

Journal of the Madras Agriculture

Students Union

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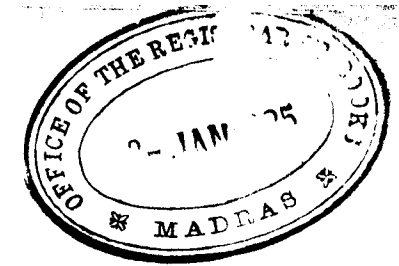
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OPINIONS.

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Journal of Agriculture (Dusa.)

The writer shows a genuine appreciation of dairy conditions in India and the book is certainly a valuable addition to the scanty literature available concerning the Dairy Industry in this country. The general principles applicable to Indian Dairying laid down in the book are sound and well and clearly stated. The book can be recommended as a suitable text-book for agricultural students and for all interested in the dairy industry in India.

THE JOURNAL

OF

The Madras Agricultural Students' Union.

NOVEMBER.—1924.

CONTENTS.

Milk Supply for children in Municipal Areas.	
—By M. A. Balakrishnan, L. Ag.	... 411
Sunhemp (<i>Crotalaria juncea</i>) cultivation at Nileshtar.	413

EXTRACTS:—

The Stone Rejected	... 415
The Thinker	... 418

REVIEWS:—

Tamarind as a source of Alcohol and tartaric acid.	419
Some digestibility trials on Indian feeding stuffs...	419
Michigan Agricultural Experimental Station	420
The Agricultural Gazette of New South Wales	420
The Farmer and Stock breeder	420

Gleanings	... 421
Students' Corner	... 429
Estate News	... 430
Departmental Notes	... 431
Queries and Answers	... 432
Union Activities	... 433
Editorial Notes	... 433
Correspondence	... 435
Departmental Notifications	... 435

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If not, send in your correct address.

THE JOURNAL
OF
**The Madras Agricultural Students'
Union.**

Vol. XII.

NOVEMBER 1924

No. 11.

Milk Supply for Children in Municipal Areas.

M. A. BALAKRISHNAN, L. AG.

It is well known that the supply of milk in most towns and municipalities is not at all satisfactory and that the present supply of milk especially to our children is very harmful in that it is responsible for causing a number of diseases.

It is common to see in towns, cows being milked in front of houses and this milk is purchased by a few well-to-do classes only. It is not within the means of every parent to get his supply of milk like this. Even there purchasers satisfy themselves that the milkmen do not adulterate milk but neglect the fact that the milk is contaminated by the road dirt and dust.

It is no wonder therefore that all poor parents depend upon the milkmen for their supply of milk—milk drawn in unhealthy and insanitary locality—milk that is carried in vessels through streets and lanes impregnated with dirt and dust—milk that is adulterated with impure water and at times also with other agents like flour water. Under the circumstances it becomes the duty of the town authorities to see to the supply of genuine milk under sanitary conditions at least to our children. I venture to suggest a scheme therefore with the conviction that at least one of the municipalities in our Presidency will give this a trial with modifications to suit local conditions.



76
J. J. M. S.
1924

The details of the scheme are :—

1. All milkmen in municipal areas should be compelled to take a license for their milch cattle and the license fee should be nominal not exceeding Re. 0—8—0 per head for a half year.

2. A few important centres within the municipal area should be opened and these centres should be at least one fourth of an acre in extent with facilities for extension as occasion arises. The number of centres required in a municipality may be determined according to the demand of the milk supply and also of the population especially of children.

3. Each centre should be enclosed preferably with mud compound walls and should be provided with a trough similar to the one we have near cart stands for the use of jutka horses and bullocks. These troughs should be cleaned regularly both morning and evening and the sanitary inspector should see that the locality is kept perfectly sanitary.

4. The municipal authorities should then induce a few of the milkmen to bring their cows to these centres for purposes of milking and in the first instance it may be necessary to give these milkmen some bonus say Rs. 2/- per month per cow. This concession may be withdrawn after 3 or 4 months when a demand for genuine milk is established in the neighbourhood. It may be necessary also in some cases to advance a few rupees up to about Rs. 50/- as loan with or without interest, on the security of the animals for helping the milkmen towards the purchase of concentrated foods in the season when they will be available at cheap rates.

5. Cows will be brought at fixed hours both morning and evening to these centres for being milked and the residents round that centre will be informed by beat of tom-tom about the availability of pure genuine milk for the use of children only.

6. A municipal councillor preferably of that ward or any other gentleman of similar status should occasionally visit this centre and see that the posteriors udder, legs etc., of the animals are properly washed before milking and that the milking vessels are clean also. The gentlemen in charge of the centre should have power to give milk preferably to those who have children and that in limited quantities and the surplus issued to others. For this purpose regular hours should be fixed for milking and selling. It will be generally convenient to all if the following hours are observed.

MORNING. 5-30 to 6-30 Milking and selling only for children.

„ 6-30 to 7 Sale of milk for others.

EVENING. 6 to 7 Milking and selling only for children.

„ 7 and after. Sale of milk for others.

8. The vendors and purchasers should be compelled to take milk in closed vessels and if this is not done the concession of issuing milk from the municipal centres should be withdrawn.

The scheme is (1) quite a simple one, (2) practically there is no question of cost to the municipality, (3) our children are protected from the effects of milk contamination, and (4) the anxieties of the poor parents living with limited means within a municipal area will be relieved to an enormous extent.

This scheme quite apart from its being the first step in the organization of social work and social service in urban areas may prove of help to the Agricultural Department to take up problems like improving the Dairy herd etc., starting from such units.

Sunhemp (*Crotalaria juncea*) cultivation at Nileshwar.

KESAVANUNNI NAMBIAR—*Farm Manager.*

Soil. Sunhemp is cultivated in the neighbourhood of Nileshwar and Charvathur in red loam and sometimes in red gravel. Lands which were not cultivated for a number of years are selected for the growing of sunhemp.

Cultivation. Seed is sown on the land before any preliminary cultivation and an imperfect hoeing with mamotti is given after sowing just to cover the seed. No after-cultivation is practiced in these parts. The field is kept safe after sowing from cattle trespass.

