

a series of tubes. In the upper tubes cold water circulates and in the bottom ones liquid brine circulates. Since the milk flows down over the tubes in a thin film it not only gets cooled but also aerated so that all undesirable food flavours are driven away. Thus the milk which has a temperature of 185° F. at the top gets cooled to 45° F at the bottom. The milk is collected in cans and is removed at once to the cold storage room where the milk remains under the temperature of 45° F. till it is taken out for distribution.

*Treatment of vessels.* The vessels i. e., cans and bottles are first washed in luke warm water. The sides are well scrubbed with brush and then with water. They are then steamed well till the cans get sufficiently heated. Steaming is not resorted to for glass bottles. These are immersed in water at a temperature of 190° for 5 minutes.

*Distribution.* Up to 2 lbs. the milk is supplied in bottles and larger quantities in cans. In all cases the vessels are sealed so that no mischief might be played *enroute*. In the case of bottles, the mouths are sealed by means of paper caps and rings and in the case of cans by means of twine and seals, so that it will be impossible to open the consignment on the way.

Thus all possible precautions are taken to supply the customers with milk pure from all points of view.

M. Krishnaswami.

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### Reviews.

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The December issue of the Madras Bulletin of Co-operation, contains an interesting article on 'the necessity for co-operative dispensaries' from the pen of Mr. C. N. Krishnaswami Ayyar, M. A., L. T., the Secretary of the Coimbatore District Urban Bank.

His plea is that medical help of the right sort is not within reach of the masses and where it is available it is too costly and he thinks that co-operation can easily set matters right. The author attributes the present slow progress of distributive societies as compared to the credit societies to the fact that they do not catch the imagination of people so well as the credit societies and thus proposes an attraction to the present distributive societies, popularly known as the 'stores' in the form of provisions for the sick, and a vendor for the same. Cheap approved medicines are to be stocked and a physician engaged at the most favourable rates to distribute the medicine. He hopes by this means to kill two birds at a stock viz., cheap medicine near doors and the encouragement of the Unani and Ayurvedic systems of medicine, as the western school of medicine is out of question on account of cost and non-availability.

Such a development the author trusts will strengthen the stores movement considerably, and bring about its rapid spread.

K. R.

The following extract from the Bombay Co-operative Quarterly will be of interest in this connection.

"A novel type of society has just been registered in Bengal. It is a village antimalarial society, the object of which is to prevent malaria, to render free medical aid to members, and to supply to members ordinary medicines free of cost. In addition to an entrance fee, members pay a quarterly subscription of Rs. 3 and undertake liability for twice the amount of the subscriptions. These funds, together with any donations and subventions the society may receive from Government, public bodies, or individuals, are to be utilized in undertaking antimalarial operations, and providing free medical relief. The antimalarial operations will consist chiefly of clearing jungles and filling up insanitary pools of water, at the recommendation of the local sanitary authorities. For the provision of medical relief, the society will engage a doctor, whose services any member can command free of charge, and will also maintain a dispensary for giving out free medicine to members."

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*Cholam as a substitute for Barley in malting operations.*

Under the above title Messrs. B. Viswanath, T. Lakshmana Rao and P. A. Raghunathaswami Ayyangar, Assistants to the Government Agricultural Chemist have issued a Memoir in the Chemical series Vol. V, No. 4. The abnormal conditions during the time of The Great War and the consequent increased attention paid to food products led the investigators to try and find a substitute for Barley in malting operations. From South Indian Cereals, paddy, cholam, ragi, tenai, maize and cumbu were tried. During the course of the investigations all were given up one by one except Cholam which they find to be superior even to Barley in many respects. The Memoir should greatly interest brewery men and we on our part invite their attention to an extract which we print elsewhere in this issue.

Ed.

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**Extracts.**


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*Sorghum or Dari, a new substitute for Malt used in Brewing.*

For several months brewers have been offered as a new substitute for malt, Sorghum, or Dari, also called "dura" and "Guinea millet." Owing to the high price of rice and maize, used as substitutes in brewing, and their present use, particularly for bread-making, it was suggested that Sorghum, which is cheaper, might be used in their stead. It is offered either as a meal or as whole grains; sometimes the grain is not decorticated and the yield in extract is then low about (10%).

