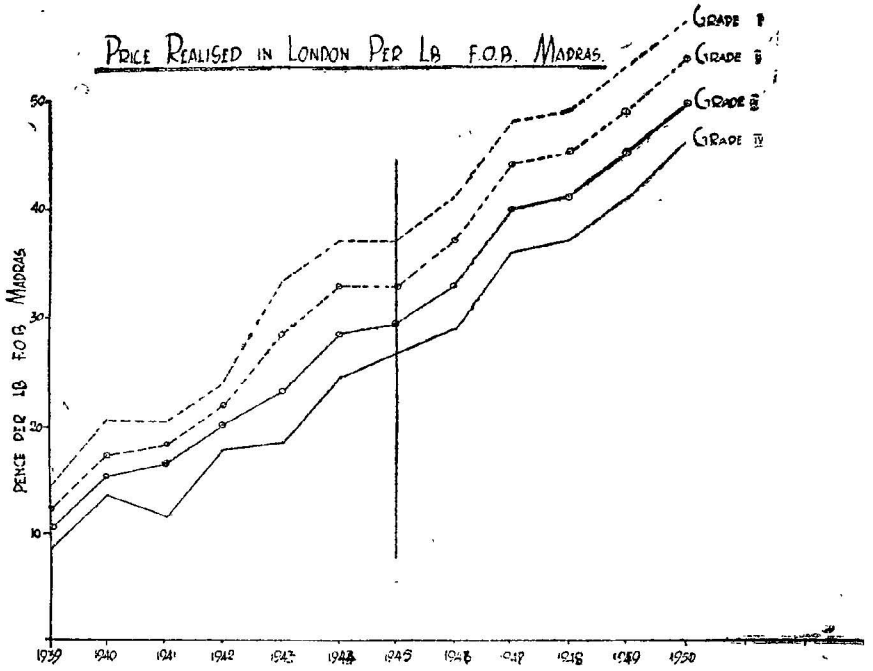
References: Roferences and reviews of literature should relate only to closely pertinent papers. The list of references should come at the end of the article, after the summary and should be arranged in alphabetical order of authors' names followed by the year of publication in brackets, and then the title of the paper, name of periodical, volume number in bold face type and then the page number, e.g. Darlingtion C.D., (1944) Heredity, development and infection. *Nature* **154**; 164–9. Abbreviations for names of journals are to be in the approved form as given in the World List of Periodicals.

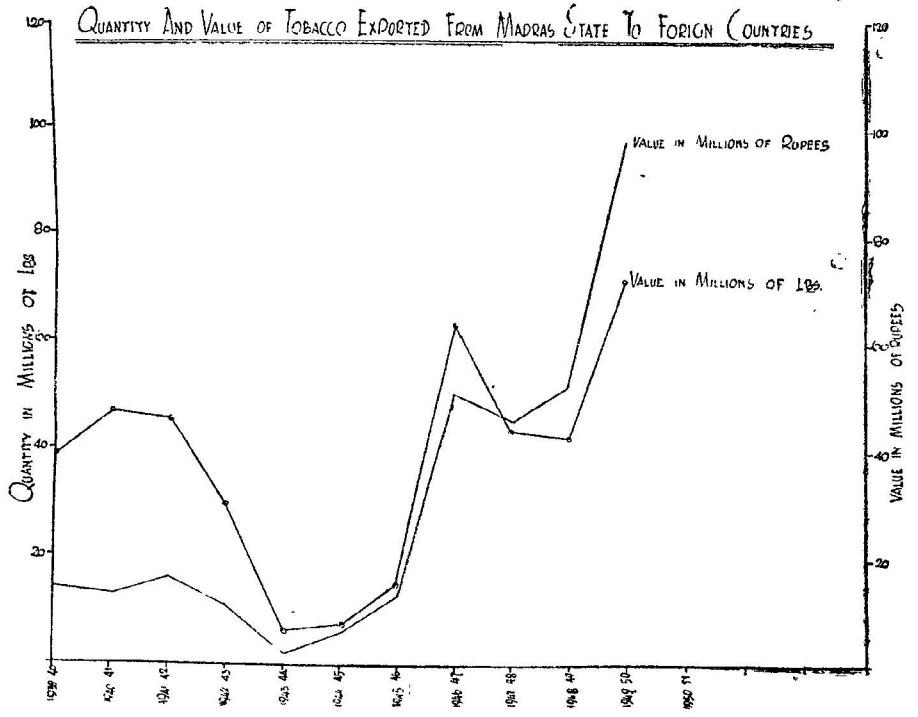
The responsibility for statements, whether of fact or opinion, rests entirely with the author of the article and not with the Editorial Board of the Madras Agricultural Journal.

Virginia Tobacco in Madras State

(By T. K. Viswanathan, M. A. J., Vol. XXXVIII, No. 11, p. 510)

GRAPHS I & II





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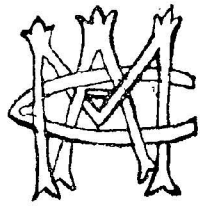

CONTENTS.

CIVILISATION OF LAWLEY ROAD

(As viewed in 5000 A. D.)

By

N. S. RAJARAMAN, Final Year, B. Sc. (Ag.) Class

The dispute was becoming proverbial. It even threatened to eclipse the famous Pickwickian Controversy.

It was all between Dr. Bluff and Dr. Muff: about the civilisation of Lawley Road: whether it was the civilisation of an educational institution or a lunatic asylum.

Now, it was not that Dr. Bluff had gone wrong or that Dr. Muff had tumbled into the correct. But the fact was that Dr. Bluff, after years of painstaking effort, both inside the laboratory and outside in the field, had come to a conclusion that Lawley Road should once have been the seat of an ancient, renowned, educational institution, ancient in its tradition and renowned for its achievements.

