

# The Origin of the Law of Diminishing Returns

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The 'law of diminishing returns' plays so large a part both in the theory of rent and the theory of population as they are now taught, that we should naturally expect to find it promulgated both by James Anderson, the reputed anticipator of Ricardo, and by Malthus in his *Essay on the Principle of Population*. In this expectation, however, we should be disappointed. Anderson, far from teaching the law of diminishing returns, was one of those enthusiastic agriculturists who have a hazy belief that an increase of the labour employed upon the soil will always bring in a proportionate, if not more than a proportionate, increase of returns.<sup>(1)</sup> Malthus is often supposed by excessively careless readers to have put forward the law of diminishing returns when he said, 'The improvement of the barren parts would be a work of time and labour; and it must be evident to those who have the slightest acquaintance with agricultural subjects, that in proportion as cultivation extended, the additions that could yearly be made to the former average produce must be gradually and regularly diminishing,'<sup>(2)</sup> but between this and the law of diminishing returns there is nothing in common, except the use of the word diminishing.' Nothing that has ever passed muster as the law of diminishing returns ever asserted, as Malthus did, that the increases of the whole produce of a country must necessarily diminish. All that the 'law' asserts is that under certain circumstances the returns to a given additional quantity of labour must necessarily diminish. Whether the whole 'addition that can yearly be made to the former average produce' increases or diminishes depends not only on the produce per pair of hands, but also on the number of pairs of hands. In the first edition of the *Essay on the Principle of Population* I have not been able to find a trace of the law of diminishing returns. As edition succeeded edition it found its way in here and there, but no great importance was ever attributed to it. Curiously enough, in one of the first places where it is incidentally referred to, Malthus is rebuking Anderson for maintaining 'that every increase of population tends to increase relative plenty and *vice versa*.'

'When an accidental depopulation takes place in a country which was before populous and industrious, and in the habit of exporting corn, if the remaining inhabitants be left at liberty to exert, and do exert, their industry in the same direction as before, it is a strange idea to entertain that they would then be unable to supply themselves with corn in the same plenty; particularly as the diminished numbers would, of course, cultivate principally the more fertile parts of their territory, and not be obliged as in their more populous state to apply to ungrateful soils.'<sup>(3)</sup>

There are doubtless many allusions to the law in Adam Smith and other eighteenth century writers, but Turgot seems to have been alone in enunciating it at length and explaining it fully. As he did so, not in the *Réflexions*, which are familiar to all economists, but in some remarks which he made upon a long-forgotten prize essay, I venture to give a translation of the passage

'Granting to the writer of the essay that, where ordinary good cultivation prevails, the annual advances bring in 250 for the hundred, it is more than probable that if the advances were increased by degrees from this point up to that at which they would bring in nothing, each increment would be less and less fruitful. In this case the fertility of the earth would be like a spring which is forced to bend by being loaded with a number of equal weights in succession. If the weight is light and the spring not very flexible, the effect of the first load might be almost nil. When the weight becomes sufficient to overcome the first resistance, the spring will be seen to yield perceptibly and to bend; but, when it has bent to a certain point, it will offer greater resistance to the force brought to bear on it, and a weight which would have made it bend an inch will no longer bend it more than half a line. This comparison is not perfectly exact; but it is sufficient to show how, when the soil approaches near to returning all that it can produce, a very great expense may augment the production very little.

Seed thrown on a soil naturally fertile but totally unprepared would be an advance almost entirely lost. If it were once tilled the produce will be greater; tilling it a second, a third time, might not merely double and triple, but quadruple or decuple the produce, which will thus augment in a much larger proportion than the advances increase, and that up to a certain point, at which the produce will be as great as possible compared with the advances.

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Past this point, if the advances be still increased, the produce will still increase, but less, and always less and less until the fecundity of the earth being exhausted and art unable to add anything further, an addition to the advances will add nothing whatever to the produce.<sup>(4)</sup>

It is needless to say that this excellent statement of the law had no influence whatever on its development in English political economy. Many things have been imputed to Ricardo, but he will assuredly never be charged with having read Turgot's *Observations sur le mémoire de M. de Saint-Peravy en faveur de l'impôt indirect, couronné par la société royale d'agriculture de Limoges*. The early nineteenth century English economists obtained the law of diminishing returns, like most of their doctrines, not from study of the works of their predecessors, but from the actual experience of England during the war.

