

IV.—*The Prices of some Agricultural Produce and the Cost of Farm Labour for the past Fifty Years.* By Richard M. Barrington, M.A. LL.B.

[Read, Tuesday, 14th December, 1886.]

IN venturing to bring before the Statistical Society a few notes on the above subject, I do so with much diffidence, because a matter of such importance at the present time should be dealt with by one who is a master of statistics, and not by a 'prentice hand; and the prudence of a tenant farmer drawing public attention to his holding just now may well be questioned.

The figures which follow are chiefly derived from farm accounts kept by my father, the late Edward Barrington, and myself; they extend over a period exceeding half a century. The accounts are kept with a detail which is not usual with farmers, and consist of six principal books.

First.—An ordinary weekly wages book, with the names of the farm labourers, the time they worked each day, and the amount due each at the end of the week.

Second.—A daily subdivision of labour book. This contains the names of the labourers and shows *how* the time of each was occupied every day. Thus, supposing A. B. receives two shillings per day, and works all day—half his time being occupied at potatoes, quarter at oats, and a quarter at turnips—there would be a charge of one shilling under potatoes, sixpence under oats, and sixpence under turnips; the money value of the time, and not the time itself, being daily distributed for each separate labourer under each separate crop or item of labour. This book is made up at the end of the week, when the cost of each crop for the week appears, and the total spent on all the crops added together should equal the total week's wages.

Third.—A daily subdivision of labour book for horses. This is based on the same principle as the previous one, except that it does not show the *money value* of the horses' time each quarter of a day, because this cannot be ascertained until the books are balanced at the end of the year, and the total cost of horse feeding for the year appears. This book contains the names of the horses, and shows how each horse's time is spent every day. Thus, suppose the "Prince" horse was $\frac{1}{4}$ of a day at potatoes, $\frac{1}{2}$ a day at wheat, $\frac{1}{4}$ of a day idle—the figures $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{1}{4}$ would appear respectively under the columns potatoes, wheat, and idle. Suppose there are 8 horses on the farm, there are (omitting Sundays) 6×8 or 48 working days each week to be accounted for; and the tot of the horse labour spent on each item should amount to this. In this uncertain climate there are frequently weeks in which the tot of the idle column exceeds all the rest. As the horse requires food and attendance whether he is idle or not, every entry in the idle column represents a loss to the farmer.

Fourth.—A subdivision book for the crops. This is again based on the same principle as the last two books. The name and acreage of each field on the farm is entered each year, and opposite to it,

the number of acres, roods, and perches under wheat, oats, barley, etc., in that field. The acreage under each crop is then added up and this figure, together with acreage under pasture, and acreage under waste and unprofitable land (which I regret to say still exists) should equal the total acreage of the farm.

Unless the fields on a farm are accurately surveyed, it is impossible to tell except in a rough way the produce, cost of labour, or profit per acre.

Fifth.—An ordinary cash book, with its debit and credit side.

Sixth.—A ledger kept on the double entry system, with its “stock,” and profit and loss account. This ledger shows particulars of the capital or “stock” invested in each crop, carried on from the previous year, and the receipts for and expenses of that crop, as well as for every principal item on the farm, under the proper headings.

The cross entries are numerous in farm accounts; but no farmer can tell *exactly* how he stands without an accurately kept ledger balanced every year; experience may, perhaps, teach him in a rough way, whether he is worse or better off without the trouble of a ledger. The books are balanced about the 10th of April—that period being most convenient—the produce of the previous year being then generally disposed of.

In addition to these six books, there were smaller ones for the sale entries of potatoes, purchase of manure, and extra labour in harvest, etc.

I have endeavoured to give you an outline of the system of book-keeping originated and kept by my father with an accuracy and detail I believe rarely equalled in farm accounts, and continued uninterruptedly for over half a century—an accuracy in which he was maternally assisted in three of the foregoing books by his steward, John Kenny, who for thirty years has been in our employment.

From the books so kept I have extracted the following figures. It must be particularly remembered that the acres mentioned in this paper are Irish, unless it is otherwise expressly stated.

The average extent under crops for fifty years has been, roughly speaking 120 acres. Potatoes, turnips, mangolds, vetches, rape, wheat, oats, barley, clover, and rye-grass, are the crops grown.

Some years, however, the tillage reached 140 to 150 acres. The largest amounts grown were:—1842, potatoes, 22 acres; 1851, turnips, 27 acres; 1841, wheat, 45 acres; 1869, oats, 24 acres; 1852, barley, 32 acres.

The rotation usually adopted has been the seven course system—oats, potatoes, wheat, turnips, barley, meadow, and pasture; this has, however, frequently been departed from as weather and prices varied. It is almost unnecessary to add, that my father and myself were always resident on the farm; because no such concern could possibly be carried on successfully without daily watchfulness and the very closest attention.

There is no pursuit in which it is more essential to look after every item, than tillage farming. Every change of weather, every shower, every hour of bright sunshine, must be watched. So uncertain is this climate, that shifts from one job to another often occur three or four

times a day, and these changes cause much delay and waste of time, unless one is on the spot to give the necessary directions.

Table No. I. shows the price obtained for five principal articles of farm produce for fifty years—wheat, barley, oats, potatoes, and wool. (*See next page.*)

For cattle, sheep, and pigs, the prices vary so much with size and quality, there is an element of uncertainty not easily avoided. I refrain, therefore, from giving any statistics with regard to the live-stock on this farm. Messrs. J. Matterson & Sons, Limerick, have, however, kindly sent me the following figures :—

PRICES PAID FOR PIGS IN LIMERICK FROM 1875 TO 1886.

[*Figures supplied by J. Matterson & Sons, Limerick.*]

Year.	Average Price per cwt.		
	£	s.	d.
1875	3	1	6
1876	3	1	0
1877	2	11	6
1878	2	12	6
1879	2	11	6
1880	2	19	0
1881	2	18	6
1882	2	17	0
1883	2	16	0
1884	2	11	6
1885	2	10	0
1886	2	8	6

Fall from 1875 to 1886—13s. per cwt.