Great men were studying stones, mud, earth and all that: there were the beautiful collection of huge stones, tiny stones of various colors, lustre, streaks, specific gravity and so on. Again, the discovery of a certain inscription, perhaps the remnants of what once was a cemetery, had thrown much light on this angle. "Freeman Buildings"—Ah! What fine words! Buildings and that too belonging to Freeman! Dr. Bluff argued that these should have been the motto for the institution; Freedom for everybody, including Man. Even the buildings enjoyed a certain amount of freedom, in that they stood in a corner, detached from the main bustling town.

But, and a weighty "but" it was, Dr. Muff had stormed the entire world of historians by putting down Lawley Road, as a Lunatic Asylum now by gone. The very stones lying pell-mell, scattered here and strewn there, and exhibiting traces of torn-off skin, proved that stone-throwing had been a pastime with the lunatic members. It should have been the only pastime, perhaps, as other entertainments were definitely put down as harmful (said Dr. Muff).

And what about the collection of herbs with all its curious attractions? People had taken the trouble of squandering wealth on the collection, had given a name Herbarium, just as an eye-wash and had gone to the extent of preserving them. Well, said Dr. Muff, people in their normal senses would not have done that. Definitely, the lunatics were all perverts who had interested themselves in the art of healing with herbs.

Again, one found arrays of bottles, containing liquids, powders and all appliances that obviously, should have been maintained in the hospital. The microscopes were used to examine sections of the brains of the dead members. "What we now use for chopping up our vegetables, said Dr. Muff, "they had used for taking sections with".

Thus, Dr. Muff began aiming his thunder-bolts in unearthing the excavations of Lawley Road that was an asylum. And one fine day, he called for a meeting of learned historians, antiquarians, contemporaries and others and began that oration, with a variety of ingenious and erudite speculations on various evidences.

"We have found out layers and layers of boxes, piled up, containing insects of various sizes, shapes and styles. Perhaps, next to stone-throwing, this was a favourite sport. Please note that to the best member in this sport, prizes were awarded each year by a Great Lunatic. Well, friends, does not the fact that the insects had been crucified with their wings stretched and bodies pierced with sharp-pointed pins, the fact that the insects had been put to deliberate death by the use of some lethal substance, and the abhorrent action in trying to preserve these; do not all these go to show the barbarism and unworldy instincts that breezed through these out-of-the-minds? You see that there was a method behind their madness in that the insects had all been arranged properly, with a sense of decorum.

"Any reasonable being, will suspect insanity on finding some excavations of what once should have been a graveyard, in the midst of trees, trees in flower and trees in fruit. Do you think that any one with common sense will take it into his head to lay out a graveyard amidst those beautiful evergreen spots on the surface of Nature? Cannot they find out some better place to bury one's remains, or to fume them away. And as you know, those who do not come under this classification are grouped under the family *Lunaceae*.

"I have got some interesting information about the life these people led. The people were all lunatic, lean-witted fools. They used to assemble quite frequently in definite places and these assemblages were presided over by elder lunatics. There were quite a good number of such G. F's in the Asylum: and this, Dr. Bluff had mistaken for class rooms, and all that. You see that the younger lunatics diverted themselves with sleeping, chatting, howling and all that, while such assemblies were in function.

"A word about the women of this civilisation. The one thing that strikes all historians is that these women were not in the habit of smoking, Oh! what a ridiculous thing it would have been! If such were in our midst, they would have become our laughing stocks.

"The attitude of the male lunatics towards their comrades of the opposite sex, (who, by the way were not necessarily fair) differed widely. Some adored them, worshipped them in their heart of hearts, dreamt about them and in short, went mad over them. Some others despised them. Some did not care about them: and yet others allowed themselves to be mocked by their contemporaries.

"These divergence and variations, about the same set of material, are easily explained by the character of the worthies, namely madness.

"Let me conclude that Lawley Road did once witness the life the lunatics led. I say it because, of all the colours, they had chosen the red colour, the ugly, dirty and above all dangerous red colour to demacate

their holdings; because instead of cultivating crops to cater to the needs the country, they raised weeds, tended them and harvested them: because, instead of building up for a stable future, they were content with the debris of their broken past: and because, they were madmen by birth, wedded to lunacy and begot in madness.

"But remember, that the most civilised people are as near to barbarism as the most polished steel is to rust; and therefore there is nothing base in being called a set of barbaric, insane, lunatics.

"Let me remind you that it was an asylum maintained by their Government, for the Government, from the coffers of the Government".

With this beautiful ebullition of historical knowledge concerning what once went to form the much-disputed civilisation of Lawley Road, Dr. Muff carved himself a niche in the temple of antiquarians. And what happened to Dr. Bluff after this discovery, little is known about that. Perhaps his name doomed to the oblivion of those who cultivate the mysterious and the sublime.

THE VEGETABLE TRAGEDY

By

CHARLES RATHNASWAMY

Final B. Sc., (Ag.) Class

Darkness had fallen now. I could hear Velu's whistle somewhere behind the block. I didn't know why, but I was feeling lonely that day. I was thinking of the lecturer's remark "Even when you are asked while you are half asleep you must be able to tell"; ..... Oh! forgotten. Boring subjects. Let me go to sleep. Avooowh!

Then suddenly, like a prearranged signal for the commencement of some festivity – Bang! Not a sharp, exciting bang, but a dull one, as of a door. Very slowly I turned my face to the right and blinked. Nothing further happened. Near at hand my clock ticked disinterestedly on. I had a feeling that someone was walking in. Suddenly it came to my mind. I had forgotten to lock the door whenI last came in.

Now, I jumped from my bed and switched on the light. Oh! what shall I say! Seated on the table, surrounded by all my records, books, notes and all that I was associated with, was a young beautiful ..... Oh! where can I get words, with a mass of blonde hair flowing down over her shoulders. Her attitude was nonchalant, but as she met my gaze with a sort of wistful appeal, I was enthralled. From the moment in which my eyes rested on her face other considerations did not count.

She was a symphony of the country-side. She was an idyll of the bower. She was the rose of summer, full and sweet and beautiful, dominating all the dainty flowers of cultivation, all the exuberant blossoms of nature.