The moisture content is from 12 to 15%. If too damp the Sorghum quickly goes bad turning sour and takes on an abnormal odour.

The yield in extract—64 to 70% is much below that given by maize, and especially by rice. In maize it depends on the extent of cleaning. Sorghum is delivered at the brewery without any special

treatment, but it would be easy to treat it in such a way as to remove part of the fats, which amount to 3 to 5% i. e., little less than those contained in crude maize. In Sorghum, as in maize these substances hinder the solution of the starch, thus accounting for a yield in extract below that which might be expected from the proportion of starch it contains (62 to 66%).

Sorghum fat also has the disadvantage of going rancid fairly quickly. Care must, therefore, be taken to store the grain in good condition and to use nothing with any rancid smell, as this might be transmitted to the beer.

Most of the samples contain a fairly large amount of total protein; this would account for the rapid spoiling of over-damp grain. Most of this protein, however, is insoluble and, as in all crude grades does not pass into the must and can have no influence on the keeping quality of the beer.

Sorghum is used in the same way as maize and rice i. e., it is added during the first mashing or to the copper. It may be advantageously used in brewing. The only difficulty is that of filtering, which is attributed to the use of excessively fine meal, which must not exceed a certain degree of fineness. From the point of view of filtering, treatment during boiling is advantageous as it allows all the starch to be dissolved by dividing the cellulose of the grain into the smallest possible particles."

From the International Review of the Science and Practice of Agriculture Year IX No. 5 of May 1918 Page 613.

C. T.

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*Butter fat content and age of cow.*

In the study of factors for production it is very important to know if there is any correlation between age and butter fat in cows. The mean yearly fat test of 86 cows in the Delaware College herd has been studied in relation to age of the cows. Some of the cows have more than one record, and the number of records studied is

104. The coefficient of correlation calculated is barely three times the probable error and so cannot be considered at all significant. The only deduction that follows from the studies is that the butter fat test of the milk of a cow is not at all influenced by the age of the cow. This being the case the study of the hereditary behaviour of the percentage of butter-fat in the milk of cows of different ages does not in any way affect the accuracy of the results.

(Journal of Heredity, Vol. IX No. 6).

K. R.

*The four O'Clock (Mirabilis Jalapa).*

The cultivation of this plant is recommended for the following reasons:—

The seeds contain starch of very good quality which may be used for making bread, paste, biscuits, etc. They may also be subjected to fermentation as they contain sugar.

The stamens, pistil and perianth give a fast purplish colour which dyes silk.

The flowers open in the evenings and give off a smell in the night which is said to keep away or stupefy mosquitoes thus making them inoffensive. This may be very advantageous in malarial districts.

—(Agricultural News).

“Leucas.”

**Students' corner.**

*The Wood's Cup Tennis Tournament.*

The finals of the above tournament came off on the 19th evening when T. G. Muthuswami of Class IV, the winner of the cup for the last two years met K. S. Bhandary of Class II. Mr. Wood acted as referee. The match was very lively and well contested. Bhandary played a good game and was particularly strong in his service. In the

first set each was taking his service game and the score went up to 8 all. By a chance Bhandary losing his service game, lost the next game and the set as well. In the 2nd set Bhandary did not put such a tough fight and Muthuswami with his usual steady game won the set. The following are the scores :—

10—8 and 6—4.

After the match was over at the request of Mr. Wood, Mrs. McRae kindly presented the cup and the Championship medal to Muthuswami and the runner-up medal to Bhandary.

This is the third year in which Muthuswami wins the cup and hence it becomes his own and as Mr. Wood humourously put it he has got to thank the War for it as otherwise he should have left the College in December and not had the opportunity of playing this year's tournament. But we are glad to announce that Muthuswami has promised to follow the precedent of Mr. Dwarakanath by giving back the cup to the College.

#### *Parlakimedi Cup.*

We are glad to announce that K. K. Subrahmanyam of Class III has been awarded the Parlakimedi Cup for the best all round sportsman in the College for the year 1918—19, the next best being A. V. Babi of Class I.

