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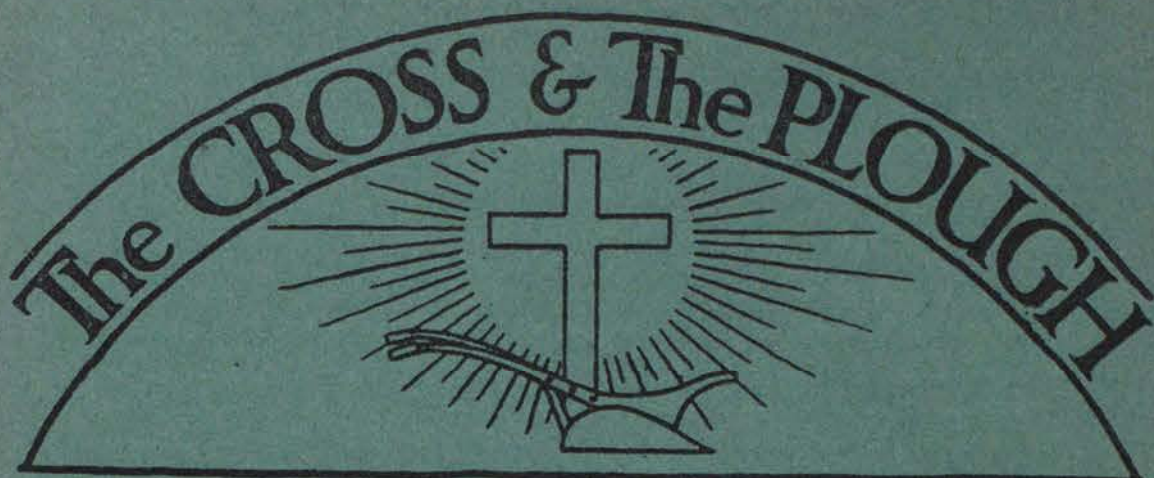
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The Organ of the Catholic Land
Associations of England and Wales.

QUARTERLY.

TWOPENCE

SAINTS PETER
AND PAUL 1942

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Vol. 8

No. 4

The Cross and the Plough

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The Papal Statements on the Return to the Land, and the statement of policy by the Catholic Land Federation, which hitherto have dignified our covers, have had to be suspended on account of the paper shortage. A copy of a previous issue containing them will be supplied on request to any new subscriber.—THE EDITOR

THROUGH THE LOOKING GLASS

HOPE DEFERRED

Following upon the unequivocal words of our Holy Father at Pentecost, 1941, there was some hope that the Hierarchy of this country might indicate a measure of general support for a Catholic Land Movement. Unhappily, it was without foundation.

There would be no point in developing at present the implications of this fact, but we should be less than honest with our supporters if, after the appeal of last Michaelmas, we failed to record it.

WHO IS MY NEIGHBOUR?

The Minister of Agriculture has asked the Cardinal Archbishop's support for a Good Neighbour Policy among farmers. *Policy* is the *mot juste*, and is not without interest of its own.

In reply, His Eminence told the simple and devastating truth: "*It is a great relief to me and to all who have the welfare of the country at heart, that at long last agriculture is to receive due attention and encouragement.*"

Wide Press publicity for this statement does not seem to have been insisted on by the Ministry.

AMMUNITION

Sir ALBERT HOWARD has placed the cause of land sanity further in his debt by

publishing two pamphlets. *A Long-Term Policy for Agriculture* is a reprint of an article in *The Dairy Farmer* for March, 1942. *Soil Fertility and the Reform of the Manure Heap* is a reprint of an address to the Nantwich Young Farmers' Club, given in February last.

Both are of the first importance as technical disproofs of the case of the Mechanisers, and of the N.P.K. mentality. Sir Albert has been kind enough to place a limited number of both these important statements at the disposal of the Editor. A copy of each will be sent to any subscriber on application. One penny stamp for postage should be enclosed.

TUMBRILS WITHOUT

Sir Daniel Hall was so unwise as to associate himself with a *Town and Country Planning Conference* at Cambridge at the end of March. He delivered an address in favour of the nationalisation and elephantine farming units with which his name is associated.

For some curious reason, this speech seems to have attracted attention in quarters which remained unaware of his recent book. Farmers, especially small farmers, are reacting admirably. There is a general statement that, as one of them puts it, "It is a pity that the members of this Conference cannot be found something better to do during the present crisis." Another, who signs himself "*Ordinary Seaman*," says: "*I wonder how*

this gentleman thinks I and many other sons of the soil feel on hearing that while we are away from our homes in the fighting services, there is someone at home with nothing better to do than rob us of our birthright by the abolition of the small farm."

THE DOOR IS KNOCKED

Hampshire, which has some of the largest as well as some of the smallest farms within its boundaries, has the honour of opening the action. The Brockenhurst Branch of the N.F.U. has demanded that that august body shall pay attention to the danger confronting farmers of less than 100 acres. They say: "*We smallish farmers do not want to find ourselves turned into the employees of big corporations, even though it means more money. But there is a move to bring that about and we must protect ourselves.*"

BUT THE PLAY PROCEEDS

In Surrey, however, the War Agricultural Committee has been showing off its machines. A *Daily Sketch* reporter, echoing no doubt what he was told, said of this demonstration: "*Russian farming experts have told us that our islands are so fertile that, if farmed under modern methods, they should produce first-class food to support not merely 40 million people but 90 million people. To-morrow's demonstration will be the first step towards that ideal.*"

We knew of the fertility and the capacity of our land without the aid of Russian experts. We know, too, that "modern methods" have nothing to do with output per acre, but only with output per man—and dividends. It cannot be repeated too often that the greatest machines ever invented cannot turn out more wheat to the acre than can a ploughman and his team.

THE LAST ACT

The Reporter proceeds: "*Dominion farmers . . . point out that they had to drag every ton of this from difficult soil, use every suitable new machine.*" DRAG is right. Unless the Dominions change their methods very quickly, there will be nothing left for their children to drag from the soil. England

belongs to our children's children as well as to us. There won't be anything left for them to drag either, if the mechanisers have their way.