About the year 1813 there were two features in the economic condition of the country which could not fail to strike the most superficial observer the high prices of corn and the improvement and extension of cultivation. From 1711 to 1794 neither the Ladyday nor the Michaelmas price of the Winchester quarter of wheat at Windsor had ever been more than 60s. 8d. But at Michaelmas, 1795, it was 92s.; at Ladyday, 1801, it was 177s.; and from Michaelmas 1808, to Michaelmas 1813, neither the Michaelmas nor the Ladyday price ever fell below 96s.<sup>(5)</sup> The rise was not only great but progressive. The average of the yearly prices of wheat for the decade 1770-1779 was 45s.; for the decade 1780-1789, 45s. 9d.; for the decade 1790-1799, 55s. 11d.; for the decade 1800-1809, 82s. 2d.; and for the five years, 1810-1814, 99s. 2d.<sup>(6)</sup> The improvement and extension of cultivation is more difficult to represent in statistical form, but at the time it was obvious to every traveller. Not only were the remaining common fields divided and brought under the better cultivation of several property, but immense quantities of waste lands, such as the great heaths in a corner of which Bournemouth has since grown up, were distributed in `allotments among the neighbouring proprietors, enclosed, and to a greater or less extent brought under cultivation. We have unfortunately no means of telling how much waste was inclosed, to say nothing of how much was brought into cultivation.<sup>(7)</sup> We can, however, roughly compare the progress of the movement at one period with its progress during the preceding period by the variations in the number of enclosure acts. We know that in the twenty years ending with 1795 there were 738 enclosure bills presented to Parliament, and that in the twenty years beginning with 1796 there were 1807.<sup>(8)</sup> How closely the two things, the improvement and extension of agriculture and the price of corn were connected will be seen by the diagram on the opposite page. When the price of corn went up, up went also the number of enclosure acts.

The corn laws had, at any rate directly and immediately, very little to do with producing these high prices. The law of 1791 (31 Geo. III. chap. 30) subjected foreign wheat to what was called the `high ` duty of 24s. 3d. per quarter only when the English price was below 50s. When the English price was between 50s. and 54s. the duty was 2s. 6d., and when it was over 54s. the duty was only 6d. Now from 1795 to 1802 the price was usually much above 50s., and importation consequently almost free. In 1804 the agricultural interest persuaded the legislature to raise the price limit. Henceforward foreign wheat was made subject to the prohibitive duty whenever the English price was below 63s. (44 Geo. III. chap. 12). This change, however, made no practical difference. The English price remained above the new limit, so that freedom of importation was no more interfered with than before.

It was perhaps only natural that landlords and farmers should deduce from these facts the conclusion that free importation was no remedy for high prices, and that the high prices would eventually reduce themselves, by causing such an extension of cultivation that a full supply of food would be produced at home.. They immediately did so, and accordingly urged that in order ultimately to obtain low prices, or rather `steady and moderate' prices,<sup>(9)</sup> all that was required was to maintain for the present the high prices.<sup>(10)</sup> A select committee of the House of Commons, `appointed to inquire into the Corn Trade,' gravely alleged in May 1813, that prices had been low till 1765 because till that time exportation was encouraged<sup>(11)</sup> and importation practically prohibited,<sup>(12)</sup> and that they had since been high because importation had been encouraged and exportation restrained.<sup>(13)</sup> They recommended, therefore, that until February, 1814, the `high duty' of 24s. 3d. should be charged on imported wheat whenever the home price was below 105s. 2d., and that after that date it should be charged whenever the home price was not 33 per cent. above the average price of the twenty years immediately preceding.<sup>(14)</sup> Sir Henry Parnell, the Chairman of the Committee, in drawing attention to its report in the House of Commons on June 15, 1813, began by asserting in emphatic terms that `it was not the object of the report of the committee to increase the

profits of any particular set of dealers, either of farmers or of landlords. Their affairs,' he added, 'had long been and still were in a very prosperous condition,' and they required no aid from the legislature. The committee had, he declared,

