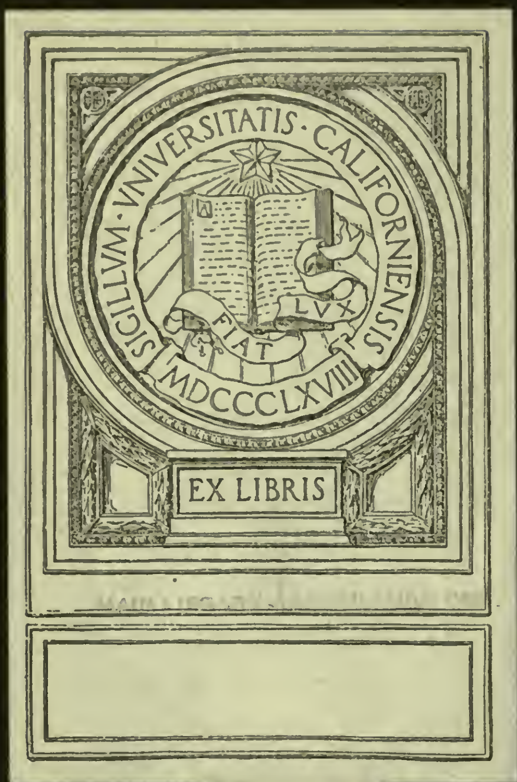
SIGILLVM · VNIVERSITATIS · CALIFORNIENSIS
FIAT LVX
MDCCCLXVIII
EX LIBRIS

THE STANDARDISATION OF AGRICULTURAL LABOUR

By

T. B. PONSONBY

Printed by
W. H. SMITH & SON,
THE ARDEN PRESS, STAMFORD STREET, LONDON, S.E.1.

This is a reprint of Mr. Ponsonby's "Standardisation of Agricultural Labour," which was published by the Co-operative Reference Library, Dublin, and with their consent re-published by the Country Gentlemen's Association in their Year-Book.

The Standardisation of Labour

By T. B. Ponsonby.

THE condition of agricultural labour is not satisfactory, and this is one of the reasons why the return of high agricultural prices has not resulted in an increase of tillage.

If agriculture is to share in the reconstruction after the war, it is certain that this question must be tackled.

Briefly, the labourer complains that he is underpaid, and the employer answers that he cannot pay a higher wage for the inferior labour he receives.

Both these views are probably correct, and together they form a vicious circle.

There appears to be no evidence that the payment of a higher wage does of itself produce greater efficiency. At the same time, it should be noted that under existing conditions a labourer has no recognised guarantee that an increase of his efficiency will secure him a higher wage. The result is that the agricultural labourer is notorious for the inefficiency of his work, and for the low standard of his living.

The fact that this state of affairs has existed so long shows that the remedy is not easily found; but, having accepted the view that this condition is unsatisfactory, we must either attempt a solution, or give up the case as hopeless. The latter method, whatever the facts, is unworthy of adoption, and we are therefore left with the necessity of, at any rate, attempting a remedy.

It may be accepted that the highest efficiency can only be obtained when accompanied by a thoroughly satisfactory condition of mind as well as of body, and this is wrapped up in the larger problems of housing, education, recreation and the development of both the desire and opportunity for the better employment of spare time and money. Alcoholism and its connection with the supply of suitable food is no less important; but all these are outside the scope of the present article, which will confine itself to the immediate difficulties of the question—namely, the combating of idleness and the encouragement of increased efficiency in the worker.

Since the chief cause of idleness is boredom, and the absence of reward the chief deterrent to increased efficiency, we must attempt to increase the labourer's interest in his work, and to suggest a means of recognising and rewarding an increase in his efficiency.

For many reasons no real progress can be made, unless we can define a day's work. For instance, it is one of the duties of the employer to see that his men do a fair day's work, and if he does not know what this is, his opinion as to whether a labourer does a fair day's work or not must be based on something other than the actual amount of work done. Such a state of affairs is obviously wrong, and is apt to lead to unfairness on the one side, and deceit or intrigue on the other. Again, a labourer has a perfect right to ask what amount of work is to be expected of him, and unless his employer has some definite views on the matter, he cannot give a proper answer. It is almost impossible to take an interest in work which has no apparent object; and where there is one, the nearness or remoteness of it has a considerable effect upon the amount of interest awakened. On the farm the object of much of the work is only realised after a considerable time, and it is impossible to expect the labourer to take the same interest in it as his employer, for he may not even be on that farm when the results of his labour show themselves. If his interest is to be stimulated, it must be centred on something less remote—and this is one of the objects of standardisation of labour.

