

It is very unfortunate that human nature likes to keep people below itself in the same level at which it found them. I would think that discouragement and dissatisfaction at their own state are the root causes of a good deal of inefficiency among labourers. Such employers who would encourage and help to lift their labourers from their serfdom to the status of independent landed proprietors are considered real benefactors to the nation.

The writer has endeavoured to briefly record what he had learnt from his experience. He is aware that there are many whose experience is much more mature and varied, who he hopes will throw more light on this problem. That practically little or no investigation has been so made up to the present is evident and it is a pity that a problem of such importance is treated so scantily even by workers in improved agriculture.

(From the Mysore Economic Journal November 1920.)

News and Notes.

Experiments in Rice Breeding—Random notes.

When comparing different varieties or different strains of the same variety of rice for yielding capacity one important point that has to be borne in mind is that all seedlings must be as nearly uniform as possible at the time of transplanting. In planting although a good deal of care and attention is taken in the preparation of seedbeds as well as in the sowing of the seeds uniformly, a certain amount of difference does always occur. This is due to the condition of the seedbeds apart from the differences which inhere in the varieties or strains themselves.

In Volume XII, No. 4 of the Philippines Agricultural Review mention is made of certain experiments with paddy seedlings with a view to find out the difference in yields from well-developed seedlings as compared with ordinary-sized seedlings.

and from entire seedlings as compared with pruned seedlings. The author of the experiment concludes that the difference in yield in favour of the welldeveloped seedlings was due to ability to grow rather than to heavier yield. He thinks that the seed must either be spread more thinly in the seedbed to produce vigorous seedlings or that more seedlings than one should be put in a hole at the transplanting time to ensure a good and even stand.

In another experiment well fertilized seedlings of the variety about 57 c. m. in height were put in a plot in duplicate and in another plot the same seedlings were planted in duplicate with the tops cut back to 26 c. m. The uncut seedlings were either blown down, or bent over, or broken down by winds after they were planted and the damaged portions began to wilt. This it is believed more than anything else accounted for the low percentage of the surviving plants and the consequent reduced yield. The pruned seedlings on the other hand remained erect and kept on producing new leaves practically without any interruption thus definitely proving that the pruning of rice seedlings before they are transplanted is a good and desirable practice. In this connection it may be mentioned that in the Paddy-Breeding Station it is a general rule to cut the tops of the seedlings at the time of transplanting them. [This is also the practice in most paddy tracts in this presidency—Editor.] The same volume contains the results of a third experiment to find out the effect of cutting the foliage of rice on the yield as it is a usual custom with the rice growers to adopt this method when the plants tend to run to tops. Two varieties were taken in an open field and a section of each of these was cut back while the other section was left intact. It is mentioned that the yield was in favour of the unpruned section showing that the practice of reducing the foliage of rice tends to reduce the yield. No mention is made however as to when the pruning was done, that

is, at what stage of the crop or of the duration of the varieties tried. The result should not be accepted as final as it might be that the pruning was not done at the proper time nor to the proper proportion.

The Government Economic Botanist, Coimbatore has designed and laid out certain experiments in the Paddy-Breeding Station, to test the effect of the condition of the seedlings at the time of transplanting on the yield of the crop.

K. R.

Awns in Plant Economy.

Awns are disagreeable in many ways, but are not lightly eliminated. Experiments with barley recorded in the Journal of Agricultural Research go to show what a complex problem it is. The removal of awns from a barley spike had a marked effect on the development of the grains. They had a smaller volume and a lower weight of dry matter at maturity than kernels from normal spikes. Care was taken to make sure that this was not due to the injury or shock of removal, the kernels from the clipped spikes developing as rapidly as those in the normal spikes for several days after the awns were clipped. The difference begins after a week—at the beginning of the period of starch infiltration—when the deposit of dry matter in the kernels of the normal spikes begins to excel that in the clipped spikes. In normal spikes the awns contained more than 30 per cent of ash at maturity. When the awns were removed a part of this ash apparently was deposited in the rachis. The rachises of the clipped spikes contained about 25 per cent more ash than the rachises of the normal spikes. The additional ash in the rachises of the clipped spikes probably was responsible for the tendency of these spikes to break. The indications are that the elimination of the awns results not only in lower yields but in shattering as well. It may be possible to produce nonshattering awnless sorts by

using parents which normally have a low percentage of ash in their rachises. As regards rice the awn problem may not necessarily be analogous to this, but this experience with barley must make us wary of the complexities of the problem handled.