Seed-rate. One and half "Muda" of seed is used per acre. This will come to about 100 to 120 lbs.

Manuring. Generally no manure is applied to the crop, that is why ryots prefer fallow lands. But occasionally when the crop is grown in the ryots' compound year after year they apply some ash.

Season. Seed is sown in the month of "Mithunam" i.e., June 16th to July 15th, and is harvested by the end of Chingam or nearly in Kanni i.e., from September to October 15th. This is a three months crop.

Harvest. When pods begin to ripe the whole plant is pulled out bundled and removed to the owner's compound.

After-treatment. The bundles are loosened and stalks are dried in the sun for three days. After this the root and top portions are removed. The pods are dried in the sun for another three days and beaten with sticks to separate the seed. After cleaning the seed it is again dried for a day and is mixed with dry clean ash and kept for next year.

The stalk is dried only on alternate days. It is dried for 5 days in this way. If dried quickly the fibre will lose the strength. After drying the same is kept spread in the yard for one night so as to get the benefit of the dew, and is again dried the next day, bundled up and kept safely.

Extraction of Fibre. The stalk is immersed in pure water for four days and the 5th day it is taken and dried for a day or two. Then the fibre is removed from the stalk. The fibre is spun into uniform yarn and is made into a ball-like thing and is kept in kanji water for 5 days. Afterwards these balls of yarn are taken and twisted into thread on a country spindle worked by hand.

It is very difficult to get the total yield per acre as nobody cultivates this on a large scale. Each ryot cultivates a few cents of land under this crop. From a rough calculation 45 bundles of 30 lbs. each or 1350 lbs. stalk including root and top may be supposed to be got from an acre. When cleaned and dried the weight of stalk used for fibre comes to 450 lbs. From the dried stalks somewhere about 30 per cent fibre is got. This comes to 150 lbs. of fibre. The cost of fibre in the market is about Rs. 18 per thulam of 30 lbs. This comes to a gross yield of about Rs. 90 per acre. No rent is given to the owner of the land. Sometimes these people may give some fish for the use of the land. As this is only a small cottage industry it is not possible to calculate the expenses for cultivation and extraction of fibre. There is good scope for the profitable cultivation of this crop in the dry lands of Malabar and South Kanara.

EXTRACTS.

THE STONE REJECTED.

This is the stone that was set at naught of you builders.....

It sometimes takes discernment and courage of conviction to choose and set in the proper places in a foundation the right stones. But it is most important. Rejecting the proper stone may result in an unserviceable structure. Innumerable great enterprises have been known to fail because some very insignificant, overlooked "peg was loose". Conversely, the key to success in many other great enterprises has been appreciation and proper attention to some small though essential detail.

To a man who came into my office a few days ago, I showed a little box containing a specimen of a very small blackish moth. He gave it a glance, tossed it back on the table with a contemptuous grunt, remarking, "Strange how little it takes to amuse some people! Why should any one waste his time on such things!" Why, indeed! Things are important in this world according to their relation to other things, and according to what we may know of their relation directly or indirectly to human affairs. The larva of this obscure and ordinary looking little black moth is devastating the coconut plantations of Fiji, and the government of this group of islands, in alarm, has sent abroad for me to come and study it and try to control it. Through this one extremely insignificant thing, the chief source of income of Fiji is imperilled. We have another moth, in Mindanao, which may, on occasion, be nearly as bad, and which may some day spread all over this Archipelago, but no effective steps whatever are being taken to avoid such an eventuality.

Early in the eighties, patches of yellow powdery material appeared on the leaves of coffee in Ceylon, quite too insignificant to deserve the attention of any reasonable man, especially a "practical businessman", in those days. If solemnly smug boards of directors had been asked to contribute to the expense of technical study of this thing, they would undoubtedly have turned it down—as many boards of directors and legislatures do yet—or adopted the "watchful waiting", *laissez faire* policy which still characterizes both boards of directors and legislatures—except, I may possibly say, in Hawaii. The insignificant "yellow powder" destroyed all the coffee in Ceylon and then spread; with tremendously destructive power, through all the Orient, even destroying the rapidly growing and very profitable coffee industry of the Philippines. The stone of competent investigation was rejected by the builders of the Ceylon coffee industry.

Not many years ago a few plants of water-hyacinth were first brought to the Philippines as house plants. Two very competent botanists in government employ protested and asked for the immediate destruction of the first few plants and permanent exclusion for the future. The water-hyacinth is an aquatic pest of the highest order of virulence and incorrigibility and has been an extremely serious and expensive problem in many other countries. These technical men were laughed at by officials approached. No accounting for the damfoolishness of these scientific cranks! Why couldn't they leave in peace people who wanted to keep a few nice house plants! Time passed and the plant escaped into the waterways about Manila, which are now clogged with water-hyacinth. It is spreading in Laguna de Bay on an immense scale and interfering with navigation. It is now scattered throughout the Archipelago—long past the stage when it can ever be exterminated. Impractical and useless "experts"! Parasites on the body politic!

We have a bud-rot of coconut in the Philippines which is destroying more and more of our trees. Much money has been spent in attempts to control it,—by cutting trees down and burning them. And all the while, of the most essential point in the whole matter we are in complete ignorance and so far as I know no steps whatever are being taken to dispel this ignorance—ignorance of how the disease passes from one tree to another. In this, we are in the same helpless situation that sanitarians were in before it was known how malaria passed from one person to another, and in those days all the recommendations of all the doctors in Christendom did not control the ravages of malaria anywhere in the world. Light on the one essential point made the control of malaria easy.

We have some abaca diseases and pests which appear to be serious. We dashed into empirical methods of control before taking any effective steps whatever toward acquiring full and detailed knowledge. All of the technical methods, skill, and knowledge, that are required to investigate a human disease are quite as necessary in the case of a plant disease. Will our government have the wisdom to recognise this in time? Perhaps, in good classical style, we will wake up and buy an ornamental patent lock for the barn door—after the horse is stolen.