Those who have accurate accounts would do well to compare the relative value of store sheep and fat sheep—full grown store cattle and fat beasts—for say half a-century. It is the difference in price which affects the fattening grazier and stall-feeder. Foreign competition consists mainly of beef fit for the butcher. Has it reduced the price of store cattle and fat cattle in the same ratio? My intention is not to deal further with live stock in this paper; but their fall in value is as generally admitted as their great importance to Ireland.

The average prices of wheat, oats, and barley, sold in the Dublin Corn Exchange since 1847, are given. These are taken from *The Dublin Gazette* for the sake of comparison, but cannot be obtained previous to that year.

I have to thank Mr. W. P. Geoghegan, of the firm of Messrs. Arthur Guinness, Son & Co., for the prices of *malting* barley at the several houses making malt for the firm on commission in the barley centres of Ireland. Mr. Geoghegan has taken much trouble, and supplied me with an extended statement. As the figures for Middleton, County Cork, and Enniscorthy, County Wexford, are almost complete for fifty years, they have been included in this table for the sake of comparison. All Mr. Geoghegan's figures apply to *malting* barley, as distinguished from *grinding* barley; and as the figures are the average prices for tens of thousands of barrels, they are most

TABLE I.—SHOWING THE AVERAGE PRICE OF WHEAT, OATS, BARLEY, POTATOES, AND WOOL, FOR FIFTY YEARS.

Years.	Wheat, per Barrel, 20 stone.		Oats, per Barrel, 14 stone.		Barley, per Barrel, 16 stone.				Potatoes, per Brl. 20 stone.	Ewe Wool, per lb.				
	Fassaroe, Co. Wick-low.	Dublin Gazette.	Fassaroe, Co. Wick-low.	Dublin Gazette.	Fassaroe, Co. Wick-low.	Dublin Gazette.	A. Guinness, Son & Co.		Fassaroe, Co. Wick-low.	Fassaroe, Co. Wick-low.				
							Ennis-corthy, Co. Wexford.	Middle-ton, Co. Cork.						
1837	s. 36	d. 10	—	—	11	6	—	—	12	8	5	2	1	0 1/2
1838	40	5	—	—	16	0	—	—	17	9	5	11	1	3 1/2
1839	34	0	—	—	—	—	—	—	19	9	6	3	1	2 1/2
1840	33	10	—	—	12	11	—	—	14	1	14	1	1	0 1/2
1841	32	4	—	—	12	2	—	—	16	4	16	4	5	7
1842	26	10	—	—	10	3	—	—	11	9	12	2	3	5
1843	30	8	—	—	10	0	—	—	14	1	12	9	4	7
1844	27	9	—	—	10	0	—	—	16	7	15	7	4	6
1845	29	4	—	—	12	0	—	—	15	0	14	6	6	0
1846	42	11	—	—	17	3	—	—	22	3	21	6	17	8
1847	30	5	29	4	12	0	—	—	17	0	14	7	13	9
1848	26	2	23	9	11	1	—	—	15	5	15	9	13	1
1849	22	2	23	9	9	11	—	—	11	5	11	0	12	11
1850	24	4	22	1	10	10	—	—	12	11	12	2	11	5
1851	24	8	23	3	10	8	—	—	12	11	12	3	9	1
1852	31	1	29	9	11	7	—	—	13	11	13	0	11	3
1853	45	3	40	4	15	8	—	—	19	2	17	4	11	5
1854	42	6	41	9	15	7	—	—	17	8	18	2	10	10
1855	43	5	40	0	14	11	—	—	21	0	20	8	8	9
1856	35	2	33	3	14	7	—	—	21	7	22	7	7	8
1857	28	9	25	10	14	3	—	—	19	10	19	10	11	5
1858	28	0	24	10	13	3	—	—	17	8	15	10	14	8
1859	30	1	30	8	15	1	—	—	19	9	17	5	16	3
1860	32	9	30	2	14	2	—	—	21	1	19	11	19	9
1861	33	10	31	0	13	8	—	—	17	5	16	9	18	9
1862	28	5	25	8	12	8	—	—	17	2	15	4	16	9
1863	25	0	23	6	10	8	—	—	15	8	15	3	14	6
1864	24	9	23	3	12	6	—	—	13	10	14	4	13	8
1865	28	8	28	9	14	10	—	—	16	6	18	2	14	10
1866	36	2	35	8	16	3	—	—	20	0	21	8	20	2
1867	40	6	35	6	16	8	—	—	24	2	21	5	21	0
1868	30	2	29	9	15	1	—	—	22	1	20	3	20	1
1869	29	11	25	9	14	0	—	—	18	5	16	3	18	0
1870	32	10	31	3	14	3	—	—	19	1	17	9	16	7
1871	30	0	31	11	13	8	—	—	18	10	18	3	18	2
1872	32	5	29	11	14	9	—	—	19	1	18	4	19	5
1873	36	8	32	1	16	9	—	—	20	6	19	3	18	8
1874	27	1	24	6	15	10	—	—	18	2	19	0	19	8
1875	27	2	24	9	14	3	—	—	17	6	17	0	15	10
1876	32	6	28	6	14	3	—	—	20	0	18	0	19	2
1877	29	3	26	7	14	8	—	—	19	5	18	0	20	4
1878	24	6	22	0	11	2	—	—	19	8	17	0	17	4
1879	29	9	23	9	13	5	—	—	18	11	16	1	17	0
1880	24	10	23	8	12	4	—	—	14	11	15	10	16	4
1881	24	10	24	11	12	8	—	—	19	10	15	2	16	0
1882	24	0	21	1	14	1	—	—	15	6	16	4	16	0
1883	21	10	18	3	13	6	—	—	17	0	15	3	16	3
1884	21	6	19	10	12	3	—	—	17	1	14	9	15	9
1885	18	11	16	3	10	10	—	—	16	0	13	6	14	9
1886	16	5	15	1 1/2	9	2 1/2	—	—	14	3	12	9 1/2	13	3

The prices obtained for oats at Fassaroe have been omitted, as only a small portion of the crop is sold annually. The earlier years have been given as they are not in Dublin Gazette.

