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Will (of) Biddle's Corp.!

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ADDRESS

Chs. B DELIVERED BEFORE THE *Penman*

Philadelphia Society for promoting Agriculture,

AT ITS ANNUAL MEETING,

ON THE

FIFTEENTH OF JANUARY, 1822.

BY

NICHOLAS BIDDLE, ESQ.

PRINTED BY ORDER OF THE SOCIETY.

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and the University of Illinois

At a meeting of the "Philadelphia Society for promoting Agriculture," held 1st mo. 15th, 1822:

The annual address was delivered by Nicholas Biddle, Esquire:

Whereupon, *Resolved unanimously*, That the thanks of the Society be presented to Nicholas Biddle, Esquire, for his eloquent oration this day pronounced, and that he be requested to furnish a copy for publication.

From the Minutes.

ROBERT'S VAUX, *Secretary*.

ADDRESS.

Mr. President, and Gentlemen of the Agricultural Society :

I congratulate you on the return of this anniversary of our Society. I rejoice with you that another year has been added to its long career of usefulness—and that, as the occupations of this day prove, we are prepared to resume our labours with undiminished zeal and increased resources. It is now nearly forty years, since a few sagacious and distinguished gentlemen, who had honourably served their country during the war, wisely judging that its prosperity in peace eminently depended on its agriculture, laid the foundation of this institution, the first, and for a long time, the only Agricultural Society in America. From that period to the present day, its members have been unwearied in cherishing the best interests of the nation. An extensive correspondence with the enlightened farmers of Europe—the introduction of the latest writings—of the most improved implements—of new varieties of plants—and the best breeds of animals, gave them advantages which they have imparted to their countrymen with a liberality worthy of all praise.

From these efforts they have reaped an abundant harvest. They may find it in the distinction which their labours have acquired among the agriculturists of Europe—they may find it in the homage which every section of the union is offering to the Society, by following its example—they may find it

under a far more delightful form, in the satisfaction of having contributed to the advancement of their country, which has presented a scene of agricultural prosperity, such as was never before given to the hopes of men. These are natural and gratifying reflections. It will, however, better accord with the unassuming and practical character of the Society, if instead of indulging in personal feelings, we endeavour to make even this meeting not wholly unprofitable, by an attempt, necessarily hasty and imperfect, to compare the situation of the best cultivated parts of Europe with our own—to observe the means of improvement which the examination presents—and to suggest such topics as may recommend the pursuit of agriculture in Pennsylvania.

In this inquiry our curiosity is naturally first attracted towards those distinguished nations in the south of Europe, who after filling the world with their fame, have passed away, bequeathing to posterity some of the noblest works of genius, and the purest examples of human character. Undoubtedly in all that remains of them, we may trace the evidences of strong attachment to rural life, and an exquisite perception of its enjoyments. Undoubtedly the cultivators of the soil were among the most distinguished citizens; and the pursuits of agriculture have rarely been embellished by so much eloquence, or sung with so much enthusiasm, as by the great writers of antiquity. But this intellectual enjoyment of the country may well consist with an imperfect condition of husbandry. The natural feelings belong to all times, but science is necessarily progressive; nor does it detract in any degree from the merits of the farmers of ancient days, that in an era of comparative infancy, in the physical sciences, they were not advanced beyond the knowledge of their age. I incline to think then that our natural reverence for ancient

nations, has exaggerated the value of their agriculture, and that a deliberate examination of their history and their writings, is calculated to lower the general estimate of the scientific management of their lands.

Thus the most distinguished people of antiquity, the Athenians, were extremely attached to the country life; yet their agriculture must have been imperfect. Attica is a small, ridgy, poor district of land, about one-third as large as the neighbouring county of Bucks, with a very light calcareous soil, so dry, that it would not yield pasture to support the cavalry employed in its defence, and so unproductive, that it did not afford grain enough for the subsistence of the farmers themselves. Its supplies of grain were annually imported, and its chief produce then was, as it is now, the honey from its hills, and the olive which delights in its thin dry soil.

Their great rivals occupied a larger, and rather a better country, but their habits and their institutions estranged them totally from the cultivation of it. The territory of Sparta was divided into small lots, each yielding about 70 bushels of grain, with a proportion of wine and oil; and these were cultivated, not by the owners themselves, who disdained the pacific labours of husbandry, but by a class of people, half slaves and half tenants, who gave a fixed proportion of the produce to the landlords. Such a state of things must be inauspicious to agriculture; the frugality of the owner being satisfied by a very moderate production, and the depressed condition of the tenant, rarely giving him the means or the wish of improving his farm. The rest of the Greek states seem to have supplied their own consumption: but the observation of one of their best farmers, Xenophon, that agriculture is the easiest of all the arts, and readily acquired by a little attention to the execution, reveals better than any collection

of facts, the true state of Greek husbandry; particularly as it is confirmed by the remains of all the georgical writers of Greece, which have reached us.

We have ampler information with regard to the ancient state of Italy. The institutions and the manners of the early Romans must have been singularly favourable to agriculture. The extreme subdivision of the soil, cultivated by the proprietor himself, seems to present the strongest incentive of necessity and interest to good husbandry. Thus the first allotment to each individual was two acres.* How long this limitation continued, is unknown; but, on the establishment of the republic, 245 years afterwards, the limit was fixed at seven acres.† This, like all unnatural arrangements which restrict human industry, gave way before the progress of wealth and inequality; for, in about a century and a half, a law prohibited the possession by any individual of more than five hundred. But the change of manners, the infatuation of power, above all the introduction of slavery, rendered it difficult to enforce these restraints, and the career of this inequality did not stop till, as is confessed by Pliny, the extensive estates had destroyed Rome and the provinces, and one half of Africa was owned by six Roman families whom Nero destroyed. In the progress of these changes, the best remembrances of the Roman power, as well as the highest advancement of its agriculture, are connected with the period immediately succeeding the formation of the republic, when the allotment of seven acres continued to be generally maintained, and it was deemed wrong in a senator to possess more than fifty. It was during this period that the farm of Cincinnatus consisted of four

* About one acre and a quarter American measure.

