

attraction of moths to traps at night are suggested. Early transplantation and careful irrigation tend a good deal to prevent this as well as 'elivi'.

In conclusion it may be said that, though ordinarily no very large increase in the yield of paddy can be effected by any single improvement or in a single year, yet by taking some extra care in each and every detail of its cultivation and for a number of years, there is no doubt that considerable enhancement can on the whole be effected.

G. JOGI RAJU

*Superintendent, Tawker's Estate.*

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### Notes.

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*Christmas in Madras:*—Christmas week in Madras was busier this year than usual. There were people who were pouring in from the mofussil to *enjoy the season*, which means, spending the frugal savings of a year in purchasing articles of little or no value, artistically displayed in all kinds of shops from the China Bazaar upwards, in attending dramas and concerts not understood and in patronising the Park Fair and Madras coffee hotels, apart from getting crushed, both to and fro, in the Railway 3rd class carriages on concession tickets!! There were also those who came to Madras, not only from the mofussil districts of the Presidency but from other parts of India as well, to attend and take part in one or other of the Conferences and meetings held in Madras. The Indian National Congress was the centre of attraction for the non-official population, but the Indian Industrial Conference, the Indian National Social Conference, the All India Temperance Conference, the Theistic Conference, the Theosophical Convention, the Provincial Co-operative Conference, the Christian College Day, the Indian Officers' Association, not to speak of others,— each had its own votaries that the Christmas activities in Madras were at a high pitch for over a week. There were opportunities for all, young

and old alike, to show skill in organisation, read well thought out addresses, join in animated discussions or display oratorical powers. Some, from their nature, returned home as pessimistic as, and no wiser than, before; while others, apparently of an optimistic temperament, vowed to do great things in future in their own spheres of action. We would very much like to see some of them translate their vows into action, especially in the matter of the industrial improvements of the country which would also necessitate a change in the social organisation of the people. One of the planks in the platform of Social Reform activities is the Elevation of the Depressed Classes and it is on these classes that the actual labour in the field and in industrial concerns depends. The question of Agricultural Reform is largely bound up with that of raising the status of these *untouchables* and we hope that action will not end with passing a pious resolution in open Conference.

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We offer our hearty congratulations, on behalf of the Union, to Mr. A. Rama Rao, Farm Manager of the Manganallur Farm on the title of Rao Saheb bestowed on him by His Excellency the Viceroy in the New Year Honours' list. Rao Saheb Rama Rao was the first Saidapet student who took a first class in Agriculture Advanced at the Govt. Technical Examinations as early as 1889. He was farming his own lands for several years and took service as Home Farm Superintendent at Sivagiri in Tinnevely about 15 years ago. He introduced vast and abiding changes in the cultivation in the neighbourhood in a quiet, unobtrusive manner, with no costly establishments or implements. The introduction of *kolingi* for green manure is due to him. His modest behaviour, cheerful manners and extremely simple life are worth copying by many an ardent agricultural reformer.

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The Judges who kindly valued the Munagala Prize Essays on Paddy Cultivation last year made the following remarks:—

“In the general opinion of the examiners, the first two essays were easily the best. They had expected practically all the candidates to show a more intimate knowledge of some particular agricultural tract than has been the case. They are glad that the prize has provoked some competition but very much wish that some more of the older members of the Union who have actually been in charge of farms had competed; and, if any such prize is again offered for open competition, they earnestly hope that some of the senior officers will compete.”

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In the light of the above remarks, we invite the attention of our members, including Honorary members and Associates, to the announcement, elsewhere, of two similar competitions instituted this year by Mr. K. Ramasastrulu and Mr. T. S. Venkataraman respectively.

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In response to the requests of many of the competitors for the Munagala prize last year, the utmost we can do is to state the order of merit under the respective pseudonyms:—

1. Agriculturist.
2. Parasuraman (close second).
3. Ganjam and Nimbalkar.
4. Agricola Varahamihira.
5. Malayali.
6. Observer.
7. Balaraman.
8. Cultivator.
9. Viralmalai.