The Dublin Gazette prices are for corn sold in the Dublin Corn Exchange from November 1st to October 31st. As to Fassaroe, the wheat, barley, and oats were for the most part sold in Dublin. The potatoes were sold in Dublin and in the neighbourhood of Bray, and the price given is the average obtained for table potatoes and what are known as "second size or hazards." The wool quotations marked thus (*) are from other sources. It was sold in Dublin. The prices given by Messrs. A. Guinness, Son & Co., are for "malting" as distinguished from "grinding" barley.

† No barley grown at Fassaroe in these years. ‡ Average price for November, 1886.

	s.	d.		s.	d.
Wheat, highest, 1853, ...	45	3	lowest, 1886, ...	16	5
Oats, " 1873, ...	16	9	" 1886, ...	9	2
Barley " 1846, ...	28	9	" 1849, ...	13	10
Potatoes, " 1846, ...	17	8	" 1842, ...	3	5
Wool, " 1864, ...	1	11 1/2	" 1848, ...	0	8

(Gazette prices)

valuable, Messrs. Guinness being the largest purchasers of barley in Ireland.

Commencing with wheat, we find for the lowest price for half a century has been reached this year. We have to go to the year 1761, or one hundred and twenty-five years ago, before we find its equal. The effect of the fall in the price of wheat in Ireland is frequently underestimated. Looking at the table No. 5 given further on, we find the acreage under wheat in 1847 was 743,871 acres; in 1886 it was 68,408 acres—so that for every eleven acres grown in 1847, only one acre was grown this year. Wheat is a crop which is usually *all sold*, and therefore the effect of the fall in price applies to the whole produce.

Oats, on the other hand, is for the most part consumed on the farm. I have no statistics; but believe that two-thirds of the oats grown in Ireland, are not changed into money by the farmers. If that assumption be correct, we must divide the acreage by three to find the amount really affected by the price. Taking 1847, this process would reduce oats to a level with the wheat crop in acreage.

In the Counties Down, Cork, Kilkenny, Waterford, Limerick, and Wexford, the great wheat growing districts of Ireland, the fall in price must have largely affected the whole system of agriculture. The acreage under wheat is much less than in England. But the real effect of the fall in price is hardly proportional to the acreage grown in the two countries, for Ireland is a purely agricultural country, while England is not.

For forty years, from 1837 to 1876, the average price of wheat was about 30s. per barrel, it is now half that price, and the cost of production is increased, as I shall show further on. Where then is the profit? There is none. The flour mills which were dotted over Ireland in almost every town, giving employment to farmers' sons, and supplying the district with bran and pollard, are gone. I should much like to see a map of Ireland, showing the number and distribution of the flour mills working fifty years ago, and at present.

If the cheap loaf has compensated the community for the disappearance of all these little centres of industry, it is certainly a dear loaf to the wheat-growing farmer, who is compelled to pay the same rent now, as he paid forty or even two years ago.

A good crop of wheat cannot be produced without a proper rotation of manured green crops, and neither wheat nor green crops can be grown without horses and implements; and horses require oats and hay. And in order to have manure, cattle must be kept, and horses and cattle must have shelter in the winter time; and implements wear out and break, and new ones have to be purchased; so that to grow wheat, or even barley or oats, a regular system of farming must be carried on, with its many accidents and losses. This illustration is given to show how the profit on any particular crop (estimated in an off-hand fashion by those who do not understand farming) is more apparent than real, even in times when prices are good.

Barley was not so low since 1864, but wool was then 2s. per lb. There is another low figure in 1849; but in 1849 there was ten times as much wheat grown in Ireland, and the farmers obtained 6s. a

barrel more for it *then* than at present ; and labour was obtainable at about half the present rate. Of all the cereals barley shows the least decrease per cent. in acreage since 1847. This year and last, the combined prices obtainable for barley, wheat, and oats, are at a figure so low that it has not been equalled for fifty years. It is the poorer qualities of wheat, oats, and barley that are affected most by a fall in price. In a bad season they are unsaleable ; and this has been a wretched barley season. If enquiry be made at any brewery or distillery in Dublin, it will be found that the proportion of samples rejected by reason of bad condition has been very large this year. Mr. W. P. Geoghegan, of Messrs. Arthur Guinness, Son & Co., writes to me that "the lower qualities of barley are almost unsaleable in the Counties of Wexford and Cork." In the Dublin Corn Exchange it is hard to find a purchaser at 10s. a barrel.

Where barley can be grown it impoverishes the land less than wheat, and probably less than oats. The period during which it obtains nourishment from the soil is much shorter than wheat, and also less than oats—it is sown later and ripens faster. Barley feels the influence of artificial manure more than either wheat or oats ; and thirty years ago, when the real guano could be purchased, its effect on barley was marked. The introduction of these manures, so readily applied, and obviating to a certain extent the necessity for farm yard manure, has probably helped in some degree to check the diminution in the acreage under barley. It may be observed, how imprudent it is to rely altogether on such artificial stimulants—their influence is transient, and often exhausting. The tenant farmer's wealth consists in a substantial heap of well rotted manure, and without its application, every crop is but a draft on his own capital and that of his landlord.

There were 877,655 less acres of oats grown in Ireland this year than 1847 (see table 5). The acreage has decreased each decade from 100,000 to 300,000 acres ; and in the present year there was little more than half the quantity grown that there was forty years ago ; and the price is the lowest on record for half a century.

One year with another, we annually dispose at Fassaroe of 1,200 barrels of potatoes. The average price of the past four years has been lower than for any other four-year period since the famine. Before the famine there were few black ones, but since then, the ravages of the potatoe fungus (*Peronospora infestans*) have almost doubled the price of this important tuber, that is if we compare the average price for the decade before the famine, with the average price for the forty years after it. Botanists, microscopists, and men of science have proposed various remedies and antidotes, but none have proved to be of any permanent or practical value in checking the disease, except the introduction of new varieties suitable for general cultivation.

