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PROGRESS IN ENGLISH
FARMING SYSTEMS

I
MILK PRODUCTION
ON ARABLE LAND

F. J. PREWETT

Price One Shilling and Sixpence net

OXFORD
AT THE CLARENDON PRESS
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PREFACE

THE most notable features in the recent history of agriculture and rural life have been the decline in arable farming and the reduction of the rural population. It is possible to exaggerate the connexion between these two phenomena, for changes in methods of tillage by the greater use of machinery have certainly had some influence in reducing the demand for man-power. Nevertheless, it is true to say that in most parts of England arable cultivation gives a higher degree of employment than does grass farming, and that plough land gives a greater weight of produce than grass land. If, therefore, it were economically possible to introduce modifications of farming practice in the direction of extended cultivation of fodder crops for the maintenance of live stock, the process should react beneficially both upon the numbers of live stock maintained and upon the opportunities of employment available upon the land.

It is notorious that in many continental countries the maintenance of cattle on arable crops is general, and in England probably some half of the total area under the plough is devoted to the production of fodder and forage crops. But in England the tillage area is relatively little and it is falling every year, and each year sees an expansion of the farmer's dependence upon grass land for the sustenance of his flocks and herds.

The whole question is one, of course, of economics. Is the protection of agriculture which some countries enjoy the means to their higher proportion of tillage, or is it the lower standard of living of the continental peasant which enables him to maintain a degree of arable farming which the higher cost of living in England does not justify? Or is it possible that modifications of accepted standards of English farming can be introduced which would tend to keep the plough running and to increase the stock-carrying capacity of the land?

The Members of the Agricultural Tribunal of Investigation, appointed by Government in 1922, were much impressed by the contrast in methods of live-stock maintenance presented by Britain and certain countries on the Continent of Europe, and in their Final Report (Cmd. 2145) they have emphasized

the point, and have drawn attention to the need of a thorough investigation of the economics of the question of live-stock production on arable land as applicable to English farming conditions.

‘Investigations have been made into the stock carried on areas both arable and grass in this country, and these inquiries seem to indicate that the head of stock carried per 100 acres is greater in the grass areas than in the arable districts. If this is correct, it makes the contrast in the development of the Continental States in stock-carrying all the more important. Not only in Denmark, but Belgium, Holland, and Germany have shown in a remarkable way how compatible and even inter-dependent stock and crops are; and we are strongly of opinion that the best chance of maintaining the arable area in this country is through the extension of arable stock farming. Nor should it be forgotten that if the head of stock has been maintained in this country to a much better extent than the arable area, it has been through the increasing use of imported feeding stuffs; a fact the significance of which should not be overlooked; for during the war the cattle suffered through rationing. And as a measure for maintaining the supplies of meat it is important that the arable area should be kept up. If there is to be a greater productivity in British agriculture we are convinced that this has to be mostly realized through the development of the arable area in relation to stock farming. Herein lies the real strength of the farm management methods of Denmark and Belgium and parts of Holland and Germany. We do not overlook the fact that arable stock farming is no new thing in this country, but there are new factors and new methods to be considered; and there is need for both an extensive and an intensive investigation into methods, analysing carefully the economic costs and entering into the details or organization on which depend to so large an extent the economic success of the system. It is admitted that this class of farming requires able management and develops the resourcefulness of the farmer to the fullest extent; but that in itself is an asset of the system’ (pp. 31, 32).

‘How far farmers may be able to compensate themselves for falling grain prices by adopting methods of tillage

which would increase the output of more profitable produce and especially milk, without diminishing the arable area, no one can tell. It must be confessed that there is no very evident movement in that direction. At present any marked fall in the sale price of grain, and especially of wheat, leads to the putting down of land to grass and the contraction both of employment and of the production of food' (p. 96).

'But while this is so, it remains that there are methods of arable stock and dairy farming which are physically possible in this country, and which, if they could be shown to be financially more profitable than a simple grass system, might be expected to commend themselves to practical farmers, and achieve the desired national objects. On the financial possibilities of such methods one can only have an open mind. It is of urgent importance that they should be practically tested under competent management, and the results made public as soon as possible, and before the movement towards grazing has made much further headway. It was for that reason that, in the First Interim Report, we urged upon the Government the setting on foot of experiments on a practical scale—experiments not so much of a technological as of an economic or financial character. Such methods will not be generally introduced unless they can be shown to pay the farmer and to pay him better than easier and less risky policies. The Government is not called upon to embark on large experiments of this sort solely in the pecuniary interest of the farmers. Regarding farmers simply as business men, like any other organizers of production, they have no more and no less claim on the Government to try experiments with the land than manufacturers have that it should try experiments with the production of their raw material (e.g. cotton). Action is recommended simply because the maintenance of the arable area is desirable in the national interest, and it is of the utmost importance that the country should know what are the really feasible alternatives before it' (p. 97).