G. N. R.

Compressed fodder.

The failure of rains in one season results in scarcity of fodder for stock and causes more anxiety to the ryot and the Government than a deficiency of food grains which can be easily imported from favoured tracts. The question of raising fodder on such occasions is of paramount importance if the agriculturist is to be placed on his original moorings after every famine. Several methods have in the past been suggested in order to save cattle from wholesale destruction. Cactus was advocated as a possible substitute. From information available, it would seem that this subject has been fairly satisfactorily solved by Australian farmers. It is ascertained that a fairly extensive trade is at present being done by Victorian firms with Java, Singapore and other eastern ports. The Agricultural Gazette of New South Wales October 2, 1920 relates a method adopted in preparing the fodder for export. "The fodder as made up is composed of mixed wheaten or oaten chaff with a good percentage of grain and lucerne chaff. A little bran is added to improve the quality and appearance of the fodder. It is made up in bundles running 70 to 80 lbs. in weight, approximately 18 inches long, 15 inches wide, 12 inches deep. At each end are placed two half-inch hardwood battens, 15 inches long, 6 inches wide, covering the whole of the two ends. Each bundle is secured by three wires. The pressing is done by plant driven by hydraulic power. In some places with an ordinary press three full bags are being pressed into a little more than the size of one."

Sugar.

The tons of sugarcane taken to make one ton of sugar in Queensland in 1919 when 1,258,760 tons of cane were crushed were 7.76, the lowest amount in the history of the industry according to official estimates.

The grinding of the cane of 1919-20 crop in Cuba terminated in June last and the revised figure for production of sugar was in the neighbourhood of 3.65 million tons.

Numerous important sales of sugar mills and sugar bearing lands have taken place, according to the International Sugar Journal for October 1920 and over 60 per cent of the Cuban industry is now in American hands, the United States manufacturers of sugarmill machinery occupying a very predominant position in the supply of the equipment for Cuban mills.

Production of Wool.

	Period.	No. of sheep millions.	Wool per head in lbs.	Country.
Agricultural				
Gazette of New	1890-93	60	3.75	Australia
South Wales,	1900-03	36	6.25	„
October 1920.	1916-19	35	8.44	„

The decrease of 25 million sheep has not lessened the output of wool which has actually increased by 70 million pounds during the 25 years 1893 to 1919.

Control of Liver-fluke.

According to a statement attributed in the Agricultural Gazette of New South Wales, October 2, 1920, to Dr. Simms of the Oregon Agricultural College, the young liver fluke or leech lives a portion of its life in the body of a fresh water snail before it can attack sheep, goats or cattle. Destruction of snails in all

standing and running water to which stock has access is rendered effective by the addition of bluestone to water. Solutions varying from 1 part of copper sulphate (bluestone) to 500,000 parts of water up to 1 part of bluestone to 3,000,000 parts of water kill the snails in less than 48 hours. No injury results to higher plants or domesticated animals. Bathing, drinking or irrigation is not affected unless solution is stronger than 1 in 50,000.

The American maize crop runs annually to 2,500 millions bushels, averaging $23\frac{1}{2}$ bushels per acre.

Captain Walter D. Elliot in his inaugural address to the Glasgow Veterinary College in the first week of October last emphasised the need for research to be carried on in close association with teaching.

The Ministry of Agriculture, England, look to the islands of phosphate in the Pacific recently acquired from the Germans for the supply of mineral phosphates needed on the British farms. Sometime ago the question of the use of the Trichinopoly phosphate in this Presidency was in the forefront and Mr. Sampson it was, we believe, that moved a resolution at the last Poona Board of Agriculture meeting that such areas should be acquired for the nation and not become the property nor be acquired or leased over for the exploitations, of exporting firms.