† Four and one-third acres American measure.

acres, the other three having been lost by his becoming security for a friend. It was then that Curius, on his return from a successful campaign, refused from the people a grant of fifty acres, declaring, that he was a bad citizen who could not be contented with the old allowance of seven. We cannot doubt that this subdivision of the soil required good cultivation to satisfy the wants even of the most frugal. But in the days which are cited as the most distinguished in her history, when Rome spread over Italy and almost all the ancient world—the substitution of slaves for free labourers had given a new character to agriculture. In that period almost all Italy was cultivated by slaves—not like that unhappy class of persons in our time, whose misfortunes are alleviated by tenderness, and whose increasing numbers are at once the evidence and the reward of humanity—but by male slaves brought from the provinces, whose waste, as they possessed no families, was constantly recruited from the remote parts of the empire. Their numbers must have rendered them formidable, for they seem to have worked, like modern galley slaves, in chains;—they must have been treated with great harshness, since, among other proofs of it, Cato recommends, as a matter of course, to every good economist to sell off his old waggons, and tools, and cattle, and his old and sickly slaves—and their labour could not have been very efficient, as the allowance for a grain farm of 125 American acres, a great part of which was of course in fallow, was eight men.

Accordingly, there are two facts decisive as to the general productiveness of land. The first is, that as the almost universal system of farming was by alternate crops and fallows, nearly one half the soil must have been always unemployed. The second is, that the average produce of Italy, in the time

of Columella, was only four times the seed—two circumstances which do not now concur in any well cultivated country.

Nor do the agricultural writers inspire more favourable opinions. The works of Cato, of Varro, of Columella, of Virgil, of Palladius, and of the writers whose fragments are contained in the collection ascribed to Constantine, present, it is true, the most curious details of ancient husbandry. There is much excellent sense, much admirable practice, many processes which might furnish suggestions for modern improvement; but farmers who resort to them for instruction, will rise I think from the study, with an impression, that their agriculture was governed by practices rather than principles; and that there is wanting that knowledge of the processes of vegetation, the composition of soils, and the rotation of crops, which have given to modern farming its dignity and value. Even these useful practices too, are often disfigured by a fantastical mixture of superstition and empiricism. When, for instance, we read in Cato a minute description of an incantation, by which the dislocated bones of a farmer may be charmed back into their places—when Columella directs us to save our vines from mice, by trimming them at night during a full moon—when Sotion declares that an effectual mode of extirpating broom-rape from the fields, is to draw on five shells the picture of Hercules strangling a lion, and bury one in the middle and one in each corner of the field—when Democritus will ensure us a thriving garden, if we bury an ass's head in the middle of it—and when no less than five of the most sober writers gravely describe the remedy by which the broom-rape may be driven from all fields, and caterpillars banished instantly from gardens, which was to make a barefooted, half-clad woman, with her hair dishevelled, walk three times round it—when these, and

many similar directions are given by the great masters of the science, they must be received as evidences of its extreme imperfection. Indeed, no one who will compare the rude plough of the Romans with the admirable instruments of France and England, or will contrast the writings of Columella and Sir John Sinclair, can fail to acknowledge how much science and the mechanic arts have contributed to agriculture.

We may derive more instruction from their descendants. So naturally do our recollections dwell rather on the past than the present Italy—so much more are we attracted by its ruins than by its prosperity, that we have not sufficiently admired its agriculture. Yet Italy is probably at this day the best cultivated country in Europe. It supports from its soil a population greater in proportion to its extent than any other; and such is its admirable system of culture, so triumphant its industry, that, though suffering from the worst of all evils, oppressive and profligate governments—although a great extent of country, not less than 200 miles long, and from 25 to 60 miles wide, is in a considerable degree lost to cultivation, by the malaria, which has depopulated the fairest part of the old Roman empire; still the absolute amount of its produce was never perhaps greater than at present. They have accomplished this, by substituting for the long fallows of antiquity a judicious rotation of crops, and by terracing the feet and sides of the mountains, so as to render them eminently productive. The minute division of the soil forms the peculiar feature of its agriculture. When the influence of Christianity had abolished slavery, the manumitted slaves, who were then the only labourers, became tenants, and have so continued to the present day. Five-sixths of its population are small farmers, working the land on shares of one-half or one-third. These cultivators of a few acres have

rendered their country so fertile, that from one end of Italy to the other—from the irrigated meadows of Lombardy to the volcanic regions of Naples, if we except some parts of the Pope's dominions—there is scarcely a single spot which does not produce the utmost which its situation and natural fertility admits. The eye rests with delight upon the magnificent prospects of Piedmont and the Milanese; on that busy scene of industry, which sustains a population of one person to every two acres—where three-fourths of its gross produce is disposable, and where the fields are constantly covered with a succession of varied and abundant harvests. The district near Vesuvius has a population of 5000 souls to the square league, a proportion unknown to any other part of Europe: while still further south, in Sorrento, their rotation of eight crops in five years, and one of them a cotton crop, is pronounced by a competent judge to be “the best managed and the most productive of any in the world.”

It is however rivalled, if it be not equalled, by many parts of Flanders; where from a soil more fertile than Italy, though in a climate less genial, they extract from their land by industry and the application of manures, a rapid succession of crops, probably not inferior to those of any other country. The details of Italian and Flemish husbandry—the Italian rotation of crops, and the Flemish management of cattle and manures—are worthy of attentive study by all in this country, who would improve in scientific farming. They would often suggest modes of culture, better adapted to our climate than the practices of England, which we are too prone to follow without making allowance for the essential difference between the seasons of the two countries.

The general cultivation of Great Britain is calculated to inspire a mingled feeling of admiration and surprise: of ad-

miration at what she has accomplished, and surprise at what she has neglected. She has many advantages: her exuberant capital, her commerce, her manufactures, furnishing to agriculture so large a body of domestic consumers, have enabled her to cover a large portion of her soil with a picturesque and beautiful cultivation, which no stranger can contemplate without satisfaction. Yet a nearer inquiry excites astonishment, that this very success has not induced a more enlarged and better cultivation.

