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By M. MACLEAN.

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AGRICULTURAL.

From the Transactions of the N. Y. Agricultural Society.

ENGLISH AGRICULTURE—A GLANCE AT ITS PROGRESS AND PROSPECTS.

By John Hannam, North Deighton, Wetherby, Yorkshire, England.—(Concluded.)

And the general results of the same agency throughout England are, that wheat, instead of being a luxury confined to the rich, is now the staff of the poor man's strength. The quaking morass and the arid moor wave with the golden grain, and the acre which formerly gave back four times the seed, now returns it from eight to ten fold. Instead, too, of winter being a season of starvation to the cattle, when existence was all that could be hoped for, it is now essentially the season for fat and plenty; for, it is now essentially the season for fat and plenty; for the turnip cultivation has given the grazier the power of increasing the quantity, the skill of the breeder has equally increased the quality of his stock. This will be seen from the estimated weight of cattle and sheep at Smithfield market, at three different periods, by Davenant, McCulloch, and Youatt.

1810, Davenant estimates cattle at 26 st. 6 lbs. Sheep and lambs, 2 st. each.

1830, McCulloch do do 39 st. 4 lbs. do 3 st. 8 lbs.

1840, Youatt do do 46 st. 12 lbs. do 6 st. 6 lbs.

But all these may be summed up in one grand national result, that while we have waxed in name and in numbers, we have increased still faster in wealth and in the means of life.

Such, then, is a brief glance at the progress of English agriculture. Trivial as has been the record which we have been able to give of it, sufficient of both cause and effect has been developed, in the history of the past, to make our prophecy for the future a golden one. Such prospects, we are inclined to believe, are not merely because it is natural to look through the past to the prospective, and it is natural also for the object to assume a tinge from the medium through which it is viewed, but because it is an axiom that like causes produce like effects; so the means which have done so much for agriculture, being continued in operation, it is fair to presume will yet do more. And that the same agency will continue to operate, we may the more safely judge, because the nearer we look to the present, the more we see its effects. Thus we know that since the commencement of the present century, our produce has increased faster than our population. Between 1800 and 1820, this is evident, but it is more so from 1820 to the present time. Thus, even Mr. McCulloch says, "The price of wheat in England, at an average of the ten years ending with 1820, was no less than 83s. 6d. per quarter; its average price has since, as we have just seen, been reduced to 56s. 11d. per quarter; and yet, notwithstanding this tremendous fall, a most extraordinary improvement has taken place in agriculture since 1820, so much so, that we now provide for an additional population not only without any increase, but with a very considerable diminution of importation."

If we look, however, from 1830 to 1840, we still see more clearly the operation of the spirit of progression; and in the individual and united efforts of the agriculturists, in fostering every germ of improvement, at this present moment, we have a still surer evidence that it is not yet operative. If we know, then, that the wheel of improvement has had an impetus, and that impetus has kept increasing up to the present time, may we not conclude that it will not yet stop?

But there is another consideration which induces us to picture bright prospects for agriculture. The progress which has been lately made has not been a progress or extension of the practice merely, but an extension of the knowledge of the science of agriculture; for if we look to the 20 years preceding 1820, we shall find that 1677 enclosure bills were passed, and that 3,069,910 acres of land were brought into cultivation, while in the ten years after 1820 only 156 enclosure

In 1837, the manor farm at Hawstead, (Suffolk) produced on 66 acres only 532 bushels of wheat, or not quite 8½ bushels per acre. The average of England is now 24 bushels per acre. According to the same authority, (Cullum's Hawstead,) 26 acres of barley returned 40 qrs 4 bushels.

sure bills were passed, and 340,350 acres reclaimed; and yet it is a remarkable fact that the necessities of life were more plentiful in the latter period than in the former.

The advance, therefore, that has been made is an advance that cannot be forgotten. It is an achievement of mind over the mysteries of matter; and now, that the fruit of the conquest is tasted, it will incite to other and more extensive exploits.