But why that appeal! Oh, cold wind, she must be suffering from something. I couldn't think. Before that she got down from the table and got into my bed and slowly placed her head on the pillow, closing her eyes.

I covered her slowly with my blanket. Suddenly it came to my mind, that the door was not closed. When I turned to close it I saw someone trying to peep inside. I hurriedly cosed the door and locked it inside. The man outside shouted, banging the door. Oh! perphaps he might call others also. So, I opened the door and switched off the light. I went out. It was Prabhu.

"What is going on, Raju?" he asked.

"Oh! nothing; but what are you doing here?"

"Oh! nothing? I was just coming behind."

"What! have you any idea of the time? Do you generally make a point of calling me up at midnight?"

"Oh! I didn't mean calling in that sense. I was just following!"

"Oh! say so, following her eh! Do you know her"

What! know her.! I have seen her face to face hundred and one times, all over the estate."

"Oh! I see. Well, I am feeling sleepy, let me go. Goodnight, Prabhu."

"What! before you say goodnight, just think how selfish you are. I have followed her for such a long time and I know her better than you. So she belongs to me more than to you."

"Oh! hell. That won't do. She came to me, so she is mine."

This started a long quarrel and was about to end in a fight when Gopi came and suggested a way out. It seems Gopi had overheard our quarrel. "Well! Raju, she has come to you. You have to take care of her. The best thing is to inform the man in that house where she lives. Till you come back we shall take care of her. What do you say, Prabhu?"

"All right! Not a bad idea. But with whom is she living?"

"Oh! One Mr. Puty."

"Poots?"

"Yea. P-u-t-y. There, that house, with the ideal fence around it with an iron gate painted green."

So after getting a promise from Prabhu that he would not shut the door, I went to the house where she lived. I halted near the door. I heard someone groaning inside. I just tapped at the door; suddenly came the responsive challenge of a long-drawn and rattling growl from inside. Awed by this, I stopped tapping the door, when suddenly a window above me was flung open. Stumbling over a flower-bed I looked up to see what had gone wrong. I could see a man up in the window looking down at me in a peculiar way for some moments without speaking. He then suddenly disappeared; only to return, adjusting his horn spectacles upon his broad, stubby nose. He then barked: Who are you?"

"I say, are you Mr. Puty?" I began.

"Who?" repeated Puty. "Speak out.!"

"I am a man that's got your....."

Before I could finish, he barked, "I do not care for you."

"All the more reason to come and take her back" said I.

"I have driven her out already" said Mr. Puty.

"Driven her out! in this night!"

"Yes, that is my expression."

"Good God!"

"Yeah! ..... Disobedience of my orders; only Nutts split."

"Nutts split!"

"She is my sister. She informed me about her."

"Oh! I see. But may I ask what she did – the disobedient act?"

"She ate worts".

"Did what?"

"She ate waterberries. A fruit I grow in my garden."

"She ate warts and Nutts split. What a vegetable tragedy! But you don't mean to tell me that you can drive her out for eating warts?"

"What is it to you?" again barked M. Puty,

"Look here, you can't do this sort of thing. Turning females out at night it is never done."

"It is done already now."

"But, dash it, I tell you I am alone in my room; and only one bed to sleep. Now she has come. It's impossible to keep her there."

"Well! If she expresses regret she may come back. If she doesn't, all right. Good night."

"It's you who ought to express sorrow. What's she done to be driven out like this? Simply because she ate some worts –"

Mr. Puty's voice became more obstinate.

"It is not only but she ate worts. It is that she disobeyed."

Just because she ate a few worts when you told her you'd rather she didn't, you're prepared to lose her altogether and to hand her over to the first stray man that happens to be about?"

" Absolutely ! Order. To obey. If not, split."

" She will split ! if you are not careful, I'll help her."

" Get out."

" I've a good mind to send for the police and have you run in " I said.

" And I," he cried, " have a good mind to unchain my dog and have you run out."

" All right, if you want me to keep you ....."

" Before I could finish he barked "Ge outt ! "

" In my house..."

" Get out ! "

" In my bed !..."

" I'll let loose my dog. It shall run you out, biting strongly." At this Mr. Puty vanished. Lights shot up within the house. Into the barking of the dog crept the note of high-pitched delight characteristic of wild animals.

Again tripping over a flower bed, I returned to the gate. I could hear the sound of rattling door chains in between the expectant yelps of the dog. I suddenly turned to run with an airy dignity. Faltering footsteps sounded in the rear, like the ghostly march of dead drummers ; the dog had ceased to bark ; instead, a most delightful and dreadful haunting sound of nasal whistling fell upon the ear. With a sudden bravery which surprised myself, I halted and swung round.

" Look here ! " Mr. Puty, a monkish figure in his dressing gown with a cowl, merely jerked the dog by the leader and stopped to release it, muttering, at the same time, some sinister jabber understood only by the dog. " Phorr – putta – putta – phorr – putta – putta – phorr ! "

I hesitated no longer. I ran like a fiend till I reached the hostel and fell flat into the ditch, and to my surprise, I didn't see the dog following me. Once more I managed and struggling up, I went to my block.

" Hallo "! called Gopi, "what happened ? "

" I think you might have told me about the dog."

" Oh ! I am sorry. Did he actually let loose the dog ? "

' What ! It was following me like hell."

" I am sorry. And what did you do ? "

" Well ! what do you suppose ? "

" I mean about here ? "

She ? The only thing I've decided about her is that she is not going back to that drone even if she wants to."

Now someone laughed from behind at me. I turned to see. Balu was winking at me. I was feeling uneasy. Understandingly Gopi started.

" Now let's face the facts. Here is Raju, a bachelor in his room all alone. She blows in, a condition which makes it impossible for us to push her out. So let us decide calmly what we're going to do about it."

Then I began "Don't misunderstand me, I am only too willing to help her. Meanwhile if the warden comes to know of this he will send me out of the hostel. But this seems rather like asking for trouble all round.

"Prabhu! directly I get up early morning, I shall go and see the warden and settle the matter.

