SMALL HOLDINGS.

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In reading the Interim and Final Reports of the Agricultural Tribunal of Investigation, it is interesting to note that, widely as the views of the members of that Tribunal differed on many points, each member advocated, and advocated strongly, the extension of the small-holding system in England.

"We have given close attention to the experience of this country in the provision of small holdings during the last fifteen years, and to the remarkable developments which have taken place in Germany and Denmark, and we wish to record our opinion that the small-holding movement is of the greatest value in maintaining the agricultural population, and that the time has come for a renewed and vigorous effort to extend the establishment of small holdings on the land."

While every student of agricultural economics will be in perfect agreement with the first portion of the above finding of the Tribunal, there are many who undoubtedly will accept the latter portion only with reserve.

The work of Dr Laur in Switzerland and of Dr Larsen in Denmark is, in this respect, exceedingly interesting and instructive, and the statistical data collected by them from the carefully kept accounts of a large number of holdings of varying size have brought out the weak and strong points of the small-holding system in a remarkable manner. It is only after carefully studying trustworthy data of this description, and weighing up the "pros and cons," that one can finally decide how far we in England should be justified in following the example of the Danes and Swiss, and adopting a policy which involves the breaking up of the large estates.

If such a policy is adopted, and the tendency certainly points that way, what size of holding is likely to give the best results for the nation as a whole, the community at large, and the individual farmer concerned? Questions of this kind, vital to the interests of the agricultural community, can only be answered after a careful study of the accumulated data collected from the trustworthy records of carefully kept farm accounts.

Gross Output.

If a time comes when we must, as far as possible, be self-supporting, so far as our food supply is concerned, it is undoubtedly the small holding which is wanted. The figures

of Dr Larsen answer that point quite conclusively, for the gross output per acre, corresponding to the amount of food produced for sale from the small holding under 25 acres, is nearly double that of the larger farms.

TABLE I.

AVERAGE DANISH RESULTS, 1917-1923. VARIATION OF GROSS OUTPUT WITH SIZE OF FARM.

Size of Farm.	Gross Output in pounds per acre		
	£	s.	d.
Under 25 acres	20	1	0
From 25 to 50 acres	15	4	0
From 50 to 75 acres	15	3	0
From 75 to 100 acres	13	18	0
From 100 to 250 acres	12	8	0
Over 250 acres	12	4	0

When it is realised that in 1924 the net outlay on the purchase of imported food material amounted in this country to £572,869,308, and the net balance between the exports and imports of all industrial products, whether raw material or manufactured goods, was only £134,481,153 in favour of the exports, it will be seen that a time is coming, even if it has not already come, when as a nation we shall have to face boldly the problem of our national food supply.

The Swiss results of Dr Laur again show that the gross output per acre steadily decreases as the size of the holding increases.

SWISS RESULTS.

Size of Holding.	Gross Output in pounds per acre.		
	£	s.	d.
7½ to 12½ acres	22	11	7
12½ to 25 acres	19	0	3
25 to 37 acres	17	17	2
37 to 75 acres	16	2	0
Over 75 acres	13	17	7

Our own results, from a study of the accounts of a limited number of small holdings in Yorkshire, go to show that the gross output on small holdings of every type is invariably high on the acreage basis, but not necessarily so per man employed.

YORKSHIRE RESULTS, 1923-24.

Farm.	Acreage.	Gross Output.	
		Per acre.	Per man employed.
		£ s. d.	£ s. d.
E. K. F. . . .	5	83 16 4	419 1 2
P. C. M. . . .	14	19 2 1	133 14 7
D. S. C. . . .	15	29 5 10	439 8 8
H. W. C. . . .	16	35 10 6	319 1 6
F. M. A. . . .	21	10 4 6	214 18 2
R. S. F. . . .	32	22 14 6	443 13 8
I. W. S. . . .	49	12 3 5	338 4 0
L. C. A. . . .	50	10 5 4	171 5 10
Average of 70 farms .	255	7 14 6	340 9 9

It is interesting to see that while the Danish results show quite conclusively that the gross output on the acreage basis steadily decreases with the size of the holding, the variations of the output per man employed are certainly in the other direction.

DANISH RESULTS.

Size of Holding	Gross Output per man employed.
	£
Under 25 acres	179
25 to 50 acres	194
50 to 75 acres	216
75 to 100 acres	214
100 to 250 acres	229
Over 250 acres	224

From a national and social point of view it is possibly the gross output on the acreage basis that is of the more importance, but from the economic point of view it is the *output per man* every time.

EMPLOYMENT OF LABOUR.

Is the time coming when we may lose our industrial supremacy, when the industries in the towns can no longer absorb our surplus population from the country; when the question

of unemployment may loom large upon the horizon, and the question of the employment of labour be one of the planks upon which a national agricultural policy will be built?

The figures of Dr Larsen show that it is the small holding which, unit for unit, is socially the best in this respect, the holding of less than 25 acres giving on the average employment to 11.3 men per 100 acres, as compared with 5.4 in the case of the holdings of over 250 acres.

Danish Results.

Variation of Wages Bill and Number of Men Employed, with the Size of the Holding.

Size of Holding.	Wages paid per acre.	No. of men employed per 100 acres.
	£ s. d.	No.
Under 25 acres	8 12 0	11.3
25 to 50 acres	5 15 0	7.8
50 to 75 acres	5 10 0	7.0
75 to 100 acres	5 2 0	6.5
100 to 250 acres	4 2 0	5.4
Over 250 acres	4 2 0	5.4

The Swiss results of Dr Laur, and our own in Yorkshire, both confirm those of Dr Larsen, and show that the small holding certainly has the social advantage of giving employment to a large number of people upon the land, with a possible economic disadvantage of a high labour bill per acre.

Yorkshire Results, 1923-24.

Farm.	Acreage.	No. of men employed per 100 acres.	Labour bill per acre.
			£ s. d.
E. K. F. . . .	5	20.0	18 4 0
P. C. M. . . .	14	14.3	18 17 8
D. S. C. . . .	15	6.7	5 18 2
H. W. C. . . .	16	9.4	10 1 9
F. M. A. . . .	21	4.8	4 15 10
R. S. F. . . .	32	6.3	7 4 0
I. W. S. . . .	49	3.6	4 8 6
L. C. A. . . .	50	6.0	4 14 4
Average of 70 farms .	255	2.3	2 10 0

Capitalisation.