This recommendation of the Tribunal received favourable notice at the hands of the Ministry of Agriculture. The Ministry had itself taken the initiative in experimental work in arable dairy farming, by the equipment and management

of three small farms in different parts of England which were designed to test the economics of the production of milk from arable land. Following the recommendations of the Agricultural Tribunal and in response to an application by the University of Oxford, the Ministry made a grant to the Agricultural Economics Research Institute, in the year 1926, to enable that place to initiate an investigation of the subject of arable stock farming in general, and, in particular, to take over the management of the three small dairy holdings.

As regards the general investigation it was decided, in the first place, to attempt to locate cases already in existence where farmers had broken away from the prevailing practice and were developing systems of farming under which arable cultivation was being maintained largely by its utilization for the production of live stock or animal products. At the same time instances in which farmers had broken away from the prevailing system and increased the productivity of their land by means other than arable cultivation were not held to be excluded and were also taken into review. A rapid survey, undertaken by W. R. Peel, who was in charge of the work at the outset, revealed the fact that although the general tendency of the countryside was very markedly in the direction of the extension of the grass-land area, here and there men were to be found who were moving in the opposite direction, with apparent success. It was resolved, therefore, to approach the problem in the first instance by making an economic analysis of cases, such as these, wherever adequate records were available or where permission for the organization of recording by the Institute could be obtained.

The report which follows contains the results of the first of these studies to be completed. The investigators in this case were fortunate in that the system of farming had been in operation over a long series of years, beginning before the War and continuing to the present day, so that the farm had experienced the full force of all the violent upheavals of the last decade and a half, and the value of the system could be reviewed in the light of them all. They were fortunate, further, in that very complete financial accounts, covering the whole period, were available for study, and in that the business operations of the farm were not complicated either by confusion with personal expenses or by transactions in stock which belong more properly to the occupation of the dealer than to that of the farmer, complications which occur

so often in agricultural enterprise to confuse the issue and to obscure the view.

It is true that the farm in question is what must be described as a landlord's farm, not that of a tenant farmer, but so far from detracting from the value of the work it is enhanced thereby. It is common knowledge that landlord farming in this country is not often conducted as a business enterprise. For some landlords the home farm is no more than a hobby, to be run for the pleasure afforded to the eye by sleek cattle and trim hedgerows; it falls into line with the Alpine garden and the conservatories. For others it represents an interest in the breeding of fancy stock, and for others, again, it exists in the main to supply some of the needs of the larder; it is the complement of the kitchen garden. In any case, if it comes to be regarded by the workers upon it as something approaching to a home of rest, and by the merchants, dealers, and others who supply it, as a Tom Tiddler's ground, this is following no more than a well-established tradition, the generality of which makes the great work done for agriculture, through the management of their home farms, by the landlords of other days the more remarkable. It is all a question of economics. In times past there was a great financial stimulus, and the agricultural improvers threw themselves into their task with an enthusiasm born of the reasonable certainty of their reward. For a long time, now, the conditions have been so far reversed as to place the balance of probability on the other side, and the more honour is due, therefore, to those landlords who, in the face of modern agricultural circumstances, are still willing to make the attempt, and in particular to one who has achieved a success which the most-skilful of tenant farmers might envy.

Nor is the success of the work about to be described due, in any way, to the superior financial resources which a landlord might be supposed to possess. It is a fact that there is no obvious or visible connexion between successful farming and easy access to capital. The capital invested in this enterprise at the start was no more than any tenant might have possessed, and since the system became established no new money has been put into it. As regards finance, therefore, the conditions of the new venture have been, in every way, normal and ordinary, and there is nothing else about it to make it a special case and so to explain away the results which the figures in the following pages disclose.

Mr. Peel's connexion with the work was severed at an early stage on his acceptance of another appointment. The conduct of the investigations, as a whole, and the preparation of the report which follows, devolved upon Mr. F. J. Prewett, assisted by Mr. D. Skilbeck and Mr. M. Messer.