There is a very definite pleasure in finishing anything, and a sense of relief when the day's work is definitely done. No matter how trivial the work, the satisfaction of feeling that it is done and finished with, or that the amount allotted to that day has been accomplished, is so real that it is well worthy of cultivation.

By establishing standards of labour we not only give the workman a definite and immediate object for his labour, but we place him on an altogether different footing. If he has done his work his position is definite—he has earned, and not merely received, his pay. Any doubt as to what his employer thinks of his abilities may be discarded; he is a free man, and every evening he may return home with a pleasant feeling that his work is done and his efficiency proved.

The advantages to the employer are equally great. His suspicions as to whether his men work in his absence or not are set at rest. There is no doubt as to whether the work is done or not, and he has some definite basis on which to estimate how long work will take, and what should be its cost. This is the essence of management, and management determines the success or failure of a farm more than any other single factor.

By fixing a standard of labour we supply something analogous to bogey at golf, or even to the goals at football. If football were played without goal-posts, one team might assert an overwhelming superiority over the other, and yet the whole thing would be unsatisfactory because definite proof would be wanting.

The advantages gained by thus standardising work are so well recognised that it has been accepted as a law that a specific amount of work to be performed in a definite time is more efficiently done than a similar amount of work to be performed in an indefinite time.

We must next adopt a system of payment designed to recognise and reward increased efficiency in the worker. Such a system must recognise three facts :—

(*a*) A man will do his best if adequately rewarded, and not otherwise, and his reward should be proportionate to his efficiency;

(*b*) The reward must be prompt, for the present value of a reward decreases rapidly with the remoteness of its realisation;

(*c*) The system should promote and not impair feelings of goodwill between employer and employed, for the results of much farm labour depend to a very great extent on the existence of such feelings.

The following systems of payment are worthy of consideration :—

1. *Day Work.*—Ordinary payment by time has the advantages of great simplicity and of a definite wage; but it offers no incentive to increased efficiency. However, it must be frequently employed and, when possible, should be supplemented by a bonus designed to offer an incentive in the desired direction.

For instance, it is not unusual to give shepherds a bonus on the results of the lambing season. It is better to give a larger bonus on each lamb reared over and above, say, a lamb for each ewe, than a smaller one on every lamb reared.

Or again, when milk is used for butter-making, the bonus to the milkers might bear some relation to the amount of butter-fat in the milk, because this is dependent to a great extent on the proper stripping of cows, which is the act in which carelessness of the milkers is most likely to show itself.

2. *Piece Work* has many desirable qualities, but it has the very great disadvantages that the fixing of the rate is liable to cause much ill-feeling. Employers are tempted to fix too low a rate, fearing that a high one would expose their ignorance of the work, whilst labourers are often afraid of earning all they might, lest the piece rate be lowered next time.

It has the further disadvantage that horses are apt to be overdriven and the work to be skimped. But neither of these need occur when the labourer is regularly employed under satisfactory conditions. Piece work, however, is not inherently at fault, and is to be recommended where the fixing of a fair rate is not a difficulty.

3. *Differential Rate.*—Here the men may be employed at a daily wage, but if the amount of work performed reaches a certain standard, they are paid at a definitely higher rate.

For instance, on a certain farm ploughmen receiving 18s. a week were found to average three-quarters of an acre per day, which was at a labour cost of 4s. per acre. The farmer told his men that if they would average one acre per day, he would raise their wages to 21s. per week. The men thus earned what was considered then a very good wage, whilst the labour cost to the farmer dropped to 3s. 6d. per acre, and he had the very great advantage of getting the work hurried on.

It should be noted that the correct application of this method ensures a benefit to both parties.