The individual farmer, however, will look at the matter from the personal rather than the impersonal point of view, and the economic rather than the social aspect of the case will appeal to him; and it is here that the figures of Dr Larsen are so instructive, for they reveal the fact that the small holding of approximately 20 acres, so common in Denmark, is not the most economic unit. It is handicapped by high capitalisation, particularly in the form of non-productive capital, by high working costs, by the uneconomic employment of labour, both man and horse, to such an extent as to more than over-balance the social advantages it enjoys.

Danish Results.

Capital Invested Per Acre.

Size of Holding.	Land.			Buildings.			Working Capital.			Total Capital.		
	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*
Under 25 acres .	16	10	0	18	8	0	20	12	0	55	10	0
25 to 50 acres .	17	5	0	13	5	0	15	8	0	45	18	0
50 to 75 acres .	19	3	0	12	4	0	14	15	0	46	2	0
75 to 100 acres .	18	18	0	11	18	0	13	8	0	44	4	0
100 to 250 acres .	18	10	0	9	18	0	11	10	0	39	18	0
Over 250 acres .	19	8	0	10	2	0	10	7	0	39	17	0

When once the land has been acquired, buildings must be erected and working capital found before that land can be efficiently farmed. A glance at the table above will show that in the case of the small holding under 25 acres the total capital to be invested in the farm is approximately *three and a half times* the value of the land, and, roughly, *twice* the value of the land in the case of the holding of 250 acres.

Unfortunately the big increase in the capitalisation of the smaller farms is largely in the form of buildings, implements, and what may be looked upon to a certain extent as non-productive capital. The following table, compiled from the records of Dr Larsen, shows the average variations in the acreage value of implements and machinery on Danish holdings of varying sizes.

VARIATIONS IN THE IMPLEMENTS AND MACHINERY VALUATION PER ACRE.

Implement	Under 25 acres.	25-50 acres.	50-75 acres.	75-100 acres.	100-250 acres.	Over 250 acres.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Power . . .	0 9 3	0 8 8	0 7 0	0 7 0	0 6 4	0 8 0
Sowing and planting	0 6 2	0 4 0	0 3 8	0 3 8	0 2 9	0 2 6
Harvesting . .	0 4 0	0 9 10	0 7 8	0 7 0	0 5 10	0 6 2
Threshing . .	0 11 10	0 9 10	0 10 9	0 7 8	0 7 4	0 9 10
Fodder preparing .	0 3 8	0 3 8	0 2 6	0 2 6	0 1 6	0 0 11
Cultivating . .	0 11 10	0 7 4	0 6 2	0 5 10	0 4 0	0 4 3
Carts . . .	1 10 3	0 17 6	0 14 6	0 12 0	0 9 0	0 9 0
Harness . .	0 4 4	0 2 9	0 2 9	0 2 2	0 1 6	0 1 6
Small tools . .	0 2 6	0 1 6	0 1 2	0 0 11	0 0 11	0 1 2
Stable equipment .	0 3 1	0 0 7	0 0 7	0 1 2	0 0 11	0 0 11
Sundry . .	0 7 0	0 1 10	0 1 10	0 1 10	0 1 6	0 1 2
Total . .	4 13 11	3 7 6	2 18 7	2 11 9	2 1 7	2 5 5

The accompanying graph shows at a glance the heavy burden of non-productive capital which the really small holder in Denmark has to carry.

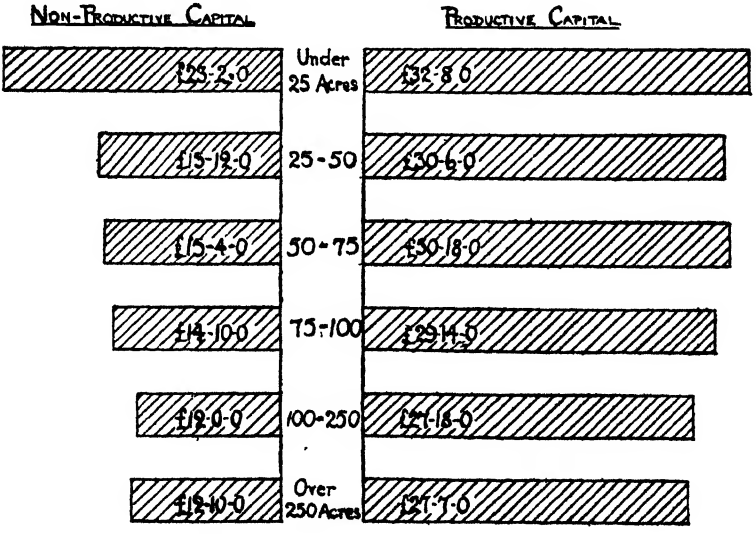

Fig. 5.—Capital invested per acre in Danish Holdings.

While the data for this country is to a certain extent scanty, yet such as is available shows that here, as in Denmark and Switzerland, the small holder has to bear the same handicaps

of high working capitalisation, particularly in the form of implements and dead stock. The following table giving details of the acreage valuation of the seventy Yorkshire farms whose accounts were last year supervised through the Department of Agriculture of the Leeds University, shows that in this respect also the small holder of this country falls into line with his confrères of Denmark and Switzerland :—

YORKSHIRE RESULTS, 1923-24.

VALUATION PER ACRE.

Size of Holding.	Livestock.			Tenant Right.			Produce.			Imps.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
50-100 acres	14	0	0	2	6	0	1	18	0	5	5	0	23	9	0
100-150 ,,	8	4	0	2	15	0	2	16	0	3	13	0	17	8	0
150-200 ,,	7	0	0	2	15	0	2	15	0	3	10	0	16	0	0
200-250 ,,	8	1	0	3	9	0	1	2	0	2	3	0	14	15	0
250-300 ,,	6	14	0	2	11	0	2	0	0	2	1	0	13	6	0
300-350 ,,	6	2	0	2	18	0	1	8	0	1	16	0	12	4	0

PRODUCTION COSTS.

From the economic standpoint, it is not so much the gross output that matters as the net; it is not so much the sales off the farm, its production, or productivity that stands out as pre-eminently important, but the *margin* between the production costs and sale prices; and, unfortunately, while the output from the small holding is undoubtedly high, the production cost of that output is also high. The Danish results of Dr Larsen show this; the Swiss results of Dr Laur confirm it, and our more limited data show results which are strictly in agreement.

DANISH RESULTS.