COSTING GONE MAD

Arising from the announcement of grain prices made recently by the Government, several attempts have been made to establish a money cost for an acre of wheat. Lord Cranworth, in *The Farmers' Weekly* of 2nd April, gave a figure which showed a bare recovery of cost. This included, of course, the allocation, carting and spreading of 14 tons of organic manure. One of our smart Alecs responded on 10th April with a statement showing 100% profit. He got it by manuring with 2½ cwt. of artificial fertiliser to the acre, adding ½ cwt. of nitro chalk in the Spring, devoting fifteen shillings to rent and crediting himself with £5 for the sale of 25 cwt. of *Baled Straw*. If, as is only too probable, these are the methods by which mechanised farming is shown to be profitable, it is time the Chartered and other Accountants protested that capital loss should really not be shown as an income profit.

An impressive series of more complete costings was printed in *The Dairy Farmer* for May. The comments of the farmers concerned included some nasty truths on arm-chair farmers and the undue influence which "land miners" have on Government circles.

THE NAKED TRUTH

It is rather surprising how often complete frankness is to be found in Press statements about the modern conspiracy. A special correspondent in *The Times*, writing on *World Trade After The War*, said recently "Among many professional economists, bankers, merchants, shipowners and other leaders of opinion . . ."

In face of this sort of thing, can we deny that we have the sort of Government we deserve?

AGRICULTURAL RECONSTRUCTION

A Division of the British Association discussed on 20th and 21st March this problem as it affects the populations of Europe. The discussion is summarised in *Nature* for 4th April by Mr. G. V. Jacks.

There was a remarkable unanimity that small-scale peasant farming affords the best hope for the future. Nearly all the distinguished speakers specified livestock and mixed farming.

Sir John Russell, in the Chair, emphasised greater production of "protective" foodstuffs at the expense of cereals, and many of the experts followed him in this respect.

It does not appear that any of them knew, and certainly none of them said, that the large-scale cereal monoculture in America and elsewhere cannot continue on its present scale. The part author of *The Rape of the Earth*, of all people, would have mentioned any reference of the kind.

But if the easy and enormous corn production of the past generation cannot continue, peasant mixed farming must be taken to include its traditional cereals. Everybody knows that now, except Sir John Russell and the experts.

HALF THE STORY

Sir Charles Grant Robertson set the cat among the educational pigeons recently by asking some pointed questions. The first was: "Can you have a society accepting the Christian code of ethics without the Christian faith as its basis?"

This is very pertinent, to be sure, but a negative answer does not end the matter. Can you profess to have a Christian basis without the Christian ethic? It is the sad fact that the reply must be yes which constitutes the modern problem. We celebrate devoutly and with dignity the Papal Jubilee. We do not dream of doing what the Pope says we ought to do.

TAILPIECE

"The fundamental evil of America and the world, from which the other evils stemmed, was the agricultural evil—the erosion of the soil. That was not in reality a grievance of the farmer, it was an evil which threatened, and still threatens, the whole existence of Christian civilisation. Yet it was an evil to which it was hopeless to get the townie politician, interested primarily in the townie vote, to attend."

... The fundament of Mr. Roosevelt's policy was the A.A.A.—the agricultural policy—the policy for arresting the destruction of the soil. And still even to-day, through all the smoke of battle, that remains the fundament of the policy. Unless that policy is solved no victory in battle will be worth the winning, and if it is solved, then Christendom may yet be saved."

—Mr. Christopher Hollis,
in "The Tablet."

This is admirable. Mr. Hollis is always admirable until he seeks to tie up all the virtues to Aristocracy, as he proceeds to do in the present case. But if it is hopeless to get the townie politician to act, because of the townie vote, it is even more hopeless to get the aristocratic politician to act, because of the aristocratic money. That was the history of very aristocratic Roman Italy, and even more aristocratic Roman Libya. Erosion is, on the whole, a sin of the rich. We solve nothing by ignoring that. As Lord Acton said, and as we cannot repeat too often: ALL POWER CORRUPTS: ABSOLUTE POWER CORRUPTS ABSOLUTELY.

THE PROBLEM

I do not believe in a fate that falls on men however they act; but I do believe in a fate that falls on them unless they act. If I treated the matter merely as one of necessity and the nature of things, I should say that England was following her sister States of Venice and Holland. If I had ever talked all the mean materialism about living nations and dying nations, I should say that England was certainly dying. But I do not believe that a nation dies save by suicide. To the very last every problem is a problem of will; and if we will we can be whole. But it involves facing our own failures as well as counting our successes; it means *not* depending entirely on commerce and colonies; it means balancing our mercantile morals with more peasant religion and peasant equality; it means ceasing to be content to rule the sea, and making some sort of effort to return to the land.—G. K. Chesterton in "Speaking Generally."



THE GOOSE THAT LAID THE GOLDEN EGGS
"This is, of course, only a temporary, war-time, measure"

AD LIMINA

Before the parted tongues upon him roared, Peter would save his Master with a sword. And with a sword did Christ-embattled Paul Endow his converts from his prison wall. Some doubt now cramps our local hell-defeaters:

Do we use both—or Paul's—or only Peter's?

—H.R.

Thus we have made social problems insoluble. For while we talk of a standard of life, in fact we have no standard of life except that each man shall desire more than he has thus far obtained.—Walter Lippmann, in *The Commonweal*.

A PORTENT

Birmingham, which was once the home of craftsmen, and later the home of big business and the big bank, has seen the red light. In May, it brought all its municipal panoply to the organisation of a Food Production Exhibition designed for the help of the small man who has no more than a garden or an allotment.

A death-bed repentance indeed, for it was held on the ruins of the Market Hall, but none the less an edifying portent.

A whole day was devoted to lectures and demonstrations on composting soil by the Indore Process, and Sir Albert Howard himself led the field.

THE CONTINUOUS GROWTH OF WHEAT ON BROADBALK FIELD

SCIENCE OR ADVOCACY?