Again, where it is very necessary to hurry on work, piece rates may be employed, a higher rate being paid for work done over and above a certain standard. For instance, loading dung into carts the men might be paid, say, 2d. per cubic yard for the first 20 cubic yards, and 3d. for each additional cubic yard per day.

4. *Optional Day or Piece Rate.*—By this system a definite piece rate is set for the work, but the men have the option of being paid either by the day or by the piece, and need not exercise their option until the pay day. For example, a drainage scheme was being carried out, the rate per yard having been fixed. Circumstances arose which made the progress very irregular and the result of

the piece work uncertain; but the men workedon contentedly, knowing that they were certain of the day's wage, and might earn a good deal more. The great advantage of this system is that it gives the incentive to increased efficiency that is lacking in the day work system and also, to a great extent, avoids the annoyance or disappointment which an unsatisfactory piece rate may cause. The conditions of farm labour offer a very suitable field for the employment of this system.

5. *The Stint System.*—By this system a definite amount of work is set to each man, having done which he may go home. Here, the labourer's reward is in spare time and not in money, and this is sometimes—though not always—of great value.

6. *Profit Sharing Systems* are not really applicable to farming. The reward is too remote, and based on complexities which the labourer cannot understand.

It may here be noted that one of the most obvious and desirable examples of increased efficiency consists in greater regularity of attendance. This is important, because the planning of the work beforehand is one of the chief factors of successful farming, and the value of this planning depends upon the certainty with which the labour is available. The work done by a labourer regular in his attendance is of greater value to the farmer than similar work done by a man on whose attendance the farmer cannot rely.

Standards of Labour.

In fixing standards of labour an attempt is made to state what amount of work a normally efficient labourer should perform in a day. No attempt is made to fix a maximum; the amount fixed should be such as can be considerably increased when a proper incentive is offered.

In all cases normal conditions are assumed, and in the case of horse implements it is further assumed that the horses and implements are suited to each other and to the ground they work. It is not suggested that the amount of work done should necessarily be measured every day, but that a system should be at hand by which this can be done whenever necessary. The ordinary man, paying bills, does not necessarily always check the totals of every item of the weekly accounts submitted to him by different traders; but he should do so now and then, and should certainly always be able to do so.

So it is with the standards of labour. They are for a definite purpose, and the amount of work done should closely approximate the standard. "As long as the ship keeps her course let her steer herself" is a very good nautical saying, and it is thoroughly applicable to farming. Nevertheless, the mariner from time to time glances at the compass; and so should the farmer keep his standards before him.

In no case is it suggested that the use of standards should displace common sense; on the contrary, it is hoped that their use will stimulate the latter.

Horse Implements.

The number of acres which any implement should cover in a day ought to be known, and this depends upon

(1) The distance travelled; and

(2) The width of the implement.

By combining these two factors in a single expression we get an index by which the standard for any class of implements is arrived at.

The Index is a figure which, when divided into the width of an implement in inches, gives the number of acres forming a standard day's work for that implement, and is based on the distance travelled by it whilst doing effective work.

An effective draught of 11 miles is good work for ploughs and other slow-moving implements, and the index for this is 9, because if the width of the implement in inches is divided by 9, the quotient gives the number of acres that implement will do, if drawn for exactly 11 miles of effective work. Example, a plough turning a 9-inch sod: 9 ÷ 9 equals 1 acre per day, and in practice this is found to be quite a fair day's work. In the short days of mid-winter, or on heavy land, the index might be 10, in which case the distance travelled would be practically 10 miles.

Considered from another point of view, the plough in the first case has to travel 11 miles; the pace should be about 1¾ miles per hour, and at this speed it would take about 6½ hours of effective work. Under ordinary conditions this should not be excessive, but to maintain such an average implies an efficiency of management which is rarely found.

A cultivator working a width of 48 inches: 48 ÷ 9 equals 5⅓ acres per day. This again, is quite good work, and above the average, but with efficient management it should be maintained, and the labourer regularly accomplishing it should be recognised as efficient.

Harrows, to do efficient work, should move at a brisk speed, say, 2 miles per hour at least, and light harrows a bit faster. The index would be 8, on the assumption that there should be about 12½ miles of effective work done, and this, at 2 miles an hour, is 6¼ hours' work.