"Raju, you sound like a perfect darling for her."

"So that is settled. Good night, boys."

With this my friends left my verandah; I opened the door quietly and switched on the light.

Oh! I could hear her soft breathing. I didn't want to disturb her. Too many thoughts passed over my mind. I didn't want to lose her. What else can you do!

I passed that night in the ante-room. I didn't know when I fell a sleep. Next morning I got up and saw the warden coming to my room unwillingly. Gopi seeing me from the bathroom shouted at me "Ou! Raju, where is she!"

"Don't be an idiot. Tell us what happened. Word by word."

We went home. Warden started asking me what happened and all that. But when he looked at her, he said "Oh! marvellous! where did you get her?" I said she was loitering near the verandah early in the morning Sir, and so I brought her here for you, Sir. For that he said "Thanks, Raju, I was looking for a male dog. Even then I wouldn't like to lose this animal."

"Oh!, hell! It is only a dog after all!" shouted all around me.

"DREAM or NOT"

By

K. RAJAGOPALAN

A marriage has been arranged and will shortly take place ..... perhaps it will, but it is not as easy as all that. Even though marriages are sometimes made in Heaven, the details must be filled in by us, poor mortals, on earth. That is why it is important to order the dress, the jewellery, perfumes, flowers, all in good time and of course from the best shops.

In the case of our hero his marriage is celebrated twice in his life with the same girl—once in his dreams and again, if I remember right, in the year 1250, month December, date the 22nd.

Rajan, a young student, a talented actor, an eloquent speaker, the best musician, a gentleman 5 ft. 7½" in height, 140 lbs. in weight, was born in the year 1928 December 22nd, if I remember right, as the heaven-sent son, of Mr. Ramachand, leading advocate of the city.

Mr. Ramchand is a man kind at *heart* and for his *part*, he has his his wife Mrs. Chand Bibi, the loveliest of women and affectionate mother among mothers. At the corner of 'Elliot's Road', a beautiful bungalow is situated, surrounded by four walls with creepers of which 'cat-nip' predominates. Inside the compound, the bungalow is situated in a grand manner. The hall is decorated with long colonnades, fretted pillars and scarlet silk hangings. At the centre, in keeping with the fashion of the day, there hangs the tube-light throwing flash and colour. To the right we see the drawing room of Ramchand. The hanging mercury lamp, the never-stopping ceiling fan, three tall bureaus full of law journals and books such as A. I. R., M. W. N., Cr. P. C., etc., a big table covered with serge cloth on which some books, a pencil-pen stand, a book by H. G. Wells, two books on philosophy and a letter pad, rubber stamp etc., are the main features of the room. For Mr. Chand there is one rotating cushion chair such that he can command the whole room and for the guests there are a dozen chairs surrounding the table.

Mr. Chand is deeply engaged in Madras Weekly Notes as he is to argue a case the next day for Miss Ratnamala, a film actress, a good dancer and a budding star, against her mother Mrs. Indra Varmarajan. This Varmarajan is the second husband of Indra, a young man who will resemble—why resemble; looks like as her son.

Mr. Chand is present there, but his mind is in the abode of Mrs. Indra.

At this critical time (in the lover's language) Mrs. Chand enters with a glass of milk, shattering the airy castles of Mr. Chand and says "Which fort are you aiming at? Take some milk first, it will give you some energy". Mr. Chand: "Ho Bibi! I was just thinking about tomorrow's argument. Come and sit here."

Mrs. Chand:— "Baba! What about Rajan? You are not taking care of him nowadays. He is aged enough to be married."

Mr. Chand:— "What? aged! many girls are nowadays still remaining unmarried even at 25. When such is the case what is the hurry for Rajan?"

Mrs. Chand:— "It is not so. My brother won't wait for his daughter's marriage. I intend to celebrate the marriage with Malini, my brother's daughter. What do you say to it?"

Mr. Chand:— "I have no objection, but there is no hurry for the marriage just now."

* * *

If I remember right, in the year 1949 Dec'—Oh! what the hell, why should we be particular about dates and days, on a heavenly Christmas vacation. Let us leave it at that. Of course hereafter only our hero Rajan dominates the story. This was the day, a happy day, the day he meets his love, he meets his sweetheart, the day he comes in contact with his better half, his dream beauty, and the day

prominent in the history of India (of course from Rajan's point of view) since it is Rajan's birthday. Perhaps he may attain prominence, in the annals of Indian History; for when his student days are over, is he not to thrill the audience with his voice and acting; is he not to snatch the platform from the chatterboxes of the present day, and revolutionalise the entire face of his dear country. A day previous to his birthday Rajan goes as usual to the Triplicane beach and after spending some time there, he moves towards the Marina canteen to take some light refreshment. He gets in, and goes to a corner from where he can have a view of the beach and its surroundings. He goes and sits in a comfortable chair, but to his great surprise, he sees a vanity bag and a handkerchief on the table. He wants to find out the owner of these two things. He orders plate after plate, drink after drink. An hour passes but no one comes there claiming those two articles.

Rajan now opens the bag and to his great astonishment he sees a card bearing the name—

"Miss Ratnamala,
Dancer & Film Actress,
17, Edward Elliot's Road,
Madras."

and in the backside of it he sees the following details.

Height:— 5′ 6″.

Weight—137 lbs.

Chest—36″—38″.

Hip—26½.

Age—(blank—as usual in the case of a woman, especially an actress.)

Phone No.—84167.

Car No.—MDU 2525.

Immediately he comes to the box office, that is to say, the proprietor's table of the canteen and takes the phone and rings up no. 84167.

Exchange:— Number please.

Rajan:— 84167. please

Exchange:— Engaged.