Cheese. The manufacture of cheese in the Netherlands is prohibited from 1-11-1920.

Rice. The first official estimate of the rice crops in Japan for the current season is $63\frac{1}{2}$ million koku—12 per cent. above the average.

Cereals. In consequence of the poor harvests the export of all cereals from the Feugtien Province which comprises most of South Manchuria is prohibited.

Cattle. The export of cattle from Denmark was 35,986 in the first half of the current year, while during the corresponding period in 1919, it was 12,816 animals.

Rice. Shipments of rice from Brazil showed a remarkable increase during the half year ended 30-6-1920 which is attributed to the great demand following upon the shortage of the Indian crop. 71,398 tons were exported this year as against 6,511 tons last year.

British Stud Bulls in Madras. Four Stud Bulls of Ayreshire breed were purchased from the United Kingdom last year through the kind assistance of Mr. Allan Carruth, late Deputy Director, Live Stock. These were stationed at the Governor's Park, Guindy, and were intended for service on cows in the Madras City and its suburbs. Sometime after arrival one animal was inoculated against Rinderpest and died of its effects. A second—a four-year-old bull—refused to cover any cow and was sent over to the Bangalore Military Dairy to try if the milder climate would induce him to be virile. The two left over are aged, one twenty-one and the other, thirty-one months. They are reported to have, respectively, covered six and twenty four cows.

The bulls are judged to be of decent size but bigger for their age. This type comes nearer the Indian cattle type than other English bulls. These animals are exercised both morning and evening by being taken out for a two-mile walk. 4 lbs. cake, 12 lbs. bran, 25 lbs. of hay and 35 lbs. grass form the daily ration of each bull—very high feeding from the point of view of one accustomed to 4 lbs. special food and 25 lbs. bulky fodder. These bulls show no tendency to fattening.

Government have ordered that notifications regarding promotion, leave, transfer, etc., of non-gazetted subordinate officers hitherto published in the Fort St. George Gazette shall cease to appear hereafter.

College Day and Conference.—It has been arranged that the College Day celebrations commence on Monday the 20th December with Sports in the afternoon and the Conference will be in session on the 21st and 22nd. The Managers' meeting will be held on the 20th in the morning and the Madras Agricultural Students' Union General Body Meeting on the 22nd afternoon.

Government have in G. O. No. 2043 Miscellaneous, dated 22-11-1920 (Revenue, Special), sanctioned the reconstitution of the existing V and VII Circles of the Agricultural Department as follows:—

Existing Circles.

V Tanjore, Trichinopoly and Salem.
 VII Malabar, South Kanara and
 Coimbatore.

Proposed Circles.

V Tanjore, Trichinopoly.
 VII Malabar and Kanara.
 VIII Coimbatore, Salem
 and Nilgiris.

During the absence of Mr. H. C. Sampson or until further orders the Assistant Directors at Trichinopoly, Coimbatore and Tellicherry will be in charge of the newly constituted Circles.

Students' Corner.

The students' society laid itself under an obligation to Rao Sahib T. S. Venkatraman, Acting Government Sugarcane Expert for his lecture on "The Sugarcane Industry—a study in plant breeding" which he delivered on 6-11-1920 under the chairmanship of M. R. Ry., Rai Bahadur K. Rangachariar. Mr. T. S. Venkatraman traced the genesis of the industry from its humble beginnings, compared sugarcane with beet in regard to cultivation, extent, and production and showed how the industry has been saved from extinction through the fortunate discovery of the principles of cross-breeding and their application to canes.

Illustrations were freely given with the help of magic lantern slides which formed a special feature of the lecture.

Estate Notes.

The Hon'ble Mr. B. N. Sarma, Member, Department of Revenue and Agriculture visited the College on 6-11-1920.

Mr. H. C. Sampson went on leave on 20-11-1920.