Another example may be taken from drill hoeing. Suppose a root crop is growing in drills 27 in. apart, and an implement is used doing 2 drills at a time. The width covered, therefore, is twice 27—*i.e.*, 54 in.

Drill hoes are light, fast-moving implements, and are used at a time of year when the days are long and conditions good. The index 7 may be used, requiring an effective draught of 14 miles: 54 ÷ 7 equals 7⅝, say, 7½ acres per day.

Standards for other implements can be fixed by the same methods, and the system is equally applicable to work done by farm tractors, whose index would probably be about 6, requiring an effective draught of 16½ miles.

The exact index to be used must be settled by the employer on the spot. By fixing an index higher or lower than the normal, allowances can be made for local conditions.

Index.	Implements.	Miles Effective Draught.
10	Ploughs, Heavy Cultivators ..	10
9	Ploughs, Cultivators, Heavy Harrows	11
8	Harrows, Rollers, Drills, etc., and fast-moving Implements subject to frequent stops ..	12½
7	Light Harrows, Hoes and fast moving Implements ..	14
6	Motor-drawn Implements ..	16½

By dividing the width of an implement in inches by the index for its class, the quotient gives the number of acres that implement will cover if it is drawn the number of miles shown in the third column.

With the help of this table it should not be difficult to determine the amount of work which any implement will do. The farmer ought to be able to estimate the distance his horses should be able to draw any implement under the conditions existing in the field, and having done this, the acreage can be determined by means of the index.

Common sense, of course, must be applied, and if the implement works only in one direction and has to come back idle, it will do only half the work or thereabouts. For instance, a potato digger is a fast-moving implement, and therefore has the index 7. Suppose potatoes are growing in drills 28 in. apart; if the digger works in both directions it will do 4 acres per day, if in one direction only, then 2 acres or a little more will be its standard.

Speed of Horses.

Many experiments have been carried out to test the relative efficiency of horses at different speeds.

A horse is found to exert his greatest efficiency at a low speed between 2 and 2½ miles per hour; above that speed his efficiency decreases gradually, and below it fairly rapidly.

A plough should not be allowed to go at a slower speed than 1½ miles per hour; from that to 2 miles per hour is normal plough pace. If the horse goes slower, he becomes very inefficient—in fact, at a very slow pace it is all he can do to balance himself, as may easily be seen by watching the track of a very slow-moving horse. It is analogous to the difficulty we experience in bicycling at a very slow speed.

Harrows should be kept moving briskly. There is a marked difference in the work done by the same harrow at different speeds When going along at 2½ miles per hour a rapid vibrating motion is imparted to the harrow, which then does quite different work to that which the same harrow does at a slow speed.

The steadiness of the draught is also of great importance in mowers and binders, particularly the latter.

In carting, the speed at which horses travel is often quite ridiculously slow. There is no earthly reason why horses should cart at less than 3 miles an hour, especially when the return journey is empty; yet horses and men easily get into the habit of almost crawling. At 3 miles an hour a horse travels 1 mile in 20 minutes, which is ¼ of a mile in 5 minutes.

A trip of 1 furlong, which means a journey to a point 1 furlong away and back again (that is a total distance travelled of 2 furlongs) will take 5 minutes, and in estimating the number of horses required to keep some operations going steadily, such calculations are necessary. For instance, if two men can load 10 cwt. of roots into a cart in 6 minutes, in order to keep these men busy, a cart must come to them every 6 minutes to replace that moving away. A cart having to travel 1 furlong to the unloading point will be back in 6 or 7 minutes, according to the unloading facilities, and therefore, at this length of haul, 2 carts will keep the loaders busy. If the trip is 2 furlongs, an extra cart should be employed.

The economies obtainable by attention to such matters will startle anyone who has not put the matter to the test.

MANUAL LABOUR.