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The United Provinces Agricultural Department has, so to say, followed the lead of Madras, in introducing, from next year, two courses of instruction at the Cawnpore Agricultural College. Instruction will be chiefly in the vernacular in the 2 years' course intended for actual cultivators and will be completely in English

in the four years' course the passed students of which will be eligible for higher appointments in the Department. Practical work in Agriculture will be, as at Coimbatore, the dominating feature in both courses. There is still a dearth of desirable candidates for admission into the college that a certain number of scholarships will be awarded to the students, a system which has apparently been found unnecessary in Madras. In fact the large number of applications for admission at the Coimbatore College, year after year, shows that we have passed the stage of luring men by offer of scholarships.

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The average yield of ragi, cultivated as a dry crop, was 540 lbs. in Hebbal village and 667 lbs in the Hebbal Farm. Deep ploughing early in the season is said to double the yield at this Farm.

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Selection of ragi seed by immersing in salt water has been giving an increased yield of 50% over unselected seed at the Hebbal Farm. Rather a very simple method of selection!

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Mr. Hamel Smith, the talented Editor of the *Tropical Life*, London, has sent us two of his publications "The Fermentation of Cacao" and "Cocoanuts,, the Consols of the East." The first book consists of the writings of 7 planters and scientific men of different parts of the world and would not be of sufficient interest to Indian readers, were it not for the fact that information is given here and there about the fermentation, oxidation and drying of coffee, tea, tobacco and indigo. The book on cocoanuts, however, is a useful book for cocoanut planters, containing detailed and lucid accounts, from the selection of sites and the starting of plantations to the different operations of manuring, cultivation and upkeep and the extraction of oil and fibre, in all parts of the world where cocoanut is grown. Very little reference is made to the cultivation of coconut in India and that little is in praise of the

excellence of the articles transhipped, both copra and oil, from Ceylon, Malabar and Cochin.

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In speaking of the large number of Farmers' Organisations which are met with in all parts of United States, Dr. L. C. Coleman, Director of Agriculture in Mysore who has recently published a report on his Agricultural Tour in Europe, America and Japan in 1912-13, states that these organisations are formed by intelligent men to meet a felt want and that they are composed of men actively and intelligently engaged in Agriculture who meet for a definite purpose and when they meet can discuss intelligently and from practical experience the questions which are brought up. Agricultural Associations will be a success only when they are organised under these conditions.

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In addition to the locally made tin lamps which have been used as light traps, two 500 c. p. arc lamps are being used for some months by the Govt. Entomologists' Staff and seem to be very effective. Just below the domes of the lamps, there are shallow basins of water with some kerosene.

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Very interesting, though laborious, work is being carried on by the Govt. Economic Botanist & his Assistants in Paddy selection. Over 240 varieties have been carefully planted in the wet lands in 2 acres and detailed study of these varieties is being made day after day. Type plants are picked out and bagged, splitting lots from crosses are examined, numbers counted and numbers of crosses counted in material designed to show natural crossing.

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The Asst. Director of Agriculture, N. Division reports that the sowing of Bengal gram in Nandyal Farm is a very slow

process. It has to be sown deep and, with 2 pairs of cattle to draw a gorru which is specially heavy and 1 pair to cover with guntaka, they just finish about 2 acres every day. Very slow indeed!

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Writing about cotton selections grown in Hagari Farm, Mr. Hilson recommends their sowings in small plots with regular spacing from plant to plant in preference to, sowing them as usual, in lines, as it is then easier to tell whether the plants in a plot are of one type, and at the same time differences in type between different plots appear more striking.

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Cotton, following Bengal gram, has grown more luxuriantly in Nandyal Farm than cotton following Sorghum, the former being taller, and better branched and tending to earlier flowering.