There is an extraordinary difference in the calculations of British economical and statistical writers on that subject; but the safest estimates show, that a proportion of from one-third to nearly one-half of the surface of Great Britain is waste and almost unproductive. Of these waste lands, it is again estimated, that one-fourth or one-fifth might be enclosed and cultivated, and the rest employed for sheep or for planting timber. The consequence is, that she does not raise grain enough for her own consumption; the average importations of wheat and wheat flour, during the last twenty years, having been about four millions of bushels a year, amounting to nearly thirteen or fourteen days consumption. Whether it be desirable to resort to the waste lands to supply this deficiency, is a question of their domestic policy which it is for her alone to decide. But even a stranger may be allowed to perceive, that, without abstracting capital from other pursuits to reclaim waste lands, the deficiency of England might be readily supplied by the simpler process of a better husbandry on lands now under cultivation. "A very small portion," says one of her best authors, Dickson, writing in 1804, "a very small portion of the cultivated parts of the island has, even at this advanced period, been brought under a judicious

and well conducted system of husbandry. Immense tracts of land, of the more rich and fertile kinds, may be still met with in different parts of the kingdom, that are managed in very imperfect and disadvantageous methods of farming ;” and he adopts the calculation of Sir John Sinclair, that 30 millions of acres are either in a state of waste, or cultivated under a very defective system of husbandry. Even still later, in 1812 and 1816, we learn from the valuable writings of Dr. Rigby, that some of the very counties which Dickson considers as the most perfect, are still very deficient: that in Essex the wretched system of fleet ploughing and whole year fallows is still pertinaciously adhered to—that Sussex is behind almost all others, at least half a century—that in Cheshire the antiquated system of a century back still prevails—that Shropshire is subject to a very inefficient cultivation; and that in short “a great part of the kingdom is in a lamentable state of agricultural unproductiveness.” Some of these defects are the result of ignorance and prejudice. With all the splendid success of Mr. Coke, of Norfolk, in rendering his land nearly ten times as productive, he used the drill husbandry for sixteen years before any individual followed his example; and even now his improvements are supposed by himself to extend about one mile in a year. Other causes, however, are not wanting, and some that to us seem almost incredible. For instance, nearly one-half the arable land of England is held in common; its culture is therefore subject to restrictions either of custom or law, and the portion of each commoner is often so arranged, that he cannot cross-plough his land for fear of trespassing on his neighbour. These, it may be easily imagined, do not produce more than half the value which might be drawn from them, by enclosure and exclusive possession. Again, the fault which is constantly deplored

by her writers, and one that seems peculiarly strange where the economy of human labour is so well understood, is the superfluous expense of cultivation by the multitude of horses. It is at this day common in England, to see four, five, and six horses, following each other in single file, before a plough, in fields of a few acres, and in soils where two horses might easily accomplish the work; to see teams of four horses employed, where two would be quite sufficient; and this notwithstanding the successful introduction of the Scotch mode of ploughing, as in this country. The consequence is, that England and Scotland are estimated to contain 3,500,000 horses, consuming the value of fifty millions of dollars, and the produce of sixteen millions of acres, being nearly one-half the productive lands of the kingdom. The condition of a large proportion of the tenants too, is, in many respects, unfavourable. The soil of England is owned by about 40,000 persons, and a greater part of the leases are at will, or for a short term from five to nine years, the better policy of long leases not having yet become general. Lastly come the tithes and taxes; the tithes, which take from three-fourths of the occupiers of land in England one-tenth of the gross produce, even when the remainder may afford no remuneration for their labours—and the taxes, which, combined with the tithes, on an average amount to more than one-half of the rent.

However consoling these views may be to our own faults, it is more agreeable to dwell on the pleasing side of English farming, and to derive instruction rather from their success than their misfortunes. And truly there is something admirable in the generous and buoyant and elastic spirit with which the genius and industry of that country have upheld its agriculture, under a complication of burdens, such as never before pressed

on the soil of any country. By her peculiar condition—by the poor laws—the tithes—the taxes of every description, England was reduced to a condition which demanded every energy of the farmer, and tasked to the utmost every resource of capital and invention. On a moderate computation, an acre of the best farming land, in order to repay with profit the labours of cultivation, must yield about thirty or forty dollars: and accordingly it was made to produce that sum. By liberal investments of capital, by judicious and economical husbandry, they have extorted from a soil not naturally distinguished for fertility, and a climate inconstant and treacherous, an amount of produce which enabled the farmers of England and Scotland to pay a higher rent than is yielded by some of the finest soils of Italy. If indeed we were to select any district where skill and capital have been most successful against natural obstacles, I incline to think we should name the Lothians of Scotland.

That the example of these countries may not be lost to us, we should habitually compare them with our own. It is now about a century and a half, since the people of the United States have been principally occupied in reducing to cultivation their extensive forests. Their agriculture bears, of course, the impression of their circumstances. While land was cheap, and capital small and labour dear, it was more natural to reclaim new fields than to restore the old, and to diffuse over a wide surface of cheap land the greatest power of dear labour. The growth of cities—the creation of new classes of society—the increase of manufactures, have now concentrated our population, and by the formation of a permanent home market, are calculated to give a new character to our farming. In venturing upon that subject, it is fit to speak with entire freedom. The object of our society is our improvement. Instead, there-

fore, of dwelling upon the merits of our farming, which is in many particulars deserving of great commendation, I shall prefer the less agreeable office of indicating the means of its advancement, believing that the humblest exercise of patriotism is, to praise our country without striving to improve it.

The condition of the soil of Pennsylvania may be examined, first, in relation to its uncultivated land, and secondly, with regard to its husbandry.