C. S. ORWIN.

AGRICULTURAL ECONOMICS RESEARCH
INSTITUTE, OXFORD.

May 1929.

I. THE FARM

THE farm on which this break-away from local practice was organized is situated in the southern part of the Kesteven division of Lincolnshire, at a distance of some five miles from a large manufacturing and market town, though this proximity has no bearing on the system of farming adopted, as the produce is marketed, for the most part, elsewhere. It is a district predominantly arable, the holdings including about 60 to 70 per cent. of plough land in the immediate vicinity, farmed on a corn, seeds, corn and roots rotation. Roots are customarily fed to cattle or folded off with sheep. One half of the seeds are mown and the other half grazed with sheep. The average rental value of the district is about fifteen shillings per acre, and corn yields do not much exceed three quarters to the acre. These yields applied also to the farm under review until the adoption of the present system, since when yields of wheat and of barley have averaged about five quarters and of oats about eight quarters per acre. Barley for malting is the chief crop in the neighbourhood, and it is grown even after a clover ley, where, if the land were stronger, wheat might be expected.

Up to the year 1921 the farm extended to 447 acres, of which only 56 acres were permanent pasture. Since that date 111 acres of pasture have been added, making a total of 558 acres, of which 391 acres are under tillage. The farm lies on the Great Oolite formation, at an elevation of about 450 feet, and the soil ranges from a strong brash of 4 in. depth to a stiff clay. The fields are large, about 20 acres each, and for the most part sufficiently level for easy working. The buildings are well situated for access to the greater part of the farm.

The farm was taken in hand in 1912, and since 1913 it has been managed on a landlord and bailiff partnership. The terms of the partnership are that the manager shall draw 30s. per week, and that out of any profits then remaining the landlord shall be paid rent at the rate of £1 per acre, and interest at the rate of 5% on the capital valuation of the farming stock, after which any further balance shall be divided equally between them. Should profits, after paying rent and interest, aggregate less than £100 in any year the manager receives the whole.

The capital required has been provided wholly by the

landlord. The manager acts entirely independently in all matters of routine, but questions of policy are decided by discussion with his partner.

II. THE FARMING PRACTICE

This farm makes a complete break with local practice, and it is of particular interest in that upon it arable dairying on a large scale has been carried on with success. The deliberate policy has been to concentrate the output of saleable products in two departments, milk and corn, and the results shown during the years under review contradict the popular idea that, in farming, success lies in a diversity of production. It is of further interest to note that arable dairying has been carried on here on a soil and in a district where, as a rule, milk production is of very secondary importance.

Live stock. A herd of about 80 cows in milk has been maintained. In the year 1926 the herd averaged 88, which represented 15·7 per 100 acres. For the same year, for two neighbouring parishes of similar physical condition but farmed according to the prevailing local custom, the number of cows in milk per 100 acres of crops and grass was, respectively, 3·7 and 5. Up to 1921, the year in which the grass acreage was increased by 111 acres, this head of stock was fed, in the summer, on lucerne, cut green and carried to the cows, and in winter, on straw, roots, and some lucerne hay. Lucerne occupies, on the average, about 60 acres, or one-fifth of the area of brashy arable land, for it is not grown on the clay. Since 1921, when the extra grazing became available, the whole of the lucerne crop has been made into hay. Experiment on a cost basis with young stock showed that the increase in weight as a result of yard-feeding with green lucerne was greater and more economical than the increase by grazing, but the soiling of lucerne conflicts with the heavy demands made by the haying and harvest upon the manual and horse labour of the farm.

Twelve working horses are kept.

Eleven men are employed, equivalent to 1·9 per 100 acres, which is rather lower than the ruling employment per 100 acres in the district. A minimum wage of 32/6 per week is paid. Cowmen are paid at the rate of 49/- per week.

Utility is the key-note of the farming, and while both horses and cattle are maintained in fair condition, neither are fed

or groomed to 'bloom'. Records have not been kept either of the number of cows in milk over a given milk-recording period or of the number of gallons produced. It is, therefore, impossible to arrive exactly at the yield per cow based on this system of lucerne feeding, but, on the basis of total cash receipts for milk, the yield appears to be about 500 gallons per cow per annum, though in particular years higher results have occurred. This is another indication of 'utility management', there being no attempt to force the cows beyond the limit of economic production.