Work.	Standard Amount per Day.
Potatoes.	
Cutting sets. Late Varieties	8 cwts.
„ „ Early „	9 „
Planting sets*	1 acre
Dig with fork or spade	⅛ „
Sort, pick and fill into carts	¼ „
Cabbages.	
Planting	⅕ „
Beans.	
Dibbling	⅓ „
Root Crops.	
Mangolds, dibbling	¾ acre
Mangolds, swedes or turnips—	
Hoe and single*	⅓ „
Top, tail and lay in rows	8½ tons
Loading into carts roots prepared as above	20 „
Top, tail and load	6 „
Clamp, stack, or pit as delivered by carts	20 „
Corn.	
Sow broadcast by hand	10 acres
Bind and set up sheaves after reaper	1⅓ „
Set up sheaves after binder	3 „
Turn and reset sheaves	4 „
Load sheaves on to cart (extra man required on cart), say	20 tons 8 acres
Farm Yard Manure.	
Load into carts	20 cubic yds.
Spread as dumped from carts	20 „ „
1 cubic yard about 14 cwts.	
Soiling Crops.	
Cut with scythe	8 tons
Load	16 „
Cut and load	5⅓ „
Hay.	
Load on cart (extra man on cart)	12 tons
„ „ elevator	15 „
Milch Cows.	
Clean out byre and feed in winter	48 cows
Milk: allow per cow in full milk	10 min.
Road Work (Rea, *How to Estimate*).	
Pick up and level 3 inches deep	30 yds. super.
Scrape. A man with a hand machine can scrape off road surface per day, when surface is soft and pliable and ⅓ to ¾ inch thick	2,200 „ „
Giving of dirt about	6¼ loads
Spread and level in 6-inch layers road metal per day	30 cubic yds.
1 cubic yard hand-broken metal covers 25 to 30 yds. super.	
Stone-breaking by hand to 2-inch cube measured after breaking:—	
Limestone, whinstone	2¼ cubic yds.
Basalt and igneous rock	1½ „ „
Load road metal into carts	20 „ „
say,	20½ tons
Excavation.	
Load into carts loose earth or similar material, say	20 cubic yds. 20 tons
Get (*i.e.*, Dig) and fill into carts:—	
Light soil	13 cubic yds.
Strong soil	12 „ „
„ Clay	10 „ „
Chalk	8 „ „
Unloading Carts (dump).	
Unload roots or easily deposited material	2 min. per load
Manure or material that clings to cart: allow for one heap	3 „ „
For each additional heap into which load is divided	1 „ „

In the foregoing table, work marked with a * refers to recognised daily averages in districts where the work is very highly developed, and the standard here set may be too high in most districts.

Some work, such as loading sheaves on to carts, necessitates an extra man on the cart to manage the sheaves. His time is not here included. The time given refers only to the man "pitching."

The amounts given here have been derived from practical experience, or from the following authorities:—

Agricultural Surveyor's Handbook (Bright).

Agricultural Note Book (McConnell).

Handbook for Surveyors (Hurst).

Labour (Morton).

How to Estimate (Rea).

In the case of loading into carts it is of course assumed that the loader is kept continually supplied with empty carts.

As a general rule it may be assumed that a man will load with spade or fork about 20 tons of material, of which the spade or forkfulls do not have to be detached from the mass. Such material would be broken road metal, loose earth, stones, sheaves of corn, roots ready pulled.

Where loading and hauling are a combined operation it is necessary to know the time occupied by each part, in order that we may arrive at the number of trips that should be performed each day.

In the following table it is assumed that the work is concentrated into 8 effective hours:—

Loading and Trip Table.

The table is divided into pairs of companion columns, and is such that if the number of units which can be loaded in one day be found in one column, the time in minutes taken to load one unit stands opposite in the companion column. Again, if the total time taken over one trip (*i.e.*, the sum of the times taken to load, haul, unload and return) be found in one column, then the total number of trips to be performed in one day stands opposite in the other column.

2	240	12	40	30	16
3	160	14	34	32	15
4	120	16	30	34	14
5	96	18	27	36	13
6	80	20	24	39	12
7	68	22	22	43	11
8	60	24	20	46	10
9	53	26	18	—	—
10	48	28	17	—	—

For example, a man loads 20 tons stones per day into carts and therefore takes 24 minutes to load 1 ton. Again, carting stones, if it takes 32 minutes to load, haul, deliver and return, then 15 journeys can be done per day.

HOW TO USE THE TABLES.