In the Philippines we constantly lose from five to above fifty per cent of the entire rice crop from preventable causes. And I am told that some eighteen million pesos worth of rice will be bought this year from a country with which we do not have reciprocal trade! Yet I am not aware that any active and competent attention is being

given to these problems, with such support as will bring about any ameliorating results. It is difficult to apply fitting terms to such a policy—or rather lack of policy—when this Archipelago is a natural rice country of tremendous potentialities.

We spend hundreds of thousands of pesos annually for the purely superficial and palliative treatment of the locust problem, permitting yearly loss to the people of the country of hundreds of thousands of pesos more in crops and labor, without ever having come yet to any serious consideration of the essential factors at the bottom of the whole matter, and solely on which any permanent relief must depend. Yet a few tens of thousands of pesos plus the *right men*, would clarify the whole problem and concentrate attention and effort on the basic details by which hang any possibility of permanent relief. But the stone lies rejected.

A country whose builders set at naught the stone of technical investigation along all scientific lines underlying agriculture, can hope for no safety, no real stability. And these lines must be developed symmetrically, one is as important as another. The neglected one may involve the very factors which some day will bring the house down about our ears despite the fine coat of paint we have put on it, and despite all other improvements made. The only really *practical man* in Agriculture to day is the man who looks all of these matters squarely and impartially in the face, with sufficient technical training to appreciate the interrelations of the thousand and one factors which compose the great field of Agricultural Science. The most progressive governments on earth have fully accepted this view and the richest and most soundly successful countries are conspicuous examples of its application.

In the Philippines we have as yet barely emerged from the "Dios cuidao" stage. But God's mercy is especially needed in case of *wilful* ignorance, refusal to heed the lessons so dearly learned by others, and continued rejection of the stone that would make the country's economic structure stable and safe. *The strength of any country may be justly measured by its attitude toward scientific investigation and toward the technical education which is built upon it.*

(Extract from the *Philippine Agriculturist*, Vol. XIII, No. 1, June 1924.



The Thinker.

(BY BERTON BRALEY.)

Back of the beating hammer by which the steel is wrought,
Back of the workshop's clamour, the seeker may find the Thought,
The Thought that is ever master of iron and steam and steel,
That rises above disaster and crushes it under heel.

The drudge may fret tinker or labour with lusty blows,
But back of him stands the Thinker, the clear-eyed man who knows;
For into each plough or sabre, each piece and part and whole,
Must go the brains of labour which give the work a soul!

Back of the motors humming, back of the belts that sing,
Back of the hammers drumming, back of the cranes that swing,
There is the eye which scans them, watching through stress and strain,
There is the Mind which plans them,
Back of the brawn—the Brain!

Might of the roaring boiler, force of the engine's thrust,
Strength of the sweating toiler, greatly in these we trust,
But back of them stands the Schemer,
The Thinker who drives things through,
Back of the Job—the Dreamer who's making the Dream come true!

(*The Indian Textile Journal*, October 1923.)

REVIEWS.

Tamarind as a Source of Alcohol and Tartaric Acid:— Bulletin No. 153. Agricultural Research Institute, Pusa. Price as. 3 or 4d. Calcutta, Government of India Central Publication Branch.

In this Bulletin Messrs. H. N. Batham and L. S. Nigam of the United Provinces Department of Agriculture publish the results of their investigation on Tamarind as a Source of Alcohol and Tartaric Acid. According to these investigators the amount of reducing sugars found in tamarind ranges from a trace to about 40 per cent while that of tartaric acid varies from 2 to 12 per cent. There appears to be some connection between the sugar content and the amount of tartaric acid and vice versa. The fermentative efficiency over the reducing sugars of the tamarind with various yeasts has been found to vary with the nature of the yeast employed. With a pure culture of *Saccharomyces ellipsoideus* the fermentative efficiency was as high as 97 per cent while with adventitious yeasts it is only 65 per cent. From the information available, it would appear that if the sugar is first converted into alcohol, it would make the manufacture of tartaric acid from tamarind more feasible as a commercial proposition and it will be interesting to see how far laboratory tests can be translated into large scale experiments.

B. V. N.

Some Digestibility Trials on Indian Feeding Stuffs. Memoirs of the Department of Agriculture in India Chemical series. Thacker Spink & Co., Calcutta. Price as 12. or 1 s.

It is a matter for gratification that the subject of animal nutrition is receiving attention in the Provinces also. The Memoir under consideration does not present results complete in themselves. Still it is of interest in that the authors, Dr. P. E. Lander and Pandit Lal Chand Dharmani of Punjab, give information on the lines along which work on feeding stuffs in India should proceed. Chemical analysis by itself does not give indications as to the extent to which the various food ingredients in the common cattle foods in India are digested. Up to the present we have been depending on the continental standards fixed by Woulffe, Kelner and Armsby in making out rations for our cattle. The work done by the authors shows clearly the necessity of having standards for Indian cattle. Wheat

bhusa, gram, maize and shisham (*Dalbergia sissoo*)* leaves were used in these trials. Judged from the standards given by Henry Armsby there appear to be differences in the percentage digestibility of the various food ingredients. For instance, the digestibility of fibre in the case of Indian cattle appears to be higher than those of Armsby while the digestibility of protein is less. Some of the results obtained in the Central Farm, Coimbatore also point to this view. Another interesting point though inconclusive is that the influence of gram on the digestion of bhusa is to render some of the ingredients of the latter more digestible in the combined diet than alone.

B. V. N.

Michigan Agricultural Experimental Station.—Quarterly—August 24 Volume No. 1. O. E. Read and J. E. Burnett give a readable account of their trials with cull beans as feeding stuff to Dairy cows and conclude that this has usually a low sales value but its feeding value for Dairy cows is nearly half that of cottonseed meal.