Size of Holding.	Total production costs per acre.		
	£	s.	d.
Under 25 acres	17	10	0
25 to 50 acres	11	16	0
50 to 75 acres	11	10	0
75 to 100 acres	10	4	0
100 to 250 acres	9	5	0
Over 250 acres	9	4	0

The way in which some of the various production costs have been found by Dr Laur to vary on Swiss holdings of various sizes is illustrated in the following diagram. That these high

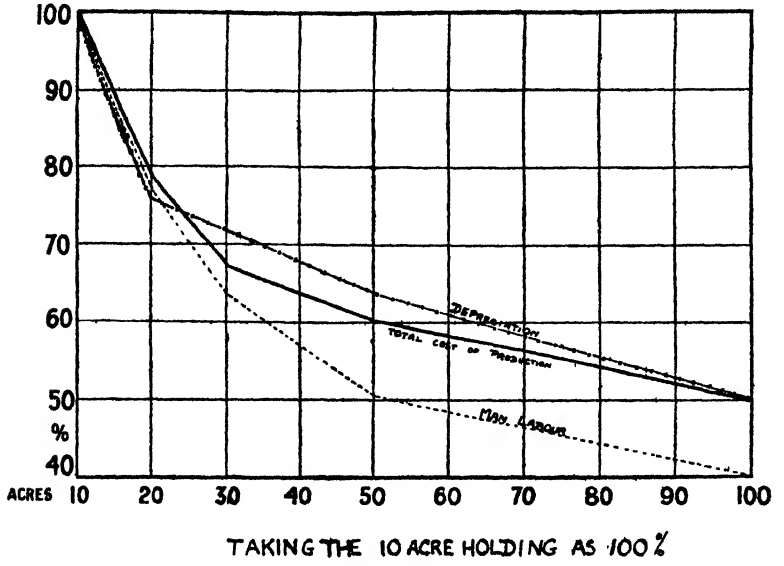

Fig. 6.—*Production costs. Swiss results.*

production costs are common not only to small holdings of Denmark and Switzerland but also to those of this country can be seen from the following records of small holdings in Yorkshire, in which their results are compared with the average result obtained during the same period on the whole of the seventy commercial holdings already referred to :—

EXPENDITURE PER ACRE.

Farm.	Total.			Labour Bill.			Purchased Foodstuffs.			Capital per acre.		
	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*
E. K. F. . .	43	9	11	18	4	0	37	4	3	73	6	2
P. C. M. . .	45	8	4	18	17	8	17	10	1	27	9	2
D. S. C. . .	38	4	11	5	18	2	22	1	6	34	15	5
H. W. C. . .	50	16	0	10	1	9	13	15	6	35	18	1
F. M. A. . .	24	15	11	4	15	10	3	18	8	17	8	6
R. S. F. . .	22	14	6	7	4	0	4	15	3	26	2	6
I. W. S. . .	16	4	3	4	8	6	4	7	7	17	2	7
L. C. A. . .	15	17	8	4	14	4	5	8	6	16	17	5
Average of 70 farms	11	9	11	2	10	0	1	9	3	13	4	7

The high rent and rates which are inseparable from small holdings, their high labour and other costs, add heavily to the cost of production of their home-grown foods, even of the grazing, and these high costs of production of crops react upon the cost of upkeep of the stock consuming them; thus, H. C. W. is a small holding of 16 acres of grassland on the outskirts of one of the industrial towns of Yorkshire, the rent charged corresponds to less than a 2 per cent return on the landlord's capital actually invested in the holding. It is good grass well managed, heavily stocked, and treated on orthodox lines, but killed by high rents and high rates, amounting to no less than £5, 12s. per acre, and constituting 68 per cent of the total cost. Had this holding been double the size, the capital outlay for building and housing accommodation for the stock would have been very much smaller in proportion, the land would have been rented at a lower acreage figure, the cost of grazing and the cost of milk production would have been very considerably reduced.

GRAZING COSTS, 1922-23.

Per acre.	H. W. C. (Small holding 16 acres)	Average of 34 Farms.
	£ s. d.	£ s. d.
Rent	3 10 4	1 8 5
Rates	2 1 11	0 8 1
Manure	0 13 9	0 3 10
Incidentals	1 0 6	0 10 8
Man labour	0 12 4	0 5 5
Horse labour	0 5 6	0 2 11
Total cost	8 4 4	2 19 4
Number of acres grazed per cow equivalent	.90 acres	1.46 acres
	£ s. d.	£ s. d.
Cost per cow per year	7 17 2	4 6 0
Cost of grazing per cow per week	0 5 3	0 3 11

MILK PRODUCTION, 1922-23.

Per cow per year.	H. C. W. (Small holding 16 acres.)	Average of 24 herds.
	£ s. d.	£ s. d.
Grazing	7 17 2	6 0 3
Soiling crops	..	0 18 7
Hay and straw	9 12 11	4 13 9
Roots	3 10 1	4 6 11
Concentrates	18 16 1	12 10 10
Total food	39 16 3	28 10 4
Depreciation	12 5 4	9 11 4
Incidentals	1 5 4	0 15 10
Labour	20 15 11	11 2 11
Gross cost	74 2 10	50 0 5
Less manure	5 2 0	3 3 6
Less calves	..	0 19 6
Net cost of upkeep per cow per year.	69 0 10	45 17 5
Average milk yield per cow	764 gals.	588 gals.
	£ s. d.	£ s. d.
Cost of production of milk per gallon	0 1 10	0 1 6½

NET ECONOMIC RESULTS.

If we look at the following table, it will be seen that after allowing for a normal interest on the capital invested in the holding, and charging the labour of the small holder himself at the normal rate paid to the hired man, there has been in Denmark during the seven years 1917-23, an annual yearly deficit of 4s. per acre on the small holding under 25 acres.

Wage charged—

3s. 6d.	per day in the year	1917-1918.
4s.	,, ,,	1918-1919.
5s.	,, ,,	1919-1920.
6s.	,, ,,	1921-1922.
4s. 10d.	,, ,,	1922-1923.

The efficiency of the holding increased with its size up to a maximum which was reached on farms of between 75 to 100 acres, on which a surplus of 30s. per acre was obtained, and then fell off steadily as the holding increased, the surplus on farms of over 250 acres being approximately £1 per acre.

DANISH RESULTS.