RULE 1. *To find the cost of any standardised operations:*
Multiply the number of units of work to be performed by the Rate of Daily Pay, and divide by the Standard for that work.
Example:—The men are paid 3*s.* 4*d.* per day. What should it cost to hoe and single 45 acres of swedes?
45 acres × 40 pence ÷ ⅓ equals
= 45 „ × 40 „ × 3 equals 5,400 pence
„ £22 10*s.* 0*d.*

RULE 2. *To find the number of days' work that a given operation will take:*
Divide the number of units of work to be performed by the Standard for that work.
Example:—How long should it take a man to cut the sets for 14 acres of early potatoes at 12 cwts. per acre?
14 acres × 12 cwts. ÷ 9 equals
= 168 ÷ 9 equals 18⅔, say, 19 days.

RULE 3. *To find the proper number of carts to keep one gang busy:*
Divide the total time of one trip (*i.e.*, sum of times taken to load, haul, deposit and return) by the loading time.
Example:—Two men load a cart with manure in 7 minutes. It takes 14 minutes for the cart to go out, deposit load, and return. How many carts should be employed?
21 ÷ 7 equals 3 carts.

The calculation will seldom give an exact number of carts, but, if the number works out with a fraction, then the number of carts employed must be the next highest whole number, otherwise the men are denied the chance of speeding up.

Example: Two men are engaged in a quarry to load carts with road metal. The carts are brought up by boys who do not help in the loading. Each cart contains 16 cwts. One man can load 20 tons per day, and therefore, by the loading table we see that he takes 24 minutes per ton.

Two men will then take 12 minutes per ton, or 9·6 minutes per load of 16 cwts.

To keep these men busy the carts must arrive every 9½ minutes. The length of the haul is 4 furlongs, and the time taken to deposit load is 3 minutes. The calculation then works out:

	Minutes.
Load	9½
Haul (4 × 5)	20
Deposit	3
	32½

which, divided by 9½, requires 4 carts.

A detailed example of the use of the standards, and of the rules applying to them, may not be out of place.

A farmer has 30 acres of swedes, estimated to yield 20 tons to the acre—in all, 600 tons to be harvested.

The field is just 3 furlongs from the place the roots are to be stored or pitted. The land is soft, and the farmer considers 12 cwts. of roots sufficient load for his horses. The 600 tons will therefore give 1,000 loads.

We have seen that one man will top, tail and load into carts 6 tons of roots per day; that is to say, 6 tons is the standard day's work; and by dividing the total amount by the standard (Rule 2) we get the number of days' work. In this case 600 ÷ 6 equals 100 days of 1 man. The carting will necessitate 1,000 loads. The distance is 3 furlongs, occupying 15 minutes—to which must be added 2 minutes to deposit the load—making 17 minutes in all. We see by the Load and Trip Tables that the standard day's work for

17 minute trips is 28, and the total time taken in carting is therefore 1,000 ÷ 28—*i.e.*, 36 days of 1 man.

The time taken to pit or store the crop is worked out in a similar way—*i.e.*, one man will pit 20 tons per day; therefore, 600 ÷ 20 equal 30 days of 1 man.

If the average daily wage of the labourers is 3s. 4d., the labour cost can be tabulated as follows:—

Work.	Quantity. Standard.	No. of Days.	Cost at 3s. 4*d*. a day
			£ s. *d*.
Top, tail and load	600 Tons ÷ 6 =	100	16 13 4
Cart	1,000 Loads ÷ 28 =	36	6 0 0
Pit	600 Tons ÷ 20 =	30	5 0 0
	Total =	166	£27 13 4

The workers must, however, be supplied with the proper proportion of horses, and this may be calculated as follows:—The farmer will arrange to have one man in the field ready to help each carter to load as he comes up. That is to say, two men will be loading. We see by the Loading Table that if 1 man can load 20 tons per day, each ton will occupy 24 minutes, and therefore 12 cwts. (1 load) will take 14·4 minutes of 1 man, or 7·2 minutes of 2 men. To keep the loading busy we must have carts arriving every 6 or 7 minutes. The travelling and unloading time we have seen to amount to 17 minutes; add to this the loading time and we get 24 minutes. Apply Rule 3 we divide the total time 24 minutes by the loading time 7 minutes, and we get the number of carts required—*i.e.*, 3 or 4.