The Agricultural Gazette of New South Wales.—Sydney, October 1924 Vol. XXV, Part 10. H. Wenholz describes some lessons learnt during the past season by growing cotton in the colony. He gives a fore-cast of the crop for 24-25 cotton season. As this is the last season in which a guaranteed price will be paid by Government, he advises every farmer to make a trial now. The Review of the Dairying Industry for the 12 months ending 30—6—24 by L. T. Mac Innes describes the position as compared with other states which shows that of the quantities examined for export, we have the following:—Victoria, 67 per cent., New South Wales, 44·6 per cent., Queensland, 33 per cent., local consumption at 29 lbs., based on the unit of population of 1924, is put down as 65,250,000 lbs. of butter. The life histories of the Sheep Tick and the Biting Louse are worked out and treatments necessary detailed, by the Vet. Surgeon, H. G. Belschner. "Lemon curing test" by W. B. Stokes warns that all rough handling of the fruit must be eliminated and that the fruit should go through a toughening (sweating) process before being carted away from the garden, and that light should be excluded from the fruits, exposure to light injures the color of the rind.

Another notable article in this number is "A Profitable Citrus Orchard" by W. H. Brown wherein is detailed an account of the

[* A Sub-Himalayan tree cultivated in portions of Ganjam and Vizagapatam districts. Locally known as Sissoo. It is a species of *Itti*, a name with which natives of Malabar Coast are familiar. In Tinnevely it is known as "Thodhagathi".]

several steps taken to establish the orchard. Through care and selective methods at every stage an area of 10 acres started in May 1914 with 520 Valencia and 99 Washington navel and some mandarin seedlings has been made so successful that "Valencias have yielded practically a four-figure crop every year for the last four or five years and that for the Washingtons, for the last five years the net return has been not less than £ 100 per year, though half the mandarins had to be grubbed out."

The Farmer and Stock Breeder. Weekly, October 27, London, Sir S. Stockman in his very informing article entitled "Hygiene on the Farm—Bacterial Diseases" states that, bacterial diseases as a rule are spread through the excretions of the sick animal. Small quantities of contaminated matter can be effectively dealt with by burning or by mixing with equal weight of lime in powder.

In addition to the use of disinfectants, preventive sera, vaccine and certain other bacterial products are available. Anthrax, black quarter, Epizootic abortion and tetanus—diseases which run a chronic course—can be proceeded against by eliminating apparently healthy but really affected animals. In the case of anthrax, the carcass should be burnt in tact or buried deeply.

A. U. M.

GLEANINGS.

Without These, No Co-operation. *The man who knows what co-operation means thinks, talks, and acts co-operation every day of his life.*—He is always building up a greater confidence in co-operation among his friends and neighbours through support of every co-operative effort. He counsels patience when others only criticise. He offers suggestions in a spirit of sympathy when others merely denounce. He shows a desire to understand the difficulties of co-operation instead of being over-critical about details. There can be no co-operation without these three:—*patience, sympathy, and understanding.*—Michigan Potato Growers' Exchange.

Poisoning of stock by Sheep-dip: A warning. It appears to be necessary to caution the farming community regarding the use of sheep-dip—especially the poisonous kinds—for purposes other than

those indicated by the makers. The department has learnt of several cases of farm animals being poisoned by sheep-dip used in altogether wrong ways. In a recent case several horses died as a result of being washed with a solution of arsenical dip to rid them of lice; the solution seemed to have been far too strong, absorption from the skin took place, and death ensued.

Live-stock Division.

[Extract from *The New Zealand Journal of Agriculture*. Vol. XXIX, No. 3, dated 20—9—24].

The Prague Fair. A ninth International Fair was held at Prague, the capital of the young Republic of Czechoslovakia, between 21st and 28th September. India was one of the 39 countries that were represented. Foodstuffs and colonial products were amongst the exhibits. The next fair will be held in March 1925, from 22nd to 29th.

Coffee leaves as a substitute for the berry.—With the failure of the berry crop in Sumatra the growers seeking a substitute collected the coffee leaves and exported them to other countries. Germany according to *Pharmaceutical Journal* (quoted by the *Indian Scientific Agriculturist* of October 1924) took the yield and imported large quantities and the infusion from the leaves has taken the place of the berry there. The leaves possess an additional advantage in that they can be had even in the plains, as the plant thrives well there, provided the soil is fertile, while the berry can be produced only in certain elevated climates, thus affecting the output and prices.

American cotton yields per acre.—Missouri 325 lbs., California 200 lbs., Tennessee 190 lbs., Mississippi 157 lbs., South Carolina 123 lbs., Oklahoma 103 lbs., Georgia 100 lbs., and Florida 97 lbs.

These are 8 out of the 15 cotton States. The yield in Missouri was practically as much per acre as the combined yield of South Carolina, Oklahoma and Georgia. The average yield of lint cotton per acre for the United States was 141·6 lbs.

[Cotton Association News, Arkansas, quoted in *Agricultural Circular* Vol. 5 No. 1. Fiji, page 82].

N. B.—Conditions being so highly variable in the several states of the United States of America, it would be profitable to investigate what varieties and what regions in India produce acre yields approximating figures given above.

A. U. M.

How to keep Tropical fruit from decay during voyage.—According to the *Revue de Botanique Appliquées*, Dr. P. J. S. Cramer of Java, has devised a new method of preserving tropical fruit for export to Europe. This consists in smearing the fruit picked a little before maturity with a thin layer of rubber latex which in coagulating forms a protective covering around the fruit. This retards undesirable early ripening and preserves it from the organisms causing the decay of vegetable matter.

[*The Indian Scientific Agriculturist*, October 1924.]

Agriculture in Old Egypt.—In his article in 'World's Work' in which he gives an account of Egypt 5,000 years ago and later, Ludlow, S. Bull writes that wheat, millets, barley and grapes were then cultivated. Cattle-raising was practised and ranged from half-a-dozen or more different breeds, including hornless cattle, to semi-domesticated goats, ibex and several breeds of sheep.

About the beginning of the Christian era, the population was about seven millions and dwelt in a long narrow canyon hemmed in on either side by cliffs from five hundred to a thousand feet high. The part of the canyon which lies below the first cataract and continues to Egypt proper is about five hundred miles long, but only ten to thirty miles wide and the cultivable area is less than the area of Belgium.