Once, twice, and thrice, at intervals of ten, fifteen, and twenty minutes the reply is still engaged. Our fellow Rajan thinks "I'm sure I'll be an old man, by the time I get this number." He goes out of the canteen and makes a careful survey of the cars, seeing the numbers, one after another but there is no car with No. MDU 2525. He loses patience and returns home. On his way at the corner of Pudupet and Elliot's road junction, he sees a car with MDU 2525 with a young and beautiful girl inside it. He walks as fast as he can but as ill-luck would have it the car starts and moves away. When it comes near him, the girl peeps out, smiles, and winks at him. (Here the readers can imagine the personality of Rajan, after coming to know, that a young beautiful girl in her teens, smiles and winks at him.)

Rajan, falls in love with her at first sight and returns home all the way thinking about the girl. He is not quite sure whether she is Ratnamala, or her sister, or friend, or the daughter of Ratnamala (as some actresses take leading roles even at the age of fifty or so), or the neighbour "pesting" on her car—like some students "pesting" on other's bikes. He spends the night without peace of mind, or sleep, and with many sighs—in the words of great authors of love stories.

Next day as usual, but an hour earlier, he goes to the beach with tweed suit and evening hat. After sometime he goes to the Marina and to the usual place and orders fruit salad and waits for its arrival. But luck instead of salad, appears in the form of the young girl, who smiled at him the previous day. The girl comes directly to his table, sits in front of him and throws a smile at him. An old woman also follows her and gets seated by her side. She turns towards the old lady and says, "Ayah, ask the server whether he saw my vanity bag and kerchief." Suddenly Rajan replies "Ho! Are you that famous Ratna, and is this your bag? The handkerchief is inside."

Ratna:— "Yes, thank you. May I know your name, please? This lady is my Ayah."

Rajan: "I am a student and the son of an advocate. My name is Rajan."

Ratna:— "Oh! good gracious! If at all I marry, I'll marry only a man like you. I love you (the server comes with the salad and she orders for two more salads, three badam halva, three Delhi Darbar, three Deradun Kitchadi, three Conjeevaram idli, three ice-water, three ovaltines, three beedas and a packet of Gold Flake with match box. (The last item is for Rajan alone).

The bill comes to Rs. 6—14—0. our young Rajan has got only a five rupee note. But as nature would help him, Ratna pays the bill and they go to another place on the beach. The Ayah is sent home in advance to prepare dinner for Rajan. The love begins like this and Ratna promises to marry. Rajan swoons with delight. That night he tells a lie to his mother that he dined with Rajaram in Park town.

Rajan knows that Ratna is his father's client, but he never tells his father's name to her. The love begins on the Marina and it travels from Adyar to Aminjikarai, Pudupet to Parry's Corner, Midland to Mylapore, Casino to Connemara, Race Course to Radio station. All this takes place in MDU 2525. Every day they meet and every day they part. But the love moves without friction, obstruction or any impediments.

One day when his mother mentioned Malini, her brother's daughter he said "No hurry, for my marriage, mother, I will marry only after my education is over." But he never tells any one of his love towards Ratna and the proposal for their future marriage. Ratna also does not know that he is her advocate's son.

Rajan's mother also met Ratna many times and had talks with her. She appreciated her talents, beauty, and envied her wealth and every time Ratna come, Rajan's mother used to sigh "Why can't she be my daughter-in-law. She is not like other actresses."

One fine evening, Rajan dresses to go to the Marina. A car comes and stops in front of his house, the same MDU 2525. Our hero runs inside and hides himself. Ratna comes in and garlands his father; both smile at each other. Rajan could hear only some words . . . case . . . success ..... laughter . . . father . . . . shakes hands with her. . . . Rajan with a suspicious look, comes in. She runs away, he cries "Ratna! Ratha! Ratna!"

Now the door of Rajan's bedroom opens. Mother says "Hallo! Bapu! Bapu! What is all this! You were dreaming, is it not? Who is Ratna? Rajan gets up from the bed and reveals everything about his dream and his love towards Ratna. Mother also feels glad over it on hearing that Ratna is ready to marry him. Father also feels proud of himself that he is garlanded by Ratna over the success of the case. No doubt the case is a critical one. So any lawyer can be proud of himself.

Next day morning, Mrs. Bibi urges Mr. Chand to go to Ratna's house and fix up the marriage. Father goes to her house but she refuses to marry his son, since she has already consented to marry another. Father returns home and tells his wife everything. On hearing this Rajan cries "Rogue, traitor, let her die. Let her art seek the burial ground."

The same day evening, Ratna dresses herself and goes to the beach but is disappointed to see no trace of Rajan. So she has to return home. On the way, she goes to the lawyer's home. At that time Mr. and Mrs. Lawyer are discussing about sending Rajan to England at the end of the year. Rajan is upstairs.

Mr. & Mrs. Lawyer welcome Ratna much against their will. Ratna takes up the album kept on the table and on seeing a photo of Rajan, cries "Ho! Rajan, you are here," and she turns to the lawyer and him how he managed to get a picture of Rajan, to which the lawyer answers, "He is my son".

Ratna:— What? Rajan, your son! You are then my father-in-law. I did not know, you were his father . . . . . She runs inside crying "Rajan; Rajan!"

Rajan comes down and enters his father's room. On seeing her he turns back, but Ratna rushes towards him and catches hold of him saying "What Rajan, you never told me that my lawyer is your father. This is the reason for your misunderstanding. Rajan, I will marry you. Please do not leave me."

Now the hero smiles. The marriage date is fixed as December. 22nd, the birthday of Rajan. He goes back to his college at Coimbatore. He is eagerly waiting for December 22nd.

Rajan one day after seeing Ratna's recent picture, returns to the hostel, and sleeps. * * *

"The marriage celebration is going on in Ratna's bungalow on a grand scale with an expenditure of many lakhs, under the immediate presence of Hon'ble Ministers and prominent personalities in all walks of life. Athangudi Srinivasa Iyer's musical performance is going on, to be followed by Malli and Suppi dance. During this, Rajan sees Ratna and says—"Dear Ratna! Ratna!—Ratna! ..... Now ... "Dai Raju! what Ratna! she will come only after December 22nd. Fool! get up, you fellow, you lazy brinjal, the time is 6-30. We have got our class at 7 A.M. Get up you pumpkin" Seenu cries.