The "champion" variety has proved itself of incalculable value to Ireland, and has to a great extent resisted the disease. There are signs of its giving way this year. We have more black potatoes than since 1879 ; but the low price of other feeding keeps down the price, and growers are getting rid of them as fast as possible.

There is no article of farm produce extensively cultivated which has varied so much in price as the potatoe. In 1842 the price was 3s. 5d. per barrel; in 1846 (the year of the famine) it was 17s. 8d., or more than five times higher. These are average wholesale prices. Some of the potatoes may have been disposed of at 30s. per barrel when the stock ran short. Since 1846 the price has jumped up and down most irregularly. In 1861, 1872, and 1879 there were potatoe famines also; and the price rose towards the end of one season to 20s., and even 25s. per barrel. But the effect of these years of scarcity, though severe, was as nothing compared with 1846, because the food of the poorer people was not so limited to this single article of diet.

Looking at the wool column, it will be seen that, with one exception, the price was never as low as in 1885 and 1886. As far as most of the farmers are concerned, we may neglect the rise in the price of wool this year, because the greater part of the 1886 clip was disposed of before it took place. May and June are the months in which the bulk of the farmer's wool is changed into money. Later on it gets into the hands of wool-brokers, etc., and the average price for the *whole* year in such an article as wool is not a suitable basis for calculating the farmer's receipts.

Taking 9½d. as the price for 1885 and 1886, it will be seen that, with one exception, wool was never so low any year for fifty years; for twenty-six years previous to 1881 it did not fall below 1s. per lb., and the average price for the past four years has been nearly 9½d.

The following figures show the average price of potatoes, wheat, oats, barley, and wool, for fifty years, arranged in decades for forty years—and the last decennial period subdivided so as to show more clearly the fall in prices:—

TABLE II.—SHOWING THE AVERAGE PRICE OF POTATOES, WHEAT, BARLEY, WOOL, AND OATS FOR FIFTY YEARS.

Years.	Fassaroe Prices.				Dublin Corn Exchange Prices of Oats, from <i>The Dublin Gazette.</i>
	Potatoes, per 20 Stone.	Wheat, per Barrel of 20 Stone.	Barley, per Barrel of 16 Stone	Wool, per lb.	
	s. d.	s. d.	s. d.	s. d.	s. d.
1837-46	6 5½	33 6	18 2½	1 0½	not given.
1847-56	10 5	32 6½	17 9½	0 11½	12 8
1857-66	9 3	29 7½	17 10½	1 5½	13 8½
1867-76	10 7½	31 11	19 10½	1 4½	14 11½
1877-80	11 11	27 1	19 4½	1 1½	12 10½
1881-84	6 5½	23 0½	18 0½	0 10	13 1½
1885	6 2	18 11	16 0	0 9½	10 10
1886	7 0	16 5	14 3	0 9½*	9 2†

* Wool was disposed of in June last.

† Average price for November, 1886.

‡ Average for three years only.

The prices of malting barley purchased for the firm of Messrs. A. Guinness, Son, & Co. have been averaged thus:—

TABLE III.—AVERAGE PRICE OF MALTING BARLEY PER BARREL (16 STONE), FROM PRICES SUPPLIED BY MESSRS. A. GUINNESS, SON & CO.

	B.	1836 to 1839.	B.	1840 to 1849.	B.	1850 to 1859.	B.	1860 to 1869.	B.	1870 to 1879.	B.	1880 to 1885.	1886.
		s. d.		s. d.		s. d.		s. d.		s. d.		s. d.	s. d.
Dublin,	8	18 6 $\frac{3}{4}$	44	17 2	—	—	—	—	—	—	524	16 7	—
Enniscorthy,	—	—	68	15 3 $\frac{1}{2}$	57	17 2 $\frac{1}{2}$	67	17 10 $\frac{1}{2}$	61	18 1 $\frac{1}{2}$	106	15 9 $\frac{1}{2}$	13 3*
Cork,	33	16 4 $\frac{1}{2}$	153	14 11 $\frac{1}{2}$	191	16 4 $\frac{1}{2}$	214	17 10 $\frac{3}{4}$	204	17 9	88	15 10 $\frac{3}{4}$	13 3*
Mountmellick,	—	—	—	—	—	—	338	17 1 $\frac{1}{2}$	496	18 1	175	16 0	13 0*
Castlebridge,	—	—	—	—	—	—	125	18 1 $\frac{3}{4}$	141	18 7	92	15 7	—

These averages are calculated from the statistics supplied by Messrs. A. Guinness, Son & Co., who have houses making malt on commission for them at these barley centres. The figures under column "B" represent thousands of barrels. The purchases for 1886 are not completed, and the prices given thus indicated (*) are average for BEST quality to date.

TABLE IV.—ESTIMATED VALUE OF THE WHEAT, OATS, AND BARLEY, GROWN IN IRELAND IN 1851, 1861, AND 1871, AND IN EACH YEAR SINCE 1881.

Average Prices for each year at Dublin Corn Exchange are taken from The Dublin Gazette.

Years.	WHEAT, Barrels of 20 stone.			OATS, Barrels of 14 stone.			BARLEY, Barrels of 16 stone.			Estimated Total Value of Wheat, Oats, and Barley. £
	Estimated Produce, Brls.	Average Price, £	Value, £	Estimated Produce, Brls.	Average Price, £	Value, £	Estimated Produce, Brls.	Average Price, £	Value, £	
1851	2,508,963	23 3	2,916,669	17,232,874	10 8	9,190,866	2,482,992	13 4	1,655,328	13,762,863
1861	1,431,051	31 0	2,218,129	12,872,280	13 8	8,796,058	1,237,206	16 9	1,036,160	12,050,347
1871	1,184,970	31 11	1,891,014	11,834,617	13 8	8,086,988	1,679,274	18 3	1,532,337	11,510,339
1881	918,852	24 11	1,144,736	11,258,899	12 8	7,130,636	1,663,458	15 2	1,261,455	9,536,827
1882	830,176	21 1	875,143	10,449,426	14 1	7,358,137	1,376,607	15 6	1,066,870	9,300,150
1883	518,685	18 3	473,300	10,772,132	13 6	7,271,189	1,410,768	15 3	1,075,710	8,820,199
1884	396,661	19 10	393,355	10,348,256	12 3	6,338,306	1,337,894	14 9	986,696	7,718,357
1885	438,879	16 3	356,589	10,362,101	10 10	5,612,804	1,441,968	13 6	973,328	6,942,721
1886	421,393	15 1*	317,801	10,283,193	9 2*	4,713,130	1,461,026	12 9*	931,404	5,962,335