Most of the serfs were attached to the land and passed with it when possession of it changed hands. Even in the old kingdom, the first of the three great periods of Egyptian history the population was not composed solely of land-holding nobles and serfs. Every indication points to there having been a free middle class, consisting of artists, craftsmen, merchants and small untitled landholders.

A. U. M.

The Philippines Agricultural Men. Dr. D. F. Baker, Dean of Philippine College of Agriculture, has called attention in a recent article to the different classes of students and the nature of the work of the College. He attaches great importance to that small group of graduates who have gone on into advanced work in America. This, it may be noted, is a different policy to that of the Imperial College of Tropical Agriculture which provides for post-graduates after they have received their general scientific training in England and elsewhere. The largest group of trained men sent out from Philippine College are those who obtain local employment direct. These at first were absorbed by the Government Bureaus; now that the requirements of these

differences appear to have some influence on the time of blooming. Fewer flowers of Shrinriki bloomed before 12 m. and more after 2 p. m. than was the case with Omachi and Wataribune. Many more flowers of the long-grain varieties C. I. Nos. 1241 and 1258, bloomed between 10 a. m. and 12 m. than of the short grain varieties.

Of the 1,505 flowers observed, 3 bloomed between 8 and 10 a.m. 148 between 10 a. m. and 12 m.; 1, 150 between 12 m. and 2 p. m.; 196 between 2 and 4 p. m. and 8 between 4 and 5 p. m. More than three-fourths of the flowers observed bloomed between 12 m. and 2 p. m. and a slightly larger number bloomed between 2 and 4 p. m. than between 10 a. m. and 12 m. It appears therefore that the maximum period of blooming of rice flowers in California is later in the day than in those other countries for which such data are available.

G. N. R.

Seed size and yield of small grain crops.—Writing on the Relation of seed size to the yield of small grain crops T. A. Kiesselbach, summarises his Nebraska Tests as follows: where tests were made with hand selected large and small seed which represented extreme grades of the three cereals, winter wheat, spring wheat, and oats, small seed yielded (1) eighteen per cent less than large, when spaced to permit maximum individual plant development, (2) ten per cent less when equal numbers of seed were sown per acre at an optimum rate for the large seed, and (3) five per cent less when equal weights of seed were sown per acre at an optimum rate for the large seed. When unselected seed was used it yielded (1) four per cent less than the large when equal numbers were sown per acre, and (2) one per cent less when equal weight of seed were sown.

A comparison of the large with the unselected seed is of the greater importance from the farmer's stand-point.

Comparing fanning mill grades of winter wheat during a seventeen year period the heaviest one-fourth yielded 0.3 per cent more, and the lightest one fourth two per cent less than the unselected.

Kherson oats was separated into the heaviest one-fourth, and the lightest one-fourth and compared with the original unselected seed during eighteen years. The heaviest one-fourth, yielded 0.9 per cent more, and the lightest one-fourth yield 0.7 per cent less than the unselected.

In general the work at the Nebraska station indicates that there will be no material or practical gain in the grain yield, under farm conditions, from the practice of grading small grain seed which is reasonably free from trash and inert matter.

Comparative results have been found to vary greatly with the manner of testing. G. N. R.

Rickets and human milk.—S. V. Telfer records the results of his trial on human milk. A number of specimens of breast milk of women of poorer classes living in the industrial quarters of Glasgow were examined to ascertain whether any deficiency of calcium or phosphorus was invariably associated with the onset of rickets. The milk on which the infants developed rickets was compared with specimens on which infants remained free of the disease. For comparison, a number of milks were selected from women with healthy children living in country villages. It was found that there were no differences in the composition of milks whether the infants developed rickets or not. The ratio of phosphoric acid was slightly higher in the case of milk from women in country parts, than in the milk of women living in a poor environment and the opinion was confirmed that infantile rickets may develop on breast milk with a high calcium content.

The Biochemical Journal Vol. VIII No. 5, 1924, Cambridge.

A. U. M.

A TRIPLE ALLIANCE.

Self-Knowledge, Self-Reverence, Self-control—
These alone lead to Sovereign Power.

Still true are these words of Tennyson to-day. Self-knowledge is essential, for uncharted seas are dangerous, and the person who is approaching young manhood or womanhood and who has a distorted knowledge of the wonderful powers with which he or she is endowed may be wrecked on the rocks of impurity through ignorance.

But education as to the laws of nature, though good, is insufficient in itself. Self-knowledge needs to be linked on to self-reverence. "Sacred thy body even as thy soul" is a forceful motto, and he who realises purity to be a priceless possession will not hold it with a loose grasp nor barter his birth-right for a "mess of pottage"—the gratification of an hour.

Self-reverence in turn needs to be strengthened by self-control. He and he only who controls his impulses, making them his servants and retaining full mastery over them, can lay any claim on that "Sovereign Power" which makes others say of him, "This was a man!" (Contributed by the Alliance on Honour)—*Great Thoughts.*

Madras Finance. Progressive totals including the month of September 1924.

428

RECEIPTS. (IN RUPEES).

DISBURSEMENTS.