According to the opinion of a very distinguished geologist, Mr. Maclure, Pennsylvania contains more good land than any Atlantic state in the union; that is, she possesses a greater extent of that formation—the secondary—which from its position, the course of its rivers, and the mineral deposits which belong to it, is best calculated to sustain a numerous population. These advantages, it must not be dissembled, have not attracted their due share of attention. I incline to think that the best portion of Pennsylvania, that which is destined to act hereafter the most distinguished part in our agriculture, has never yet felt the plough. It is indeed lamentable to see so much of this long-established state totally abandoned—to look at extensive tracts of rich country without a road or an inhabitant—to meet, almost in the heart of Pennsylvania, the Seneca Indians from New York, hunting through a wilderness of nearly a hundred miles in extent, with less interruption perhaps than they would have found two centuries ago. There are seventeen adjoining counties, north and west of the Susquehanna, containing an extent of more than 18,000 square miles, with a population of about six souls for every square mile. There are five adjoining counties, containing nearly 6,000 square miles, without one inhabitant to the square mile. There are three adjoining counties, more than 3,500 square miles in extent, with only one human being for every two and a half

square miles. I seem to be speaking of some desert on the Yellow Stone, not of a fine region within four days ride of Philadelphia, which was possessed in full sovereignty by Pennsylvania more than sixty years ago—an antiquity in this country—a period when the great empires of the west, Ohio, Kentucky, and Indiana, who will outnumber Pennsylvania in the next Congress, were not among the prophecies of men. There is no example among the old states of a wilderness like this. It has lost to the state half a million of inhabitants. It has condemned to barrenness a magnificent region, that should have been filled with wealth, with intelligence, and power. If we cast our eyes over the map of the union, we may discern in Virginia, a district of country to which the nation has three times resorted for its chief magistrate. A large proportion of the corresponding part of Pennsylvania is one unbroken wilderness, the habitual hunting ground of savages. In the cause of this calamity we may learn a great lesson, not merely of agricultural, but political wisdom. Something certainly must be ascribed to the unhappy controversy with Connecticut, which, nearly half a century of confusion, of concession, and of compromise, has but recently closed. But the greater part of the evil may be traced to bad legislation. If, when the state sold its vacant lands, they had been previously surveyed and marked, as those of the United States were, they would have been cheerfully bought and easily settled; but the unfortunate policy of selling the right to land, leaving the purchaser to find it, and the mistaken hope of peopling a country, by requiring paper conditions of settlement, instead of leaving it to grow with the natural course of enterprise—these have introduced a fatal spirit of speculation and of fraud, which thirty years have not yet completely repaired. Entire families were ruined by the

madness of these delusions. In the inextricable confusion of interfering claims, the same lands were again and again sold by fraud or ignorance, till the maps of some of our counties exhibit a mosaic of conflicting surveys, which no science except law can ever bring into harmony. Then came the reaction of disappointment. Men turned with disgust from a scene of so much suffering, and dreading a lawsuit on the threshold of every man's property, abandoned in despair the attempt to settle lands so surrounded with uncertainty and trouble. There are now in Philadelphia—there are perhaps now listening to me, many owners of thousands, of 10, 20, and 50 thousands of acres of land, which they have never seen, and of which they would scarcely know the existence, but from the periodical visit of the tax gatherer; lands which might be rendered magnificent possessions, surpassing now in extent, and hereafter in value, the most splendid estates in Europe. There are others who, deceived by exaggerated estimates—seduced by well painted drawings of streams that have never flowed, except in the eloquence of the deputy surveyor; of groves of white oaks, and beeches and maples luxuriating only upon the parchments of the land office, go on year after year, paying taxes for lands, undiscovered and undiscoverable, or which, if they really exist, may be again paid for by one, by two, by three, I have known as much as four other claimants, residing perhaps in an adjoining street. In the midst of these conflicts, there grows up on the soil, either an honest settler always willing to purchase, or else some intruder, originally perhaps not ill disposed, till the absence of all control, and a gradual attachment to his new residence, begin to inspire hopes of wresting it from the owner. He then insinuates doubts of the title, defaces the marks of surveys, and shunning the proprietor, till 21 years

may ripen his possession into a title, lives on in anxious obscurity, festering, discontented and restless, imagining in every passing stranger, the approach of his most dreaded enemy. Such was once the too frequent picture of the condition of the interior of Pennsylvania; and even now, although it has nearly passed, its effects are still visible in the anxiety with which emigrants go round our state, as if there were some infection here, and pass on to remoter and poorer fields, where their industry will at least be safe.

There can be no hope for the agriculture of Pennsylvania, till this source of disquiet is completely removed; and fortunately for us, time, in revealing all the errors of that system, has furnished the means of remedying them. Every owner of land may now ascertain whether there are other claimants to his land, and readily adjust their mutual pretensions. Every purchaser may now satisfy himself as to the title of the seller; so that while suffering from our own improvidence, we may be allowed to console ourselves for it, by reflecting that, while the states around us have been peopled to their borders, Pennsylvania possesses an extent of well watered, healthy, rich, cheap land, convenient to both the atlantic and western markets, which however hidden from the world by her past mismanagement, now offers abundant temptations to industry, and will largely contribute to augment the population and resources of the state. To give to these advantages all their attraction, however, much more exertion is necessary than we have hitherto witnessed. There are few families in the city, who have not some connexion with the lands of the interior; there are many who have extensive estates there. To these I would recommend most emphatically, to visit and examine their possessions; to be seen, and felt, and known as the owners; to disencumber themselves at once

of the burden of paying taxes for what does not exist, or might be worthless if found; to encourage every beneficial improvement, and by all the means of conciliation and liberality, which they are, I know, equally able and willing to extend, identify their own with the growing interests of the new settlements. There is still another step. How many well educated young men are there among us, languishing in the long noviciate of some profession, or wasting in indolence the finest years of their existence, who, in the new counties of the interior, might lay broad and deep the foundations of a splendid prosperity for themselves and their families. They will be received with welcome by those whose fortunes they have come to share; and their new interests and new connexions, will soon render their situation as agreeable and distinguished as it will ultimately be profitable.

There is more satisfaction in turning from the wild to the settled parts of Pennsylvania. The old counties between the Delaware and the mountains, with the exception of Philadelphia, contain a population of about fifty to the square mile. Their mixed pursuits, their division into consumers and raisers of produce, as well as their access to the markets of Philadelphia and Baltimore, afford advantages not enjoyed perhaps by any section of the union. The soil, without being generally distinguished for fertility, is fitted for all agricultural purposes. The farms averaging probably from fifty to one hundred acres of cleared land—the taxes light—the farming implements, in general, good—and the best breeds of cattle within reach. Yet, notwithstanding all these elements of the most enviable state of agriculture, we must acknowledge that our farming is still very imperfect. If any evidence of this were wanting, it might be afforded by the actual produce and the rents of our lands.