(Of course, now it is clear that Ratna's marriage is a dream, even though the marriage between them is sure. Long live the couple, Ratna—Rajan).

Rajan gets up from his bed and says to Seenu, his room mate, "Dear Seenu, it is only a dream.

Let it be true, whether dream or not

Oh! God".

Rajan goes to the bathroom to wash his face and clean his teeth.

"MARY'S NEGLIGENCE"

By

J. CHANDRA MOHAN, B. A.,

I was pedalling back home rather slowly, late in the evening, that day when Gopi stopped me in front of the Ideal Cafe and took me inside, much against my will. We were soon engrossed in chatting over a cup of coffee. It was very late before I could resume biking.

My house stood well back from the main road but quite close to an obscure lane. I always use the back way, entering from the lane, when the wife is at home. But to-night I should have entered the house by the front door because she had gone to one of her social meetings in the Women's Club. I always carry the front door key, with me but tonight ..... suddenly I remembered and turned in my tracks, only to stop again I heard the voice, rather a deep voice it was, and it came from the house!!

The obvious thought struck me in a flash. Thieves ! ! Burglars !! Neverthless I crept closer to make sure, pressing my ear to the window I listened. I heard a voice " Not so much noise, Hush ! Fool " it said and then it went off into a deep string of muffled curses, when with a faint crush I heard my favourite vase, the one I had brought from Bangalore, end up in small pieces on the carpet. A much lighter voice whispered. Keep your gun and revolver handy, just in case .....!!! "

Suddenly I felt a bit queer, sort of hot and then cold all over. Of course, I was not scared, not a bit. It took but a matter of seconds for me to recover and retrace my steps as quick as possible and as noiselessly as I could. I hesitated. To tackle them alone will be suicide. Two men with guns and revolvers against me, unarmed !! It was preposterous yet ..... Yet ..... I could not let them get away with it as easy as all that.

If I went off in search of the police they might be gone when we get back. If I waited here in the lane, it might he an hour before any one came along. I sighed deeply and turned into the main road. But suddenly, I was again on the path leading to the front door of the house. I still do not, understand why I did this, for I had not the slightest intention of tackling them alone. This time I pressed my ear to the key hole. A cold breeze buzzed in my ear. This time no voice was heard.

No doubt, they would have Mary's jewels and savings in the big almirah we had. But now I heard approaching footsteps. My heart missed a beat then. But soon I sighed with relief when I realised it was some one coming down the road. Then I literally flew along the road until I recognised the lean figure of Balan coming towards me. I lost no time in narrating the situation. He was for going and righting it out, but I warned him saying that the Burglars carried guns and revolvers. He stopped short.

" We must get the police, and they must be armed too. " Balan took my bike which was near the gate and started off to the Police station. I moved on to a corner from where I could see the front and back doors and the road.

The Police were there in a quarter of an hour, I knew it was a Police car the moment I saw it. An Inspector, a Sub-Inspector and two constables jumped out. The Inspector and Sub-Inspector carried revolvers and the constables gripped their 'lathies' firmly in their right hands.

Quickly I rolled off the story. I was feeling much better now. I even smiled when Balan corroborated my statement.

The Inspector was a man of action. He directed the Sub Inspector, one constable and Balan to the rear of the house. The other constable and myself accompanied him to the front.

" We'll break the door in " he said tunring to me. I agreed. Immediately we drew back on the path. " I'll count three " whispered the Inspector " at the word, three, all rush together."

"One.....two..... at the stroke of "Three" we rushed forward into the room along with the other constables. For a few minutes there was silence. I heard a click and the room was flooded with light. There was nothing seen out of order. Even my vase still stood on the table in the corner!!

Suddenly the Inspector glared at the radio close by the window. The dial was still lit up. Before he could speak, the voice of the announcer filled the room. He said "This is All-India Radio; you have just been listening to first Act of the Drama, Murder at Midnight". Act two will be broadcast at this same time next week on Monday!!

Silly girl, Mary had gone out to her club, without switching off the radio.

WIT OR TIT BIT

By

S. RANGANATHAN

Wit or humour can be defined as an expression of man or woman, in the simplest form possible which produces the highest state of excitement and a general pleasure. It goes also by the name of TIT BIT. Tit has practically no meaning by itself but when combined with BIT it assumes a unique prominence. Wit without sense is like a razor without a handle. Brevity is the soul of wit. It is generally believed that the human characteristics are governed by certain humours in the body. A man may be soft or angry, jovial or serious, happy or gloomy. These traits of character are attributed to the predominance of the particular kind of humour responsible for it. If the humour responsible for a particular humour is dominant over the other humours in the body, he or she is said to be a wit. Witticisms are of different kinds. Some may produce peals of laughter, some others merely a laugh, still others only a smile and lastly there are certain kinds of homour which provoke anger.

Simple humour is one which, as the name implies, is as simple as itself. Spontaneous humour is the immediate outcome of the human expression without any thought or design. Laboured humour is exactly the opposite of this.

Sarcastic or caustic wit is the most dangerous type. It is attacking a man or woman by taking advantage of either his or her character or other mannerisms. Ironical humour is not so dangerous as the former. Pungent humour is also not desirable under any circumstances. Humour arises also out of sheer ignorance and absent mindedness. Due to ignorance and absent mindedness people say something which produces laughter. Punning on words: two words of different spelling but same pronunciation are employed to bring about a funny situation in the

worst of circumstances. This is common among literary people as it requires a high intelligence. The dramas of Shakespare provide nemerous examples of this type of humour. Exaggeration and under statements sometimes excite laughter.

High class humour : This is the highest type of humour which does not produce laughter instantaneously. A little bit of thought has to be bestowed on it before getting at the meaning. Such humour cannot be enjoyed by all. Unexpected humour:- In following the trend of an event or narration we may expect something at the end. But the ending may have a different turn, quite contrary to our expectations.