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Some substances having an injurious action on certain individuals are produced when coffee berries are roasted, but may be eliminated by coating the raw berries with clay and removing the coating subsequently from the roasted berries.—B. V. N. (*From the Jl. of Soc. of Ch. Ind.*)

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*Transpiration in the Cactus*:—Various recent observers have shown that many plants, as the cactus, with fleshy leaves or stems, which were formerly regarded as typical “xerophytes” (plants which can subsist with a small amount of moisture) prove on actual experiment to lose water quite as rapidly as “Mesophytic” plants (ordinary plants except the xerophytes and the Aquatic plants). One Petrograd Journal contributor compared the transpiration in the Cactus per hour with that in different thin leaved “Mesophytic” plants and arrived at a similar conclusion. Some of the unexpected results of this kind obtained by experiment may be explained by the very different behaviour of the stomata, in

different plants, as well as in the same plant under different conditions.—K. C. J. (*from Knowledge.*)

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*Effect of light on the Development of fruit:*—Experiments have been made to ascertain the influence that light exercises on the development of fruit, and the results are interesting. The experiments were made by letting the fruit ripen (1) in bags that shut all rays of light; (2) in transparent bags giving an attenuated light; (3) fruit exposed to full day light. The trials were made on grapes, cherries, pears, apples, etc. From the results it would appear that light is absolutely necessary, only during the first stages of the formation of fruit and grain. After this initial stage had passed, the fruit seems able to complete its development and maturity, equally well in obscurity as well as in full light, although under the influence of the latter a great amount of dry substance was acquired. It was observed that the best results were obtained when the growing fruit was under the influence of an attenuated light, and also that the acidity of the fruit was then diminished.—J. C. R. (*From the Mark Lane Express Agricultural Journal.*)

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*Draining with Dynamite:*—A good deal has been heard recently of the use of Dynamite and other high explosives for the removal of tree stumps and for breaking up hard subsoils in the orchard, but the latest application of the explosives is in drainage of swamps. Such swamps are often caused by the surface waters which collect on low ground failing to percolate through a comparatively thin layer of impervious clay. The water is held as in a saucer. A Kansas farmer owned a 40 acres swamp of this kind in his land and he proceeded to tap it. Across the lowest part where the water was about 3 ft. deep, he blasted a row of holes. In a few days the water had disappeared and in the following season he is said to have reaped 1600 bushels of oats from the 40 acres. Since then he has been producing four cuttings

of lucerne on this land.—J. C. R. (*From the Journal of Agriculture, Victoria.*)

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Green manuring experiments with Sanai (Sunnhemp) on wheat conducted at the Cawnpore Agricultural Station give an average of 2466 lbs of grain for the unmanured plot, while the manured plot gave 1,877 lbs per acre. The summer crop was not 45 days' old when ploughed in and it is argued that the season was not favourable for green manuring on account of scanty monsoon rainfall.

On the other hand, owing to favourable rainfall, the effect of sunnhemp as a green manure on the yield of wheat grown in Atarra Experimental Station, Banda, U. P. is seen from the fact that, on the average, unmanured lands gave 1426 lbs, while the manured lands gave 2052 lbs per acre.

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The application of gypsum to counteract the deleterious effects of sodium carbonate in alkaline soils was tried in two plots in the Partabgarh station, U. P. In one of the plots which contained 0.197% sodium carbonate and to which 185 maunds (1 Md=82 lbs) of gypsum were applied, the yield of barley was poor, but grass grew fairly well. In the other which contained 0.26 to 0.37% of Sodium carbonate, pits were dug from 4 to 6 feet and the dug out earth was mixed with 26 to 36 lbs of gypsum in each case and young plants of different trees margosa, iluppai (*bassia latifolia*) etc. were planted, in 1908 and 1909 and they are all doing well.

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### **Diploma Examination Results.**

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The Diploma Examination in Botany was held in December, the outside examiner being Mr. R. A. Graham,