Cropping. Lucerne is the principal crop, both as regards the dairy herd and as the pivot of the rotation. It is sown either in a cover crop of oats or in 9 in. drills on the fallow, and it has been found to stand from 4 to 6 years. Two cuts are taken in each year, and the subsequent growth is grazed, totalling not less than three tons dry weight per acre combined. During the last four years (1924-7) the lucerne has always been sown in a cover crop, and the results have been less satisfactory than when sown in 9 in. drills on the fallow, but some allowance must be made for the effect of four successive wet and sunless seasons which coincided with the change of method.

Apart from lucerne the chief crops are wheat, oats, and barley, the wheat being grown generally on the clay, the oats and barley on the brash. Following a course of lucerne, the rotation on the brash is usually roots, oats, barley, roots, carried on for not less than eight years, when lucerne may be again laid down. For example, on one field of 17 acres seven crops of oats and barley, with two intervening root crops, were grown after 5 years under lucerne, the oats never yielding under 9 qrs. or barley under 5 qrs. Thus, the effects of the lucerne were felt for nine years, though it is usually supposed that the length of the ley determines that of the rotation of crops following it. On the clay, the rotation, if one can be said to exist, is wheat, seeds, wheat, fallow, but on no part of the farm are rotations adhered to strictly.

About 30 acres of mangolds and swedes are grown for the cows, the acreage having been reduced from double this amount on account of the heavy labour cost involved in cultivations for these crops.

Potatoes have never been tried, nor are any other roots grown. Similarly, no pigs, sheep, or poultry are kept, production being concentrated on milk and corn.

From the point of view of the milking herd this system of cropping provides an abundance of the best feeding hay and ample straw for feed and litter, while from the point of view of corn production it provides dung, and, as an effect of lucerne, a large nitrogenous residue. Further, as a result of concentration upon two lines of production, both directly convertible into cash, an immediate relation can be made between the costs and returns in each department.

In the year 1926, in the two neighbouring parishes referred to above, the percentage acreage of lucerne to the total of crops and grass was respectively 0.3 and nil. Similarly, the number of sheep per 100 acres of crops and grass was 81.2 and 65.8, and of pigs 2.5 and 2.7. The high importance of dairy cattle and of lucerne and the absence of sheep and pigs on the farm here described, and the low importance of dairy cattle and practical absence of lucerne, combined with the high importance of sheep in these two parishes of similar physical characters indicate the completeness of the break-away from custom represented by the practice of husbandry established successfully on this farm.

Cultivations. Tillage operations are carried out very thoroughly. In the difficult spring of 1928, for example, the tilth in all growing crops was particularly good. Corn crops are subjected to very rigorous spring harrowing.

All the dung made is applied to the root crops, the corn being grown entirely with artificials. Barley and oat crops are dressed with 1 cwt., and wheat with 2 cwt., of nitrogenous manure, and the total expenditure on artificials, averaging about 16s. per acre per annum, compares with an estimated average expenditure on cultivated ground for the country as a whole of not more than 4s. per acre.

Tractor and steam tackle are used to supplement horse labour in the operations of ploughing and cultivating.

III. THE RESULTS

The financial year begins on April 6th. The system of accounting is based on actual *cash* receipts and expenditure. The value of dung is put against the straw consumed by the stock and therefore does not appear in the accounts. Artificials and cultivations are included in the annual expenditure since they represent expenses which must be incurred any year to keep the land in condition. The yearly valuation,

which is made by an outside valuer, ignores market fluctuations except in the case of corn, so that inflation and deflation have never affected the profit and loss account. Such variations in the valuations as appear are due, therefore, to any changes in the market value of corn in stack, and to seasonal differences in the cultivations done at the date of closing the accounts. Regardless of purchase price, milking stock were valued at £19 per head until the year 1927, when the valuation was raised to £22 per head. The following figures show the amount of the valuations for each year on April 6th:

	£	s.	d.
1913	5,055	0	9
1914	5,543	18	0
1915	5,619	12	9
1916	6,092	2	5
1917	5,343	17	5
1918	5,669	17	8
1919	5,628	7	1
1920	5,903	1	5
1921	6,890	5	9
1922	5,923	18	4
1923	4,698	12	10
1924	4,692	17	5
1925	5,765	10	1
1926	5,672	4	5
1927	5,674	18	3
1928	5,348	6	7

Trading profits and losses over the same period, after paying interest at 5% and 30s. per week for management, were as follows:

	<i>Profits.</i>			<i>Losses.</i>		
	£	s.	d.	£	s.	d.
1913				157	15	0
1914	366	1	6			
1915	619	6	1			
1916	1,702	4	8			
1917	3,152	6	5			
1918	2,966	3	1			
1919	2,556	3	11			
1920	2,298	12	3			
1921	2,160	16	4			
1922	1,269	0	1			
1923	241	10	10			
1924				181	1	2
1925	529	3	5			
1926	92	10	2			
1927				11	1	1
	<u>£17,953</u>	<u>18</u>	<u>9</u>	<u>£349</u>	<u>17</u>	<u>3</u>

For the whole period of 15 years the surplus of profits over losses amounted to £16,281 16s. 10d. These profits have been made on third-rate soil rented at much above the average for its quality.

Considerable interest attaches to an analysis of the cash receipts throughout the period covered by the accounts. Table I has been prepared to show the percentage value of the principal items from 1913 to 1927, and the dependence of the farm for income upon the two commodities corn and milk is very clearly brought out. Stock sales account for no more than the replacement of uneconomic cows and the sale of calves, and 'sundry receipts' are a matter of small importance. The extreme fluctuations in the cash receipts from corn are due, in part, to the practice of holding over stocks during times of low prices. In this connexion, the following stocks of corn were carried forward on April 6th in each year, and in each case the figures represent a low estimate of the ultimate amounts realized, as sales, in all cases, were effected at higher values:

	£	s.	d.
1916	697	10	0
1917	68	10	0
1918	Nil		
1919	No information		
1920	692	7	6
1921	840	12	6
1922	1,786	0	0
1923	704	0	0
1924	84	0	0
1925	950	0	0
1926	860	0	0
1927	519	10	0

A similar analysis of the cash purchases for the years 1913 to 1927 has been made, and the results are given in Table II. An examination of the various items shows that the collapse in prices following 1920 was anticipated by the manager, who cut down rapidly every item of expense save that of labour, the rates of wages being maintained, during the interval that the Wages Board was in abeyance, at a minimum of 32/6 per week, and also those of rent and rates, rent remaining throughout the period at the figure fixed by agreement between the partners and rates being beyond the farmer's control. The heavy expenditure on live-stock purchases for the year ending 1924 represents the replacement at low prices of cattle sold at high prices during the three previous

TABLE I
Analysis of Income

<i>Year.</i>	<i>Milk.</i>	<i>Corn.</i>	<i>Live stock.</i>	<i>Sundries.</i>	<i>Total Cash.</i>
	%	%	%	%	£
1913	55	28	12	5	2,112
1914	55	30	12	3	3,128
1915	46	40	13	1	3,837
1916	31	50	16	3	3,553
1917	28	57	13	2	6,527
1918	37	46	14	3	6,958
1919	48	39	11	2	7,010
1920	51	36	9	4	6,904
1921	47	39	13	1	6,126
1922	49	30	20	1	5,074
1923	32	61	5	2	4,747
1924	46	45	8	1	4,133
1925	72	12	15	1	2,595
1926	57	33	8	2	2,736
1927	38	45	11	6	3,210

TABLE II
Analysis of Outgoings

<i>Year.</i>	<i>Wages.</i>	<i>Stock.</i>	<i>Feeding Stuffs.</i>	<i>Manures.</i>	<i>Implements, Seeds and Sundries.</i>	<i>Rent, Rates, Taxes, Ins.</i>	<i>Total Cash.</i>
	%	%	%	%	%	%	£
1913	24	13	20	3	21	19	3,421
1914	24	3	19	13	18	23	3,155
1915	24	Nil	24	13	18	21	3,300
1916	24	1	25	8	20	22	3,385
1917	23	3	30	8	15	21	4,222
1918	27	6	25	9	15	18	4,063
1919	27	1	22	14	19	17	4,433
1920	30	Nil	23	9	21	17	4,883
1921	36	—	13	12	18	21	4,555
1922	34	11	8	—	24	23	4,021
1923	35	6	9	7	18	25	3,269
1924	25	26	8	9	15	17	4,378
1925	28	4	17	10	16	25	3,138
1926	39	4	10	5	12	30	2,552
1927	31	17	9	2	16	25	3,226

years. For an arable dairy farm the expenditure on labour is not high, and the purchases of feeding stuffs have been got down to a very low proportion of the whole.

Comparisons in the year 1924 are thrown out of proportion by the heavy live-stock purchases.