Size of Holding.	Capital invested per acre.	Output per acre.	Cost of upkeep per acre.	Net Balance per acre.	Normal Interest on Capital invested.	Balance per acre after allowing for normal Interest on Capital.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Under 25 ac.	55 10 0	20 1 0	17 10 0	2 11 0	2 15 0	-0 4 0
25-50 acres .	45 18 0	15 4 0	11 16 0	3 8 0	2 5 0	1 3 0
50-75 acres .	46 2 0	15 3 0	11 10 0	3 13 0	2 6 0	1 7 0
75-100 acres	44 4 0	13 18 0	10 4 0	3 14 0	2 4 0	1 10 0
100-250 acres	39 18 0	12 8 0	9 5 0	3 3 0	2 0 0	1 3 0
Over 250 ac.	39 17 0	12 4 0	9 4 0	3 0 0	2 0 0	1 0 0

In Switzerland the holdings are on the average smaller even than in Denmark, and from a study of Dr Laur's results it will be seen that in spite of the high gross output from the holdings under 12½ acres, their high capitalisation and high labour and other production costs were instrumental in reducing the average net profits obtained on them to less than 3 per cent on the capital outlay, as compared with more than 5½ per cent in the case of the holdings of more than 75 acres, from which it would appear that the efficiency of the normal holding increases with its size certainly up to 75 acres. In this respect there is, on broad general lines, an almost uniform agreement between the results obtained by Dr Larsen in Denmark, Dr Laur in Switzerland, and those which we have obtained from a more detailed study of a smaller number of farms in Yorkshire.

[TABLE: Swiss Results.

Swiss Results.

Size of Holding	No. of Holdings.	Capital invested per acre.	Output per acre.	Production costs per acre.	Net Balance per acre.	Balance expressed as Interest on Capital invested.	Normal Interest per acre on Capital invested.	Balance per acre after allowing for normal Interest on Capital.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.
7½ to 12½ acres .	662	149 18 8	22 11 7	18 15 1	3 16 6	2.5%	6 0 0	−2 3 6
12½ to 25 acres .	2457	116 16 2	19 0 3	14 5 6	4 14 9	4.0%	4 13 6	0 1 3
25 to 37 acres .	1367	108 8 5	17 17 2	12 8 11	5 8 3	4.9%	4 6 9	1 1 6
37 to 75 acres .	1247	96 11 10	16 2 3	11 1 1	5 1 2	5.2%	3 17 3	1 3 11
Over 75 acres .	364	75 4 3	13 17 7	9 11 10	4 5 9	5.6%	3 0 2	1 5 7

In none of these cases is the small holding of 30 acres, so common on the Continent, found to be the most economic unit; while if either Dr Laur's or Dr Larsen's results are plotted, it will be seen that there is a very marked falling-off in the economic efficiency as the holding falls below 35 acres.

Our own limited number of results go to show that so far as size is concerned, the peak of maximum efficiency is apparently in this country reached on a holding of somewhere between 100 and 150 acres, though, as has been pointed out before, the data at present available is not sufficiently large for the evidence to that effect to be conclusive.

Actually there are indications that the efficiency curve of holdings of varying sizes in this country is not a continuous one, but has two peaks, the first one apparently somewhere

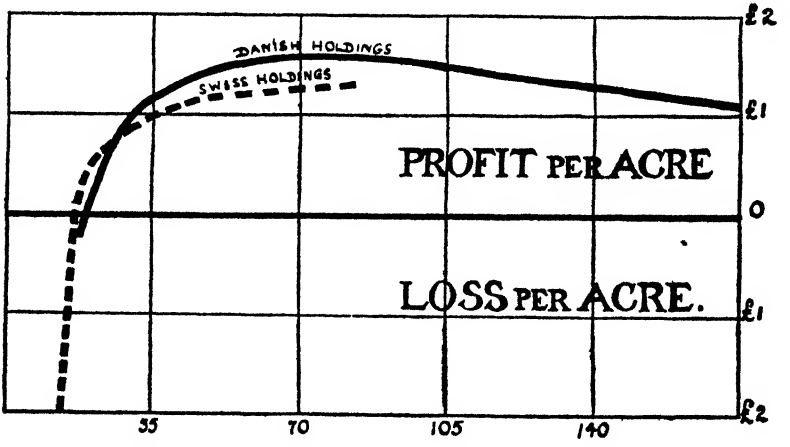

Fig. 7.—*Efficiency curves of Danish and Swiss holdings.*

between 100 *and* 150 *acres*, after which the curve falls, only to rise again to a second crest somewhere about 350 acres, from which point onwards it appears to fall as the holdings increase in size above that limit.

Place a man on a small holding of under 12½ acres, the records of Dr Laur show that he would be £2, 3s. 6d. an acre, or, roughly 10s. a week better off, were he employed as a hired man on a larger farm, and were the money which he has sunk in his holding invested in Corporation or other trustee stock. It would be difficult to justify such an economic handicap on any social grounds.

Place a man on a small holding of just under 25 acres, the records of Dr Larsen show that he would be 4s. an acre, £5 a year, or, roughly, 4s. a week better off were he to hire himself out on a larger farm, and invest his money again in

trustee stock instead of in his holding: There are undoubtedly many men so constituted that they would prefer to work for themselves, as their own masters, and order their own lives in their own way, rather than place themselves at the beck and call of another man, even if by doing so they were sacrificing 4s. a week; and undoubtedly this spirit of independence is a thing to be encouraged and fostered.

Place a man on a holding of from 75-100 acres, he not only maintains his independence, but will also be placed in a position in which he has a maximum chance of financial and economic success. Such a farm could still be run as a *family* farm, and possess the social advantage we all wish to develop, high output and a maximum employment of labour on the land, compatible with economic efficiency. In the interests of the nation extend the small holding movement by all means, but in the interests of the small holder, widen the term so as to make it include a holding of at least 75 acres; and remember that except on very specialised farms there is a very marked falling-off in its economic efficiency as the holding falls below 35 acres.

Number of Small Holdings in Country.

In this respect a study of the following table illustrating the variations in the number of holdings of various sizes during the last forty years is certainly instructive. It will be seen that in this country the tendency has certainly been in the direction of the gradual elimination of the large holdings, and also of those which have been found in practice to be too small for economic working. In spite of the repeated efforts made to encourage the small-holding movement, economic forces have slowly but surely worked in the direction of the medium-sized farm hovering round the 100 acres, which our limited results suggest to be in this country the most efficient economic unit.

TABLE VI.

Number of Holdings in England and Wales.

Size Group.	1885.	1895.	1913.	1921.	1924.
1 to 5 acres .	114,273	97,818	92,302	81,217	76,859
5 to 20 acres .	126,674	126,814	122,117	116,159	111,934
20 to 50 acres .	73,472	74,846	78,027	80,967	79,537
50 to 100 acres .	54,937	56,791	59,287	61,001	60,781
100 to 300 acres .	67,024	68,277	69,431	67,842	67,411
Over 300 acres .	16,608	16,021	14,513	12,947	12,861

The Minority Report of the Agricultural Tribunal of Investigation, signed by Professor MacGregor, makes very interesting references to this point.