But while the past performances and present principles of agriculture entitle us to hold out such prospects, and to anticipate, with a hope amounting to conviction, that they will be gloriously realized, we must not forget that the brightest object has a shadow. So, it is our duty to notice that even now a cloud hangs about the horizon, which, by threatening the glory of the day, throws a partial gloom over the brightness of the morning of these prospects. Thus, with a full knowledge of what has been done, and what may yet be done, if he be permitted to use the same means, the English farmer, at the present time repressed in his exertions by a fear which is not without some foundation. The immense efforts made by a certain class to deprive him of the protection, on the faith of which he has buried his capital in the improvement of the soil, is this foundation. It is not our object to discuss the merits, or the demerits of the free trade theory; so far, however, as it interferes with the prospects of agriculture, as faithful chroniclers, we must allude to it. And that it should in some degree mar these prospects is not strange, when it is considered that the declared object of the theory is to reduce the price of the English farmer's products to a level with those of the continent, and the declared (vide Lord John Russell's speech) that two or three millions of acres of land must go out of cultivation; and according to Lord Spencer, that even the good land would go out of corn cultivation, and be converted into pasturage.

Knowing, then, these designs, knowing too, that in his present situation in society, with heavily taxed soils, and with dear labor, he cannot compete with the produce of the untaxed soil and cheap labor of the continent; and that the land upon which he has invested the most capital in improvements or in tillage, must suffer first, because the interest of this capital has to be repaid by the increased crop, and because the management of such soils are the most expensive (as natural deficiencies cannot be supplied artificially without expense.) Knowing, we say, this, is it possible for him, at the present time not to feel misgivings, to hesitate, and often to finally relinquish those improvements which, were he sure of reaping a fair return for his capital, he would undertake?

Whether or not it be proper national policy to experiment with such a great important interest, and to produce so much certain evil for an uncertain good; whether or not it be justice to unroof one house to repair another; and whether or not Mr. Van Buren's opinion, that "nothing can compensate a nation for a dependence upon others for the bread they eat," be a fallacious one, I leave. Thus much, however, we are compelled to say, that the very agitation of the question, and the possibility of a measure being passed by the Legislature which would reduce the farmer's produce to a rate lower than he can afford, has a tendency to mar, in some degree, the present prospects of English agriculture, and to check that spirit of improvement that has already secured to England, along with its fast increasing population, a still faster increasing production of the necessaries of life; and this attained, it is said, that population is the measure of a nation's prosperity; without it the index of its ruin.

This, then, is the cloud which, by threatening the future condition of agriculture, throws a partial gloom over its present prospects. We say a partial gloom, because we have every assurance that it will soon pass away. The reasons adduced at the commencement of that portion of our subject, incline us to believe that bright prospects have yet to be realized; and a knowledge of the position which the friends of agriculture hold in the country, the exertions which they have made to promote its improvement, and their knowledge of its importance as a national interest, convinces us that this cloud will not be permitted to destroy them. Had this "heavy blow and great discouragement been contemplated before English agriculture had assumed its present standing, as a science, it might, perhaps, have been carried into effect. It never can now. Ignorance and apathy are no longer the characteristics of the guardians of the soil. The lamps of science shed their light over the once dreary waste, and in it the statesman sows the seeds of national independence and prosperity, and the philosopher finds food for the mind; and it will not be made the subject of an experiment. Never will such a great interest be risked for the sake of trying a novel theory.

This then assumed, what a field opens to our view. By developing the same spirit of progress which actuates modern science, agriculture has become identified in principle, and consequently equally identified in progress with it. Moved, then, by the spirit, and directed by the pioneers

of science, who can point out an end to its progress or say, "thus far" to its prospects? Before the philosophic mind, whatever may be its favorite sphere of action, there is ample food. In animal and vegetable physiology, in the formation, classification, constitution, and fertilization of soils, and in the elucidation of, and the supplying the wants of vegetation, much has already been accomplished; but our best guarantee that much will yet be done is the fact that much wants doing.

For instance, we know the structure and peculiarities of vegetables, the chemical constitution and mechanical process of vegetation; but we are ignorant of the elements of vitality. We know that certain soils are more fertile than others; we can trace the constituent elements of each, and discover external or mechanical causes influencing the fertility, but of the essential principle of nutrition—the elixir vitæ—or of the combination best adapted to the wants of the vegetable life, we can scarcely be said to know the least. We may apply this ignorance to a single soil, how much, then, has to be accomplished before it be removed in toto.

