

regular zone of the typical Ongoles. The area is 700 acres, black loam occupies more than half, the remainder being red sand or gravel. This area is commanded by the Mopad irrigation project just completed which enhances its value, and is well fitted for the growth of fodder crops and grasses. The lands are being laid out and buildings are commencing. A beginning has been made in breeding with the purchase of a composite herd of cows, heifers and bull calves—60 best animals of the Ongole breed.

Finishing this, I wended my way back and reached Madras in time to get into harness again.

Efficiency of Agricultural Labour.

D. ANANDA RAO, B. SC.

It was at the first Economic Conference held in Bombay, Dr. Mann read a paper on a similar subject in which he endeavoured to show that the agricultural labourer in this country is not as bad as he is depicted to be by several writers on Indian labour problems, and from certain experiments conducted, he argued that "the ploughman in America using his horses, is 50% more efficient than the ploughman here using bullocks."

It is not my intention to question the figures quoted by Dr. Mann, nor to argue in favour of or against the efficiency of the Indian labourer. Efficiency is, after all, only a relative term, and what is considered as a piece of efficient work in America may not be judged equally efficient in Britain compared with its own standards or *vice versa*. My object is, taking the labourer in India for what he is worth, to elicit from those more conversant with this important problem, any information on the methods of making labour still more efficient, if it is already so. Personally I am of opinion that there is room for improvement.

In the management of a farm, the handling of labour exercises the greatest tact, skill and patience. Labour has, it is true, suffered

in the past at the hands of capital in all parts of the world. India has been no exception to it. In the United Kingdom the expression "farm hands" is quite common even today, and the treatment meted out in this country is not anything, that would bring credit to our civilisation. But times are rapidly changing, and labour is increasingly asserting its own rights. It is an open secret that capital is bending its knees before labour even here; that the Indian labourer has not allowed the grass to grow under his feet, but is treading on the heels of his fellow labourers in other parts of the world. Such being the case, there is no other alternative for the employer of the present day than to submit to the signs of the times, and recognise the significance of the turning of the tables.

With an ever-increasing labour bill, and a constant fear of labour becoming scarce, the employer should devise ways and means to retain the labour he has secured at a high price, and to maintain it at a high level of efficiency.

Compared with pre-war days labour costs now at least twice as much. But has its efficiency increased in proportion? It could not have been for obvious reasons. On the contrary, famines, bad seasons and high prices have all quickly followed one another, which in all probability have deprived the labourer of his former strength. It may be therefore assumed that during the last 4 or 5 years labour has if at all not only not increased in efficiency, but perhaps has cost the employer far more than before. I propose to discuss the very common causes that contribute to bring down labour to a very low state of efficiency and per chance point out certain methods which might help its increase. I should like however to make it clear at the outset that I claim no originality for the causes or methods suggested; they are not based on any experiments, but are merely the result of observations made during my experience as an agricultural officer. I believe there are large employers of labour in agricultural operations, in planting districts, in cotton mills, in iron foundries, and various other bureaus of labour, who I hope will assist us in providing correct

information, and I shall be highly flattered if this article provokes investigation and experiments which this intricate subject rightly deserves.

In the first instance agricultural labour is unable to compete fairly and squarely with other kinds of labour in regard to wages. Agricultural labour is dubbed "unskilled," while a mechanic or a mason is a "skilled" workman. Those of us who know of agricultural operations realise that good ploughing and straight drilling call for as much skill as any of those, which come under the category of "skilled" labour, and the labelling of all agricultural operations as 'unskilled' is therefore a misnomer. Of late it has become evident that non-agricultural operations like building construction, road making, carpentry, are attracting agricultural labour in the vicinity of large towns. In many localities, it is drawn to the hills for works in the plantations and there has been not a little of emigration from this part of the country to Ceylon, Rangoon, and Malaya. With such attractions at their doors, it is not surprising that the best of them are lured away by higher wages, leaving the country with what may be called the riff raff of rural labourers for local field operations. Again, similar occupations which require no greater skill like e. g., cotton ginneries withdraw large numbers of women workers who perhaps get same wages as if not more than those that are employed in more arduous agricultural operations. Agricultural labourers have of late been taking to apprenticeship in carpentry and smithy because of the higher wages such operations bring in. It is only an economic problem which has upset the equilibrium, and the agricultural labour has indirectly at least, hit the profession which has been and will be the mainstay of the nation.