'been influenced by no other motive than that of a strong sense of the danger of continuing to depend upon our enemies for a sufficient supply of food, and of the impolicy of sending our money to improve other countries, while we have so much of our own lands that stand in need of the same kind of improvement. The whole object of their report is merely to prove the evils which belong to this system as it now exists, and to obtain such an alteration in the law as shall draw forth our own means into operation of growing more corn by increasing the capital that is now vested in agriculture. If they succeed in this they will secure a greater production of grain, at the same time with diminished expenses in producing it, and at reduced prices to the consumer. For if the agricultural capital is considerably increased, its effects on the quantity produced and the expense of production, and also in lowering prices, will be just the same as when employed in manufactures. Everyone knows how it operates in increasing the quantity of manufactures; and that those who employ it in manufactures can afford to sell them at very reduced prices, in consequence of the reduced expenses at which, with its help, they can make them. In the same way the farmer, by being able to render his land more productive in proportion as he improves it, and at a small expense, according as he makes use of good implements, will be able to afford to sell his corn at reduced prices; and in this manner the increase of agricultural capital will secure us a sufficiency of food independent of foreign supply, and at the same time at a reduced price to the consumer.'<sup>(15)</sup>

Here we have a distinct denial of the law of diminishing returns.

Nothing was accomplished in the session of 1813, but before the next the energies of the landed interest were thoroughly roused by the fact that the end of the war was now seen to be approaching. The stoutest advocates of the theory that encouraging importation made corn dear did not maintain that this was its immediate effect. Peace, it was argued, would bring great imports, prices would fall, farmers would be ruined, rents would be reduced or swept away, the extension of cultivation would cease, and land lately reclaimed would return to a state of nature and then prices would be again as high as ever. These disasters must be prevented by a great restriction if not an entire prohibition of imports. Sir Henry Parnell's supporters no longer repudiated the idea that they required aid from parliament, but they still asked for it in the interest not of themselves but of the country in general.

Malthus, though a protectionist himself, was not imposed upon by the protectionist argument that restriction of importation would eventually produce steady moderate prices. In his *Observations on the effects of the corn laws and of a rise or fall in the price of corn on the agricultural and general wealth of the country*, which he published in the spring of 1814<sup>(16)</sup> and intended as an impartial exposition of the disadvantages of protection and free trade, he asserted strongly that the effect of restricting imports must necessarily be to raise the price of corn.<sup>(17)</sup> To grow at home all the corn required would involve, he pointed out, 'a certain waste of the national resources by the employment of a greater quantity of capital than is necessary for procuring the quantity of corn required.'<sup>(18)</sup> This seems to imply that he saw it would be easier, would involve less labour, for the population of England to buy some of their corn from abroad than to grow it all at home. Exactly why it should be easier he does not immediately explain, but he says, rather incidentally, later on, that the whole difference between the expense of raising corn in England and in the corn countries of Europe

'does not by any means arise solely from taxation. A part of it, and I should think no inconsiderable part, is occasioned by the necessity of yearly cultivating and improving more poor land to provide for the demands of an increasing population; which land must, of course, require more labour and dressing and expense of all kinds in its cultivation. The growing price of corn, therefore, independently of all taxation, is probably higher than in the rest of Europe; and this circumstance not only increases the sacrifice that must be made for an independent supply, but enhances the difficulty of framing a legislative provision to secure it.'<sup>(19)</sup>

During the session of 1813-14 there were long and acrimonious debates in the House of Commons on a proposal of the ministry to impose a sliding-scale duty of 24s. on the quarter of wheat when the home price was not more than 64s., and one shilling less for every shilling by which the home price exceeded 64s. till it reached 86s. Petitions against this proposal poured in from the towns, and its opponents demanded delay and further inquiry with such pertinacity that the ministry at last agreed to appoint a committee, and the question was shelved for the year, so far as actual legislation was concerned.<sup>(20)</sup>