We know something of the uses of animal and vegetable manures; but how can we know their proper economy till the mystery of vegetation is more clearly developed, and the constituents and conditions best adapted to special cases ascertained. Much, in fact, has yet to be developed before the essential elements of the soil; the operation of each constituent, the operation of various manures, and the effects, mechanical and chemical produced by certain crops, are clear to us; yet these must be known before agriculture reaches its fair and legitimate standing as a science, and before we can produce the conditions most essential to fertility.

To the practicalist are duties no less urgent. It is for him to banish from his vocabulary the word best; to think nothing good because it is old, and nothing worthless because it is new, but to lend an observing eye to its proof, and to endeavor to promulgate the truth that practical observation or scientific knowledge may have taught him. For much that is known has yet to be applied to practice. Thus geology has given us a key to the formation, nature and properties of soils, and their bases; and affords us, as is evidenced by Sir J. V. Johnson, (Jour. of the R. Agr. Soc. of England, vol. 1, p. 273.) such practical results, as, "1. The knowledge of applying lime; 2. Laying down fields to advantage to grass, and when and how to plant wheat; 3. What trees to plant in each stratum."

Chemical analysis, too, supplies us with the relative proportions of the constituents of the soil, and shows us what element or earth it is deficient in. Geology again teaches us where that element is found; yet how seldom do we find this method of improving the soil resorted to, although Davy long since made known that "the best natural soils are those of which the materials have been derived from different strata, which have been minutely divided by air and water, and are intimately blended together; and in improving soils artificially, the farmer cannot do better than imitate the process of nature. The materials necessary for the purpose are seldom far distant; coarse sand is often found immediately on chalk, and beds of sand and gravel are commonly below clay. The labor of improving the texture is repaid by a great permanent advantage; and capital laid out in this way secures for ever the productiveness, and consequently the value of the land." (Lecture, p. 204.) Although, too, we are aware, from the writings of agricultural chemists, of the high value of liquid manure—that, in fact, 1 lb. of urine will produce one lb. of wheat, how seldom do we see it preserved at all. A writer in the Prize Essays of the Highland Agricultural Society of Scotland, (Quarterly Journal of Agr. for this month, Dec. 1841.) calculates that as much is lost as would, if applied, have an effect equal to the whole of the lime, rape dust and bones which are commonly used.

By the amateur agriculturist, and in this class we include statesmen and every one who is a farmer by choice, much is required. By him, an example should be set, in the adoption of all improvements, and the support of the means which are publicly proposed for the encouragement of agriculture, and every facility afforded to the tenant to follow in his wake. Adopting this principle, there is one change in his power to make which will tend to stimulate the improvement more than any other. This is, a change from the present tenant-at-will system of letting farms, to the sort-lease plan, with a corn rent, "depending on the marketable price of the produce." The advantages resulting from this would be, 1st. A tenant with capital equal to his farm; for he would never think of taking it, as is often the case, now, till he met with a better, and after robbing it, or it robbing him, for a few years, leave it for another to experiment upon; but, as his engagement would be one of some duration, he would consider well before he bargained, and after, he would endeavor to make the best of it.

2d. As the only way to make the best of it would be by good management, he would lay his capital out freely, being sure of his tenure, and consequently of

reaping the benefit of his improvements. And this is not the case under the year to year plan. A landlord may be ever so liberal, and the tenant may have great confidence in him; still he is human and may err, he is a man and will die; then who can speak as to the consequences? The prudent man, therefore, is content to make such reforms in his farm as will be of immediate benefit, and to use his capital in a manner that it is always at his command. This is the general rule—of course there are exceptions.

3d. He would be partially preserved from the pressure of the times, as his rent would settle with the price of the grain.

4th. If from the above security to tenure springs a liberal use of capital, and from the security against bad times a more equitable condition to the farmer, the general result must be an equal improvement in the condition of agriculture itself.