Demanding as it does no small amount of physical endurance, field work is uncongenial, specially to those who are not blessed with robust constitutions. It is monotonous with nothing to look forward to, but the wage it brings. It is possible to relieve the strain by change of occupation. This, however, is not the lot of an agricultural labourer. In these circumstances inefficiency is likely to take root in

all daily tasks. Owing to slack seasons in agricultural operations, the labourers do not find themselves employed throughout the year which necessitates their tiding over seasons of scarcity with what they have saved in seasons of prosperity. And this is not possible when normally the labourer gets just enough to support himself and family. Human labour is often wasted on operations which can be replaced more efficiently by mechanical means. Lifting earth in headloads to level a field instead of using a leveller with a pair of oxen is a case in point. How often is it the experience of an agricultural officer to see human labour inefficiently employed with inefficient implements, no proper supervision, tactless management, thoughtless organisation, and injudicious farming.

One of the most difficult things for a farmer to employ efficiently, is his cattle. On large farms, it is perhaps ever difficult to estimate correctly the exact number of pairs required for efficient working, when busy and slack seasons alternate. It is an undoubted fact that a deal of organising capacity is required of an officer to so equip the farm that there is neither scarcity in one season nor superfluity in another. The writer obtained not long ago figures relating to the actual number of cattle employed in one of the large Government farms (mixed) during one year. It was found that except during two months of the busiest season only from 50 to 60% of the cattle were utilised per month throughout the year, and during the two busiest months, the number employed rose to about 82%. Even granting 4 days' rest to each pair, during a month, it was calculated that 20% of the cattle including those which were ill were not properly employed or in other words, there was a wastage in cattle efficiency of about 20%. It is false economy to overwork cattle as it will only tend to high depreciation, on the other hand, underworking will doubtless swell the farmers' bills. For inefficiency in cattle labour, apart for the inherent inefficiency, of the cattle themselves, the men in charge are mainly responsible. Where cattle are worked only for 6 hours a day instead of 8 hours, and where a man ploughs half an acre when $\frac{3}{4}$ of an acre is expected of him, it is beyond doubt that we are not getting the most of our cattle.

To these inefficiencies must be added other uncontrollable factors such as illness, rainy days, and slack seasons. On the whole, on mixed farms and with efficient organisation, there ought to be little difficulty in keeping the cattle at work over 75% of the total number of working days.

I have indicated briefly where inefficiency occurs and what then are the remedies ?

It was pointed out that insufficiency of wages is a fruitful cause of inefficiency of labour. It is, however, open to question whether increase in wages would increase efficiency in proportion. This is the first consideration which needs investigation: namely how far we can increase the wages to obtain maximum efficiency. It is beyond doubt that Indian agricultural labour, as it exists today, is very much underpaid, and so long as this continues, the blame for inefficiency will be laid at the door of the employer. Given similar conditions, it is not at all unlikely that Indian labourer will rise and compare favourably with his western brother but this remains to be proved by facts. The first principle to bear in mind in maintaining labour in efficiency is to keep him beyond penury and want. Only then can the labourer put forth his maximum effort and direct his best attention to the work. Low wages on the other hand will only tend to divert his attention to the consideration of the morrow. How much an agricultural labourer ought to get is a question depending on local conditions. One would think that by the gradual increase of wages of the permanent labour, and carefully watching its work without creating suspicion, useful results would be obtained.