The committee's report<sup>(21)</sup> began with a eulogy of the 'very rapid and extensive progress' which had taken place in the last twenty years, and a suggestion that it would be an unparalleled disaster if many of the improvements should be abandoned in an unfinished state, from want of sufficient encouragement to continue them. The cause of these improvements was in the judgment of the committee chiefly to be traced to the increasing population and growing opulence of the United Kingdom:

'But it is also not to be concealed that these causes, which they trust will be of a permanent nature, have been incidentally but considerably aided by those events which during the continuance of the war operated to check the importation of foreign corn. The sudden removal of these impediments seems to have created among the occupiers of land a certain degree of alarm which, if not allayed, would tend in the opinion of the witnesses . . . not only to prevent the enclosure of great tracts of land still lying waste and unproductive, but also to counteract the spirit of improvement in other quarters, and to check its progress upon lands already under tillage.'<sup>(22)</sup>

Doubtless thinking that this was sufficient to show that something must be done in the way of maintaining the impediments to importation, the committee proceeded to consider 'the expense of cultivation including the rent.' Money rent, they said, had been doubled within twenty years. Other expenses of cultivation had also been doubled, and so they concluded that at least 80s. per quarter was required to remunerate the grower of British wheat. Some witnesses, they added, thought a much higher price would be necessary.

'it may be proper to observe,' they remarked, 'that these latter calculations appear in most instances to be furnished by witnesses whose attention and experience have been principally directed to districts consisting chiefly of cold clay or waste and inferior lands, on which wheat cannot be grown but at an expense exceeding the average charge of its cultivation on better soils. On lands of this description, however, a very considerable proportion of wheat is now raised, and it appears by the evidence that if such lands were withdrawn from tillage they would for many years be of very little use as pasture; and that the loss from such a change, as well to the occupier as to the general stock of national subsistence, would be very great.'<sup>(23)</sup>

Either with the object of showing that the rise of prices had not been caused by the rise of rents, or in order to show that a great reduction of prices could not be met by a fall of rents, the committee collected evidence to show that the proportion which the rent bore to the whole produce had diminished during the last twenty years, and now formed about a fourth or a fifth of the whole instead of a third.

A Committee of the Lords, appointed at the same time as the Commons' Committee, followed much the same lines. They too collected evidence to show that where high farming was practised, and on poor lands, the landlord received a smaller proportion of the produce. They too assumed that to interrupt what they called 'the progress of improvement'<sup>(24)</sup> would be ruinous. Two examples will suffice to illustrate the drift of their investigation.

A land surveyor was asked:

'What has been the cause of the great increase of enclosures of late years?'

'The high price of corn.

'What has been the effect of that?'

'A great quantity of land has been cultivated that would not otherwise have been.

'Has the produce been increased or decreased?'

'Increased very considerably.'

'If the prices were considerably reduced, would the number of enclosures continue?'

'Certainly not.'

'Has a great quantity of produce from farming land the effect of lowering or raising the price of grain and butchers' meat?'

'Of lowering the price.'<sup>(25)</sup>

A Wiltshire landowner, with some experience as an agriculturist, was asked

'If wheat should be at 80s. and other grains at a proportionate price, do you believe the farmers

would continue in the cultivation of their land at the expense of the present mode of culture?

'Certainly not. I think less wheat would be sown and less money would be expended in the cultivation of land.'

'Would not those prices affect inferior soils much, more than the superior quality of land?'

'Certainly, because the expenses are greater on inferior soils.'

'Would not the consequence of those prices then be that the farmers in general would withdraw their capital from the cultivation of inferior soils?'

'Certainly.'<sup>(26)</sup>

These reports were widely read, and considering how distinctly they connect 'the progress of improvement,' the increase of the population, and the wealth of the country, with the cultivation of poorer soils and a diminished proportion of the produce for the landlord, it would have been surprising if no economist had generalised from the twenty years under review, and declared that the increase of population and wealth always necessitates recourse to more expensive, or, what is the same thing, less productive agriculture. Edward West, mild free trader, and Malthus, protectionist, immediately did so, West in his Essay on the application of capital to land; with observations showing the impolicy of any great restriction of the importation of corn, and that the bounty of 1688 did not lower the price of it, Malthus in An inquiry into the nature and progress of rent and the principles by which it is regulated.