Items.	India.	England.	Total.	Budget estimate 1924—25.	Items.	India.	England.	Total.	Budget estimate 1924—25.
V. 1,84,98,354			1,84,98,354	7,62,01,000	(5)	18,59,778	28,970	18,88,748	43,46,800
VIII. 22,59,883			22,59,883	52,34,000	(8)	20,57,306	3,850	20,59,156	49,70,000
XIII. —16,13,441			—16,13,441	—29,54,400	(27)	12,987		12,987	56,000
XIV. 46,573			46,573	1,38,000	(31)	61,31,993	52,880	61,84,874	1,73,65,000
XX. 14			14	1,000	(34)	11,69,381	15,730	11,85,111	28,59,000
XXIV. 1,50,744			1,50,744	4,01,500	(35)	8,00,930	24,530	8,25,460	26,89,500
XXV. 4,01,195			4,01,195	15,54,000	(h)	6,77,82,508	14,28,890	6,92,10,898	16,62,94,000
(a) 6,05,17,816			6,05,17,816	16,77,22,000	(i)	1,54,584		1,54,584	1,75,000
(b) 2,15,000				2,15,000	(j)	1,18,662		1,18,662	12,16,000
(c) 11,33,330			11,33,330	20,92,000	(k)				
(d) 15,82,000			15,82,000	1,10,00,000	(l)	25,79,646			78,10,000
(e) 6,32,33,146			6,32,33,146	18,10,29,000	(m)	9,50,000			24,68,000
(f) 12,40,067			12,40,067	11,49,000	(n)	7,16,01,056	14,28,890	7,30,29,446	18,08,14,000
(g) 6,47,32,213			6,47,32,213	18,21,78,000	(o)			—85,56,233	13,64,000
					(p)			6,44,73,213	18,21,78,000

N.B.—V and 5, Land Revenue. VIII and 8, Forest XIII Irrigation, Navigation, Embankment and Drainage

works for which capital and revenue accounts are kept, XIV Irrigation etc., for which no capital accounts are kept. 27, XX, Ports and Pilotage, XXIV and 34 Agriculture, 31 Education, XXV and 35, Industries. a and h, total Revenue. i, Capital outturn in Forests. I, construction of irrigation works; b and k Famine Insurance, c and l Loans and advances by Provincial Government; d and m, loans between Central and Provincial Governments; e and n, total. F. opening balance; O. closing balance; g and p Grand Total.

(Vide Fort St. George Gazette dated 18-11-24 Part I pp 1364-65).

STUDENTS' CORNER.

C. Narasimham of B. Sc., class I resigned his studentship.

B. Sc. class III went on tour with Mr. T. V. Rajagopalacharya to Erode and Palayakotta for 4 days from 21—11—24.

Mr. B. Viswanath, F. I. C., gave a lecture on 1—11—24 at the Students' Club, the subject being "Soil Surveys."

Mr. E. Kirk, Secretary, Coimbatore Labour Union delivered a lecture on 'Labour' under the chairmanship of Mr. T. V. Rajagopalacharya.

Mr. M. Anandan was appointed Assistant Warden with effect from 20-11-24.

Games section. The first match in connection with the local Hockey Tournament was played with the Government College on 3rd November. On account of inclement weather the ground was wet and slippery to some extent. From the beginning, however, our forwards pressed well, and out of the numerous chances they had, they were able to convert only five of them successfully. The opponents made good attempts, and mainly through the unsteady game of our defence, were able to put in two goals. Thus in the end we were left winners by three goals.

The semi-finals were played on 5th November with the Medical School team which was expected to be weaker than ours. It was bright weather and the match promised to be interesting. Our players were confident of a win, but as ill-luck would have it, matters proved otherwise. For about twenty minutes our forwards were constantly pressing at their goal, but the opponents suddenly got a chance and their centre had a free hit into the goal. During the second half time, though we were in an advantageous position on the field, with all the corner hits we got, we were able to score only one

goal. But the Medicoes, having the better time of it, kept on rushing now and then, cleanly put in two more and thus claimed themselves winners by three goals to 1.

The Inter-class Tournament. [For the Victory Cup.] Though there are four independent classes, it was possible to form only three full teams in all. The competing teams are B. Sc. I (one team), B. Sc. II and Short Course II (one combined team) and B. Sc. III (one team). B. Sc. III class, comprising only of 13 students has been able to put up a fairly strong team, because of the fact that almost all of them are to some extent well up in all games. A new departure this year is the inclusion of Badminton and Volley Ball also, in the list of games for the tournaments. It has been decided that the team which shall win in the largest number of games shall be declared to have won the cup. In case, two teams happen to win in two games each, then they will meet each other again in the game in which both of them have been defeated and the winning team in this will be entitled to have the cup.

Results of games so far played :—

HOCKEY FINALS.

B. Sc. III Team to meet Combined Classes Team.

FOOT-BALL FINALS.

B. Sc. III Team to meet Combined Classes Team.

BADMINTON.

B. Sc. I. Team declared to have won in the Finals.

VOLLEY BALL.

B. Sc. I. Team to meet Combined Classes Team.

ESTATE NEWS.

Visitors. Mr. J. Beck, Trinity College, Kandy, visited the Estate in the course of his tour round the whole of India in connection with the opening of agriculture classes in Ceylon.

Mr. Devayya, Deputy Superintendent of Police, Coorg, paid a flying visit to the college.

Mr. T. V. Seshagiri Ayyar, President, Madras Central Flood Relief Committee peeped into the Estate on his way back to Madras, from a tour of inspection of the flood devastated areas in Malabar and S. Kanara Districts.

Mr. R. C. Littlewood spent 6 days (from the 25th to the 30th) at Coimbatore, inspecting the Dairy herd and selecting poultry for Hosur.

Tours. Mr. S. Sundararaman returned from his tour in Coorg.

Mr. H. E. R. Dunhill paid a short visit to Hosur to inspect the adequacy of water supply to the animals at the Central Cattle Farm, Hosur.

Rao Sahab Mr. M. R. Ramaswami Sivan attended the Academic Council and Senate meetings on the 6th and 24th respectively when important educational matters affecting the position of Agriculture in the Intermediate and B. Sc., degree courses were discussed.

DEPARTMENTAL NEWS.

The British Minister for Agriculture. The Hon'ble E. F. L. Wood who has represented the Ripon Division in the Unionist interest since 1910 has become Minister of Agriculture in the Baldwin Government.

President of the Royal Agr. Soc. Eng. Sir Robert Greenall of the county of Cheshire has been elected President of the Royal Agricultural Society of England for the year 1925.

Training of Direct recruits. In G. O. No. 756, Finance, dated 20th October 1924, Govt. have ordered that in future all officers directly recruited to the Imperial Agricultural Service or the Madras Agricultural Service should undergo a course of training in Farm Work and accounts in the Central Farm Coimbatore, but that the authority sanctioning deputation is only the Govt.