In order to give the men a chance of earning a good wage, it is only fair to give the larger number of horses—in this case 4.

The farmer now knows what the work should cost, and he can set it to his men for that amount. By speeding up they will earn a higher pay per day, and the farmer will get his work forward.

Measurements.

It should at once be noted that the degree of accuracy required should always be definitely understood. It is often far more important to get an immediate approximation than absolute accuracy at a later date. Much time may be lost by seeking for the latter, where money might be actually gained by at once accepting the former. The approximation, however, must be based on a definite method, and not merely on guess work. This will not do at all. The method to be employed will, in all cases, depend on the degree of accuracy required.

For measurements of land there is nothing equal to the surveyor's chain. If we wish to estimate the weight of mangolds to the acre we may sample 1·20 of an acre, knowing that the weight on the sample area in cwts. will be equal to the weight on the whole acre in tons. Or, if less accuracy is required, the weight on 1·160 acre in stones is equal to that on the whole acre in tons. Both these units are convenient. A 1·20 of an acre is an area 1 chain by ½ chain wide, whilst 1·160 acre is an area which, if square, has 5½ yards side, and can be measured by forming a square with one chain strained around stakes so that the ends meet, the angles being all right angles and the sides equal.

Roots can be conveniently measured in the clamp or pit, and Bright gives the following table:—

Kind of Crop.	Weight. per cubic foot.	Cubic foot per ton.
Mangolds	32	63
Swedes	34	65
Turnips	31	72
Potatoes	34	65
Parsnips	31	72

From this we may assume that a clamp or pit, having a base of 9 ft. and a height of 4 ft. 6 in. contains of swedes or potatoes or mangolds about 1 ton for each yard in length; whilst of common turnips or parsnips the clamp should be 6 in. higher in order to hold the same amount.

It is very useful to be able to estimate rapidly the area of a given part of any field.

The employer should carry a note book in which the area of all his fields is marked, and also the length of the furrow in each field. If the latter is known, the following table will allow of a rapid approximation of areas to be arrived at by means of pacing the length of headland.

The table contains pairs of companion columns, and is such that if the length of the furrow in yards is found in one, the length of headland demarking 1 acre appears opposite in the other:—

22	220	27	180	35	140	48·5	100
23	210	28·5	170	37·5	130	54	90
24·5	200	30·5	160	40·5	120	61	80
25·5	190	32·5	150	44	110	69·5	70

For further information as to measurements the reader is referred to Bright's *Agricultural Surveyor's Handbook*, a work no landowner should be without.

Conclusion.

The whole question of agricultural wages really depends upon the proportion which costs of production bear to the price of the product. The largest of these costs is the labour bill, and the efficiency of the labour is the controlling factor in the costs of production. Wages must then ultimately depend upon efficiency, and this is the point on which attention must be concentrated. The attainment of efficiency is the province of management and, as has been mentioned before, the management of the farm is the factor which transcends all others in importance. Knowledge is no use, unless it can be applied; and it is on this that success or failure depends. Of all the books on farming there is not one, as far as I know, that contains as much as one chapter on this, the most important factor of all; nor do I know of a single educational course which teaches its students anything about labour, and this is not only by far the greatest of all the items of expense, but the one which, by universal consent, is most in need of consideration. The result is that the average hired farm manager is totally incompetent as such, and where he does show a profit for his employer, it is almost always through his ability as a buyer or breeder of stock, and hardly ever due to low costs of production. Where the latter is studied at all it is generally by trying to keep wages low, and not by making efficiency high.

One of the most obvious duties of management is to see that tools, equipment, etc., are ready at the time and place needed. Yet how seldom this is done. If an employer will make a careful study of the time lost by his men in looking for such simple things as swingle-trees, oil-cans, spanners, or in waiting for plough points or repairs to implements, or even in waiting for instructions, he will probably be amazed, especially if he works out the time wasted as a percentage of total time worked.

The utter inability of the average farm manager to keep any form of cost account is universal. Nine out of ten could not form any real estimate as to the cost of producing anything, nor can any answer such a simple question as, "What are the market conditions that determine whether any given produce should be fed or sold?"