"The grounds on which the small-holdings policy can clearly be based are two.

"In the first place, it is the policy for maintaining rural population; it does this by satisfying an ambition, and thereby impeding the rural exodus.

"In the second place, it is in the interests of the efficiency of farming as a whole that qualified labourers should be enabled to start on their own account and to rise into the ranks of farmers. Agriculture, it may be repeated, is an industry to which this latter idea is so specially applicable that an effective small-holdings policy is a matter of social justice."

Going further into detail, he quotes the following figures with reference to the variations in the number and acreage of the small holdings under 50 acres in England and Wales between the years 1875 to 1919 :—

NUMBER AND ACREAGE OF SMALL HOLDINGS IN ENGLAND AND WALES.

Year.	Number.	Percentage of all Holdings.	Acreage.	Percentage of area under all Holdings.
1875	333,630	70.7	4,182,346	15.4
1880	336,149	70.7	4,176,427	15.0
1885	314,419	69.2	4,203,742	14.9
1895	299,378	68.9	4,224,594	15.0
1908	287,170	66.8	4,368,330	15.7
1913	292,446	67.0	4,281,526	15.5
1919	272,568	65.5	4,150,813	15.5

"It will," he says, "be seen that the area under small holdings remains a fairly constant proportion of the area under all holdings, and that this is also to a certain extent true of the numbers. The fact which is most difficult to explain is the decline of the acreage since 1908, since it was in the beginning of this year that effective legislation came into force."

Under the Act of 1892 practically nothing was done. The Act of 1907 came into force on the first day of 1908, and from that time until the outbreak of the war, 189,294 small holdings of an average size of 13 acres were established at the rate of just over 2300 holdings per year; yet in spite of this the number of statutory small holdings in the country to-day is

60,000 less than it was in 1875, and nearly 15,000 less than it was in 1908, when compulsory powers for their creation were first acquired. In other words, of recent years *for every two statutory small holdings established three have disappeared, to be merged into larger holdings.* Make the small holding an economic unit, and the small-holding movement will grow; but the compulsory establishment by law of a system which, whatever social advantages it may enjoy, is based on foundations which are economically unsound, is doomed to failure from the commencement; and the utilisation of public funds for the establishment of such a system is as satisfactory a process as pouring water through a sieve.

During the year 1924-25 we have had the accounts of eighty farms under most careful supervision. Of these, fifty-two at the time of writing are already completed, and of those fifty-two the one which stands out easily in the premier position for its economic efficiency is farm W. D. R., a small arable holding of 89 acres, 22 of which only were under grass. It is also interesting to note that this holding, originally two small holdings, both economic failures when worked separately, has been made a huge economic success when worked as one unit.

The farm has a high gross output, high sales, but no abnormally high capitalisation, no abnormally high expenditure, no unreasonably large number of men employed upon it, no unduly heavy labour bills, no heavy outlay on non-productive capital. It is not too heavily overstocked with horses; the labour, both man and horse, can be efficiently supervised, and are economically worked, with the result that good crops are grown, and grown cheaply.

In the report sent to this man on the 6th June 1925 it was stated:—

"Mr —— will note that the year's working of the farm has resulted in a net profit of £791, 3s. 4d., of £8, 18s. 9d. per acre, 4.4 times the rental or of 58 per cent of the working capital invested. Such a result, in spite of the general improvement which has taken place in agricultural conditions during the past year, is a remarkable achievement, and shows what may be accomplished by careful management and attention to detail, given a holding of *economic size* and suitable land. Such a result has only been made possible by careful management and attention to detail—two factors which stamp Mr ——'s farm as one of the best we visit."

W. D. R., 1924-1925.—Gross Output

	Initial Valuation	Purchases.	Sales.	Final Valuation	Gross Output.	Gross Output per 100 acres.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Cattle	220 10 0	..	31 0 0	372 0 0	182 10 0	206 2 0
Pigs	38 0 0	..	125 8 6	39 0 0	126 8 6	142 12 0
Poultry	14 5 0	6 1 3	134 3 7	20 3 0	134 0 4	151 10 0
Milk and milk products	..	0 12 0	242 9 6	..	241 17 6	273 2 0
Wheat	10 0 0	..	120 1 0	28 3 4	138 4 4	156 0 0
Oats	..	6 1 6	..	27 12 10	21 11 4	24 8 0
Peas	..	9 6 9	25 16 0	..	15 19 3	18 1 0
Potatoes	79 10 0	8 0 0	442 11 6	274 0 0	629 1 6	711 5 0
Roots	..	..	..	36 16 10	36 16 10	41 12 0
Total	£362 5 0	£30 1 6	£1121 0 1	£797 16 0	£1526 9 7	£1724 12 0

Gross output per 100 acres	£1724 12 0.
Gross output per man employed	£689 17 0.
Number of men employed per 100 acres	2.5
Per £100 spent on labour	£590 19 6.
Per £100 of capital invested	£202 10 0.
Per £100 of total expenditure	£175 0 0.

YORKSHIRE RESULTS, 1924-25.

	W. D. R. Double Small Holding.	Average of 52 Commercial Farms.
	£ s. d.	£ s. d.
Gross output per 100 acres	1724 12 0	892 13 9
Gross output per man	689 17 0	331 3 11
Expenditure per acre	11 3 0	13 8 9
Profit per acre	8 18 9	0 15 0
Profit as percentage of capital invested	58%	5%
	£ s. d.	£ s. d.
Working capital per acre	15 17 3	14 5 4
Wage bill per acre	2 12 9	2 14 1
Number of men employed per 100 acres	2.5	2.7
Percentage of gross income taken by labour	19%	20%
	£ s. d.	£ s. d.
Cost of grazing per acre	3 5 10½	2 17 0
Cost of grazing per cow equivalent	3 5 10½	4 1 0
Cost of seeds hay per acre	5 8 2	6 2 4
Cost of seeds hay per ton	3 12 2	3 15 5
Cost of wheat per acre	7 11 9	8 13 4
Cost of wheat per cwt.	0 6 6	0 8 2
Cost of oats per acre	8 1 3	9 2 1
Cost of oats per cwt.	0 6 7	0 9 2
Cost of potatoes per acre	20 11 2	25 0 4
Cost of potatoes per ton	3 0 0	3 9 11
Cost of mangolds per acre	11 14 3	15 16 7
Cost of mangolds per ton	0 15 7	0 16 4
Cost of upkeep per horse per year	28 15 3	34 15 6
Cost of horse labour per working day	0 4 6	0 4 6
Cost of upkeep per cow per year	20 14 2	35 0 4
Cost of production per gallon of milk	0 0 11½	0 1 2½
Cost of upkeep per hen per year	0 7 6	0 8 5
Sales per bird per year	1 5 10	0 13 4
Profit per bird per year	0 18 4	0 3 10

Such a result could only have been obtained as the result of really first-class management and particularly favourable marketing conditions, *but it could not possibly have been obtained on a statutory small holding, however good the management, because these high outputs could not have been obtained at such low production costs.*

Cost to Responsible Authority.