AS we indicated in a note at Michaelmas, 1941, the standard defence for continuous growth of grain crops with artificials has been Broadbalk Field at Rothamsted. According to Sir John Russell, the Director, "In 1843 it came into wheat, and it has been put in wheat every year since; it is now carrying its ninety-eighth wheat crop *without a break*." (Letter to *Farmers' Weekly* of South Africa, 7th May, 1941. Italics ours).

It was established in the previous note that the experiment has been discredited by the use of healthy seed from outside sources every year. The matter can now be taken further.

A little light, and some amusement, may be derived from the following extract from the 1929 Report: "Imperial Chemical Industries, Ltd., and Fertiliser Manufacturers' Association, jointly defray the cost of a Guide Demonstrator for the field plots and, in addition, provide considerable funds for the extension of the work."

The following letter on the general subject has been sent to *The Farmers' Weekly* of South Africa by Mr. H. R. Broadbent. Owing to the hazards of war, the date of publication cannot be given at the moment of writing.

"Sir,

No doubt some of your readers will have been disappointed to learn from Sir John Russell's letter in your issue of 7th May, 1941, that the Experiment on the Continuous Growth of Wheat at Rothamsted has been abandoned. Its place has been taken by one in which "the plots have been divided cross-wise into five sections, each of which in turn has been fallowed for a year to keep down weeds."

Sir John Russell explains "we have had trouble with weeds." The weeds, judging from the monotonous appearance of the adjective "foul" in the Rothamsted Annual Reports on Broadbalk, must have been a nightmare. There were valiant attempts to

fight them at earlier dates than 1925, the year quoted by Sir John Russell; indeed, the fallowing which was used makes the qualifying terms "continuous" and "without a break" more euphonious than accurate. In 1903 each plot was divided in half longitudinally. One half was fallowed in the season 1903-4 and the other half in the following season. The longest period, therefore, during which any part of Broadbalk carried a continuous succession of wheat crops was from the autumn of 1843 to the harvest of 1904, a total of 61 crops. There was a second break when in 1914 there was a complete fallow of the whole of the top half of the field and in 1915 of the bottom half.

In 1925 Rothamsted threw in the sponge. The weeds had won. The field was divided into five sections and drastic fallowing imposed. The top three-fifths were fallowed in 1926 and 1927, the bottom three-fifths in 1928 and 1929, so that there was a break of two years on both the top and bottom two-fifths and of four years on the centre fifth. The whole ground was cropped in 1930 and in the season 1930-31 the present system of four years of cropping and one year of fallow on each fifth of each plot was started.

Fallowing on Broadbalk, at least initially, benefits the succeeding crop to a considerable degree. The effect of the two years fallow, 1926 and 1927, on the succeeding crop from the top two-fifths of the field was the subject of the following comment in the Rothamsted Annual Report for 1928: "Never in the 86 years of successive wheat growing has Broadbalk grown a crop so thickset with grain and we are at present unable to explain it."

Sir Daniel Hall, when Director of Rothamsted, wrote of the experiment on alternate wheat and fallow: "The produce of wheat after fallow is considerably higher than when it is grown continuously."

The figures given in Sir John Russell's letter and in the report to which he refers in his last paragraph indicate the benefit of

fallow to the succeeding crop. The latter mentions that the improvement lasts beyond the first year when it states "in the second and later years the yields are much less, though the fall is less abrupt on the plots with highest nitrogen supply and on those of lowest potash supply. . . ." e.g., the mean yields on Plot 2 (Farmyard manure) 1935-39 of each of the four years after fallow are given as (1) 20.9, (2) 16.6, (3) 15.9, (4) 14.3 cwt. per acre. These are, of course, only indications, as the new experiment is too young to produce a dependable result.

An interesting sidelight on the effect of fallowing appears in the report quoted in the last paragraph. Referring to a test of the bread produced from Broadbalk wheat for the years 1926 to 1929, the report states that "something in the method of cultivation had consistently reduced the baking quality, for the samples of 1926 and 1927 were below ordinary English standards, the dough from some of them being distinctly poor. Fallowing led to a definite improvement; the appearance of the flour and the crumb colour of the head was in marked contrast to the lifeless greyish crumb of the previous years."

It may be noted that a similar experiment in growing wheat continuously at Woburn was abandoned after 50 years. Not only had the weeds conquered, but the yield had dropped disastrously on every plot, due, it is said, to the increase in acidity. This factor has not yet shown itself on Broadbalk, which is still benefiting from the heavy chalking which preceded the use of the field for experiments."

According to Sir Daniel Hall, the proportion of nodules of chalk still identifiable in the Broadbalk soil is as much as three per cent. We draw special attention here to the phrase *lifeless greyish crumb* used by the Rothamsted Report. It is the final proof of the end of the road to which other matter in this issue directs attention.

A selection from the further evidence available is given below.

EXTRACTS FROM SOME ROTHAMSTED ANNUAL REPORTS:

1905.—"Seasons 1904 and 1905. As the plots were becoming very foul, particularly with *Alopecurus Agrestis* (Black Bent Grass),

they were divided longitudinally and one-half of each was fallowed during the summer of 1904 and the other half is being fallowed in 1905 in order to clean the plots without breaking the continuity of the experiments."

1914.—"The Broadbalk Wheat was again poor, the yields being almost identical with those obtained in 1913 but for this the season is only partly responsible. Continuous wheat growing allows very few opportunities of cleaning the land and weeds have obtained so strong a hold on this field that hoeing and hand weeding are insufficient to keep them down, and indeed the processes finally injure the crop more than the weeds. The committee therefore decided to fallow the west or top half of the field in 1914 and the east or bottom half in 1915. Only once before since the experiment began in 1843 has there been a fallow and that was in 1903-4 and 1904-5 when, however, the operation was carried out by dividing each plot into a north and south half and fallowing one in 1903-4 and the other in 1904-5. The method did not prove very successful by reason of the narrowness of the strips."

"Note.—As in the two previous seasons (1912 and 1913) owing to the foulness of the land on the upper half of the field the produce here recorded was that obtained on the lower half of the field only." (Italics ours).