To contrast the total of cash expenditure and cash income for the period, a graph has been prepared. Cash income responded immediately to the curtailment of cheap food imports, resulting from stress of war; cash outgoings, on the other hand, rose much more slowly and reached their peak a year later than cash income. As a further illustration of the economic lag it is of interest to remark that wages did not reach their peak until a year later still. The aggregate of cash outgoings shown by the graph illustrates very clearly how the manager began to cut down expenditure in anticipation of the collapse of prices in 1921. The great increase in expenditure, due to large purchases of cattle, in 1924 has been explained already. It is of interest to note that the total of both purchases and sales has now settled again about the pre-war level.

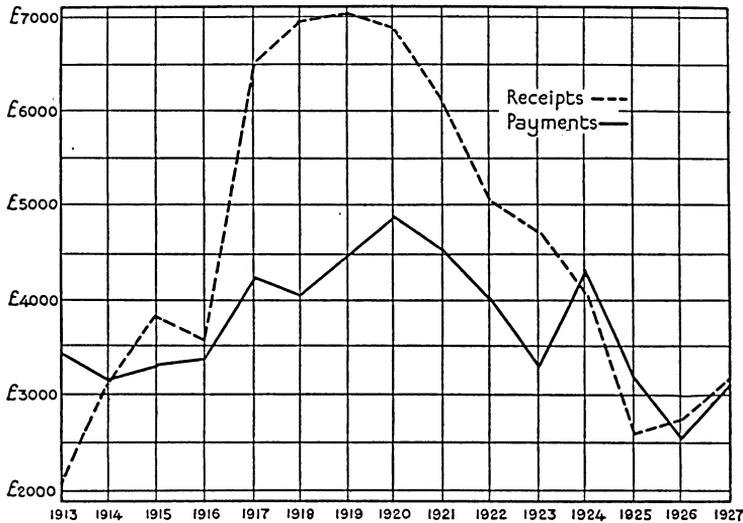
IV. SUMMARY

The success of this farm is to be attributed in part to the high standard of management and in part to the system followed. Under this system production is concentrated in two commodities, each contributing to the success of the other. The two staple commodities produced are convertible directly or at one remove into cash, and no doubt managerial efficiency is more effectively applied on a farm of this type than on one where production is more diverse. There is a marked absence of expenditure which does not contribute directly to the production of corn and milk.

On the usual basis of estimating farm profits, that is, not including interest on capital as a cost, and omitting the year 1913, when the farm was being first developed, this farm has once, in 1924, incurred a small loss and for the other fifteen years made profits, and usually large ones. Omitting the prosperous years of the war, and the time immediately following it, and considering the period 1922-7, years of severe farming depression, the capital invested has earned an average cash return of 13% in each of the five years, before providing the weekly payment to the manager, which amounted roughly to another 1% on capital. Regarded from

the tenant farmer's point of view, the cash return available to him during these years was 14% on the capital invested. In the remaining year, 1923, a loss amounting to 0.6% on the capital was incurred.

Dividing the total returns between cost of management and the return on capital, the manager's weekly wage and his half share of profits, calculated as described above, brought his total remuneration in this period to an average



of £241 per annum, together with a house free of rent and rates, and the cash return on capital amounted to 6% per annum. The manager's salary on this basis is not commensurate with his capacities, nor is 6% an adequate return on capital invested in a speculative business. But how many farmers occupying arable farms of over 500 acres during these lean years can show results so good as these? But for an outbreak of contagious abortion, which halved the income per cow from 1924 to 1928, profits would have been very much higher. In Table III are given some figures of the milk production in these years which show, very strikingly, how this scourge can squander the dairy-farmer's balance sheet. Still, too much must not be made of the point as it is one of the risks of dairying and one which the normal profit rate must cover.

TABLE III

Effects of Contagious Abortion on Milk Receipts

<i>Year.</i>	1924	1925	1926	1927
Cows in Herd	72	89	88	84
Calves lost	5	22	50	45
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Cash Receipts for Milk. Gross	2,223 9 10	1,711 13 7	1,374 14 4	1,386 3 9
„ Per cow	30 17 7	19 4 7	15 12 5	16 10 5
Reduction in Receipts per cow due to C. A. (taking the year 1924 as standard)		11 13 0	15 5 2	14 7 2

The financial results of this farm are proof that sometimes, at all events, a break-away may be made with well-established local farm practice with profit to the farmer, and that agriculture is more adaptable to reconstruction in the face of economic changes than some are willing to admit. They provide some evidence, too, that high farming is sometimes justified, even in critical times, given the best management, and given operations intelligently directed, as they have been here, to the production of commodities of which the prices have fallen least, among those of farm produce generally during the present depression.