Anything that does not fall into any of the categories just talked of so far, comes in the group "KADIR WIT". This is the lowest type of humour that produces not even a smile. It sometimes produces anger.

Examples of these types of humour are given below. Will the readers please put these tit bits in the proper group? Never mind if you are a bit wrong, for bittism is always pardonable.

1. She :- If you tell a man anything, it will go in by one ear and out of the other.

   He :- If you tell a woman anything, it will go in by both the ears and out of her mouth.

2. (A weak man is bowling in a cricket match).

   Spectator :- Who is he, that bowler ?

   Student :- He is the champion of the college team !

3. Naturalist:- What is the length of rope required to reach the moon ?

   Philosopher : As long as it is necessary.

4. One - Who is better, physician or surgeon ?

   The other - The former, because in his case death is immediate.

5. Lecturer :- Can you tell me the symptoms of Ranikhet disease ?

   Student :- The most characteristic symptom is that the combs and wattles disappear.

6. Tit :- The girl who joined this college last week left for the medical college abruptly.

   Bit :- Probably she has seen you first in this college.

7. Gopu is the last boy in the class. He enters the class late. The teacher abruptly remarked, " Here comes the gem (germ) of the class.

8. Judge - Holding a staff said, " The man at the end of the rod is a rogue."

   Accused :- Which end, my Lord ?

9. A young lad rushed to the train which was about to start and said, "Is the Noah's Ark full"

A voice :– We are all here except the ass. Please come in.

10. Professor :– What is pasteurisation ?

Pupil :– It is the process of converting waste lands into pastures for the grazing of dairy animals.

11. Mathematician An express train is running at the rate 40 miles per hour on a level bridge 320 yards long. What is the name of the driver's wife ?

Student :– Mrs. Jones.

Math :– How do you know ?

Student :– I know the driver ?

12. The house-owner saw the milkman adding water to the milk, called him and said, "Why do you add this water ? If you had asked me, I would have given you hot water. It is more healthy".

13. Teacher :– Is rinderpest a virus or bacterial disease ?

Student :– It is a bacterio-virus disease.

14. Manager :– What is the matter ? You are always coming to the office one hour late.

Clerk :– Sir, my coming to the office late by one hour is compensated by going an hour earlier.

15. Gopu :– Where is the caterpillar which I had placed here just now ?

Mohan :– I dont's know, probably it has flown away.

16. A learned lecturer entered the biological laboratory, assembled the students near the dais and, "Today, you have to dissect out the microscope and examine it under the seed."

17. X : Will you please open the door, my dear ?

Y : I am sleeping.

18. Once a Scotchman, an Irishman and an Englishman had to pass through a desert. They had a bottle of water with them. According to the arrangement, the Englishman has to take the first third, the Irishman the middle third, and the Scotch the last third. After sometime the Scotchman became thirsty and drank up the whole water. The others got angry and asked him, "Why have you drunk the whole lot ?".

He coolly remarked, "I am entitled to the last third. In order to get at it, I swallowed the first two-thirds."

19. Fun :– Of all the games in cards, Bridge is the most intelligent game.
Frolic :– Then, I am sure, you can't play that.

20. Kumar :– I told Ramu that "Great Expectations" is a very fine picture, but he does not seem to entertain a good opinion.
Chinu :– What does the ass know about the camphor smell ?

21. Sukumar :– Gopal ! I am in love with Susil.
Gopal :– Your dhall wont't boil there, she is already married.

22. Student : Sir, what is the name of this caterpillar ?
Lecturer :– Is it a caterpillar or a centipede ?

23. Bob :– Mr.....the weather is cold, I can't stir out.
Oob :– You strike a Kadhir wit, it will become dry.

24. X : What are you munching, man ?
Y : Betels.
X : Beetles or Bugs ?

25. A gentleman in tweeds driving a car having lost his way, enquires a seargent at the cross roads.
Seargeant :– You go this way Sir – You will cut a road running at right angles to this. Take the road leading to the west. You meet a constable near handpost.....
Gentleman :– Thanks.

26. Mr. Librarian ! Have you got "Life" ?
It is out, Sir.

MY MAIDEN FLIGHT

By

G. THULASIDAS, Final, B.Sc., (Ag.) Class

I was sitting up into the night ; I saw the old day expire and the new one being born. There was no one else awake in the whole hostel – not one light burning in a hundred and thirty-nine other rooms.

Sleep – elusive, fickle sleep – would not come. I lay in bed, restlessly tossing to and fro. At last, realising that sleep like a fickle maiden comes only when unsought, I rose from my bed and stood on the verandah.

All the myriads of stars were shining in the sky as brightly as they did in the beginning of the world, and they shall continue to twinkle to the end of time. So beautiful and so majestic in their splendour !

A soft, cold breeze sprung up. It gently caressed my cheeks ; how delicious it was, and fragrant with the scent of jasmines in front of the verandah.

A few lights began to shine in the hostel; some students were already up and at work. I glanced at my watch. It was four; just a few hours ahead to fulfil the long-cherished idea of travelling by a plane.

At half-past eight my three friends and myself left the hostel, by a Studebaker Champion. We reached the Air-India Office in just ten minutes, to see that the Air-India Car was waiting for us. When the formal ceremony of taking our weight, as well as that of our suitcases, was over, we stepped into the car.

We reached the Aerodrome at 10 O'clock. The plane landed at 10–20. From the hostel friends had come to see us off. We shook hands with them and amidst shouts of "Cheerio" we entered the plane. The plane hissed, took a round on the concrete road and soon we were up aboye the world.

We saw cattle grazing near the road, buffaloes that refused to move and walked as slowly as if all the road and time Itself was theirs, great tanks full of lilies and lotuses – and every scene with a charm of its own.

The Railway Station, the hundred and one mills which are scattered over the Manchester of South India, were very soon out of sight.

The young charming Air-Hostess offered me a toffee and a cup of coffee. How different the latter was, from our hostel coffee which is a decoction of dubious ingredients, of fluctuating colour and odour, and a remote, perhaps illusory suggestion of milk.