1893.—"For the crop of 1889 therefore down one half the length of the plots (the top) only alternate rows of wheat were sown, in order, so far as possible, to eradicate this and some other plants; the other (the bottom) being sown in the usual way. For the crop of 1890, on the other hand, the full number of rows was sown on the top half and only alternate rows on the bottom half of each plot in order the better to clean that portion. For the crops of 1891, 1892 and 1893, however, the full number of rows were again sown over the full length of each plot."

The Rothamsted Report for 1929 says: "In 1926 and 1927 the crop was confined to the lower (eastern) part of the field, the upper being completely fallowed for 2 years. This was the first complete fallow on this area since the experiment began in 1843." This at least ignores the fallow of 1914.

EXTRACTS FROM TECHNICAL COMMUNICATION
No. 40: IMPERIAL BUREAU OF SOIL SCIENCE.

*"The Rothamsted Field Experiments on
the Growth of Wheat"*

by Sir E. J. Russell and D. J. Watson.

p. 57 under "Weed Infestation"—

"In 1926 and 1927 the top three-fifths of the field was fallowed and in 1928 and 1929 the bottom three-fifths was fallowed. Thus the fallow parts overlapped so that the middle fifth of the field was fallowed for four years. Then in 1930 the whole field was cropped and each of the fifths was harvested separately. From 1931 onwards one-fifth has been fallowed each year, the fallow moving from Strip V (east end) up to the west end."

p. 72 under "Continuous Wheat Growing at Woburn"—

"The Woburn results are set out in Table 25; the first fifteen years only are given because shortly after that a fall in yield began on some of the plots through an increase in acidity."

p. 75—

"As at Rothamsted, the yields rose for the first few years to a maximum in about 1882 to 1887 and then fell: over the period 1887 to 1901 there was little if any change. After that rapid deterioration set in."

p. 77—

"The yields of Wheat and Barley (at Woburn) had by 1926 fallen by from 1.5 to 6-cwt. per acre according to the treatment: this closed a 50-year period of continuous corn growing and the whole area was fallowed for two years, one year being insufficient to eradicate the weeds which had become very troublesome."

p. 153, under "Woburn Experiments"—

"One of the most striking results in the whole range of agricultural science was the demonstration of the harmful effect of acidity on crop growth: this was less marked on Wheat than on Barley."

Of special interest is a series of passages in the same Technical Communication No. 40 on the extraordinary lengths to which special and highly expensive steps to keep down weeds were taken.

"In the old days much labour was expended in hand-weeding the plots. In 1852 (for which year a full record exists) there were 211 man days and 714 boy days: as the

weeding season lasted only about 100 days this means an average of 2 men and 7 boys working full time on the field. Apparently the method was successful, because yields were high and the notebooks contain no reference to weeds in the following years. But from 1867 to 1889 the field is often described as 'exceeding foul'; this was a period of bad seasons and boy labour was becoming more difficult to obtain."

"In spite of much hand weeding—often in later years by parties of school girls—the weeds increased so much that in 1890 and 1891 the field was partially fallowed by drilling the rows at double width over half the field, to allow of hoeing between the rows."

And again—

"An Account of the Rothamsted Experiments" by A. D. Hall (1905 Edition) has on page 41:

"The real difficulty, however, in continuous corn-growing is to keep the land clean; certain weeds are favoured by the wheat and tend to accumulate, so that the land can only be maintained clean by an excessive expenditure in repeated hand-hoeing. Notwithstanding all the labour that is put on the plots, the 'Black Bent' Grass, *Alopecurus Agrestis*, has from time to time become so troublesome that special measures have had to be taken to eradicate it and to restore the plots to a reasonable degree of cleanliness."

"Despite the proof that continuous wheat growing is feasible (italics ours) it has not come into general practice in Britain. The difficulties have usually been too great. The time available for cleaning the land is so short that weeds tend to accumulate and ultimately cause a good deal of trouble, and on light chalky soils where ease of mechanical working is a great inducement to continuous or at least very frequent cereal growing, there is a further danger of accumulation of fungus disease 'Take All' (*Ophiobolus graminis*)."

We leave our readers to reflect on the situation produced by these facts, including the astonishing extent of *extra* cultivations carried out to prolong the death agonies of a field that is for ever England.

We may conclude, with strict moderation, that in this matter of N.P.K. we stand in urgent need of much more science and much less advocacy.

EFFICIENT FARMING

By H. S. D. WENT

ON page 90 of his latest book, Sir Daniel Hall, K.C.B., F.R.S., writes: "The farmers of the newer countries would agree that the test of efficiency is not the amount per acre, but the amount that can be grown with one man's labour." (The newer countries, from the point of view of farming, are New Zealand, South America, Central and South Africa, Western Canada, the U.S.A. and the U.S.S.R.). From this statement we can draw two conclusions: (1) that Sir Daniel believes that the test of efficient farming is the amount produced per man, and (2) that he considers that the opinion of the farmers of the newer countries constitutes a sort of Court of Final Appeal. From (2) we must deduce that he believes the newer lands to be efficiently farmed.

Before we consider the conclusions forced upon us by Sir Daniel's statement, it will be as well to refresh our memories as to his qualifications to speak authoritatively on farming matters. The Editor of *The Field* has told us that:—

"Sir Daniel Hall's connection with agriculture extends over more than fifty years. In 1894 he was appointed the first Principal of the South-Eastern Agricultural College at Wye. The system of education which he devised for it has served as a model for all later foundations throughout the country. In 1902 he was appointed Director of the Rothamsted Experimental Station, and the position Rothamsted holds to-day in the world of agricultural research is sufficient tribute to his work there. In 1909 he was appointed to the Development Commission and in 1912 he resigned from Rothamsted to devote himself entirely to his new work. He it was who conceived the idea of a series of State-endowed research institutes, and these have been set up in various University Centres all over Britain. The organisation of this national scheme of agricultural research and education was perhaps his greatest work. In 1917 he became Secretary to the then Board of Agriculture and later Chief Scientific Adviser. He remained to see the Board become a

Ministry and held the post until his resignation in 1936. In 1926 he became Director of the John Innes Horticultural Institute. His last great work was the Constitution of the Agricultural Research Council. In fifty years of work for farming he has made for himself a position unequalled in the world of agriculture, and a reputation that is truly world-wide."