Veterinary Department.—There was a considerable fall in the number of inoculations against cattle diseases carried out during 23-24 and Govt. finding that the introduction of fees scared away cattle owners, have decided to abolish the fees for inoculation from April 1925.

Sir Narasimha Sarma. The Member for Education, Health and Lands, the Hon'ble Sir Narasimha Sarma, inspected the Military Dairy Farm at Anand, Guzerat, on 27-11-24, in company with Mr. Smith, the Imperial Dairy Expert, in order to examine on the spot the question of transferring it to the civil control. He also inspected the Cotton Technological Institute at Bombay.

Dr Harrison. Dr. W. H. Harrison, Officiating Agricultural Adviser to the Govt. of India has been appointed a member of the Academic Council of the Delhi University.

Taxation Committee. As a result of the discussions during the last sittings of the Imperial Assembly, Sirdar Jogendra Singh, Member, Council of State, has been appointed to the Todhunter Taxation Committee to represent agricultural interests. The Sirdar is known to us as a Member of the Sugar Committee, and owns much landed property in the Punjab canal colonies tract.

An Irrigation Co-operative Society. An irrigation Co-operative Society for *Musiri Nattu Vaikul* was formed at Ayyampalayam with Mr. A. P. J. Shanmugam Pillai, a rich mirasdar, as President. The main object is to take over the silt clearance, *Korambu* construction, repair of supply channels and the opening of minor channels wherever necessary. The minimum share capital held by a member is fixed at 4 as. an acre owned by the member, and the maximum number of shares is not to exceed 100.

Bull Services :—"There were 23 services of Farm animals. The number of re-services amongst the cross-bred herd is great. Some of the animals have been served 4 and 5 times and still they return to the bull. This matter will require a lot of attention. I do not think this has anything to do with the feeding of the animals as most of the country cows are served once and we managed to get them in calf. The Agricultural Demonstrator, Madras, also gives me information regarding crossbred cows to the same effect. I think this is a matter we shall have to discuss at the next Cattle Conference."

[Extracted from the September Report of the Deputy Director of Agriculture—Livestock—Madras].

QUERIES AND ANSWERS.

Query No 1.—Will any of your readers kindly advise me the best kind of waterlift for irrigation from a well with a lift of about 25 to 30 feet for irrigating 10 acres of wet and dry lands?

(Sd). P. A. Sitharama Ayyar, Vellore.

Query No. 2.

Dear Sir,

Will you kindly inform me in the pages of your journal the best mixture of fertilizers and manures for grafted mangoes in hilly soil and the proportion and the proper location of ground, to be dug up round the trees for manuring. Also whether in your opinion top dressing of soil at the roots is essential and how to prune the roots in the case of top dressing for the purpose of manuring trees and producing large crop. Thanks in advance,

(Sd.) D. R. GAVASKAR (SEVASTIAN?)
COCHIN,

UNION ACTIVITIES.

At the meeting of the Working Committee held on the 16th in the Union Building, a committee consisting of Messrs : T. V. Rajagopalachari, G. N. Rangaswami Ayyangar and Achyutan Nambiyar was elected to work out for submission to the authorities a scheme in accordance with the resolution passed at the July General Body meeting regarding the representations about the pay and prospects of lower subordinates.

Representations were also submitted to the several Durbars relating to the pay and prospects of such members of the Union as are employed in the states.

EDITORIAL NOTES.

Our Development Secretary.—The readers of the Journal are, no doubt, aware that Frank Noyce, Esq., I.C.S., C.S.I., O.B.E., who was Secretary to Government for the Development Dept. since 1922, has now been placed on special duty with reference to the Indian Coal Commission. In his absence, G. H. T. Bracken Esq., I.C.S., has become our Development Secretary. We offer him our humble but

hearty welcome and trust that he will, with his extended experience of Indian Agricultural conditions as Collector in various districts and his continued touch with the Indian ryot, deal with this Department in a spirit of sympathy and enlightened interest: for, need we add that it is solely in the interests of the ryot that this Department exists?

What neglect of Science leads to.—Dean Baker of the College of Agriculture-Los Banos-the Philippines, in his humorous but eminently practical contribution headed "The Stone Rejected" to *The Philippine Agriculturist* extracted in this issue, cautions peoples concerned against the dire consequences that follow the neglect of what look like insignificant things at the time they appear. He instances the appearance and rapid spread of the yellow rust of coffee, the water hyacinth, the Budrot and abaca diseases and pests. We have similar problems in our own country which are of no less seriousness and would therefore invite our readers to a careful perusal of the article.

Madras Religious Endowments Act, 1924. We hear that the Madras Religious Endowments Act has received the assent of His Excellency the Viceroy and become the law of the land. In view of the reported statement of the Hon'ble the Chief Minister, the Raja of Panagal, made during his visit to Tanjore on the 8th of this month that the funds that would be liberated consequent on the act being brought into force would be utilised for the public good, it is earnestly hoped that the Ministry will not lose sight of the urgent need there exists for agricultural improvement. We may in this connection only remind them and the Legislative Council of the large number of schemes of development which in the last Budget meeting, the Hon'ble the Finance Member, Sir Charles Todhunter, said had been received, but could not be pressed for want of funds. The State Aid to Agriculture Bill is one, that should in our opinion be taken up next on the lines of a similar one passed to help industries in Madras.

British Government and Agriculture. Mr. Joseph F. Duncan, writing in the 'New Leader' about the good acts of the short-lived Labour Government in its relations with Agriculture says that "it devoted £200,000 to the development of co-operative methods among farmers, it helped the sugar beet industry by endorsing subsidies for a period of ten years of 19/6s per cwt. for the first four years, 13/s. for the next 3 years and 6/6s. for the remaining 3 years, as a result of which, six new factories are promised within 1925 and that it earmarked a sum of half a million for research during the next five years.

We may add that the Labour Government was instrumental in passing the Housing Bill leading to the construction of 2,000,000 homes for agricultural labourers in rural parts.