West enunciates a general rule of diminishing returns at the very beginning of his pamphlet

'The chief object of this essay is the publication of a principle in political economy which occurred to me some years ago, and which appears to me to solve many difficulties in the science which I am at a loss otherwise to explain. On reading lately the reports of the corn committees, I found my opinion respecting the existence of this principle confirmed by many of the witnesses whose evidence is there detailed. This circumstance, and the importance of the principle to a correct understanding of many parts of the corn question, have induced me to hazard this publication before the meeting of Parliament. The principle is simply this, that in the progress of the improvement of cultivation, the raising of rude produce becomes progressively more expensive, or, in other words, the ratio of the net produce of land to its gross produce is continually diminishing.'<sup>(27)</sup>

Adam Smith, West explains, saw the principle that the quantity of work which can be done by the same number of hands increases in the progress of improvement comparatively less rapidly in agriculture than in manufactures,<sup>(28)</sup> but did not see another principle which may retard or stop, such improvement in agriculture, 'or even render the powers of labour less productive as cultivation advances.'

'The additional principle to which I allude is that each equal additional quantity of work bestowed on agriculture yields an actually diminished return, and of course, if each equal additional quantity of work yields an actually diminished return, the whole of the work bestowed on agriculture in the progress of improvement yields an actually diminished proportionate return. Whereas it is obvious that an equal quantity of work will always fabricate the same quantity of manufactures.'

'Consider the case of a new colony; the first occupiers have their choice of the land, and of course cultivate the richest spots in the country. The next comers must take the second in quality, which will return less to their labour, and so each successive additional set of cultivators must necessarily produce less than their predecessors.'<sup>(29)</sup>

And throughout the general course of history, when population increases

'the additional work bestowed upon land must be expended either in bringing fresh land into cultivation, or in cultivating more highly that already in tillage. In every country the gradations between the richest land and the poorest must be innumerable. The richest land, or that most conveniently situated for market, or in a word that which, on account of its situation and quality combined, produces the largest return to the expense bestowed on it, will of course be cultivated first, and when in the progress of improvement new land is brought into cultivation, recourse is necessarily had to poor land, or to that, at least, which is second in quality to what is already cultivated. It is clear that the additional work bestowed in this case will bring in a less return than the work bestowed before. And the very fact that in the progress of society new land is brought into cultivation, proves that additional work cannot be bestowed with the same advantage as before on the old land. For 100 acres of the rich land will, of course, yield a larger return to the work of 10 men

than 100 acres of inferior land will do, and if this same rich land would continue to yield the same proportionate return to the work of 20 and 30 and 100 as it did to that of 10 labourers; the inferior land would never be cultivated at all.'<sup>(30)</sup>

By 'work' West means the immediate effects of labour, as for example the ploughing of an acre of land in a certain way, or the digging of a ditch of a certain size. The question whether the returns to labour as well as the returns to work diminish is a further one:--

'The quantity of work which can be done by a given number of hands is increased in the progress of improvement by means of the subdivision of labour and machinery, even in agriculture. Such increase then of the quantity of work which can be performed by the same number of hands in agriculture may either more than compensate, or just compensate, or fall short of compensating, the diminution of the return of the same quantity of work. In the first of which cases labour in agriculture would become absolutely more productive; in the second would remain always equally productive; in the last would become absolutely less productive.'<sup>(31)</sup>

Here, instead of inquiring directly whether agricultural labour has become less or more productive in the course of history whether the labour of one man working on an average soil will now feed fewer or more persons than in previous ages, West endeavours to settle the question by a deduction from the 'acknowledged fact that the profits of stock are always lower in a rich than in a poor country and that they gradually fall as a nation becomes more wealthy.'<sup>(32)</sup> He very hastily assumes that an increase in the productiveness of labour necessarily means an increase of profits,<sup>(33)</sup> and from this he infers that the increase in the productiveness of manufacturing industry would cause a rise of profits if the productiveness of agriculture did not decrease; as profits do not rise but fall, he concludes that the productiveness of agricultural industry diminishes more than enough to counter-balance the increase in the productiveness of manufacturing industry. The passage in which he recapitulates his propositions is noteworthy as containing probably the earliest instance in economic literature of the word 'tend' used in its more scientific sense. West himself italicises it