The Government Agricultural Engineer's office has been shifted to Coimbatore and Mr. F. T. T. Newland has joined us in the Estate.

The increase of plague in Coimbatore and its vicinity stimulated interest in preventive measures and sanitation. A few school going children from the estate got inoculated at the Forest College camp about 10 weeks ago. As the result of representations since made, the Medical Officer on plague duty visited the College on 22-11-1920 and 119 inoculations were registered.

Crop Notes.

Unusually wet weather was experienced during the month. The North-east monsoon began with a heavy fall which has brought up the total quantity of rain up to date far above the average. Paddy crops in the neighbourhood which had bright sunshine in October were put into better heart. The dry land cholams, however, refused to grow. Early sown cottons did not suffer but the late sowings had to struggle with weeds. Bengalgram sowing had to be sandwiched between wet days.

Departmental Notes.

Appointments:—

1. Mr. S. Ramaswami Raju, Sub Assistant, Government Lecturing Botanist's section from IV grade to III grade S. F. T. vice Mr. S. Subbayya, promoted to the Upper Division. To take effect from 1-4-1920.

2. Mr. T. V. Cheriyaaku, Sub-Assistant in Planting Mycology on probation on Rs. 35-2½-75. To report to the Government Mycologist.
3. Mr. C. Rangaswami Ayyangar, Sub-Assistant in Planting Mycology, to be Sub-Assistant under the Government Mycologist in a permanent vacancy.
4. Mr. K. E. Viswam Ayyar, confirmation as Assistant Farm Manager, IV grade from 16-11-1920.

Leave:—

1. Mr. P. Susainathan, S. P. T. Assistant in Entomology, extension of privilege leave for two weeks from 26-10-1920 in continuation of the leave already granted.
2. The grant of extension of privilege leave for a week from 13-10-20 to Mr. M. U. Vellodi, Farm Manager, is cancelled.
3. Mr. S. Subbiah, Farm Manager, Bantanhal, privilege leave for one month from or after 24-10-1920.
4. Mr. K. Hanumantha Rao, Assistant Farm Manager, Hagari, privilege leave for 17 days from 14-9-1920.
5. Mr. G. Satyanarayana Murthi, Assistant Farm Manager, on probation privilege leave on medical certificate for one month from 3-11-1920.
6. Mr. J. Arulanandam Pillai, Assistant Farm Manager, privilege leave for one month from 17-10-1920.

Change of Rule.

Proposed by Mr. V. Muthusami Aiyar and seconded by Mr. K. T. Bhandari that in rule 12, for "with four student members one from each class" read "with as many student members as there are classes."

The following subjects have been adopted for discussion at the next General Body meeting of the Madras Agricultural Students' Union.

"That in view of the coming changes which eventuate in the large employment of Indians in the higher grades of service in the agricultural department this meeting is of opinion that the time has

come for a better system of higher agricultural education so as to equip the alumni of this college to occupy posts of trust and responsibility and take independent lines of research work and therefore requests government to make early arrangements to get the College affiliated to the University and thereby enable the present batch of students of the Diploma course to get the full benefit of such affiliation."

"That this meeting resolves that the salaries of upper and lower subordinates are inadequate and therefore begs that Government will be pleased to revise the scales as below."

(1) Upper subordinates both scientific and agricultural section 100-10-300, increments to be automatic.

(2) Lower subordinates 75-5-175, increments to be automatic and the period of probation should count also for increment.

WANTED.

Applicants from Indians of the Madras Presidency for two posts of Technical Advisers on rice growing in Sierra Leone on the West Coast of Africa for a period of 12 or 18 months at the option of the Sierra Leone Government with 4 or 6 months' leave on full pay to follow. One to be a man of some scientific attainments and the other, of much practical experience. A knowledge of surveying, levelling and map drawing and a capacity to collect information on irrigation and cropping of a nature to help investigation by an expert are also needed of the former.

The salary is £40 a month for the senior and £30 a month for the junior. Free passages will be provided.

L. D. Swamikannu,
Director of Agriculture.