#### *Games :—Football.*

A friendly match was played between the College and the Coimbatore Young Men's United eleven on our grounds in which we got defeated by one goal. There were two other matches with the Madras Forest College one on our grounds and another on their grounds. The first one was a draw and in the latter we won by four goals to two.

#### *Hockey.*

There was only one match this month with the Stane's European High School, played on their grounds. The game was a draw, the score being 3 all.

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## Students' Literary Club.

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The Students' Club most thankfully accepts the recent instalment of present of books so kindly made by Dr. Barber. This is one of the several occasions where we are the recipients of such gifts from the Doctor. We members are at a loss how to express our gratitude to him except by assuring him that we try our best to derive the full benefit from the store of knowledge which his interesting and useful books offer us. Once more thanking him, on behalf of the club.

General Secretary.

## Departmental Notes.

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### Appointments :—

During the training of Mr. P. H. Rama Reddi Probationary Deputy Director of Agriculture, for one month as Farm Manager, Central Farm, Coimbatore, Mr. S. Subrahmanya Ayyar Farm Manager, Central Farm, is transferred to the VII circle for district work under the Deputy Director of Agriculture, with headquarters at Coimbatore.

Mr. S. Ramaswami Pillai, Acting Assistant Director of Agriculture, to be Assistant Director of Agriculture and continue in charge of the II and III circles Bellary.

Mr. C. Narayana Ayyar, Assistant Director of Agriculture, on relief from the IV Circle, to be Special Assistant Director, VII Circle, Coimbatore.

Mr. R. Chokalingam Pillai, Farm Manager, is confirmed with retrospective effect from the date of appointment as such.

Mr. A. S. Nilakanta Ayyar, Assistant Agricultural Demonstrator is confirmed in his post with retrospective effect from the date of appointment as such.

### Leave :—

Mr. K. T. Bhandary, Teaching Assistant privilege leave for one month from 5-4-19.

Mr. T. V. Narayana Rao, Farm Office Manager, privilege leave for 6 weeks from 7-4-19.

Mr. K. Raghavachari, Teaching Assistant, privilege leave for 2 months from 19-5-19.

Mr. S. Viravaradha Raju, Assistant Farm Manager, privilege leave for one month from 26-4-19.

Mr. L. S. Natesayyar, Assistant Farm Manager, privilege leave for one month from 5-5-19.

Mr. K. Gopalakrishna Raju, Teaching Assistant privilege leave for 38 days from 23-4-19.

Mr. Govinda Pai, Assistant Farm Manager, leave on loss of pay for 17 days from 16-2-19.

Mr. G. Sitharama Sastri, Assistant Farm Manager, sick leave from 21-2-19 to 4-3-19.

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#### **An Announcement.**

We invite the attention of our readers to the announcement appearing elsewhere in this issue regarding "The Godavary Prize essay." The subject is of very great interest and hope there will be a keen competition for it.

(Ed.)



## The Godavary Prize Essay.

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1. A prize of Rs. 100 (one hundred) will be awarded for the best essay on "The History of Agriculture from Vedic Times."

2. The prize will be called "The Godavary Prize" and will be given by M. R. Ry. D. Balakrishnamurti Garu, Actnig Deputy Director, Madras Agricultural Department.

3. The competition is open to all the members of the Union including Honorary members and Associates.

4. The essay should not be more than 32 pages foolscap, type-written on one side.

5. The essay should be sent in so as to reach the General Secretary, Madras Agricultural Students' Union, Agricultural College, Coimbatore, not later than the 15th November 1919, with a covering letter giving the full name and address. The essay itself should be subscribed *nom de plume*. Six typed copies of the essay should be sent, one for record and the other five to be sent to judges.

6. The essay will be valued by a committee of five judges to be elected by the Working Committee in consultation with the Donor and the prize will be awarded at the next Agricultural Conference probably in December 1919.

7. The Working Committee of the Union reserves to itself the right of publishing the first or any of the essays, in the journal of the Union in the first instance.

8. All references to books, reports, papers etc., should be clearly given as foot notes.

All members of the Union are invited to compete. For further particulars apply to the General Secretary.

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