Value of Wheat, Oats, and Barley in Ireland, 1851, £13,762,863; value, 1881, £9,536,827; value, 1885, £6,942,721
 ,, ,, ,, 1886, 5,962,335; ,, 1886, 5,962,335; ,, 1886, 5,962,335

Decrease in value, £7,800,528 £3,574,492 £980,386

* Average price for November, 1886. The estimated produce per acre for 1886 is taken to be same as in 1885.

The next table (No. IV) shows the estimated value of the cereal crops at intervals of ten years since 1851.—

1887.]

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In 1851 their value was £13,762,863; in 1886 it is only £5,962,335. There has been a marked decrease in value every ten years, and a decrease every year since 1881. The cereals of 1886 are estimated at £3,574,492 less than in 1881, and there is a diminution in value of £980,386 from 1885 to 1886. The total fall from 1851 to 1886 amounts to £7,800,528.

The decrease in statute acres under cereals since 1881, has been:— for wheat, 85,386; oats, 70,107; barley, 28,599; making a total decrease of 184,092 acres, and this coupled with the great fall in prices, explains the serious diminution in value, *i.e.* £3,574,492 within five years.

TABLE V.—EXTENT UNDER WHEAT, OATS, BARLEY, POTATOES, AND TURNIPS IN IRELAND IN STATUTE ACRES.

Years.	Wheat, Acres.	Oats, Acres.	Barley, Acres.	Total.	Potatoes, Acres.	Turnips, Acres.	Total.
1847	743,871	2,200,870	283,587	3,228,328	284,116	370,344	654,460
1851	504,248	2,189,775	282,617	2,976,640	868,501	383,548	1,252,049
1861	401,243	1,999,160	198,955	2,599,357	1,133,504	334,104	1,467,608
1871	244,451	1,636,136	220,979	2,101,566	1,058,424	327,035	1,385,469
1881	153,794	1,393,312	210,093	1,757,199	855,293	295,212	1,150,505
1886	68,408	1,323,205	181,494	1,573,107	799,858	299,273	1,099,131

There is a large diminution in the extent under wheat, oats, barley, and turnips, since 1847.

Wheat has decreased 675,463 acres; oats, 877,665 acres; barley, 102,093 acres; and turnips by 71,071 acres. Potatoes have decreased since 1861 by 333,646 acres, or about one-third; but increased since 1847 by 515,742 acres.

The acreage under potatoes in 1847 looks abnormally low if we consider the great increase in 1851—doubtless after the famine there was little seed left for the following year. Since 1851 there is a diminution of 153,000 under potatoes and turnips.

Coming to the cost of farm labour. The book for subdividing the time of the farm horses has been referred to, and an effort made to explain how it is kept.

Table No. VI. has been compiled from it. The average number of days spent in horse labour on each crop from 1870 to 1879 is shown, and the average cost per working day of each horse, and the average total cost of horse labour per acre for the various crops. The real expense of a horse's working day is not the total cost of his feeding for the year divided by 365—because the Sundays and idle days must be subtracted, and the cost divided by the balance. Farmers who do not keep a horse account would be astonished if told what an idle day now and again amounts to at the end of the year; inclement weather, sickness, lameness, and other mishaps, greatly increase the number of idle days. This table could be extended backwards for thirty years, but a decade is sufficient. I have never

TABLE VI.—SHOWING THE HORSE LABOUR PER ACRE (IRISH) EXPENDED ON VARIOUS CROPS AT FASSAROE, 1870-79, WITH COST OF SAME.

Year.	POTATOES.		TURNIPS.		WHEAT.		OATS.		BARLEY		Cost of Horses' Feeding per Day.
	Horses per Acre.	Cost per Acre.	Horses per Acre.	Cost per Acre.	Horses per Acre.	Cost per Acre.	Horses per Acre.	Cost per Acre.	Horses per Acre.	Cost per Acre.	
1870	43 $\frac{1}{2}$	£ s. d. 5 6 9	28 $\frac{3}{4}$	£ s. d. 3 10 7	9 $\frac{1}{2}$	£ s. d. 1 3 4	10 $\frac{1}{2}$	£ s. d. 1 5 10	9	£ s. d. 1 2 2	s. d. 2 5 $\frac{1}{2}$
1871	48	5 16 5	34 $\frac{1}{2}$	4 3 6	10 $\frac{1}{2}$	1 6 0	8 $\frac{1}{2}$	1 0 7	13	1 11 5	2 5
1872	31 $\frac{1}{2}$	3 9 6 $\frac{1}{2}$	29 $\frac{1}{2}$	3 5 2	9 $\frac{1}{2}$	1 1 0	10	1 2 1	15 $\frac{1}{2}$	1 15 4	2 2 $\frac{1}{2}$
1873	44 $\frac{1}{2}$	6 2 4	39 $\frac{1}{2}$	5 8 6	11 $\frac{1}{4}$	1 10 10	8 $\frac{1}{2}$	1 3 5	—	—	2 9
1874	36	4 13 3	41	5 5 9	11	1 8 5	12 $\frac{1}{4}$	1 11 8	—	—	2 7
1875	47 $\frac{1}{4}$	6 0 0	30	3 15 6	8	1 0 4	10	1 5 4	16 $\frac{1}{4}$	2 1 3	2 6 $\frac{1}{2}$
1876	45 $\frac{1}{4}$	5 4 5	38 $\frac{1}{2}$	4 8 4	10 $\frac{1}{4}$	1 3 6	12 $\frac{1}{2}$	1 8 8	18	2 1 4	2 3 $\frac{1}{2}$
1877	43 $\frac{3}{4}$	6 5 1	38 $\frac{3}{4}$	5 10 8	10 $\frac{3}{4}$	1 10 11	13 $\frac{1}{4}$	1 18 1	11 $\frac{3}{4}$	1 14 4	2 10 $\frac{1}{2}$
1878	50 $\frac{3}{4}$	6 13 2	42 $\frac{1}{2}$	5 12 1	10 $\frac{1}{2}$	1 6 11	12 $\frac{1}{2}$	1 12 10	14 $\frac{1}{4}$	1 17 6	2 7 $\frac{1}{2}$
1879	34	4 12 0	32 $\frac{1}{4}$	4 7 3 $\frac{1}{2}$	10 $\frac{3}{4}$	1 9 1	11 $\frac{3}{4}$	1 11 11	13 $\frac{1}{2}$	1 16 6	2 8 $\frac{1}{2}$
Average,	42 $\frac{1}{2}$	5 8 3	35 $\frac{1}{2}$	4 10 9	10	1 6 0 $\frac{1}{2}$	11	1 8 0 $\frac{1}{2}$	14	1 14 11 $\frac{1}{4}$	2 6 $\frac{1}{2}$