Many people will recognize, doubtless, the enterprise described above; few, probably, have realized its great interest as a revolutionary reorganization of farming in the district, and its outstanding financial success. The system is one which could be applied to a large district if the economic conditions of the farming industry continue round the present level. The only difficulty in making this short summary of its details and its success is how to assess the value of the contributions respectively of the manager and of the system to the final result. Farming, similarly to any other enterprise, cannot be profitable under an inefficient manager; on the other hand, a good manager cannot make a success of a system ill-advised in relation to its environment, and this farm affords a good illustration of a well-considered farming scheme put into practice under an effective and capable organizer.

APPENDIX

SOME COSTING DETAILS

Certain details as to costs on the farm to which the foregoing general results relate have been worked out, and are included here as being of interest in relation to them. In accordance with the system of accounting followed on this farm the residual values of manures and of beneficial cultivations are not included in these costs.

The year 1924 may be taken as fairly representative of conditions since the collapse of war-time prices, and the costs of various crops during this year are given below.

PASTURE. 133 acres.	<i>Total Cost.</i>		<i>Cost per acre.</i>	
	£	s. d.	£	s. d.
Wages	6	3 6		11 0
Artificial manures	138	14 4	1	0 10
Repairs, sundries, misc. labour, &c.	45	5 5		6 10
Horse charges	4	0 0		7
Rents, rates, management, &c.	153	4 10	1	3 1
	<u>£347</u>	<u>8 1</u>	<u>£2</u>	<u>12 3</u>

The full cost of a dressing of artificials of which the benefit was derived over a period of five years was charged to this year when the dressing was applied.

FALLOW. 87 acres.	£ s. d.		£ s. d.	
Steam cultivation	130	3 2	1	9 10
Repairs, sundries, misc. labour	29	12 2		6 10
Rents, rates, management, &c.	100	4 10	1	3 1
	<u>£260</u>	<u>0 2</u>	<u>£2</u>	<u>19 9</u>

BARLEY and OATS. 209 acres.	£ s. d.		£ s. d.	
Wages	177	13 0		17 0
Seeds	175	4 0		16 9
Artificial manures	167	10 0		16 0
Thrashing	91	5 1		8 9
Repairs, misc. labour, sundries	71	2 10		6 10
Horses	196	9 5		18 9
Rents, rates, managements	240	16 4	1	3 1
	<u>£1,120</u>	<u>0 8</u>	<u>£5</u>	<u>7 2</u>

PAGE 20. PASTURE—*Cost per acre*

Wages: *for 11s. read 11d.*

PAGE 21. MANGOLDS and SWEDES—*Total Cost*

Rent, rates, management :

for £38 11s. 4d. read £34 11s. 4d.

SOME COSTING DETAILS

21

MANGOLDS and SWEDES. 30 acres.	Total Cost.	Cost per acre.
	£ s. d.	£ s. d.
Wages	106 0 0	3 10 8
Seeds	14 7 6	9 7
Repairs, misc. labour, sundries	10 4 3	6 10
Horses	28 4 0	18 9
Rent, rates, management	38 11 4	1 3 1
	<hr/>	<hr/>
	£193 7 1	£6 8 11

LUCERNE. 99 acres.

	£ s. d.	£ s. d.
Wages	36 19 0	7 5
Repairs, misc. labour, sundries	33 14 0	6 10
Horses	93 1 4	18 9
Rent, rates, management	114 1 6	1 3 1
	<hr/>	<hr/>
	£277 15 10	£2 16 1

(It should be noted that there is no charge for seed, as it is the practice of the landlord, to encourage the growth of lucerne, to give seed to all farmers on the estate.)

HARVESTING (Wheat).

Cost per acre.

	s. d.
Cutting and stooking	2 4
Leading (6 men, 1 boy)	3 4
Threshing (inc. hire of machine, coal, labour)	4 3
	<hr/>
	9 11

HARVESTING (Barley and Oats).