It was stated two years ago by one of the vice-presidents of this society, that the average crop of wheat in Lancaster county, which is considered the richest in the state, did not probably exceed fifteen bushels per acre. Now the average of all France is more than eighteen bushels—the average of all England twenty-four—and in some counties, as in Middlesex and the Lothians, forty. With regard to rents, it is not easy to speak with accuracy. If we except the alluvial meadows near this city, which rent for nine or ten dollars per acre, I should not estimate the average rent of cleared land with improvements, within the district just mentioned, at more than two or three dollars. In Italy, in England, and in Scotland, lands not particularly favoured by vicinity to markets, rent for from sixteen to twenty dollars, and in the neighbourhood of large cities, from thirty to forty dollars.

The causes of this inferiority may be ascribed to two characteristics of our farming—a disproportionate capital and an inefficient cultivation. The first is a striking deficiency. Agriculture, though a very common, is not, I think, a favourite pursuit in Pennsylvania. It attracts few from the other classes, and its ranks are rather thinned by desertion than recruited by volunteers. The enterprising shun it for its inactivity; the gay, from its loneliness; the prudent, from its unproductiveness; so that although a great proportion of the wealth of the state is fixed in land, an exceedingly small capital is devoted to farming. We too often exhaust our means in clearing or purchasing a farm, leaving scarcely any resources for stocking and cultivating it. Now an English farmer, with a certain capital, rents a farm, as a manufacturer rents a house, and devotes his capital to extract from it the greatest possible produce. Accordingly his proceedings seem almost incredible to the possessors of large American farms. It has become a

settled maxim of English husbandry, that before occupying good arable land, a capital of from thirty to forty dollars per acre is necessary. On an estate of three hundred acres, therefore, a farmer begins by expending in preparations nine thousand dollars; and his annual disbursements, in labour, manure, and other articles, are about five thousand dollars a year. His operations are all on a proportionate scale. To contract to pay a rent of twenty or thirty thousand dollars; to expend in a single year, on lime alone, eleven thousand dollars; to pay two thousand dollars a year for rape-cake to manure turnips; to make a compost heap, costing four thousand dollars—such are the combinations of wealth and skill which produce good husbandry. These we cannot, and we need not, imitate. But they may teach us that we should measure our enterprises by our means; and that an ill stocked farm can no more be profitable than an empty factory. Men praise the bounty of nature. It is much safer to rely on her justice, which as rarely fails to reward our care as to avenge our neglect. Our farms then, though small, are generally too large for our capitals; that is, we work badly too much ground, instead of cultivating well a little. In the estimates of finance, two and two do not always make four—in the arithmetic of agriculture, two are generally more than four. It is wonderful, indeed, how profusely a small spot of ground will reward good husbandry. There are in Italy hundreds and thousands of people, living on farms of from four to ten acres, and paying to the owner one-third, or one-half, of the produce. The whole straw for the Leghorn bonnets, by the exportation of which in a single year five hundred thousand dollars were gained, would grow on two acres. There are in Switzerland some hill sides, formed into terraces, which have sold for two thousand dollars an acre; and in fortunate spots for gardening, as

near London, a single acre will yield a clear profit of from eight to nine hundred dollars a year. These examples may perhaps explain, how without the great capitals of England, and without diminishing our farms, we may gradually render them richer and more productive by judicious culture.

The characteristic merit of modern farming seems to be this: The old practice was to draw from land successive grain crops, and then leave it to recruit strength enough for a repetition of them. The modern system seeks to restore the soil, not by rest, but by variety—to make one crop be followed by another, feeding on different parts or at different depths of the soil from the preceding. It has, therefore, for fallows, substituted root crops. These support large quantities of cattle, which, besides the direct profit from them, afford the means of returning sooner and more successfully to the grain crops.

Now, the defects of our husbandry have relation to this system,

1st. We have not studied sufficiently our soil, with a view to establish a judicious rotation of crops, nor adapted our cultivation to our climate. As an example, I doubt whether we appreciate our long autumn, the finest of all our seasons, to which husbandry as yet trusts so little, but which would often enable us to draw a second and valuable crop of roots after grain. From the result of personal experiments made with that view, which better farmers would, of course, practise more successfully, I incline to think, that there are few of our good fields from which we could not obtain considerable crops of roots, planted and gathered after harvest. Why indeed should we not, when they are constantly obtained in Spain, in Italy, in Flanders, and even in the climate of England and Scotland?

2d. We have not yet succeeded in diffusing widely the best breeds of cattle, from the excellent stock now easy of access

to us all. There is no subject on which it is more true, that a liberal expense is the strictest economy. Natural peculiarities of form in animals, are either the cause or the indication of certain qualities. Judicious observers, by the union of similar animals, have given greater development to these qualities, and established at length distinct breeds with very decisive superiorities over our ordinary cattle. These should be sought by good farmers, as their superior profits far exceed the additional price of them. But we are too often tempted by the false economy of buying cheap animals, and we are frequently misled into the practice of pampering into a sickly magnitude, cattle which have no natural facility to fatten. This is a mistaken pride, productive of no immediate good, and the more to be regretted, since the capital actually lost in feeding bad animals might have imported good ones.

3d. We are deficient in the cultivation of roots. The cattle are left to feed almost exclusively on hay in winter, instead of being nourished on roots, more nutritious and cheap in themselves, and the culture of which is among the very best preparations for the succeeding grain. The extension, on a large scale, of the root culture, would alone, I am satisfied, give a new face to the agriculture of the state. In the use of these, as well as the general feeding of cattle, we should endeavour to adopt what is justly deemed one of the greatest discoveries in agriculture—I mean the old Flemish practice, now known in England by the name of

4th. Soiling. In administering food to thoughtless persons, it would be deemed strangely improvident to let them eat and waste at pleasure. We are more respectful or less judicious towards cattle. They are allowed to enter, without restraint, fields of luxuriant vegetation; they lie down upon it; they trample it under foot; in wet weather their foot-prints com-

mit injuries to the ground, which years cannot repair, and what is worse than all, the benefit which they might confer on the land is almost totally lost. Instead of this wasteful system, the cattle are kept under comfortable shelter, and their food is brought to them. An acre of ground thus furnishes three times as much subsistence as when pastured, and the additional expense of cutting is abundantly repaid by the rich manures which are thus saved.