Even the Editor of *The Cross and The Plough*, though his standpoint is almost diametrically opposed to that of Sir Daniel, has said: "Sir Daniel Hall is probably our foremost authority on the details of commercial farming."

It follows, therefore, that any expression of his opinion on agricultural matters by Sir Daniel Hall demands our respectful consideration, if not our instant and automatic agreement.

Personally I am of a rather sceptical temperament, so I think that, before accepting Sir Daniel's conclusions, it would be just as well to examine the results which "the farmers of the newer countries" have achieved by their efficient farming.

In 1938 *Famine In England*, by Viscount Lymington, was published. In it are some rather strong criticisms of the methods of these farmers. Here are some of them:—

NEW ZEALAND.—"New Zealand is a great reservoir for animal foodstuffs. As islands, her rainfall is less affected by deforestation than if she were a continent. Yet even in New Zealand there are signs of serious erosion through grazing on steep slopes and too much interference with natural vegetation." p. 99.

SOUTH AMERICA.—"South American agriculture has so far escaped most, but not all, of the devastating results of bad farming in North America." p. 99.

AFRICA.—"In general and under present conditions where the plough is drawn in Africa the shadow of the desert runs before it. This is not all. Miss Huxley's article in *The Times* of June 11th, 1937, shows how the grazing land is losing heart. Here again we have upset the balance of nature.

... Even with the most energetic action, which must be both wise and far-seeing, there is little hope in Africa to increase food supplies for a generation. What is far more likely is that the desert will grow apace for a generation before a desperate and sadder but wiser world takes it in hand." pp 102 and 103.

CANADA.—"In general the only traditionally well-farmed land in temperate North America is the land farmed by the French-Canadian peasants of Canada, where a peasant population and wise mixed farming has for two hundred years kept the land in sound heart, which in itself should be sufficient lesson." p. 98.

AUSTRALIA.—"Unless Australia is rapidly turned into a peasant country, ruin of the soil is inevitable. . . . The reported problems from Australia show a really desperate position. . . . The plough and the grazing have each unconsciously intensified the desert. Taking an objective view, it is hard to feel anything but pessimism for the general future of Australian soil." p. 100.

U.S.A.—"This (Middle West) 'dust bowl' is no accident of nature, no seismic cataclysm such as engulfed Atlantis. It is man's handiwork. After the pioneers passed the land was filled. But the spirit remained the same—it was the spirit of exploitation and with it was still a general ignorance of good husbandry." p. 94.

U.S.S.R.—"The Big Idea, the apogee of Americanism, has become God to the Russian. Not only does he have the world's largest power-station, but he must have the world's largest farms and fields. Collectivized farming is the order of the day. But collectivized farming in the Russian sense is almost certain to mean bad husbandry. Wheatfields of hundreds or thousands of acres in the end mean a new dust bowl. At present the United States has the world's largest failure in farming, but Russia, in this also, will ultimately have the record." p. 106.

It may be objected that Lord Lymington—with his insistence on the necessity for peasant farming and his respect for tradition—is obviously a sentimental mediaevalist, one who objects on principle to all new ideas, an instinctive opponent of all progress. "Sir

Daniel Hall we know," you may say, "and Sir John Russell we know; but who is this Viscount Lymington that he should set his opinions up against the unique authority of Sir Daniel Hall?" Again the Editor of *The Field* supplies the answer:—

"Viscount Lymington," he tells us, spent his boyhood until the age of eleven on a cattle ranch in Wyoming, when the West was still the West. He has travelled widely in Europe, Asia and America, always with an eye on farming. In 1932 at the Volta Conference in Rome he spoke on "The Unity of European Peasant Farming." Between 1925 and 1939 he reclaimed 3,000 acres of land taken over from tenants, mostly bankrupt, by laying on water and heavy stocking with Hosier Bails and folded pigs on grass, thereby doubling arable production and trebling the gross output. He was one of the pioneers in Hosier Bails and alternate husbandry, and since 1931 he has experimented in a closely followed connection between soil fertility and animal health and resistance to disease in field crops. He is the author, among other books on farming, of *Famine In England*, a prophetic book published in 1938."

It would seem then that, although Lord Lymington is not a world-renowned Professor of Agriculture, he is a successful practical farmer and a life-long student of farming, and that his statements also are worthy of our respectful consideration. They are not unsupported. A few years ago Messrs. Jacks and Whyte undertook, at the request of the Government, a world-wide survey of the causes and effects of soil erosion. The appalling results of their survey were published under the title of *The Rape of the Earth*. In that book every one of Lord Lymington's criticisms of the farmers of the newer countries is repeatedly justified up to the hilt.

No scientific or specialist knowledge is necessary to realise that men who have utterly ruined millions of acres of fertile soil, and who have damaged—seriously if not in all cases irretrievably—more than they have yet ruined, are not efficient farmers. They are not farmers at all, they are crop-miners and soil-bandits. But Sir Daniel Hall believes that these bandits are efficient farmers, and

appeals to their support of his contention that the "test of efficiency" is not the amount per acre, but the amount that can be grown with one man's labour. It follows of necessity that we are regretfully forced to conclude that Sir Daniel Hall, K.C.B., F.R.S., has no idea of what constitutes efficient farming, that his "test" is no test at all, and that his opinion on the matter—in spite of his immense prestige, his half-century's experience of Agricultural Pedagogy and all his qualifications—is of even less value than that of a nobody like myself, whose ignorance of agriculture is almost as profound as is Sir Daniel's knowledge. Here, in self-defence, I must digress. No doubt it seems intolerable that I should dare to criticise such a man as Sir Daniel Hall; for in this free, but expert-ridden, island it has come to be looked upon as something outrageous, an indecency, almost a blasphemy, for the ordinary ignorant nobody to refuse to kow-tow to a Great Authority. On points of technical detail I might respect the tabu, but on matters of common sense I most emphatically do not. If all the Agricultural Professors in the country told me that if I had four bullocks and two were taken away I should have six left, I should not hesitate to tell them that they were talking through their respective hats. So, when Sir Daniel Hall says that the men who have made a desert and called it farming are judges of "efficiency," I say that he is talking bosh, and I am entirely justified in saying it.