The cost per day of feeding each horse is ascertained by dividing the number of days all the horses *worked* in the year into the total cost of horses' feeding for the year.

seen such a record, nor do I know of any farmer who has regularly kept accounts from which to compile one.

It will be seen that the potatoe crop consumes the most time, requiring $42\frac{1}{2}$ days' horse labour; turnips, $35\frac{1}{2}$; wheat, 10; oats, 11; and barley, 14.

If an average were struck for forty years instead of ten, it might alter these figures by a day or so, but they may be taken as nearly correct. There is a very steep and long hill leading to this farm which increases the expense of horse labour, to the extent of at least 10s. per acre on green crops, and few of the fields are without a steep incline.

A rough analysis of the 42 days' horse labour spent on an acre of potatoes may be of interest.

	Days	Horse-labour
Collecting and carting 40 tons manure to heap in field,	6
First ploughing of stubble, and cross ploughing,	10
Harrowing after both ploughings and filling furrows,	2
Putting out manure in heaps,	3
Opening and closing drills,	2
Harrowing down and horse hoeing,	2
Grubbing,	3
Drill harrowing and rolling,	1
Two mouldings,	2
Taking out and carting to farmyard,	6
Carting to market,	5
	Total,	42

These figures are only intended to give a general idea, and must be altered according to circumstances.

In estimating the cost of horse feeding, hay has every year been charged at £3 per ton, and oats at a price varying with the lowest market rate of the year.

The average cost per acre of horse labour from 1870 to 1879, was:—for potatoes, £5 8s. 3d.; turnips, £4 10s. 9d.; wheat, £1 6s. 0d.; oats, £1 8s. 0d.; and barley £1 14s. 11d.; and the cost of each horse per working day, 2s. 6½d. The horse labour spent on carting manure has been subdivided among the green crops, in proportion to the quantity each received, so that all the horses' time spent on the crops is given in the above table. The ground must be in fine order for barley; this accounts for the larger amount of horse-labour spent on this cereal crop, compared with oats and wheat.

The next table shows the cost of manual labour per acre, for five different crops, every year for fifty years. (*See opposite.*)

The fluctuations will be more quickly grasped by examining table No. VIII., in which the average cost per acre for five decades is given. (*See p. 150.*)

Beginning with the potatoe crop—we find the cost of labour between 1837 and 1846 slightly higher than between 1847 and 1856 and this, notwithstanding the fact that labour was dearer in the latter decade. Besides there were few or no black potatoes until the famine, and for this reason, the cost of sorting should be lower previous to this year. The cause of the higher figure in the early decade is, so far as I have analyzed the accounts, to be attributed to the

TABLE VII.—SHOWING THE COST OF MANUAL LABOUR PER IRISH ACRE ON POTATOES, TURNIPS, WHEAT, OATS, AND BARLEY, FOR FIFTY YEARS, AT FASSAROE.

[This includes the expense of ploughing, etc., in preparing for the crop—putting it in, weeding, sowing, and conveying to market. The heap of manure is supposed to be ready for putting in the ground in the case of potatoes and turnips. The previous collection and preparation of it is not included; but this labour appears in the Manure Account.]