There is one other branch of farming, which has scarcely made its appearance in this country—It is

5th. Irrigation. This is, probably, the most profitable of all modes of culture. Whenever the situation of land will permit of its being covered with a stream of water, the direct nourishment to the plant, the minute subdivision of the soil, and the deposit left by the water, these combine to produce an amazing fertility. In Lombardy, for instance, the irrigated meadows afford four abundant crops of grass. In the dry climate of Spain, they are still more productive. It could scarcely be believed, were it not vouched by the personal observation of Arthur Young himself, that in the watered fields of Valencia, there are actually cut, four, five, six, and seven crops of lucerne, from two and a half to three feet in height, and yielding ten tons of grass on an acre at each cutting: so that on a moderate average an acre yields no less than fifty tons of grass, and when broken up, gives three crops in the course of a year. It is not wonderful, then, that in that country the greatest efforts have been made to water their fields; that reservoirs have been constructed, canals cut, wells dug, and machines erected for raising water from the rivers, and that whole rivers themselves, instead of hastening to the ocean, have been made to pause and deposit their extraordinary fertility. To us the example is peculiarly interesting, since our

climate resembles that of Spain in its dryness—the defect which irrigation is most calculated to repair. It is now almost an established law of this climate, that in midsummer there shall arrive a critical season, during which the intense heat of our long days is not relieved by rains, and our crops, just as they are verging to maturity, are suddenly checked and injured, and sometimes destroyed, by the burning influence of the sun. But instead of struggling to overcome this danger, our farmers, with a want of the characteristic spirit of the country, sit down by the side of the most magnificent rivers and unfailing streams, and lament the decay of their harvests, touching the river banks, without one effort to convey to these fields the water which is passing at their feet. In this finely watered country, we should surely be able to equal the improvements of Spain and Italy; and he will be a great benefactor, who shall exhibit a cheap and efficient mode of irrigation. If the first expense be beyond the means of an individual, it may be accomplished by the union of interested neighbours, and almost any expenditure would be justified by the success of a plan, which would at once render our fields twice, or five, or ten times more productive.

The prevailing opinion however is, that even with an improved culture, the high price of labour in this country renders farming an unproductive and hazardous investment of capital. This belief has contributed much to retard our husbandry. I myself think it entirely erroneous. My impression is, that a capital employed in judicious agriculture, would yield quite as safe and abundant a return, as in most of the other pursuits of life among us, and probably superior to the profits of farming in other countries. For instance, the average profit on farming in England, with which we are most habituated to compare ourselves, is from ten to fifteen per cent.

Now, in this country, the profits ought to be greater. The question might perhaps be decided by the single fact, that while the greater part of our farmers live well and educate large families from small farms, the same class of persons in England, the renters of farms of about fifty acres, are universally allowed to be in a miserable situation; and on that account they were actually exempted from the income tax—a forbearance which describes, at once, the measure of that wretchedness which could appease or defy even the spirit of the Exchequer. But the inquiry is sufficiently interesting to tempt us into a comparison, between the arable farms, within reach of the markets, of London and Philadelphia—their respective expenses and profits; that is, the prices at which they may be obtained and cultivated, and then the prices of the produce of them. The first naturally resolves itself into the heads of rent and taxes, and labour and manure.

The rent of land within twenty-five miles of London, varying as it does from two to fifty dollars, it is not easy to estimate with precision; but we shall err on the side of moderation, if we place the average rent of good arable land at ten dollars. The taxes and tithes, as they are stated by Sir John Sinclair in 1821, would be fifty-three per cent. on this rent, say five dollars; making the rent and taxes on a farm of 200 acres amount to three thousand dollars. Now, if we except our alluvial meadows, the average rent of land within the same distance from Philadelphia, cannot, I think, be estimated beyond three dollars. Of tithes there are of course none; and the taxes of all kinds, judging from those of Bucks county, do not exceed twenty-five cents per acre: making the rent and taxes of a farm of two hundred acres six hundred and fifty dollars.

In the memorial of the English Agricultural Commit-

tee of 1819, it is stated, that the tithes and taxes amount to one-third of the market price of agricultural productions. In this country they form a proportion so inconsiderable, that a single acre of good wheat will pay all the public demands on a farm of one hundred acres.

With regard to labour, I know it is against all our received opinions, but I incline to think that farm work in Pennsylvania is very little dearer, if it be not actually cheaper, than in England. The comparison is difficult, because at this distance we have not yet seen all the effects which the embarrassments of the last two years have produced on the rate of wages—because their nominal wages are generally swelled by perquisites, and because in a country, where every sixth or seventh person is legally a pauper, the poor rates are in fact only a disguised increase of wages. But, rejecting these considerations, and taking the average wages of day labour to be what it was in 1810, fifty-five cents (2s. 6d.) and a dinner—and it is not probably now less near London—even this does not, I believe, fall more than about twenty-five or thirty-five per cent. below the price of day labour in the same district near Philadelphia. But the nominal price of labour is a less true mode of comparison, than the actual expense of executing any given work in the two countries. Now, we have more long, clear, good working days, and our workmen—as I have spoken freely of our faults, I may be allowed to state our capacities—our workmen are better fed, more active, more intelligent, and more dexterous in their labours. Not to speak of the axe, in all the uses of which they have no rivals, I believe that three Pennsylvania farmers, with their scythes fresh ground and their tough ash cradles, might stand before any wheat field in Europe, and challenge twice or thrice their number of reapers. This is no exaggeration. Sir

John Sinclair, in his work published as late as 1821, says, that three good reapers will cut an acre of wheat in one day. Now an American cradler will, in a field with the average crop of England, cut three, four, and even more acres in one day. He further calculates, that the cutting and binding of this acre will cost fifteen shillings, from which, if we deduct 2s. 6d. as the wages of the binder, who performs his part in half a day, there remains 12s. 6d. or \$2.75 per acre. Now, allowing a moderate average of work for a cradler,—three acres,—and a high average of wages,—one dollar,—the American acre will be cut at the price of thirty-three cents, and the English acre at two hundred and seventy-five cents; and done as well too, for the difference as to the shattering out of grain between good cradling and reaping, is in fact very little, and even that may be saved by cutting rather before the complete maturity of the grain—a system to which the best English practice is now approaching. So too, an English labourer, with a driver and four or five or six horses, will not plough more in a day, than a Pennsylvanian alone with two; and no excess of wages to him, can balance the expense of a driver and two or three superfluous horses.