To return to Sir Daniel Hall's "test of efficiency." It will be interesting to take a concrete example, and see how it works out. At Messrs. Arthur Guinness, Son & Co.'s hop gardens, at Bodiam in Sussex, compost is made by the Indore Process. The total cost per acre (at 16 tons of compost to the acre) is £8 os. od., £2 8s. od. of this being the cost of transporting pulverised town wastes from the station to the gardens, £2 os. od. being the cost of making and spreading the compost heaps and spreading the finished compost. The total cost of the equivalent amount of artificials would be £9 12s. 7½d., about 5s. 9½d. being the cost of transport, and about 3s. 10½d. being the cost of spreading the chemicals. Consider the operation of manuring one acre (to simplify matters we will assume that outside transport is used in each case) in the light of the rule that the less the

man-power used to attain a result, the more efficient the method. We then reach the remarkable conclusion that—since £2 is more than ten times 3s. 10½d.—artificials—in spite of their costing £1 12s. 7½d. more, and producing a less satisfactory crop—are ten times as efficient as compost. A conclusion which would have delighted the heart of the late Sir W. S. Gilbert.

How comes it that Sir Daniel Hall, K.C.B., F.R.S., should have made such an amazing blunder? It is incredible that a man of his position and experience should be so ignorant of world conditions as not to know of the destruction wrought by "the farmers of the newer countries," and I find it equally impossible to believe that he is anything but honest in the expression of his belief. I fancy that Lord Lymington, on page 95 of *Famine In England*, has provided the clue to the mystery. Of modern methods of farming he says:—

"In the spirit of the profit age nearly all agricultural research has been towards bigger and better exploitation of the land rather than saner and sounder farming."

Thus when Sir Daniel Hall, the Great Panjandrum of Agricultural Research, speaks of efficient farming he is not really thinking of farming at all, but—subconsciously, of course—of efficient money-grubbing. There is an old story of a salesman who sold razors which would not shave. When he made a round of return visits his indignant customers told him that the razors were useless for shaving. He replied cheerfully that he knew they were. On being asked what then they were for, he said, in innocent surprise, "To sell, of course." I feel certain that if we could dig down deep enough into Sir Daniel's subconscious mind, and then asked him what crops were for, he would reply: "To sell, of course."

Must we take it that, as Sir Daniel Hall has failed to produce a test of efficient farming, no definition can be found? I think not. In all humility, subject to correction and with a full consciousness of my ignorance, I venture to offer one: The efficient farming of any piece of ground is that farming which—WHILE FULLY MAINTAINING THE FERTILITY OF THE SOIL—produces the maximum of healthy crops.

MEASURES

By H. R. BROADBENT

TWO measures of farm efficiency are here examined—output-per-man and net profit.

It is common practice in comparing the output-per-man from a mechanised farm with that from a mixed farm using animal traction to say that a mechanised farm is more efficient than a mixed because the yield measured as output-per-man-on-the-farm is higher. This is true, at least for a time, because of the efficiency of mechanised traction and other machinery. Machinery is efficient in this sense of the term that a man with its aid can do more work in a given time than a man with hand tools or horse-drawn implements.

Machinery is usually included as part of the farm's capital. It can, however, be regarded in a different light. It can be considered as concentrated labour imported on to the farm. If a direct comparison is to be made of output-per-man, the machines should be considered as imported man-hours. Not only the machines, but the fuel, lubricants and artificial fertilisers are all forms of concentrated imported labour. Each has had man-hours spent on its production, selling and transport. Indeed, the work of all men engaged in the whole line of production, selling and delivery, from the growers of the food for the makers, processors, salesmen and carriers to the accountant who finally balances his books, must be considered as a part of the importation and should be assessed as such in the form of man-hours imported on the farm. Part of the time of the Services protecting the trade routes and of the Foreign Minister and his staff must also be charged as man-hours against machine production.

The imported labour special to a mixed farm with animal traction (e.g., harness, provision of more gates and buildings) cannot weigh very heavily in the balance against that special to the mechanised farm.

The mixed farm must, however, bear in the form of taxation a part of the extra services, for instance, elaborate communications, which are essential to mechanised equipment. This is a subsidy from the mixed to the mechanised farm.

By how much would the mechanised output-per-man-on-the-farm be reduced if the concentrated imported man-hours were charged in that form to the mechanised farm? Would it fall below that of the mixed farm? It is probable that no attempt has ever been made to find the answer. The difficulties are too great. Indeed, it may be argued that it is unnecessary to go to the trouble since the measure, output-per-man, is only one factor among many which are covered by a second measure, net profit.

The money exchanged in all the various transactions, from the original payment for food for all workers in the chain to the final payment to the costs clerk, gathers together all factors under a common heading. If this is so, mechanised and mixed farms can be compared on a common basis, and if the mechanised farm shows a greater money return it is said to be more efficient.

This statement is fundamentally unsound, for in the assessment of costs on the mechanised farm a vital factor is ignored. Little, if any, account is taken of the loss of fertility, the loss of capital from the soils which provided the cheap food for the sub-divided labour of machine production.

Our machine production depends on cheap food. Most of the factories, machine tools, railways and roads in the U.S.A., for instance, have been built on cheap food. The food was cheap because it had been grown without regard to the subsequent condition of the soil. The soil producing the cheap food deteriorated. According to a survey made in 1934 in the U.S.A., three-quarters of the top soil had been washed away from 12,000,000 acres of the Piedmont area. The Tennessee Valley authorities had scheduled an expenditure of between 350 and 450 million dollars by 1943 to stop erosion in the area through which the river flowed. Between 1935 and 1938 3½ million dollars were spent in Manitoba, Saskatchewan and Alberta, Canada, to combat erosion. Similar stories are told of Australia and South Africa.