A study of the financial returns of the authorities responsible for the provision of the small holdings is also interesting. In the year ended 31st March 1921 one such authority had under its control 11,968 acres, the rent of which paid by the tenants amounted to £31,772, 18s. 10d., corresponding, roughly, to 53s. per acre, as compared with an average rent paid on normal-sized farms in the same county of 28s. per acre. The cost to the responsible authority amounted to no less than £57,131, 0s. 5d., and involved them in a loss that year of £25,358, 1s. 7d., making the economic rent of the holdings concerned approximately £5 an acre, a burden which no agricultural land under present conditions could hope successfully to carry. The reason for abnormally high rents can be seen from the fact that of the estates acquired under the Land Settlement (Facilities) Act of 1919, 8119 acres were purchased for £340,000, or £43, 15s. per acre; while, in addition, the cost of their additional equipment with the necessary buildings amounted to no less than £252,942, or £32 an acre. The cost of the holdings, land, and buildings to the authorities concerned amounted to no less than £75, 15s. per acre. We have, at the present time, the accounts of eighty commercial farms under investigation in the county. Since 1919, eighteen of these have been bought by the former tenants at an average cost not of £75, 15s. but of £29, 7s. 3d. per acre.

Undoubtedly many inexperienced men have been established upon small holdings at great expense to themselves and to the public, and have never had a dog's chance of success. If *suitable* men, trained in the practical work of the farm, could be placed on holdings *suitable* in size, there need be little fear of them not making good; and if, where necessary, cheap credit could be found, possibly out of the public purse, for carefully selected men deserving it, it would be money well spent.

The establishment of 656 men on just under 12,000 acres by the authority already referred to has resulted in an annual loss of approximately £25,000 of the rate or taxpayers' money; and in spite of the fact that this corresponds to a grant out of the public funds of approximately £1 per week

to each of these men, it has been of little practical benefit to them.

Had a careful selection been made, and between 200 and 250 of the most suitable and experienced men been placed on holdings nearly three times as large, not only could the capital expenditure on buildings have been reduced by at least £80,000, and most probably £100,000, but the men so placed should have needed no support out of the public purse, for they would have had a chance, and a good chance, to make their farms a financial success; while in addition at least £80,000, and most probably £100,000, of capital expenditure on the erection of superfluous buildings might have been avoided. Had that money been utilised in productive expenditure like drainage, it would have been put to good purpose.

Output from Stock and Crop.

A study of Dr Larsen's figures shows that in Denmark, as in England, the small holder relies almost entirely upon the sales of produce of animal husbandry for his revenue, the output of animal products amounting to, as can be seen below, £15, 10s. per acre in the case of the small holdings under 25 acres, and to only £5, 4s. in the case of the large holdings of more than 250 acres; while the output from the crops, which amounted to only £1, 12s. per acre, or only 10 per cent of the total output in the case of the small holdings, rises to £5, 4s. per acre, or 50 per cent of the total output in the case of the large ones.

Danish Results, 1921-1922.

Output of Animal Products.

Size of Holding.	Milk and milk products.			Pigs and pig products.			Eggs and poultry.			Total of animal products.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Under 25 acres . .	8	4	0	5	8	0	1	18	0	15	10	0
25 to 50 acres . .	6	8	0	3	12	0	1	6	0	11	6	0
50 to 75 acres . .	6	0	0	3	12	0	1	4	0	10	16	0
75 to 100 acres . .	5	12	0	3	4	0	0	12	0	9	8	0
100 to 250 acres .	4	16	0	1	13	0	0	5	0	6	14	0
Over 250 acres . .	4	1	0	1	0	0	0	3	0	5	4	0

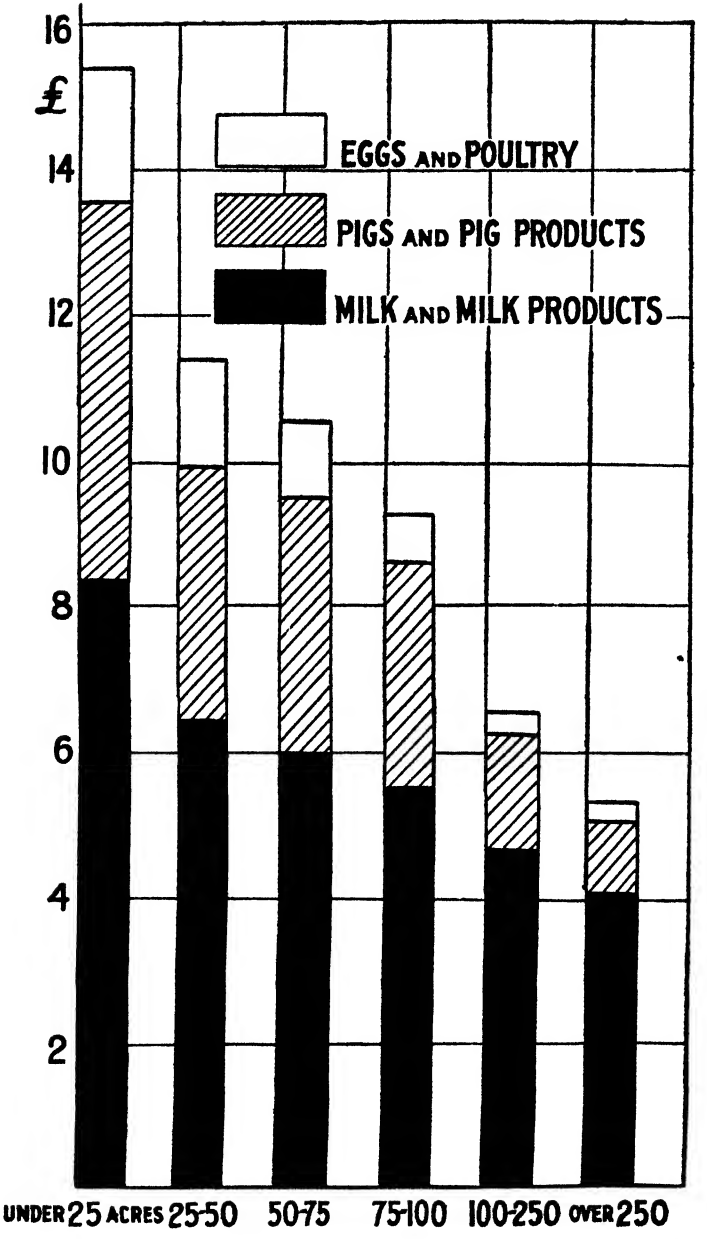

Fig. 8.—*Output per acre of animal products.*

OUTPUT OF CROP PRODUCTS.