Year.	Potatoes.			Turnips.			Wheat.			Oats.			Barley.			Rate of Wages per day for men.	
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	s.	d.
1837	4	11	9	2	12	1	2	5	3	1	16	3	2	13	2	1	0
1838	3	18	8	1	15	1	2	13	4	1	14	2	1	18	11	1	2
1839	4	2	9	3	1	9	2	6	5	—	—	—	2	11	2	—	—
1840	4	2	9	2	15	8	2	6	0	1	13	8	2	5	6	—	—
1841	3	18	5	2	11	10	1	16	6	1	12	8	1	19	6	—	—
1842	4	11	3	1	13	2	1	17	11	1	15	8	2	1	7	—	—
1843	2	15	4	3	6	5	1	17	5	2	7	2	1	17	4	—	—
1844	3	6	6	2	1	8	1	16	10	1	10	11	1	17	9	—	—
1845	3	13	8	2	7	10	2	7	1	2	9	9	3	8	6	—	—
1846	3	9	5	2	16	0	2	6	0	2	3	1	2	7	1	—	—
1847	3	19	1	2	16	9	2	14	11	2	0	6	2	1	10	1	4
1848	4	18	9	2	3	9	2	0	6	2	0	8	2	0	11	—	—
1849	3	15	11	2	7	9	2	3	7	1	14	9	2	8	4	—	—
1850	3	2	1	2	7	0	2	2	7	1	18	0	2	3	3	—	—
1851	3	3	9	2	10	0	1	15	11	2	1	6	2	6	5	—	—
1852	3	4	2	2	1	8	2	4	8	2	5	7	2	12	8	—	—
1853	3	16	1	2	9	6	2	3	2	2	4	1	2	1	6	—	—
1854	2	19	10	2	8	0	2	10	0	2	3	4	2	8	3	—	—
1855	3	9	6	2	12	0	2	9	2	2	8	7	2	16	1	1	6
1856	4	14	2	2	1	2	2	12	2	2	6	8	2	11	4	—	—
1857	4	0	0	2	13	7	2	7	4	2	9	9	2	6	4	—	—
1858	4	5	3	2	15	1	1	19	1	2	4	10	2	3	9	—	—
1859	5	1	7	2	16	0	2	10	4	2	11	5	2	5	4	—	—
1860*	4	13	4	3	16	1	1	17	0	2	15	1	2	5	5	—	—
1861	5	18	9	3	1	7	1	16	10	1	17	6	1	17	10	—	—
1862	5	8	11	3	6	11	1	12	2	1	19	11	2	7	0	—	—
1863	6	1	6	3	6	8	1	11	6	1	14	0	1	14	11	—	—
1864	4	4	5	2	16	8	1	11	6	1	5	4	1	12	10	—	—
1865	5	8	4	2	14	8	1	9	6	1	15	5	1	14	2	—	—
1866	5	9	8	2	18	0	1	4	8	1	9	5	1	9	7	—	—
1867	5	9	5	3	2	4	2	2	11	1	11	10	1	19	4	1	8
1868	5	8	6	3	17	8	2	6	1	2	9	7	2	1	4	—	—
1869	5	3	5	3	7	3	2	2	0	2	0	6	1	19	9	—	—
1870	5	5	8	3	2	9	—	—	—	1	15	3	1	15	11	—	—
1871	5	11	10	4	6	6	2	3	3	1	17	10	1	17	9	1	10
1872	5	12	8	4	5	2	2	6	7	2	18	10	2	17	3	2	0
1873	5	14	3	4	12	11	2	4	5	1	15	2	—	—	—	—	
1874	7	2	9	4	2	7	2	13	7	2	8	10	—	—	—	—	
1875	7	11	8	3	14	0	2	1	5	2	8	10	2	18	6	—	—
1876	6	18	2	5	5	5	2	14	10	2	14	10	2	11	5	—	—
1877	5	5	11	5	2	8	2	5	4	2	4	2	3	2	8	—	—
1878	6	16	6	4	13	8	2	13	7	3	11	3	2	14	10	—	—
1879	5	13	4	4	2	6	2	3	5	2	11	4	1	16	0	—	—
1880	7	1	0	3	11	2	2	13	2	2	10	4	—	—	—	—	
1881	6	16	1	4	17	3	2	0	0	2	19	8	2	0	9	—	—
1882	6	10	5	4	4	6	2	6	4	3	1	5	—	—	—	—	
1883	6	5	9	4	11	11	2	0	5	2	11	4	3	7	9	—	—
1884	5	11	11	3	14	4	1	15	5	2	2	8	2	17	8	—	—
1885	6	16	1	3	2	7	2	7	4	2	10	5	2	2	3	—	—
1886																	

In the earlier years the farm was very weedy with "prassaght" (*Stagnis arvensis*), "scutch" (*Trifolium repens*), etc. The poppy (*Papaver Rhoeas*) is now the worst weed.

* In 1860 reaping was first done by machinery, and threshing by steam. Note the increased cost of potatoes and turnips. In the case of the corn crops the cost has increased slightly notwithstanding machinery, the expense and wear and tear of which must be added. This is a larger item that is generally supposed.

TABLE VIII.—COST OF MANUAL LABOUR, PER IRISH ACRE, AT FASSAROE.

Year.	Potatoes, per acre.	Turnips, per acre.	Wheat, per acre.	Oats, per acre.	Barley, per acre.	WAGES PER DAY.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
1837-46	3 17 0½	2 10 1¾	2 3 3½	1 18 2	2 6 1	1s. for one year, 1s. 2d. for nine years.
1847-56	3 14 4	2 7 9	2 5 8	2 2 4½	2 7 0¾	1s. 4d. for eight years, 1s. 6d. for two years.
1857-66	5 1 2	3 0 6¼	1 16 0	2 0 3¼	1 19 8¾	1s. 6d. per day throughout.
1867-76	5 19 10	3 19 8	2 6 1½	2 4 1¾	2 5 2	1s. 8d. for four years, 1s. 10d. for one year, and 2s. for five years.
1877-85	6 6 4	4 4 6	2 5 0	2 13 7	2 11 8¼	2s. per day throughout.

N.B.—It is essential to the proper understanding of this Table be read the remarks thereon in the paper.

extra labour spent on weeding, as the farm was taken up in very bad condition. The cost £3 14s. 4d. for the second decade may be taken as the normal wages for potatoes on fairly clean land at that time and the second decade, is a better starting point for comparing the labour spent on any of the crops.

In the third decade, from 1857 to 1866, there is an increase in the labour bill of about 26s. 10d. per acre; in the fourth, a further increase of 18s. 10d. per acre; and in the fifth, a still further increase of 6s. 6d. per acre—making a total increase in forty years of £2 12s. per acre on potatoes. But this does not represent the total increased cost of production, because we have to add the increase in the cost of labour in collecting and preparing the manure—a very material item, when it has to be carted long distances or frequently turned.

The total cost of farm-yard manure in the year is subdivided among the green crops, according to the acreage and the approximate number of tons per acre each crop receives, and none of the manual labour expended on manure, up to a certain point, appears under the various green crops *as labour*, but it is charged directly to the *manure* account as labour, from which there is a cross entry to each green crop as manure. This arrangement is the most convenient; because in the preparation of such a necessary ingredient, it is often impossible eight or nine months beforehand, to say what will be the ultimate destination of a particular cartload.

From 1857 to 1866 the wages on the turnip crop increased 12s. 9d. per acre over the previous decade; from 1867 to 1876, there was a further increase of 19s. 2d. per acre, and from 1877 to 1885 a further increase of 4s. 10d. per acre—making a total increase in the cost of production of turnips of £1 16s. 9d. per acre in forty years.

