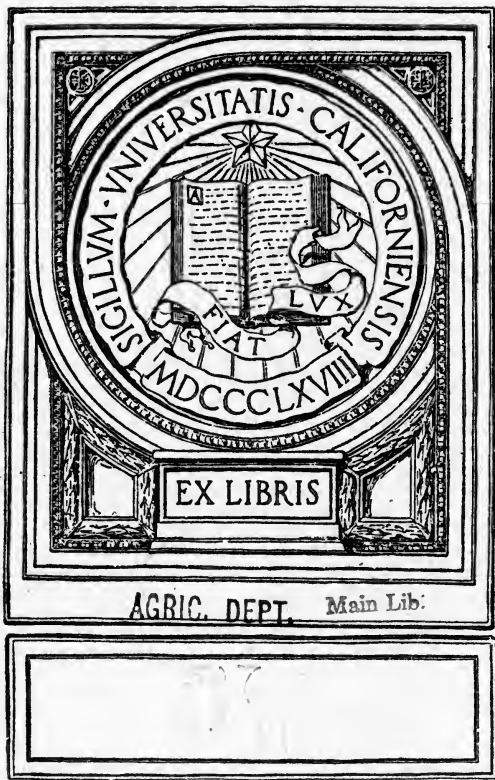


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THE FUTURE
OF
AMERICAN AGRICULTURE.

THE FUTURE OF AGRICULTURE IN THE
UNITED STATES.

The Foothold



AN ADDRESS

DELIVERED BY

DR. PETER COLLIER,

Director N. Y. Agricultural Experiment Station.



At the Agricultural Fair of the South Jury District held at Ovid,

N. Y., Wednesday, Sept. 3, 1890.

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TO VNU
ARACHUDA

ADDRESS.

GENTLEMEN AND LADIES:—

Rather against my own judgment but in accordance with the wishes of my friends, the officers of this Association, I have consented to give you an informal talk, which I see is announced as a practical address upon such topics as are of interest to farmers.

I hope, in what I have to say, to be very practical. I promise you that I shall be very brief and will not long detain you from the many things of interest which are presented for your inspection upon these grounds.

You remember how it is related that when the hosts of Assyria besieged the city of Samaria, the supplies of food becoming exhausted the famine reached such terrible proportions that an ass's head was sold for eight score pieces of silver, and the inhabitants of the doomed city were driven even to cannibalism. You remember that at this crisis in their affairs the prophet Elisha predicted that within the short period of twenty-four hours two measures of barley would be sold in the streets of that city for a shekel and a measure of fine meal for a shekel, and how such incredible results actually came about through the change in conditions brought about by the stampeding of the beleaguering hosts of Assyria.

Now I am not a prophet nor the son of a prophet, nor are the conditions of our agricultural communities in such straits as were the people of that unhappy Jewish capital, though, were we to believe much that is now-a-days said and published, we might almost be led to think that our farmers were rapidly passing into such conditions.

For one, I do not see any evidence which justifies such alarming predictions. That agriculture of late years and at present has failed to bring the pecuniary returns which it might, all must admit, but, that the prospects for the future of agriculture in this state and in this country are forbidding, I do not believe. In fact, at the risk of being thought optimistic, I wish to be placed on record as predicting that to the best of my knowledge and belief we are about entering upon an era of agricultural prosperity, the like of which, as a people, we have never known, and which prosperity is to be permanent.

I feel sure I cannot present anything which is of greater practical value to you to-day than to briefly give you the reasons for the faith which is in me, and I hope that I may succeed in convincing you that what Washington declared to be "the most noble, the most healthful and the most useful occupation of man" is likely soon also to become, all things considered, the most profitable.

First then let us seek to learn the cause or causes of the present agricultural depression, since obviously if it or they can be removed the depression must cease.

Now we find upon investigation that in this state of New York, at least, such depression is not due to a diminution in the fertility of our lands. This is so important a factor in the prosperity which I predict for the future, that I know you will be willing to listen to the evidence in its support.

AVERAGE YIELD OF PRINCIPAL FARM CROPS IN NEW YORK STATE SINCE 1861 BY BUSHELS, POUNDS AND PER CENT.

	Corn Bushels	Wheat bushels	Rye Bushels	Oats Bushels	Barley Bushels	Buckwheat Bushels	Potatoes Bushels	Hay Pounds	Tobacco Pounds
1862-1870	30.20	14.93	15.17	30.32	22.33	19.77	103.1	2516.	918.
1871-1879	32.09	14.90	13.99	33.09	23.15	18.42	81.7	2404.	919.
1830-1833	29.91	14.82	11.94	23.84	22.66	13.40	77.7	2222.	1348.
1832-1870	100.	100.	100.	100.	100.	100.	100.	100.	100.
1871-1879	109.	99.8	91.6	103.8	99.2	99.2	79.2	95.6	100.1
1880-1883	99.	99.3	73.7	95.1	101.0	67.8	75.3	80.3	146.6

Value of Hay Crop in N. Y. 1888, \$61,051,016=50.3 per cent. of aggregate value of all crops.

Value of Cereal, Potato and Tobacco Crop in N. Y. 1888, \$60,282,841=49.7 per cent. of aggregate value of all crops.

Acreage in Hay in N. Y. in 1888, \$4,933,415=15. per cent. of total acreage in all crops.