	Corn.			Other crops.			Total of crop products.		
	£	s.	d.	£	s.	d.	£	s.	d.
Under 25 acres .	0	9	0	1	3	0	1	12	0
25 to 50 acres .	0	12	0	0	12	0	1	4	0
50 to 75 acres .	0	17	0	1	7	0	2	4	0
75 to 100 acres .	1	0	0	1	6	0	2	6	0
100 to 250 acres .	1	10	0	1	0	0	2	10	0
Over 250 acres .	3	12	0	1	12	0	5	4	0

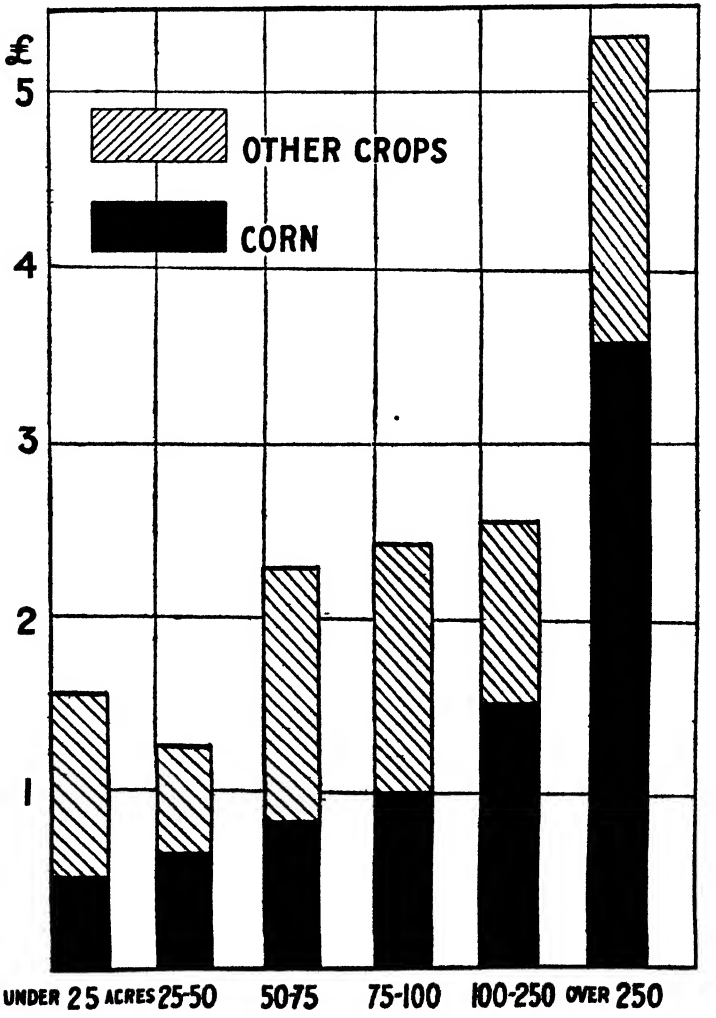

Fig. 9.—*Output per acre of crop products.*

PERCENTAGE OF GROSS OUTPUT.

	Under 25 acres.	25-50 acres.	50-75 acres.	75-100 acres.	100-250 acres.	Over 250 acres.
Animal Products—	%	%	%	%	%	%
(*a*) Milk . .	48	51	46	48	51	40
(*b*) Pigs . .	32	29	28	27	17	9
(*c*) Poultry .	10	10	9	5	3	1
Total . .	90	90	83	80	71	50
Crop Products—						
(*a*) Corn . .	3	5	8	9	16	38
(*b*) Other crops .	7	5	9	11	13	12
Total . .	10	10	17	20	29	50

Evidently the small holder manages his grass land *better*, and his arable land, particularly the area under corn, *worse* than his brother on a large holding, as can be seen from the following records extracted from Dr Larsen's figures :—

	Yield per grain per acre.	Food units of grass and forage crops per acre.
	cwt.	
Under 25 acres	16.2	1080
25 to 50 acres	16.8	965
50 to 75 acres	19.5	978
75 to 100 acres	20.2	840
100 to 250 acres . . .	20.4	836
Over 250 acres	21.0	800

The skill of the small holder in the management of stock, the value of the individual attention which he is able to give to them, points which we have noticed in our own records on the farms being costed through the department in Yorkshire, are brought out by a study of Dr Larsen's figures, as are also the handicaps that the small holder has to suffer in the over-stocking of horses and the uneconomical use made of the horse labour on holdings that are too small.

The following extract, taken from a report sent off on the 12th December 1924 to L. C. A., a small holder farming 48 acres in the Doncaster area, may in this respect be of interest :—

"In many ways the holding at —— is handicapped in the same way as are the small holdings in Switzerland and Denmark. Possibly one of the most striking cases is the way in which it is heavily over-stocked with horses, with the

consequence that sufficient work cannot be found for them to keep them really busy on the farm. The following comparison of the efficiency of the horse labour on Mr ——'s farm and on the fifty-two farms already referred to is certainly instructive :—

HORSE LABOUR IN DENMARK.

Size of Holding.	No. of acres per working horse.	No. of working days per horse per year.	Feeding units fed per head per year.	Cost of horse labour. Per working day.	Cost of horse labour. Per acre.	Cost per working horse per year.
				£ s. d.	£ s. d.	£ s. d.
Under 25 acres	7.2	94	1792	0 5 8	3 13 6	26 12 0
25-50 acres .	17.2	131	2450	0 5 5	2 16 0	35 16 0
50-75 acres .	17.2	143	2676	0 5 6	2 5 3	39 0 0
75-100 acres .	19.2	157	2748	0 5 5	2 4 8	42 8 0
100-250 acres .	23.5	179	2850	0 5 0	1 18 4	45 0 1
Over 250 acres	27.3	212	3204	0 5 0	1 17 10	52 10 0

HORSE LABOUR IN YORKSHIRE, 1923–1924.