There appears to be no doubt that we have received and are receiving our cheap food from land which has been and is being

maltreated. The men who made the factories, machine tools, power stations, roads and railways, all indeed who shared and share in the supply of the machines, have drawn at least a part of their food from wasted lands. Machinery has been subsidised from soils which are now eroded, destroyed or in course of losing their food producing value. Very little of this subsidy has as yet appeared in the cost of the machines.

The argument that food from a mechanised farm is cheaper than from a mixed farm is without foundation. Its roots lie in the deserts of the world.

There is a primary condition which must be fulfilled before any sound foundation for a civilisation can exist. The soil must be kept in good heart. The maintenance of fertility

must be the prime measure. No plan which rests on economics dependent on an exhaustion of the world's soils can be successfully defended. The source would be robbery of either the present or future generations.

We have accumulated wealth from the wasted lands in the form of factories, power stations, roads and railways. These are wasting assets the maintenance of which will become increasingly difficult as the sources of cheap food become dry. Their replacement value has already risen. The best that we can hope for is that the problem is recognised and our wealth used to produce a more stable economy before calamity overtakes us.

The civilisation which we can build on the sure foundations of soil maintained in fertility is unknown, but we know this—that it will be different from the present.

DAILY BREAD BEAUTY: IV

Final Extracts from the Writings of the late Professor Lethaby

Always and in all things choose quality rather than quantity.

Happiness is not so much a happening as a way of looking at happenings.

Without some daily bread beauty we starve.

A true work of Art is the crest of a big wave in a wide sea. Many modern pictures and poems are ripples in a tea-cup.

What we call things are our way of looking at appearances.

Oh! ornament, what atrocities are committed in thy name!

Art like poetry and religion is near every one of us. It is universal or it is of little worth.

We live under a tyranny of trusts, in an Empire of emporiums.

Good work is surely a form of good works.

Digging the ground, that is the root problem.

Kindliness kindles.

To live on the labour of others is a form of cannibalism.

The best originality is that which becomes common afterwards.

Education teaches reading but not what to read, painting but not what to paint, archi-

tecture but not how to build.

Our favourite employment is underpinning: just enough to prevent collapse from day to day.

We are easily captured by myths of superiority.

The poor are gentle, but the rich call themselves so.

The ideal of modern life seems to be that some will be motoring, the rest making and repairing cars.

Is this to be a world of wrecked machines, crashed aeroplanes and stranded warships—rusty iron everywhere?

The helplessness of modern Art is the measure of the helplessness of the worker—there is justice in the universe.

An intention to be artistic slays art, putting seeming for being.

Making and doing are forms of virtue and philosophy.

Everyone would produce Art if so much had not been said of it that none but professors dare to profess.

Religion should glorify the common. "Civilisation" has been the development and destruction of a series of Babylons.

(CONCLUDED)

ORDER OF BATTLE: XI

EPITAPH ON A DUD*

IN the Ladyday issue of *The Cross and The Plough*, a good deal of space was devoted to the attempt of Big Business and other interests to recast the face of England after the war into large-scale mechanised farms.

The case presented against this ramp was perhaps as complete as was possible within the limits of a single article. But from the exigencies of space alone, two considerations of major importance had to be omitted. They are indicated here to round off the case against an anti-social, unscrupulous and unscientific conspiracy.

The main capital asset of the human race is a fertile soil, and it is the primary duty of mankind to hand on that capital intact to future generations. The spectacular results obtained in many parts of the world by mechanised arable farming have been obtained solely at the expense of that capital fertility. Our readers are well aware of this enormous fact, and it is mentioned here only to bring out the point that wasting one's substance in riotous living is always spectacular—while the substance lasts. No doubt the owners of the swine were filled with envy of the Prodigal Son at all stages prior to that of the husks.

It is precisely the methods which have wasted the substance of the world which are now proposed for England, but one aspect of the argument has not been developed to our knowledge.

It is quite clear that in terms of labour applied at the time and on the spot† large mechanised farming is cheaper than small peasant farming. That is its sole claim to notice. It is also clear that four-thousand-acre farms are, on the whole, the largest possible units in a country like England.

But observe the stupidity of the argument. They challenge competition with large-scale cultivation in America and Russia on its own terms. Very well, we start our four-thousand-acre farms, which by definition we can extend no further. The American Cor-

porations, operating already in units up to a hundred thousand acres, can extend to twice or thrice that scale without difficulty, and the new English farming finds itself outclassed before it is well started, with no hope of improvement on its chosen line. Not only so, but there are possibilities just over the horizon which would make both English and American mechanists look extremely foolish.

About ten years ago, the present regime in Russia was considering seriously a system of mechanised farming where brigades of fourteen-share power ploughs would start from the south of the steppes, and plough furrows a thousand miles long. They would be followed by cultivators and seed drills (or seeding aeroplanes) on a similar scale, and brigades of combine harvesters would reap and thresh the crop in due time.

Now this is absurd, but it is by no means technically impossible, and our own mechanised farms would look much more foolish by comparison with this Gargantuan conception than a peasant looks to Professor Scott Watson.

We cannot compete with this sort of thing, and our correct remedy, even on technical grounds—and incomparably more so on every other ground—is to refuse to compete at all. If size and machine competition are out of the question, our only remedy is to cut out size and the machine, and to grow our food in small intimate units—in that close mixed farming which ensures permanent fertility and with which mechanisation cannot compete at all.

This argument is clinched by the fact that large mechanisation, abroad and at home, cannot fail to produce disaster by erosion. It is true that we owe erosion chiefly to industrial capitalism, but industrial collectivism is no remedy. Industrialism of any sort cannot exist without invasion of capital resources. Erosion in Russia began with the greed of the Best People there. The fact was first realised as a problem at all by their Communist successors. But it does not appear that Soviet methods are providing any

real remedy. They are confined chiefly to experiments in reclaiming desert, and the authors of *The Rape of the Earth* are very dubious about them.

Bound up inseparably with large-scale farming is the use of chemical fertilisers. There is good reason to hold that not only do they encourage the process of erosion, but that the crops grown with their aid are lacking in important qualities found in similar crops grown on properly fertilised organic soil.