Employers are horrified at a sudden increase of rates amounting to say, 1s. in the £ on their valuation, and are ready to combine to prevent so dire a catastrophe; yet an increase of 1s. per acre in costs of production is passed absolutely unnoticed, and this, no doubt, often amounts to a greater sum than the 1s. increase in the rates.

Again, how often on the farm does one see five men doing the work that four could equally well do? This unnecessary increase of 25 per cent. in the labour cost of that particular operation is passed unnoticed on the farm, while it would not be tolerated for a moment in any other industry.

How often are horses left idle in the stable? Yet a horse idle for a week may cost as much as or more than the rent of an acre idle for a whole year. The sight of the latter would fill one with indignation, yet the former is unnoticed.

While such conditions exist, the employer cannot afford to pay higher wages, but he has no right to plead this as an excuse. That the solution is difficult none will deny, but it is not impossible, and until it is solved all those that feel they are worthy of a higher rôle than that of the agricultural labourer will continue to leave the country-side. The whole business side of agricultural education is neglected. It is only in isolated farms here and there that real business management is to be found, and no one who has visited such farms can fail to appreciate the extraordinary results obtained.

There is no hope of a general improvement in rural conditions until such management becomes the rule instead of the exception. There are many societies in the country whose object is the advancement of the science or practice of agriculture. What better work could they perform than the study of such questions?

It must be recognised that real agricultural prosperity is incompatible with a low standard of living of the labourer, that the standard of living of the labourer depends ultimately upon efficiency, that efficiency depends upon management, and that it is therefore the duty of agricultural education to produce men able so to organise the farm that labour has a fair opportunity to reach its highest development.

This type of progress can begin only at the top, and if it is to be attained the country gentleman must recognise that he performs a higher duty to the State by making his farm a model of efficiency than by using it as an asylum for the incompetent; that the benefit he confers upon labour is to be measured rather by the dignity to which he raises it than by the numbers he employs; and that the skill with which he increases the earning capacity of his men is of greater value to mankind than the liberality with which he pays a wage they do not really earn.

He must be supplied by the Colleges with the type of manager required—a type at present almost unknown—and in return he must be determined to employ none save those worthy of the office. The idea that efficiency must be the foundation of agricultural as of all other industrial prosperity must be made to permeate rural life.

The labourer must be made to recognise that a day's work is something other than the minimum to which an indulgent master will submit. The manager must realise that he wrongs the man to whom he denies the opportunity of proving his real value, and the reputation of the employer should depend as much on the high standard of his labourers as on that of his crops and stock.

The employer who does not put himself in a position to recognise which of his men really have his interests at heart is not doing his duty by them. If he does not work alongside them so that he has actual ocular evidence of their work, then, in common fairness, he should devise some other means of attaining the same end.

Men who have made a success of this side of the business should be got together. Their knowledge should be collected and recorded, and form part of the agricultural education of the country. The advantage of having such authoritative recognition of standards of labour would be immense. It would help the employer in his dealings with bad workmen; it would give the labourer some definite and immediate object for his work, and it would identify the efficient men. The difficulty of doing the latter is the most heart-breaking feature of agricultural employment. It would enormously help the vast number of unskilled employers and employed whom the war has put to agricultural work; and for this object alone I believe the question should receive the immediate attention of competent authorities.

One does not see how a Minimum Wage Act can operate without some definition of an efficient man; for, obviously, the wage is not meant to apply to any other.

If standards of labour were drawn up, they would be modified, if necessary, by local authorities to suit local conditions. These local codes could—if sanctioned by a competent Government inspector—be used as a definition of the efficient man to whom the Act would apply. Any man whom the employer could prove was not up to the standard would be outside the Act, or subject to special provisions of it, whilst any labourer who could prove his efficiency could not be denied the benefits of the law.

Once more, standards are not meant to be used as strictly inviolable laws, but as general guides, and, as has already been said, are comparable to the use of bogey at golf, or to the sailing instructions of the mariner.

The author will be more than satisfied if this article shall have directed any attention whatever to this totally neglected yet fundamental aspect of rural life.