COMPARATIVE COSTS.

Size of Holding.	No. of acres per working horse.	No. of working days per horse per year.	Cost of horse labour. Per working day.	Cost of horse labour. Per acre.	Cost per working horse per year.
			£ s. d.	£ s. d.	£ s. d.
Under 50 acres . .	7.63	88.4	0 7 9	4 6 0	32 12 1
50 and under 75 acres .	18.12	99.4	0 7 3	2 1 7½	37 14 5½
75 ,, ,, 100 ,, .	25.94	135.6	0 4 9½	1 5 1½	32 11 0
100 ,, ,, 150 ,, .	28.04	131.3	0 4 11	1 3 1	22 6 10½
150 ,, ,, 200 ,, .	35.32	128.6	0 4 6	0 16 4½	28 18 1
200 ,, ,, 300 ,, .	34.40	149.0	0 3 11½	0 17 1½	29 8 0
Over 300 acres . .	44.97	170.3	0 4 4	0 16 6½	37 3 9

	L. C. A.	Average of 52 Farms.
Number of working horses kept per 100 acres	10	2.9
Number of working days per horse per year	54	148
Number of working horses kept per 100 acres of arable land	14.3	5.7
Cost of horse labour per working day .	£0 10 0	£0 4 10
Cost of upkeep per horse per year .	26 15 11	35 15 4

"It will be seen that the horses are undoubtedly kept cheaply, but the fact that they can be found employment for little more than one day a week makes the actual cost of horse labour per working day more than double the average.

"The Danish records already referred to show that this is a common failure in that country, as can be seen from the table on p. 51, obtained from a study of Dr Larsen's figures.

"The really small holding of under 25 acres is nearly four times as heavily stocked with horses as is the large holding, for that country, of over 250 acres. The influence of the individual attention which can be given on the small holding is seen from the fact that on these holdings the food consumption and the total cost of upkeep have been reduced by nearly one-half. The fact that the horses on the small holdings cannot be kept busy is brought out when it is realised that on the smallest holdings they worked 94 days per head per year, and on the largest for 212.

"The skill in management of these men is shown by the fact that in spite of the small number of days worked by the horses, the cost of horse labour was only eightpence per working day more than on the largest holdings which could keep horses busy."

The value of the individual attention that is given to stock by the small holder is seen from a study of Dr Larsen's records of poultry and pigs. From these it will be seen that the small holder stocks his land heavily with birds on the holdings of under 25 acres, possibly too heavily; watches his feeding remarkably closely, with a saving of 3s. a head, as compared to those on the holdings of over 250 acres, where the birds would be most probably looked after by hired labour; while the larger profits per bird and per pig were made on holdings in the one case just under, and in the other just over, 50 acres.

Conclusion.

In conclusion, I think it must be admitted that the small-holding system as at present adopted, in England at all events, has been to a large extent a costly failure, mainly through following too slavishly the methods that have been adopted in other and principally smaller countries. Yet success could so easily be attained, and lies ready waiting to be boldly grasped.

Unless on a specialised farm, I would put no man—who expected to make a living by it—on a holding of less than 35 acres, and would hesitate to put him on one of less than 50 acres, and I would extend the working of the Act to make it applicable to at least a holding of 75 acres, and, wherever possible, make it reach as near as possible to that limit; and lastly, I would select, and carefully select, the men to be placed upon them.

POULTRY.

Size of Holding.	No. of birds kept per 100 acres.	Expenditure per head.			Profit.		
		Food.	Labour.	Total.	Per Holding.	Per acre.	Per bird.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Under 25 acres . .	294	0 8 0	0 2 4	0 10 4	9 0 0	1 12 0	0 4 11
25 to 50 acres . .	132	0 8 10	0 1 8	0 10 6	13 10 0	0 19 8	0 5 6
50 to 75 acres . .	122	0 9 10	0 1 9	0 11 7	17 0 0	0 14 0	0 4 6
75 to 100 acres . .	72	0 10 2	0 2 1	0 12 3	13 0 0	0 7 6	0 4 2
100 to 250 acres . .	39	0 10 10	0 1 10	0 12 8	15 10 0	0 4 10	0 4 3
Over 250 acres . .	30	0 11 0	0 2 3	0 13 3	17 0 6	0 1 6	0 3 10

There would be no possible objection by any party, political or otherwise, to the simple alteration in the working of an Act in this way, but its effect socially and economically would undoubtedly be enormous, and in my opinion it would do untold lasting good to the agriculture of the country, particularly if some system of cheap credit were made more readily available for really deserving cases.

PIGS.

Size of Holding.	No. of food units fed per pig.	Proportion of food fed			Labour bill per pig.	Profit per pig.
		Meal.	Milk or Whey.	Coarse Fodder.		
		%	%	%	£ s. d.	£ s. d.
Under 25 acres .	509	62.6	22.5	15.9	0 19 6	0 12 2
25-50 acres . .	542	67.8	21.3	10.9	0 10 4	0 16 3
50-75 acres . .	530	74.8	19.2	6.0	0 8 4	1 8 6
75-100 acres .	550	71.8	20.7	7.5	0 9 0	1 0 6
100-250 acres .	574	71.7	20.1	8.2	0 9 10	0 13 2
Over 250 acres .	618	75.8	17.8	6.4	0 13 1	0 3 6

While I have had few opportunities of studying the financial records of small holdings in Scotland, and should welcome further opportunities of doing so, yet those that I have seen again bring out quite clearly their typical strong points :—

(*a*) High production.
(*b*) High output.
(*c*) High employment of labour.
(*d*) Good management of stock and, what one rarely meets with on small holdings either in Denmark or England, good management of the arable land and crops.

On the other hand, they bring out quite clearly their typical weak points :—

(*a*) High production costs.
(*b*) High capitalisation.
(*c*) High rents.
(*d*) High labour bills.

While in England many men with little practical knowledge and experience have, particularly in recent years, been placed upon small holdings with no reasonable chance of success, in Denmark only men of long training and wide experience have been given an opportunity of taking those provided by the State ; and in Scotland, so far as my limited knowledge goes, most of the men are of the right type to make good.

Hence, in both of the latter countries most small holders are holding their own and more than making a living, in spite of the difficulties with which they have to contend.