Payment in kind, instead of in money is perhaps one of the best ways in which the ordinary ryot has solved the question of inefficiency. Such wages will minimise the tendency to extravagant habits. Extra wages can be substituted by perquisites so that the employer wins the goodwill of his labourers. Encouragement to those who work well during sowing and harvesting seasons by promising 1 or 2% of the total yield will, no doubt, help in achieving the

object in view. Presents during festive occasions would stimulate the desire to work wholeheartedly for the master. Slackness in work is bound to continue, as long as the labourer feels that he is working for the profit of another, and such a feeling can only be counteracted by keeping the labourers, contented and happy in ways similar to those suggested above.

Supervision of labour is much neglected at the present day. Anything that directly tends to improve it will increase efficiency. A cartman who brings sand from a distant river bed, men building a fodder stack, a mason at his culvert, boys tending calves are a few examples out of many, which as at present managed, escape scrupulous supervision. It is not easy to suggest improvements, but the best cure seems to be to educate the labourer to be worthy of his hire. It is beyond the province of this paper to deal with rural education, but it is the duty of the state to educate every boy and girl in the country in such a way as to make them realise the high sense of duty in whatever calling they may find themselves in. This again largely depends on the personality of the teacher who can infuse into them lofty ideals which they themselves follow.

For the present at all events, supervision from the most senior officer down to the maistry should be rigorously exercised. It is the duty of the superior officer to see that his overseers and maistries are the pick of men who recognise their responsibility. For these are the men with whom the bulk of supervision rests. It may be a good plan to give special training under experienced officers before the maistries are confirmed.

Concentration of labour at particular jobs, and not the dissipating of it throughout the farm is one secret of careful supervision. To ensure efficient work it is most desirable to insist that the actual quantity of work turned out in each operation is systematically recorded. To an experienced officer this must be one of the easiest ways of checking supervision. Supervision must be minimised by giving jobs in piece work i. e., by paying a cooly according to the quantity of work turned out, which will be an incentive for a larger wage

than what he would get under the daily system. There is no doubt a certain amount of supervision is necessary even in such operations, as the tendency would be to sacrifice quality for quantity. One of the best methods of increasing efficiency is to employ labour under share system, for by it the labourer recognises that his efforts contribute directly to the increase of his income in as much as he has a claim for share in the produce. In experimental cultivation, however, this system cannot be permitted. The exact period at which a particular operation should be given to the best advantage on share calls for judgment. In the case of cotton picking, for example, a Manager who pays daily wages when the crop has fully burst, and employs them for shares at the end of the season, is held in contempt by his labourers. It must always be recognised that when labourers are paid by methods other than daily wages, the special wage should be so adjusted as to be slightly higher than the daily wage, for only then can it be really attractive.

Henry W. Wolff recommends strongly the method of giving the labourers a share in the profits in the following words "Profit sharing means that a well defined share, fixed beforehand, of the net profit resulting in an enterprise as a whole, shall be handed over to the workmen employed, over and above their ordinary wages. The wages should be fixed to start with and should be of the ordinary level. For profitsharing is not designed as a substitute for part of them as you place a travelling Agent on fixed pay and on commission but as an inducement of work of head, hand and eye *beyond* that which is paid for in the regular wage. The labourer should receive his honest pay first." Profitsharing is therefore intended for better intelligence, greater diligence and more thought bestowed by the labourer in his master's work. In a modified form, this system is prevalent in most parts of the country. It is suggested, that in India where the labourer is so much indebted, the extra profits he earns in the way might go to liquidate his liabilities, which he will do, only if the master takes a personal interest in him. One of the chief causes of inefficiency in farm labour seems to be due to what I would call, a lack of personal touch. Employers of labour are prone to treat their