'The division of labour and application of machinery render labour more and more productive in manufactures in the progress of improvement; the same causes tend also to make labour more and more productive in agriculture in the progress of improvement. But another cause, namely, the necessity of having recourse to land inferior to that already in tillage, or of cultivating the same land more expensively, tends to make labour in agriculture less productive in the progress of improvement. And the latter cause more than counteracts the effects of 'machinery and the division of labour in agriculture.'<sup>(34)</sup>

West adds that this conclusion which he has endeavoured to prove theoretically<sup>(35)</sup> is supported by the 'commonly observed fact' which 'appears in almost every page of the reports of the corn committees,'<sup>(36)</sup> in the evidence of practical men,<sup>(37)</sup> that the ratio of the rent to the gross produce has been diminishing in consequence of the introduction of more expensive methods of cultivation.

His object in bringing out his pamphlet in time for the parliamentary session was to prevent the adoption of what he considered an immoderately high protective price in the coming corn law.<sup>(38)</sup> If importation were totally abolished, he thought the price of wheat would immediately stand at something like 90s., as this was in his opinion about the price at which an amount of corn sufficient for the existing population could be grown within the country, and this price would gradually rise as population increased, because 'the increased produce would be raised at a greater proportionate expense.' And if importation were prohibited whenever the home price was less than 80s., the average price would never be below 80s.

West was a very able man, and expressed himself with a clear-ness which is sadly to seek in both Malthus and Ricardo. It is impossible to read his pamphlet without seeing that the form in which the 'law of diminishing returns' was subsequently taught, and the phraseology in which it was expressed, are far more due to him than is imagined by those who only know him as the subject of a civil reference in Ricardo's preface.

But for securing the 'law of diminishing returns' the prominent place which it has occupied in English political economy, not West but Malthus and Ricardo are responsible. While West was writing his essay, Malthus was engaged upon his *Grounds of an opinion on the policy of restricting the importation of foreign corn, intended as an appendix to Observations on the Corn Laws*, and also *An inquiry into the nature and progress of rent and the principles by which it is regulated*. The *Grounds* announced his definite adhesion to the protectionist side, chiefly, or at any rate firstly,

because the evidence taken by the corn committee, showed that protection was necessary to prevent a great loss of agricultural capital. The other tract contained the substance of some notes on rent which he had collected in the course of his duties at Haileybury and which he had intended eventually to appear as part of a considerable book.<sup>(39)</sup> He seems to have been induced to publish the tract at that particular moment by a desire to lessen the odium into which high rents were falling among those who wished for cheap bread. This desire, however, though it led him to insist strongly on the proposition that high rents are 'one of the most certain proofs of the prosperous condition of a country,'<sup>(40)</sup> did not prevent him from explaining that one of the conditions of their rise is 'the comparative scarcity of the most fertile land.'<sup>(41)</sup> Comparing the 'machinery of the land' with the machinery employed in manufactures, he says:

'The machines which produce corn and raw materials... are the gifts of nature, not the works of man; and we find, by experience, that these gifts have very different qualities and powers. The most fertile lands of a country, those which, like the best machinery in manufactures, yield the greatest products with the least labour and capital, are never found sufficient to supply the effective demand of an increasing population. The price of raw produce, therefore, naturally rises till it becomes sufficiently high to pay the cost of raising it with inferior machines and by a more expensive process; and as there cannot be two prices for corn of the same quality, all the other machines, the working of which requires less capital compared with the produce, must yield rents in proportion to their goodness.