Again, reaping oats in Middlesex is stated to cost 8s. (\$1.75) per acre. The same field in this country would probably be cradled for one-sixth of the expense. These details might be pursued into other departments of farming labour, and they would show, that an acre of ground may be prepared for seed, and the produce carried to market, at an expense, if not less, certainly not much greater, in America than England.*

* These estimates may be supported by examples from other branches of industry. There can be no fairer measure of prices, for instance, than the expense of removing, by manual labour, a given quantity of earth; that is,

The means of enriching land, by lime and other manures, are cheaper near Philadelphia than near London; and that most important article of husbandry, salt, is much cheaper here than in England, where the excise has almost banished it from their farm yards.

The prices of produce may be more readily compared. Of the great production of England, wheat, her farmers have the monopoly until the price rises to about \$1.85. This, however, being a scarcity price, is, of course, much above the ordinary price. In July last, the average of all England was about one dollar and fifty-three cents. At the same period with us—a season of great depression—the price varied from seventy-five to ninety cents, and at the present moment, without any foreign demand, it may be stated at about one dollar and ten cents. The flesh markets are also considerably higher in England. But wheat forms only one-fourth of the crops; and in the articles of turnips and potatoes—in the root crops generally, the price is probably higher here than in England. The great staple of wool is certainly dearer. These elements will enable us to contrast with our own, the condition of an English farmer, whose rent is three times as great, whose taxes are twenty times as great—manures more expensive—labour not much cheaper—and prices, on a whole rotation of crops, not much higher.

of excavating a canal, though all the benefits of experience in that business are certainly on the side of England. Yet, yard for yard, a canal may probably be made as cheap in this country as in England. The latest British work of that kind is the Caledonian Canal, completed in 1820. There the average price in common earth was six pence, or 11 1-9 cents per cubical yard. Now the contracts recently made by the Company for constructing a canal by the side of the Schuylkill, are in some cases as low as seven cents per cubical yard; in other and peculiar cases, as high as twenty-eight cents; but the average of the whole twenty-two miles, will not probably exceed 11 9-10 cents per cubical yard.

Yet they make their farms more productive; they pay higher rents. Near London or Edinburgh they can afford to pay for wheat lands twenty or thirty dollars rent per acre; and—what ought to shame us into better husbandry—in spite of all their burdens—in spite of a freight of 3000 miles, a commission to two merchants, and a duty of fifteen per cent., they reach our own market with their produce, and are always preferred to us. But then they raise twice or thrice as much wheat, and probably five times as much of other produce. They have forty bushels of wheat, and fifty of barley, and sixty or seventy of oats, and twelve hundred bushels of turnips, and four hundred bushels of potatoes; all following each other with the least practicable intervals. They succeed better than we do, because, in fact, they are better farmers than we are. But the reason of the difference is, simply, that we will not bestow on our lands the same well directed labour, or the fiftieth part of the capital which they intrust to theirs. Whenever these have been applied, as in other countries, our soil has never refused returns as abundant. Of this the premium crops of our agricultural societies afford decisive evidence: and we have recently seen an experiment, which I mention as illustrating at once the judicious employment of capital, the productiveness of small spots of ground, and the benefits of soiling. The Pennsylvania Hospital has in its neighbourhood fourteen acres of ground, from which, during the last year, were soiled seventeen cows. Some of these, as their milk failed, were replaced by others. But an account of this expense, and of all the other charges, was accurately kept, and credited with the market price of the produce, either consumed in the hospital or sold at market. The clear profits amounted to more than two thousand three hundred dollars.

These calculations are, of course, not applicable to the remote farmers, whose markets are habitually less valuable, and who are now suffering under the extinction of the accustomed demands from abroad. Their embarrassments should, however, direct their industry to new channels; and there are, fortunately, now presented to the farmers of Pennsylvania, two distinct branches of industry, which may enable them to retrieve their losses, and give a new impulse to the husbandry of the state. I mean to speak of the growth of wool, and the cultivation of flax and hemp.

The consumption of woollens in the United States cannot be less than twenty or thirty millions of dollars, of which the greater part is manufactured in the country. It is needless to be exact as to the amount, since my purpose will be explained by the facts, that the domestic supply of wool is not equal to the domestic demand—that the manufactories of Pennsylvania receive much of their wool from abroad—and that wool is at this moment probably dearer in Pennsylvania than in England, or perhaps in any of the wool growing countries; and this while we possess the finest breeds of sheep, capable of an almost indefinite increase. These unhappy animals have been the victims of the most extraordinary caprice. When the war of the Peninsula threw into this country some of the very best breeds of Spain, they were eagerly purchased at extravagant prices. But, in too many instances, the owners were deceived by calculations of their very small consumption of food; and they omitted to adopt for them, what in the long winters of this climate is indispensable, the turnip culture. Large flocks were, therefore, crowded into narrow fields; where, as there was soon no other means of subsistence, their hunger forced them to eat the roots, and they were then denounced as utterly destructive to grass lands. Their inade-

quate supply of winter food too was soon exhausted, and they were then reproached for their voracity. Even this might be borne, while the war price of wool repaid the expenses of buying subsistence for them, but when peace diminished their value, without lessening their appetite, the owners, disgusted with a stock which they did not know how to manage, sacrificed them as rashly as they had bought them, gave them away, and almost drove them away from their farms. Thus entire flocks of the finest merino sheep were devoted to the knife, for no other reason but that, contrary to the wish and expectation of the owner, they would persist in eating. The extent of these sacrifices is scarcely credible. A very respectable butcher assured me, that he bought, for one dollar a head, a flock of merinos, among which was an imported ram, who the owner declared, and I have no doubt truly, had cost one thousand dollars. That extravagance has now passed, and excellent merino sheep may be procured, well calculated to cover the interior of Pennsylvania with a most productive source of wealth. On the rich natural herbage of the woods they would subsist, without any expense, during a greater part of the year, and a small field of turnips would carry them through the winter. The only serious obstacle in the less populous districts is the wolf, and he is fast disappearing.