We were flying at a speed of 120 miles per hour. Far below us were blue-black mountains and evergreen forests, streams and rivers trellising the land, placid lagoons, backwaters lined with coconut palms and dotted with verdant islands, paddy fields stretching to the horizon, – and a wonderful variety of scenery.

The plane slowly came down. We flew over squalid villages of small mud huts, with children playing in dirt, over towns where beggars crowded round at every halt. The dirty dwellings, the naked people, the starved cattle, – the land is smiling but her children suffer. We saw the mighty waves rushing to the sandy coast and the ships anchored in the calm harbour.

In another minute the Dakota landed at the Willingdon Island Aerodrome and thus ended our maiden flight.

A TRAGEDY OF ERRORS

By

SADHU

The news that Raju had fallen in love came as a bolt from the blue even to his intimate friends. No one had expected such a thing would happen. Some how Raju did not appear to be of that sort to go and fall in love. At least he did not look like it. But the inevitable had happened and Raju was really in love.

He himself could not say how all began. One fine evening as soon as the dull and monotonous lecture in Agriculture, was over, he went to the Nirmala College to see his sister who was studying there. He was

asked to wait in the visitors room. Raju had a hell of a time waiting there – flocks of girls passed by that room staring at him as if he was an unusual specimen. While he was sitting there and fidgeting nervously, a girl entered and asked him in a sweet, soft voice, "Whom do you want to see, please?" Raju looked up and suddenly he felt a strange sensation. He forgot even good manners and involuntarily stared at the girl. How beautiful she was. Raju was sure he had never seen before such a girl. Soon he woke up from his reverie and realising the awkward situation, blurted out, "Oh! I want to see my sister, – I mean, I want to see Miss Leela" Quite involuntarily his left hand plunged deep into his trouser pocket and his right hand began to twitch at the funny knot of his necktie. The girl, ignorant of his nervousness, knit her charming eye-brows in perplexity and asked, "Thangam, which one do you mean?" Raju summoned up all his courage and replied. "I mean K. Leela of junior inter."

"Oh!" exclaimed the girl as if wisdom had suddenly dawned upon her. "Please wait a minute. I will go and call her."

After a few minutes Raju's sister arrived along with that girl "Hallo, Raju", his Sister began, "Sorry I kept you waiting.....By the way, this is my friend and classmate, Miss Sunatha." And Ramu brought together his palms before his face and murmured "Vanakkam." That was how Raju came to be introduced to Sunatha.

Needless to say, Raju returned to his room and spent a sleepless night. The figure of Sunatha, her charming eyes, her rosy dimpled cheeks, her red lips, and her slim and slender form began to haunt him. He realised that he had fallen in love with her. He realised that without her his life would be a barren desert, devoid of all earthly pleasures. Alas! He did not know how many barren deserts she had created so far!

A few days later, he received a letter from his sister asking him if he would like to go with her to pictures. By then Raju had come to know that his sister and Sunatha were inseparable friends and his 'sixth sense' told him that Sunatha also would be coming along with his sister. So, on the appointed day he hurried to the theatre and there, sure enough, were his sister and Sunatha waiting for him. He bought tickets and they all entered the theatre. It was by pure chance or luck if you please, that Sunatha happened to sit by the side of Raju. He seemed to be deeply engrossed in the picture. But Raju was not a bit interested in it.

If you had a asked him what the title of the picture was, he could not have told you. Suddenly Sunatha dropped her kerchief, and Raju gallantly picked up and handed it over to her. While doing so his hand touched hers and he felt she distinctly pressed her fingers against his palm. A peculiar thrill ran through his veins. "Can it be true" he thought, "Does she love me" Why not? He began to imagine himself in the role of Romeo. Suddenly the lights were on and Raju realised with a shock that the picture was over. He returned to his room.

Raju lay awake thinking deeply. Something must be done and pretty quickly too. He could not tolerate this suspense. But what to do? "Why not write a letter to her?" he thought. But supposing she had not really pressed his palm, and the whole incident was only a

figment of his imagination? Supposing she hands over the letter to his sister! Sunatha would surely write to his father and then.....? He shuddered to think of it.

Raju was essentially a man of action. He got up the next morning and taking an attractive hostel letter pad; wrote as follows:—
" Dear Miss Sunatha,

You may be surprised to received this letter.....well, I don't want to beat about the bush. To put in plainly, I love you. Without you I simply cannot pull on. You are the light of my heart....." It went on in this strain for about 6½ pages and finally concluded. "..... For Heaven's sake don't show this letter to my sister. If she comes to know of it, I will be doomed.....I will call you on the phone tomorrow morning at 10 o'clock to know your answer. I fervently hope it will be in the affirmative....." He wrote another letter to his sister. placed the two letters in blue envelopes, addressed them, one to Sunatha and the other to his sister and posted them.

The next day dawned. Raju felt as if he had to face his Waterloo that day. He began to pace up and down in his room nervously. He finished breakfast hurriedly, stepped in the phone room after due salams to the bearded Sarma, to get the phone key and rang up.

'Hallo'! He called,

'Hallo, whom do you want, please?' asked the voice from the other end

"I want.....er.....Miss Sunatha of junior inter class.

The receiver was visible shaking in his hand. His whole body itself seemed to be shivering.

"Hallo" came the voice from the other end. "Who is that"

It did not take long for Raju to understand who was talking.

"Hallo, Miss Sunatha", he replied, "it is Raju, it is about the letter that I ....."

"I have given it to your sister"

"Given it to my sister?", Raju echoed incredulously.

A chill ran down his spine.

"Yes" replied Sunatha, "This morning I got a letter to me of course – but on opening it I found your letter to your sister. I handed it over at once to your sister. I think ....."

Raju did not hear the rest of it. His head began to swirl. The truth dawned upon him slowly.....He had wrongly addressed the envelopes.....And at that very moment his letter to Sunatha was in the hands of his sister.....

"My God!" He whispered hoarsely and replaced the receiver with with a bang.