All these heads might be illustrated by many practical cases. The agriculture of Scotland, where the system is largely employed; has made a most wonderful progress in the face of every disadvantage of soil, climate and locality. And we can have no better proof of the value of this system, than that afforded by the evidence of the Scottish farmers, given before a committee of the House of Commons in 1837. From this evidence we are told that the great improvement made in the agriculture of the Lothians, during late years, is owing to the adoption of the system of leasing, upon a rent regulated by the price of corn; that the improvements made by them, individually, on their farms, would not have been made, had they not had such leases; that in the low seasons of 1834-35, &c. they were preserved from much injury by the reduction of their rents, which fell immediately with the price of corn. The evidence of one of our first agriculturists, Mr. John Eilman, corroborates these facts. And wherever the system has been fairly tried in England, its results are equally favorable to the improvement of the soil.

Several English landlords have already adopted a measure so fraught with benefit to the whole community, and which tends to increase the production, and consequently to decrease the price of food. The Earl of Leicester's estates are already a striking example of such results from such an agency.

These then are a few, out of the many steps which have to be taken in the march of improvement. And though some of them may be encompassed by difficulties, which it appears impossible to overcome; yet, as we have said, so far from being dark spots in the prospects of agriculture, our best guarantee of their being realized. They are, in fact, the golden apples which will tempt the inquiring mind, further and further forward in the race of research; they are incentives to that observation and spirit of investigation to which agriculture owes so much, and they must be useful. Without inventive man is powerless, with it he may perform wonders; but he must do much. For, if the mind once seeks, it must find something; and it may be something of more value than that which was originally sought for. Thus, to the vain search after the philosopher's stone, we owe the discovery of many chemical truths; and, to the equally futile attempts at perpetual motion, we are indebted for much that is ingenious and useful in mechanism.

"An apple's fall, thus led the searching eye,
To the deep mine of rich discovery."

But there is another inlet, through which I see a prospect of some agricultural knowledge, shining upon England. The Chinese war, will, I hope, open this door. How, will not require much explanation. The present war is not an opium war. As the Hon. John Quincy Adams proves, (in his admirable lecture on that part of the law of nations which applies to the existing war between Great Britain and China.—(Boston Notion, Dec.—4th.)

The cause of the war is the Kō-ton! the arrogant and insupportable pretensions of China, that she will hold commercial intercourse with the rest of mankind, not upon terms of equal reciprocity, but upon the insulting and degrading forms of relation between lord and vassal. England will bear this no longer; the final instructions to the plenipotentiary, demands that future intercourse shall be carried on upon terms of equality, and according to the forms which regulate the commerce of other nations; impositions and restrictions upon certain articles, being, of course at the option of each party. That England will compel the abandonment of what Mr. Adams terms "an enormous outrage upon the rights of human nature, and the first principles of the rights of nations," is not a question of ability, (I think) but of will. And that she has the will her present preparations show. Moreover, she must now have a trade upon fair terms, or no trade; as she has gone so far that the Chinese, if not forced, will not trade at all. That they will be compelled to bow to the laws of civilized nations, there is no doubt. England will have the credit, and all the world the benefit, of having taught a lesson of humility to, and of having laid the foundation of the future civilization of a people whose vanity and ignorance has hitherto induced them to consider China, the very heart of the universe.

This accomplished, and agriculture must benefit from it; for though they are so exclusive and ignorant, universally speaking, every author allows that their practical agriculture is the most perfect in the world. Let, then, an intercourse upon equal terms, be fairly established with such a people, and there will soon be a barter of knowledge, as well as of goods. By having made every art, an experimental one, a thousand years ago, without the aid of scientific principles, China has made

many brilliant discoveries. It is, therefore, fair to presume, that if we carry principles, she will give us in return, some facts, and amongst the rest some agricultural ones.

Such, then, is a brief glance at the progress of English agriculture, and at the prospects based upon it. That such a foundation warrants such a superstructure, we have fully shown. And our view of it, depends upon no limited examination or partial deductions. The movement that has been made, has been a movement of mind, and with the principles of philosophy as their lamp, its professors and practicalists have become students in the storehouse of nature. Henceforward, the prospects of agriculture are the prospects of science; and its future progress, will be the progress of universal knowledge!