Owing to the intimidating effect of the important commercial interests involved, this point has been investigated far too little. Our readers will be aware, we hope, of the many significant points emerging in Sir Albert Howard's *An Agricultural Testament*. As recently as last March, Sir Albert drew attention to the important results of the field researches of the late Sir Bernard Greenwell. "This gentleman, on his own large estates, tried out the effect of grain raised on fertile soil on his livestock, and compared it with similar produce purchased in the open market. In pigs and poultry, infantile mortality practically disappeared. All the rest of his animals—dairy cows, cattle, horses and sheep—improved in all respects. Moreover, they needed less food—a saving of from 10 to 15 per cent. in the grain ration proved to be an important subsidiary result." (*The Dairy Farmer*, March, 1942).

Our attention has also been drawn to a significant experiment recorded in the *Biochemical Journal*, Vol. 24, I, 1930

Mr. M. J. Rowlands and Miss Barbara Wilkinson of the Knightsbridge Laboratories, carried out the following experiment:—

Experiment: One portion of the land was dunged at the rate of 20 loads of pig dung to the acre; the other portion manured with artificials: 20 cwt. basic slag + 3 cwt. Kainit + 1 cwt. of sulphate of ammonia as a top dressing to the acre. The pig dung used was pigs' excreta mixed with straw. (The dung came from pigs fed on the following diet: 10% of a proprietary product including meat meal, rye and wheat embryo, which have a high vitamin B content; bone meal, cod liver oil, 40% of barley meal, 50% of middlings. The vitamin B content of the seeds collected from the experimental plots was tested

on rats, using the vitamin B deficiency diet. Two groups of experiments were carried out, applying the preventative and the curative method.

Preventative Test.—A number of rats were fed on the deficiency diet + 20% of the "dung" seeds; a number were fed on the deficiency diet + 20% of the "artificial" seeds. The rats fed on the "dung" seeds showed all good and, in a few cases, slightly subnormal growth. The rats fed on the "artificial" seeds grew very poorly, not one had normal growth.

Curative Test.—Rats were put on vitamin B deficiency diet for some time and when all were losing weight, half the number had 25% of "dung" seeds added to their diet. Immediately they resumed normal growth. When 25% of the "artificial" seeds were added, the condition of the experimental animals grew worse, exhibiting typical symptoms of vitamin B deficiency. They recovered when given "dung" seeds.

Analysis has shown that there is a considerable quantity of vitamin B in pigs' dung.

It would seem that a plant may absorb vitamin B from the land, and that the vitamin B content of any food may be dependent upon the amount of this vitamin in the land. Possibly the view that vitamin B is manufactured entirely in the plant and stored in the embryo is incorrect.

This experiment is not conclusive, but it is highly suggestive. At least the presumption is now against artificials, and more field experiments should be conducted at once.

Chemical analysis should be excluded. Analysis may reveal no significant difference, but if humans and animals thrive on one food and ail on another, identity of chemical analysis is clearly irrelevant.

An examination of conscience by our Research Institutes and Chemists is clearly overdue.

So easy still it proves in factious times
With public zeal to cancel private crimes.

—Dryden.

* See *The Land Mine*, Ladyday, 1942.

† See Mr. Broadbent's article on page 12.

OUR NEIGHBOURS' LANDMARKS

Major Resolutions of the Convention of the National Catholic Rural Movement of Australia

THIS Convention, representing the N.C.R.M. in every State of the Commonwealth, pledges its loyalty to the Government of the Commonwealth in the present grave crisis confronting our people.

The National Catholic Rural Movement, having surveyed the present position of Australian agriculture, the ground which has been gained in the two years which have elapsed since its foundation, and the necessity of rural reconstruction, considers that it will perform its highest duty to the Church and to Australia by strengthening the bonds of its own organisation and by calling for a continued increase in the number of Rural Groups (men and women), the living cells on which the strength of the Movement depends.

The National Catholic Rural Movement re-emphasises the directions which were given to all sections of the Movement by the last National Convention. It enjoins upon them their urgent responsibility to establish Young Farmers' Clubs and all forms of co-operation, including Credit Unions and regular district Field Days and General Meetings in the coming year. It records its opinion that the work of Rural Groups receives invaluable aid from annual Diocesan Conventions.

That the Movement embark on Co-operation of all kinds, including Credit Unions, Co-operative Purchasing and a plan of Co-operative Insurance to be formulated by the National Executive.

The National Catholic Rural Movement (realising that its programme for the restoration of the land is grievously handicapped by the tremendous burden of indebtedness which weighs so heavily on the shoulders of the farmers of Australia) launches its National Campaign for the solution of the problem of Rural Debt and calls for the wholehearted participation of all its sections and welcomes the collaboration of all rural organisations prepared to lend their assistance to the accomplishment of the Movement's programme.

The National Catholic Rural Movement, confident that the future of the Australian people depends upon a sound policy of rural settlement based on the foundations of the independent farm, calls upon all its sections to play their full part in the National Campaign of Land Settlement, so that the Movement may not only play a practical role in achieving the ideals for which it stands, but that it may provide for the Government of the Commonwealth a practical model on which the land settlement plans of the post-war period may be based.

As war has emphasised the need for decentralisation of industry, we ask that the Government, in dealing with problems of post-war reconstruction, should act upon the scheme of Homestead Farming submitted to it last year by the N.C.R.M.

That the Movement pledges itself to care for the interests of all members called up for military service and instructs its groups to arrange, where possible, to care for the stock and other property of farmers called up for service.

The National Catholic Rural Movement, in the full realisation of the fact that we seek nothing less than the achievement of the Christian revolution and that basically the problem of the land is a spiritual problem, re-emphasises the necessity for the complete spiritual formation of its members to fill them with the passion for the apostolate of the land, and to fulfilment of these objectives, in perfect concordance with our Holy Mother the Church, it pledges its allegiance to the Bishops of Australia.

—From "Rural Life," 21st Feb., 1942

Great is your Faith! I weakly think your teaching is too sane for a world that grows madder every day. (Last week, in this country parish, I had eggs from Uruguay and milk from Minnesota!)—A country priest.