If we add the increased cost in the preparation of manure, due to the higher wages given to labourers collecting and turning it, and getting it ready to put out on the ground (a figure I have not as yet exactly determined) there will be a further increase in the cost of production of not less than 10s. per acre. We then find that in order to grow an acre of potatoes, it costs at least £3 2s. an acre more in labour alone, than it did forty years ago; and turnips cost £2 6s. 9d. per acre more, when all the labour has to be paid for.

Wheat, oats, and barley, do not show much increase in the cost of labour; but it is to be observed that, notwithstanding the use of a corn drill, a steam thrashing machine, and a reaping machine, the cost per acre has increased in forty years 11s. per acre in oats, and 4s. 8d. per acre in barley—wheat alone showing no increase. The ploughman, the corn-sower, the weeder, the men working the reaping machine, the binders, the stokers, the stackers, the carters, and those attending the thrashing, all receive so much more wages, that the cost of production, notwithstanding the machinery, is greater instead of less than forty years ago. I exempt the agricultural labourer from blame. His labour is, I believe, as efficient as ever it was, and his wages are little enough to rear a family on.

Then there is the wear and tear of machinery. Only those who watch a machine from the time it is purchased until it is thrown aside in a disused corner as old iron, and keep an account of

its breakages and repairs from year to year, really know what the expenditure on farm implements is ; and whatever it may amount to on any farm, it must be added to the cost of production. If this were done, the increase per cent. in the cost of production of corn crops would, I believe, be little behind the green crops. Where machinery is used, you have the cost of implements ; and, notwithstanding the implements, an increase in the cost of production of cereals. Where machinery is not used, and all the labour is paid for, the cost of production would be, as in the case of green crops, almost doubled. Where reaping is done by machinery, oats and barley have increased more than wheat ; and this is easily accounted for, because oats and barley, especially oats, are more liable to tangle and " lodge " than wheat, and the old hook and scythes have to be resorted to. The necessity of stacking in the field is also less required with wheat. The cost of labour on cereals in the third decade from 1857 to 1866 was the lowest, because lower wages and machinery existed together.

It might be prudent to allow the foregoing tables to speak for themselves, and not add further to the length of this paper—but in the present crisis, as a tenant farmer, I would be more than human if I suppressed my thoughts.

What consideration is to be drawn from all these figures ? They are not a matter of speculation or mere hearsay, but *hard facts*. They might be presented to you in a more complete and finished form ; but fifty years' ledgers are not a light task to examine and digest. I have purposely avoided decimals and percentages. Wheat is 15s. per barrel below the average price for the forty years ending in 1876. Oats can be purchased at a figure lower than for half a century ; and barley, with the exception of one year, is cheaper than it has been since 1850.

The average price of *potatoes* for the past four years is lower than for any four year period since the famine. Wool, which for twenty-six consecutive years up to 1880 did not fall below 1s. per lb., and in 1864 reached 2s. per lb., has for the last four years been sold at an average of 9½d. ; the recent small rise in price being valueless to the bulk of the farmers who sold before it came. It was not my purpose to speak of live-stock in this paper, but the great fall in their price is beyond dispute.

Ireland has 368,477 acres less under potatoes and turnips than in 1861, and the value of cereals have decreased £7,800,528 since 1851, and £3,574,492 since 1881, and nearly a million within the last year.

The cost of production of wheat, oats, and barley has increased, and their combined prices have fallen to a figure which has no precedent. At a low estimate, potatoes cost the farmer who has to hire all the labour, £3 per acre more than forty years ago ; and turnips cost him £2 5s. od. It is just as if these amounts were added to the rent per acre of his potatoe and turnip field—all his crops cost him more, and he gets less for them. For the tillage farmer the margin out of which *any* rent is paid has had no existence for three years.

In addition to the expenses which can immediately be referred to

the particular crops, there are a variety of sundries about a farm, often regarded as of little moment, but which amount to a very substantial sum at the end of the year—such as fencing, road mending, repairs to farm building, insurance—and, largest item of all, repairs to implements. Every one of these items except insurance, has increased in cost. Then horses depreciate in value. Cattle and sheep have their annual losses due to sickness or accident—and there is the liability to epidemic diseases, which may at any moment reduce a poor farmer to beggary. As to interest on capital, or remuneration for one's time, they never enter a tenant's head. Low prices in one article of produce can be endured; *but now everything has fallen.* What becomes of the sacredness of contract when we are face to face with circumstances which go to the very root of the agreement, but which never entered the head of either of the contracting parties?

The unwonted exertions which a tillage farmer must make under circumstances such as the present lead to the difficulties of his situation not being appreciated. His implements, his crops, his barns, his cornstands, his horses, his fields busy with labourers, are pointed to as a sign of wealth; and yet, so long as the land is to be cultivated at all, these are indispensable.

Too often a premium is put on misery and poor land, by extracting the full rent from the respectable tenant who cultivates and improves his holding. *No matter who is the sufferer, the land should be so held that it would pay to cultivate it.* The man who makes two blades of grass grow where one grew before, is a public benefactor, and yet how often do we see what was once the busy home of industry, a waste, supporting a single caretaker and a herd of bullocks, which wander over the broken down fences, and take shelter in the deserted ruins of the farmyard. Is this prosperity?

Most of the statistics upon which I have had to rely are from a private source, and in bringing them forward, may I hope the Statistical Society will not consider I wish to exaggerate their importance. They will speak for themselves apart from any opinion I have ventured to express.

V.—*The Congested Districts of Ireland and how to deal with them.*
By E. O'Farrell, B.L.

[Read, Tuesday, 14th December, 1886.]

THE phrase congested districts has acquired in the discussion of Irish problems an almost technical meaning. By the congested districts I understand to be meant those parts of the country which are unable, at least in their present state of development, to employ profitably in their cultivation, or to support by their own produce, the population at present inhabiting them.

It has been repeatedly stated by competent witnesses, and cannot, I think, be too strongly impressed on the legislature, that the land problem in these districts is totally different to what it is in the other