Although writing *currento calamo*, there is a question which I feel inclined to ask, and answer, before I close this paper. It is, what is the American farmer to learn from a consideration of the progress and prospects of English agriculture?

It was the saying of an ancient author, that there never was a book from which something good, might not be derived, so, in the following manner, this imperfect sketch may not be unuseful. As the history of one man is the prophecy of another, as his life is the record of certain principles of conduct tested by experience, and as that record shows what should be adopted, and what rejected, if we would pursue, the path of our predecessor; so a glance at the progress, and prospective condition of English agriculture affords a lesson of instruction to the American agriculturist. In that sketch, he sees cause and effect developed; if, therefore, there be aught therein, which is desirable, the cultivation of the same means, will produce the same result; for science is universal; she regards not the ties of kindred or nationality, nor confines her gifts to the "old" or "new world," provided her demands be as equally universal and unalterable, be satisfied. If, then, the achievements of English agriculture be worth aiming at, the path which has been pursued, is worthy of being pursued again; or, in plainer words, the present improved condition of the science in England, will incite the American farmer to employ the same means to attain the same end; and this is the more likely, because American agriculture has advantages which are peculiar to itself. Thus, in the first place, it is not an old practice, and there is consequently, no fixed spirit of imitation or custom to remove, before advancement can be made.

2d. As this is the case, and as many of her farmers are strangers to the country, and to prevailing customs, they are compelled to make it a practice of observation; to the adoption of which, at an early era, China owes her present agricultural excellence; and to her obedience, though late, to the same principle, England as we have shown, is indebted for "the progress and prospects" of her agriculture.

3d. Having, in many cases broken from family and fatherland associations, these farmers, must possess some energy of mind, a qualification which will, at least, teach them "to know themselves," the first step to knowledge and induce them to adopt every means of improvement which is in their power.

4th. "The American farmer is generally the freeholder or owner of the farm he cultivates. The improvements he makes, are, therefore, his own, without doubt, and his best policy is to increase the value of his property.

That these influences are in operation at the present moment, this volume of "transactions," is sufficient evidence. It is impossible, therefore, that a glance at English experience can be uninteresting or useless. J. H.

North Deighton, Wetherby, Yorkshire, Dec. 31, 1841.

From the South-Western Farmer. Utica, 10th July, 1842.

Messrs Editors:—I have read with much pleasure, on the pages of your valuable paper, the communication signed "Farmer," on the subject of curing cotton; and in reply to a previous article of my own. It is a subject which has hitherto caused but little enquiry in Hinds, altho' of equal or greater importance than the culture of the article, or any other calling the attention of the cotton planter. I beg leave to state that there is not so great a difference in our plan as "Farmer" supposes, particularly in the picking and drying process. He says until the dew is "dried cut;" I until the "seed crack." Now, if the dew be "dried out" of the ripe cotton, the seed will undoubtedly be hard. There is however, particularly in the early part of the season, a good deal of green cotton that requires drying, although but little or no dew will have fallen on it, which would otherwise become blue in colour, altho' "Farmer" should move or scatter it about in his house once a day for two months. By the "dingy red" I had reference to the colour given to cotton by the plan pursued by a great majority of our farmers, viz: lousing it without any sunning whatever. It then "heats," and I have absolutely seen it smoke.

"Farmer" is certainly well aware that cotton, altho' as dry as sun could dry it, will, when thrown into a bulk, go through a sweat. I let it sweat, uninterrupted, when, not only the dew is dried out of the fibre, but the sap out of the green seed. The vegetable oil is then pure and imparts to the fibre "softness, toughness and pliancy," and a better color than a steam of dew, sap and oil combined.

The reason of its being "impossible to make fine cotton of that suffered to remain in the field for a length of time" is, that it injures the body and strength of the fibre, which "Farmer" is willing to allow. It also acquires a dingy blue colour—imparted perhaps by the drippings of dew off the leaves impregnated by the colouring matter of the same; by the boll of that portion adhering thereto, and by the particles of dried leaf falling on it, which all the heating that "Farmer" could give it would not change.