'Every extensive country may thus be considered as possessing a gradation of machines for the production of corn and raw materials, including in this gradation not only all the various qualities of poor land, of which every large territory has generally an abundance, but the inferior machinery which may be said to be employed when good land is further and further forced for additional produce. As the price of raw produce continues to rise, these inferior machines are successively called into action; and as the price of raw produce continues to fall, they are successively thrown out of action.'<sup>(42)</sup>

Improvements in agriculture, he adds, retard the advance of price, but 'are rarely found sufficient to balance the necessity of applying to poorer land,' so that 'the quantity of labour necessary to procure the last addition that has been made to the raw produce of a rich and advancing country is almost constantly increasing.'<sup>(43)</sup>

Malthus' two pamphlets, instead of making Ricardo a protectionist, convinced him 'of the policy of leaving the importation of corn unrestricted by law.'<sup>(44)</sup> While attributing the rise of rents to diminishing returns, Malthus had endeavoured to give the impression that the landlords' gain was no man's loss. Ricardo's commercial mind perceived that the increased expense of production must be paid by some one, and accepting Malthus' (totally erroneous) view that it could not fall on the labourers, he decided that it all fell on the capitalists. Setting to work at once, he produced in a few weeks the work of which a great part of his Principles is merely an expanded edition, An essay on the influence of a low price of corn on the profits of stock, showing the inexpediency of restrictions on importation, with remarks on Mr. Malthus two last publications. In it, like West, he snakes diminishing returns the cause of the historical fall of profits; but he goes further than West by bringing into strong relief the consequent opposition between rent and profits. By the aid of a set of hypothetical figures which look like proofs, but are merely illustrations of his thesis, he makes it appear to the ingenuous reader that the landlords' increased rent comes straight from the pockets of the capitalist.

'By bringing successively land of a worse quality, or less favourably situated, into cultivation, rent would rise on the land previously cultivated, and precisely in the same degree would profits fall.'<sup>(45)</sup>

This was what would now be called by namby-pamby politicians an attempt to set class against class the class of capitalists against the class of landlords. And it attempted to enrol the farmers among the capitalists, and thus to divide 'the agricultural interest' against itself. It would have been difficult at that time to bring any more damaging charge against the protectionists than that by stimulating the progress of improvement they were only robbing merchants, manufacturers, and farmers for the benefit of landlords. The effectiveness of the charge accounts to a great extent for the enthusiasm for the Ricardian theory of rent which was felt by the free trade economists of the time. What the protectionists felt may be judged from the fact that Arthur Young, who had had forty-one publications on the corn bill read to him,<sup>(46)</sup> pronounced Ricardo to be 'far more violent than all the rest against the landed interest, and most especially against every species of agricultural



improvement.'<sup>(47)</sup>

We need not attempt to decide here whether there was any real foundation for the belief that the returns to agricultural industry 'employed at the margin of cultivation' had diminished during the war. Even if returns did not diminish at all during the war, 'West and Ricardo were quite right as to the practical question at issue. Owing to the fact that no more than a certain amount of labour can be employed on land or lands with a maximum return, a protective policy which actually keeps out corn which would otherwise be imported, must diminish the productiveness of industry, and therefore necessarily damage some classes more than it benefits others. And even if returns did diminish greatly during the war, Malthus, West, and Ricardo were completely wrong in deducing from the experience of this short and anomalous period the hasty generalisation that as a general rule returns to agricultural industry diminish with the progress of wealth and population, in spite of all 'improvements in agriculture.'<sup>(48)</sup> Few historical facts can be better established than that with the progress of wealth and population in the present civilized world, the labour of providing raw produce has been performed by a steadily decreasing proportion of the whole populations and till some one brings forward statistics to show that an agricultural labourer now employed at the margin of cultivation actually produces less wheat or beef than his predecessor in the time of King Alfred, we may take this as sufficient proof that the returns have increased and not diminished.

By subsequent writers Ricardo's general rule of diminishing returns has been explained away till it is either merely a statement that returns would diminish if it were not for the causes which make them increase, or else as in Turgot, a statement that there is always some point beyond which the labour employed on land cannot be increased without diminishing its productiveness. In both cases the law of diminishing returns is somewhat of a misnomer.