labourers as mere human machines. Fictitious standards of efficiency in work are fixed by men who have not the practical knowledge, so that they become mere taskmasters rather than guides and helpers. Personal touch begets personal sympathy, and this is only possible where the officer realises the degree of effort that each field operation such as, ploughing, digging, sowing, planting or hoeing calls for. This is where the human element comes in. The employer must realise the difficulties of the labourer, not only in his work, but even in his private life and should regard the labourer as one possessing similar flesh and blood to his. I was greatly struck with the very friendly relations that existed between the labourers and the head of a large Government Farm, in North India, which I had the privilege of visiting not long ago. The treatment accorded to his labourers there is worthy of imitation on the part of officers of similar status in other parts of this country. The labourer in this instance would fearlessly approach his superior with his grievances, and his personality averted many a time a strike owing to silly coercion on the part of his farm staff. In the training of agricultural students, neither the student nor the teacher can afford to forget this aspect of human element, in practical work. It is the sacred duty of the teacher to constantly impress upon the student the importance of his knowing the details of practical work, for no other reason than to gauge in later years the correct estimate of a labourer's efforts. The practical student, from his point of view, knowing the ease or difficulty of each operation, should train himself to correctly value the farm labour. He should realise that practical work in the curriculum is the only way of training him to be a supervisor of his labour and of attracting for it his best respect.

A practice prevalent in Britain, which is worthy of adoption elsewhere, is the allotment of small plots of land to labourers for the cultivation of vegetables for themselves in their spare time.

Free housing is an admirable method to make the labourer contented. In Coimbatore such a practice is very common in garden lands, where the chuckler employed to stitch the leather buckets, is provided with a hut for himself and his family.

A point worthy of investigation is the advisability of giving occasional rest to the labourer doing strenuous work. The writer remembers reading of some American Experiments with a similar view but has not heard of any such efforts made in India. During the first half an hour that a ploughman works, the efficiency is low owing to several defects connected with his plough, his oxen or himself. When adjusted, however, during the next few hours, the efficiency is likely to be at its height, after which the efficiency decreases in proportion to the number of hours worked, which is due to the usual human as well as animal weakness. If, however, from the time that efficiency tends to show retardation some rest is afforded, it is worth investigating whether efficiency cannot be maintained at a higher level than if the labourer is worked in the usual way. It appeals to common sense that efficiency is bound to increase, but there are practical difficulties in the way. Unless supervision is perfect, the labourer is likely to take undue advantage of the relaxation. In the case of operations done as piece-work or under share system, the labourer solves the problem himself by taking rest whenever he feels the necessity, and while engaging labourers in such operations, it would be most useful to study unnoticed, the method of relaxation and the frequency of it, that the piece-worker or sharer enjoys. Closely allied to this is the periodical rest that the animal system needs in maintaining the body in health. Nature is an efficient master and revolts when bodily rest is suppressed. How often and for what length of time, such periodical rests be encouraged is a matter to be decided purely by local conditions. The rest given to the labourer must be at the expense of the employer alone. In western countries except for a brief annual holiday, the workman is compelled to lose his wages for all compulsory holidays. This

however cannot be done in India, where wages as we have already seen are low. It is suggested that all employers should insist on their servants taking a holiday even once a fortnight at full pay, as it is indeed a short-sighted policy to make a labourer work week in and week out without any change or relaxation. The custom demands of employers of domestic servants in England the giving of a weekly and sometimes a bi-weekly half holiday. In Government farms in this presidency, all farm labourers are given three holidays in a month which they can accumulate up to 20 days. This allows a far-sighted cooly to go off on a three week's annual holiday if he so desires.

It may be a good plan also to reduce or increase the hours of work according as the season is dull or heavy, instead of adopting the hard and fast rule of 8 or 9 hours a day of work. In summer when the days are hot and long, it would contribute to efficiency if labour is employed only during the cool hours of the morning and the evening, with a long break in the afternoon.

Since it is recognised on all hands that agricultural labour is monotonous, it should be one's endeavour to change the occupation as far as possible. It may not always be possible indeed it is not considered expedient, to change the occupation during a day, but it ought to be possible during a week. For a ploughman to be made to plough day after day, is irksome both for man and beast. A change to harrowing or carting would be a welcome relief.

Competitions have their great advantage in increasing the quantity of work turned out, but must not be allowed at the expense of quality. A better method than competition seems to be an award of surprise prizes in money or in kind, for good work turned out by the labourer without previous intimation. This will create a healthy rivalry among labourers tending to keep efficiency always at a high water mark.

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.