The case of Messrs M. and P. does not in my opinion settle the question in dispute. M. might have sold his cotton for nine cents, P. for ten—while Messrs. A. B. and C., farmers pursuing my plan, have been on the same day selling theirs for fifteen.

Now, Messrs. Editors, I was also raised where a considerable attention was paid to the quality of cotton. I have also "picked, ginned, helped press," drove the horse, sold the cotton, and, "infandum Regina" spent the money. Although I may not be so old a planter as "Farmer," nor live on so long a creek, yet I will bet my bob-tail pony against his sorrel horse, that, if I should not out-write him, I will next fall out-sell him in the New Orleans market.

In conclusion, I will remark that Mr. Blalock, a gentleman formerly of the same country with myself, and who, by the by, is well informed on those things, informs me that I have neglected to mention, in my last communication, a very important matter in relation to the construction of the Gin Stands used by my father and many others, whose cotton commanded the highest prices, viz: that the rag cylinder had a diameter of twelve or thirteen inches and the brush full twenty-eight, being much greater than those a good deal in use throughout this country. He thinks a cylinder and brush of that size will make better cotton than the smaller. Messrs Broomfield & Woolly of Utica, extensive Manufacturers of Gin Stands, think differently, yet are anxious to have the experiment tried. Certainly, the next thing of importance to the curing of cotton is the ginning. A few dollars spent in repairing the Gin will be more than doubly replaced in the difference in the sale of the cotton. Suppose the difference in the sale of the article would only be a cent, there would then be a gain to him who made fifty bales of two hundred dollars; and only think of four cents, a difference which I am convinced would be made by the alteration of some Gins I have seen, and there then would be a gain of one thousand dollars, save perhaps fifty, seventy-five or even a hundred that he would pay the Ginwright.

R. NUTT.

CORNSTALK SUGAR.

We understand that one of our subscribers living beyond the Mississippi springs has a fine crop of fifteen acres corn, sown broadcast, with which he intends to make the experiment of supplying his plantation with sugar and molasses. We wish him the utmost success, and hope he will let us hear from him. If Mr. Ellsworth and Mr. Webb, in their articles upon this subject, are correct, of which we have no reason to doubt, the time is not far distant when the sugar plantations of Louisiana may be turned to some other business—for every family in the U. States will be able to manufacture its own sugar and molasses.

From the Connecticut Farmer's Gazette.

A CHAPTER ON COMPOSTS.

Mr. Storer.—Notwithstanding the great value in which this kind of manure is held by most of the farmers, yet it is believed by us that there are yet many farmers who do not make a single shovelful of this Compost manure in a year.—To all such we would say, make a beginning this season, and my word for it you will never regret it, nor the time spent in this business, which will add and increase the fertility of your lands. The business of Compost making is so well understood by most of the farmers, that it needs no particular description. It is made by mixing together rich sods, wash of the roads, swamps, mud and muck, stable manure, green weeds, and all kinds of vegetable matter, with a mixture of lime, ashes, or plaster, as the case may be.

We have for two seasons past made about forty loads single, of this valuable manure, and we find it good for every kind of crop, particularly for a top dressing for corn and potatoes, meadows, and the like. Not having sufficient room in our barn yard for making the Compost heap, we make it by the road-side, having a good wall for the back side of the heap. We then raise it up to the top of the wall, and then, after we have made it of sufficient width, and length, we turf it up at the side and the ends. It happens that we have not a swamp upon our farm, so that in making our compost we do not have swamp mud or muck. However, as a substitute for this, we go into the woods and get leaves, and scrape off one or two inches off the top of the ground, which together with the half decayed vegetable matter, forms some of the best materials for mixing with the compost heap, that we have ever tried. Lime or ashes should be used in making compost, as they help to decompose the vegetable matter, and also to make the whole mass thoroughly decomposed. Some experiments have been made, with both ashes and lime, for a test; and the result was in favor of ashes, as being the best. We intend to try ashes this season in making our compost.—There are several kinds of liquids,