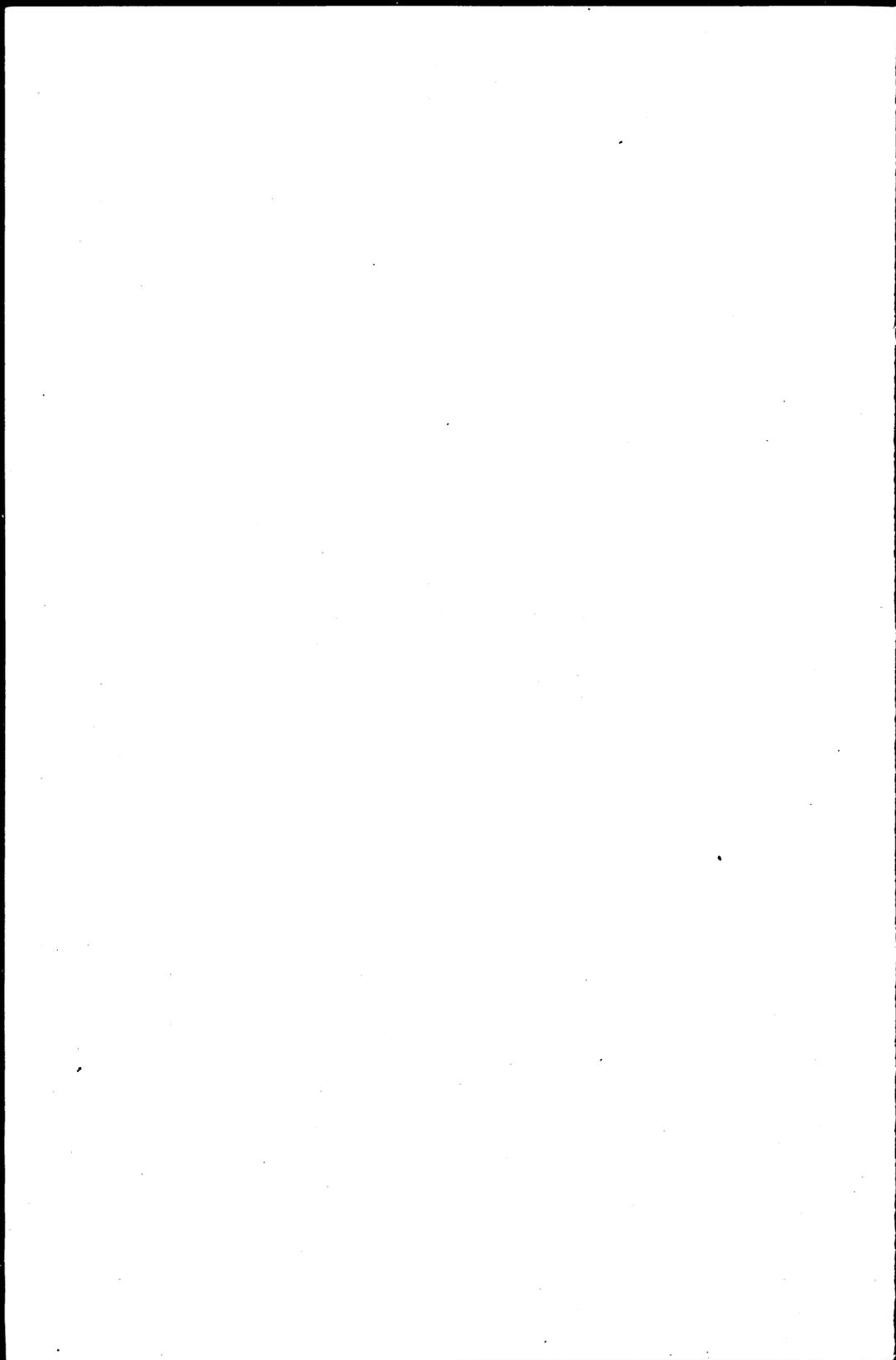
s. d.

Cutting and stooking	2 0
Leading (6 men, 1 boy)	2 8
Threshing (hire of machine, coal, labour)	3 6
	<hr/>
	8 2

DAIRY. 67 cows.

Total Cost. Cost per Cow.

	£ s. d.	£ s. d.
Labour	390 0 0	5 16 5
Cake	536 19 5	8 0 3
Roots	193 7 1	2 2 11
Hay	277 15 10	4 2 11
Pasture	347 8 1	5 18 8
Sundries	27 11 6	8 1
	<hr/>	<hr/>
	1,773 1 11	26 9 3



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