Mr. Baldwin has tried similarly to redeem the promise he made in his Election campaign and since assumption of the office of Premier, has appointed a committee with Sir Eric Geddes as Chairman to enquire into the prices of food stuffs with a view to taking measures for the amelioration of the masses in respect of their food requirements. In this connection the recommendation of the committee of the Central Chamber of Agriculture, England, that, in the first instance "the Government should be urged to make a payment to producers under proper guarantees sufficient to induce them to hold a portion of their wheat crop in stock," is noteworthy. In this the Central Chamber is making praiseworthy efforts to secure the co-operation of similar bodies in Scotland.

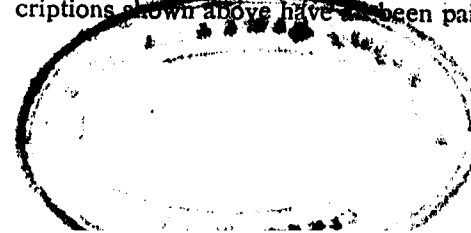
In this country, attempts of individuals to move the councils to agree to the enunciation of the principle that collection of land revenue assessment may be spread over a longer period than now have proved unavailing. The question requires reconsideration from several stand-points, the forcing down of prices, the congestion of traffic in railways and ports, the extreme tightness of the money market, and their undesirable effects on the condition of agricultural labourers.

CORRESPONDENCE.

GUPTA MEMORIAL FUND.

The second list of subscribers received from the Secretary, Gupta Memorial Committee.

Messrs. R. Vasudeva Rao and R. Sitaramiah have since paid their promised subscriptions of Rs. 5/-each, Messrs. B. Baliah, Rs. 2, V. Chidambaram, Re. 1, P. Gopalaratnam, Rs. 5, K. G. S. Bhandari, Re. 1, K. L. Ramakrishna Rao, Rs. 2, T. Sheshachalam Modaliar, Re. 1, N. Subramanian, Re. 1, A. C. (not known), Re. 1, K. K. Subrahmanian, Rs. 2, S. Muthuswami, Rs. 2, K. T. Alwa, Rs. 25. [Subscriptions shown above have been paid except the last three].



DEPARTMENTAL NOTIFICATIONS.

Appointments, Transfers etc.

1. Mr. T. Lakshmana Rao, Assistant to the Govt. Agricultural Chemist, to officiate as Asst. Agricultural Chemist vice Mr. P. A. Raghunathaswami Ayyangar.

2. Mr. M. Raman, Farm Manager, Central Farm, transferred to Central Cattle Farm, Hosur-to join at once.

3. Mr. S. Jobitharaj, Assistant in Economic Botany, V grade, to be assistant IV grade provisional, vice Mr. C. V. Ramaswami Ayyar, Assistant to the Govt. Agricultural Chemist, whose lien is suspended under rule 13 of the Fundamental rules.

4. Mr. B. Kamaraju appointed to act vice Mr. M. U. Vellodi on leave. He should report himself for duty to the Professor of Agriculture and Superintendent Central Farm, on 1-12-24.

5. Mr. V. Chidambaram Pillai, Asst. Agricultural Demonstrator, on return from leave posted as Assistant Farm Manager, Kollpatti.

Leave.

1. Mr. D. Ananda Rao, Deputy Director of Agriculture, leave on average pay for 15 days from 1-12-24 with permission to affix Christmas holidays.

2. Mr. M. U. Vellodi, Teaching Assistant, leave on medical certificate on average pay for three months from 1-12-24.

3. Mr. P. A. Raghunathaswami Ayyangar, Assistant to the Govt. Agricultural Chemist, leave on average pay for one month from the 3rd January 1925 with permission to prefix the Christmas holidays.

4. Mr. T. S. Ramakrishnan, Assistant in Mycology, leave on average pay for 15 days from 1st December 1924.

5. Mr. K. Krishna Menon, Assistant in Mycology, leave on average pay for 20 days from 10-11-24.

6. Mr. K. L. Ramakrishna Rao, Assistant to the Cotton Specialist, Hagari, leave for 20 days granted is extended by one day on half average pay.

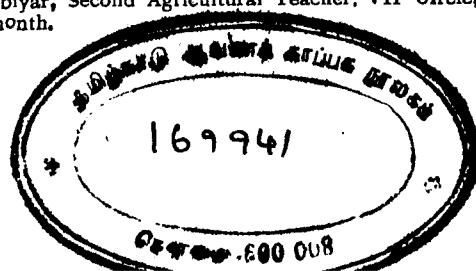
7. Mr. V. Gomathinayakam Pillai, Assistant to the Millets Specialist, leave for 20 days, 10 days on average pay and 10 days on half average pay from 24-11-24.

8. Mr. S. Purnalingam Pillai, Sub Assistant to the Cotton Specialist, extension of leave by six days.

9. Mr. D. S. Subrahmanya Ayyar, Asst. Agricultural Demonstrator, VIII Circle, the one month's leave on medical certificate extended by leave on medical certificate for one month and fifteen days.

10. Mr. M. V. Kondala Rao, Asst. Agricultural Demonstrator, III Circle, leave on average pay for three months granted extended by two months on medical certificate.

11. Mr. A. P. Sankaran Nambiyar, Second Agricultural Teacher, VII Circle, leave on average pay for one month.



(v)

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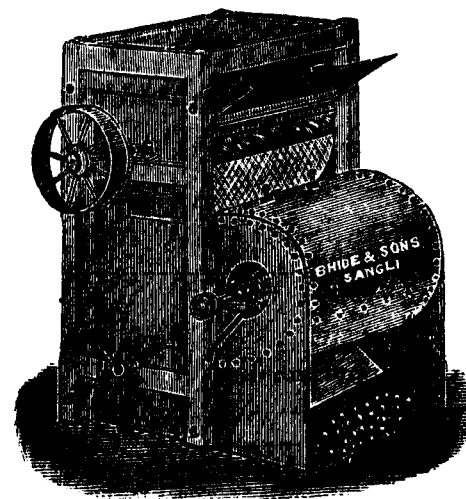
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(viii)

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