The culture of flax and hemp in Pennsylvania has been hitherto limited by the imperfection of our machinery for working it, and by the inferiority of our dew-retting to the European practice of water-retting. Accordingly our trade in flax consists chiefly in exporting the seed to the Irish farmers, who, after raising and preparing it, return it to our factories. It is selling the fountain and buying back the stream.

The society has been for some time engaged in endeavours to remedy this deficiency, and the result of the exhibitions this

day inspire a confident hope of their success. We have just examined a machine scarcely less important than the cotton-gin, by which all the expensive and troublesome labours of dew and water-retting are superseded; which will prevent the deterioration both in the colour and strength of the fibre caused by those processes; which will save the whole quantity—about one-half—now lost in the ordinary method; and by enabling us to gather the flax before ripening, save the land from the most exhausting process of all plants, the seeding. By the general adoption of this machine, the farmers may increase their cultivation of flax and hemp—prepare it themselves—and provide a cheap supply for the whole consumption of the country. Nor is this all. As the flax manufactures cheapen, their consumption will of course increase, till they may be made to regain that ascendancy in general use which they lost by the cheapness of cotton, and enable the farmers of the middle states to engage in a generous competition with the cotton growers of the south. This expectation may not be visionary. The great consumption of cotton is due to the machinery. Now this machine will greatly diminish the cost; and the manufactories of this country can, it is said, work flax as easily as cotton. If, then, the same facilities be given to flax or hemp, their prosperity may be equal; since they enter with great advantage into our rotation of crops, and the actual produce on an acre is twice as great as that of cotton.

If, gentlemen, I have wearied you with these details, you will ascribe it to the deep conviction, that nothing is more important to this community than to extend the taste for agriculture, from which the habits of the last twenty years, and the present depressed value of its produce, combine to estrange us. We, in Pennsylvania, have reached precisely that point where, with all the finest materials for good husbandry, one

step only is necessary to ensure distinguished success. Why then can we not make this final effort? While all around us are roused into an honourable zeal for agriculture—while Virginia possesses so many societies devoted to her cultivation—while the most distinguished gentlemen from distant parts of Maryland crowded a few months since to their fine exhibition at Baltimore—while almost every county in New York has its agricultural society and its cattle show, why is it that this Pennsylvania, this land emphatically of farmers, suffers herself to be outstripped in this generous career? Why is it that, although the legislature has assigned a fund for an agricultural society in every county, that with the honourable exception of Bucks and Chester and Susquehanna and Franklin and Allegheny, whom I enumerate in justice to their spirit, the farmers of Pennsylvania have never yet found leisure to associate for the advancement of their own best interests? The establishment of these societies throughout the state, would be among the surest means of promoting its improvement. They inspire mutual confidence—they kindle mutual competition—they draw into notice the skill of experienced cultivators—they diffuse useful information—and, more than any other measure, they tend to improve and exalt the character of the farmer. The exhibitions, too, are admirable auxiliaries. By placing in their most attractive lights the labours of industry, they reward the deserving, while they stimulate the indolent, and enlist in the great cause of public improvement all the pleasures of social enjoyment and the enthusiasm of emulation. What indeed can be more exhilarating than the assemblage of a healthy, well clad, free, happy people, surrounded by the fruits of their well directed industry—the animals which display their kindness—the implements which attest their ingenuity. Who is

there even on this side of the Atlantic, who does not read with more pleasure the accounts of the agricultural meetings at Holkham, than of the coronation at Westminster, or the assemblage of sovereigns at Troppau? Who did not feel more satisfaction at the exhibitions of Massachusetts or Maryland, than in the gaudiest displays of military power?

If I have failed to prove that the pursuits of agriculture may be as lucrative as other employments, it will be an easier task to vindicate their pleasures and their importance. I need not dwell on that retirement, one of the purest enjoyments of this life, and the best preparation for the future—on those healthful occupations—on that calmness of mind—on that high spirit of manliness and independence, which naturally belong to that condition. These are attractions which must have deep roots in the human heart, since they have in all times fascinated at once the imagination and won the judgment of men. But I may be allowed to say, that in this nation agriculture is probably destined to attain its highest honours, and that the country life of America ought to possess peculiar attractions. The pure and splendid institutions of this people have embodied the brightest dreams of those high spirits, who in other times and in other lands have lamented or struggled against oppression—they have realized the fine conceptions which speculative men have imagined—which wise men have planned, or brave men vainly perished in attempting to establish. Their influence in reclaiming the lost dignity of man, and inspiring the loftiest feelings of personal independence, may be traced in every condition of our citizens; but as all objects are most distinct by insulation, their effects are peculiarly obvious in the country.

The American farmer is the exclusive, absolute, uncontrolled proprietor of the soil. His tenure is not from the

government; the government derives its power from him. There is above him nothing but God and the laws; no hereditary authority usurping the distinctions of personal genius; no established church spreading its dark shadow between him and heaven. His frugal government neither desires nor dares to oppress the soil; and the altars of religion are supported only by the voluntary offerings of sincere piety. His pursuits, which no perversion can render injurious to any, are directed to the common benefit of all. In multiplying the bounties of Providence, in the improvement and embellishment of the soil—in the care of the inferior animals committed to his charge, he will find an ever varying and interesting employment, dignified by the union of liberal studies, and enlivened by the exercise of a simple and generous hospitality. His character assumes a loftier interest by its influence over the public liberty. It may not be foretold to what dangers this country is destined, when its swelling population, its expanding territory, its daily complicating interests, shall awake the latent passions of men, and reveal the vulnerable points of our institutions. But whenever these perils come, its most steadfast security, its unfailing reliance will be on that column of landed proprietors—the men of the soil and of the country—standing aloof from the passions which agitate denser communities—well educated, brave, and independent—the friends of the government, without soliciting its favours—the advocates of the people, without descending to flatter their passions; these men, rooted like their own forests, may yet interpose between the factions of the country, to heal, to defend, and to save.

There are many such men in this nation; and there was one, whom the old among us loved, and the youngest venerate—whom we may proudly place by the side of the master

spirits of the best ages—the man whom his country's danger always sought at his farm, and his country's blessings always followed there—the model of American farmers. His memory is in all our hearts, and his example may well inspire a fondness for those pursuits which WASHINGTON most loved, and teach us that there is no condition in which our lives may be more useful—in which we may more honour ourselves and serve the country.

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