#### NOTES:

1. See his *Recreations in Agriculture. Natural History, Arts, and Miscellaneous Literature*. 1801, vol. iv., pp. 374-376 vi. 405-407
2. 2nd ed., p. 7; 8th, p. 5.
3. *Essay*, 2nd ed., p. 472; 8th ed., p. 380.
4. *Oeuvres* ed. Daire, vol. i. p. 420, 421.
5. See the table of Windsor prices in Tooke's *Thoughts and Details on the High and Low Prices* (1823), pt. iii., pp. 172-176.
6. See the table in Porter's *Progress of the Nation* (1836), vol. i., pp. 155, 156.
7. It is a great mistake to assume that all the land that was enclosed was brought into cultivation. The particular heaths referred to in the text are a case in point, as there is no reason to suppose they were even temporarily cultivated. The end of the war and the collapse of prices probably arrived before the preliminary steps were accomplished. A few of the allotments (of several hundred acres each) were planted with Scotch firs, and all the rest long remained, as the most of them still remain much as they were in 1790.
8. These numbers are taken from Appendix No. 16 to the 3rd Report from the *House of Commons' Select Committee appointed to Inquire into the State of Agriculture*, 1836. (Sessional vol. viii. pt. ii. p. 505 (MS. paging), 501 (printed paging), which is the authority for the numbers given in Porter's table. (*Progress of the Nation*, 1836. Vol. i. pp. 155, 186.) Very few enclosure bills failed to become acts.
9. Report of Select Committee, 1813. Hansard, vol. xxv., Appendix, p. lxi.
10. See *Hansard*, 1813-15, passim.
11. By a bounty of 5s. when the price did not exceed 48s.
12. By a duty of 18s. when the price did not exceed 53s. 4d., and of 8s. when it was between 53s. 4d. and 80s.
13. From 1765 to 1772, inclusive, temporary laws were passed prohibiting exportation and allowing importation free of duty. In 1773, by 13 Geo. III. cap. 43, the bounty ceased to be paid whenever the price was above 44s., instead of 43£., and the 'high duty' ceased to be charged on imports whenever the price rose to 48£., instead of 53s., 4d.

14. The 105s. 2d. fixed for 1813 was arrived at by this method (*Hansard*, June 15, 1803, p. 654).
15. *Hansard*, vol. xxvi. pp. 644, 645.
16. Malthus, *Grounds of an Opinion*, p. 1.
17. P. 25.
18. P. 34.
19. Pp. 40, 41.
20. *Hansard*, vol. xxvii., p. 1102. June 6, 1814.
21. 1813-14. No. 339. Sessional vol. iii. pp. 195-342.
22. P. 4
23. P. 5.
24. *Report*, p.89.
25. *Report*, p. 31.
26. *Ibid.* p. 39.
27. Pp. 1, 2,
28. P.6. See *Wealth of Nations*, bk. i. ch. i. (p.35 in McCulloch's ed.).
29. Pp. 6-8 Compare with the second paragraph *Wealth of Nations*, bk. i. ch. ix. (p. 42a in McCulloch's ed.).
30. Pp. 9-10.
31. P. 12.
32. P 18
33. P. 14.
34. P. 25.
35. P.26.
36. P. 27.
37. P.30.
38. P. 53.
39. See the Preface.
40. P. 47.
41. P. 8.
42. Pp. 38, 39.
43. P. 45.
44. *Essay on the Influence of a Low Price of Corn*, Preface.
45. *Works*, p. 373,
46. 'An Inquiry into the Rise of Prices in Europe. 1815,' in *The Pamphleteer*, vol. vi. p. 166.
47. *Ibid.* p. 188.
48. All three believed that 'the causes which render the acquisition of an additional quantity of corn more difficult are in progressive countries, in constant operation whilst marked improvements in agriculture, or in the implements of husbandry, are of less frequent occurrence.' (Ricardo, *Influence of a Low Price of Corn*, p. 377, note, in *Works*.) That returns do actually diminish is obviously implied in the theory of West and Ricardo that the actual historical fall of profits is caused by a diminution of returns.

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