Acreage in all other crops 1888, \$4,033,902=45. per cent. of total acreage in all crops.

If we take the average yield of our leading farm crops, corn, wheat, oats, potatoes and hay for the past quarter of a century and divide this period into those from 1862 to 70; 1871 to 79; and 1880 to 88, we find that the average acreage yield of these five crops, the aggregate value of which is 92 per cent. of the total value of our leading farm crops, had fallen off but 1.6 per cent. during the second period from the average yield during the first period; and the average yield of the third period was within 8.6 per cent. of what it was during the first; and this diminished yield is perhaps due in great measure to less careful cultivation which the low prices of farm products seemed in many cases to excuse, if they did not justify.

On the other hand the average market value of these five crops was, during the second period mentioned, only 75.6 per cent. of what it was in the first, and during the third period dropped to an average of only 66.9 per cent. of what these crops upon the average sold for during the first period. In view of this great falling off in prices it appears to me needless to seek further for causes of the recent and present depression, and I think that no one can doubt that, with a restoration of prices to something approximating what they were, a revival in agriculture would speedily follow, and gladness would take the place of despondency.

But it seems to me, quite without warrant of fact, to be almost universally concluded that such restoration of prices cannot in the future be hoped for, and upon every hand we hear it said that "over-production" is the cause of all our woes, and that, as this is likely to continue indefinitely, there is no hope of future escape from our present condition through better prices, but only through greater economy in production.

This is a matter of extremest moment, and deserving our most careful consideration. For myself I cannot accept either the explanation wholly of "over production" nor the conclusion that it is long to continue.

To me it seems that this over-production is relative rather than actual, that it is determined rather by the ability to purchase than by the actual needs of the consumer. To take for illustration our manufactures, certainly there is of these products of labor an enormous supply, but does this in fact surpass or as yet even equal the reasonable desires or legitimate needs of our people? What woman would not be pleased to-day to add a new gown to her wardrobe or a new bonnet. What man of us who would not find a new suit of clothes, if not an actual necessity, at least convenient;—of all these implements here on exhibition, how few would remain unsold if what appear more urgent demands for absolute necessities did not compel the farmer to careful deliberation over his expenditures.

But to return to agricultural products, let me give an illustration, and I purposely select a product partly the result of agricultural and partly of the manufacturing industry, also a product almost wholly imported and from countries with which we have but very little reciprocal commerce, so that it would naturally happen that such a product would perhaps best illustrate the increase of the country not only in total but per capita consumption, and best illustrate the fact that perhaps no people on the earth are to-day so well provided with the necessities or even luxuries of living as are we.

Now, during the decade before the present century, viz.: from 1790 to 1890 the annual per capita consumption of sugar in the United States was less than ten pounds (9.65). In 1840 it had increased to only fifteen pounds. It doubled during the next twenty years, being thirty-one in 1850, and during the past thirty years it has again nearly doubled, since the present annual per capita consumption of sugar in this country is nearly or quite sixty pounds. Can any one believe that with such a record there is reason to question the general prosperity of the country?

As with sugar, so is it with many another article of consumption by our people. It is estimated that the per capita consumption of breadstuffs amounts annually to an equivalent of fully eight bushels of grain, mainly wheat and corn, "making the fullest bread ration of any nation in the world," as the statistician of the Department of Agriculture declares. Indeed it is proverbial that as a people we are almost prodigal in our expenditures for food supplies. But I wish to call attention to the several points which

to me appear to prove that we are upon the eve of what I believe will prove the golden age of our agriculture.

First:—The population of the country is very rapidly increasing; from 1860 to 1870 it increased 23 per cent; and from 1870 to 1880, 30 per cent; so that, if the same increase is continued, as there appears no reason to doubt, the present census will show a population of 65,200,000; but the increase of those living in cities has been more rapid. There were in 1880 nearly 13 times as many people in the United States as in 1790, but over 86 times as many living in cities in 1880 as in 1790. The increase of population was from 1860 to '70, 23 per cent.; of those living in cities 59 per cent.; the increase of population from 1870 to 1880 was 30 per cent.; but of those living in cities 40 per cent., from 1860 to 1880 the increase in population was 60 per cent., but of those living in cities, 123 per cent. Nearly one-fourth of all our people live in cities and since then the number has vastly increased, and I think relatively so. We see then that agriculturally the consumers are increasing far more rapidly than the producers.

Second:—The number of farms in the United States has nearly doubled (96 per cent. increase) from 1860 to 1880; while the average acreage in the farms has diminished during this same period 33 per cent.; both facts of very great significance as evidence that the area of arable land was diminishing relative to the increase in the number of those who desire to engage in agriculture.

Third:—While the area in farms increased from 1860 to 1880, 32 per cent., the improved land in farms increased 75 cent.; showing that increase of tillable lands was mainly secured by improving lands already occupied.

Fourth:—While the improvements of lands has gone on rapidly the farms have been growing steadily smaller, the improved lands in farms having fallen off from 1860 to '80, 11 per cent., while the unimproved land on farms diminished 47 per cent.

Fifth:—And to this I call your particular attention in connection with this so-called over-production. The Statistician of the Department of Agriculture in a recent report after an extended investigation of the subject of Agriculture Exports, says: "It appears that the proportion of all agricultural products exported is about 10 per cent., or, exclusive of cotton and tobacco, 5 per cent."

Now of our agricultural products exported there are four only which constitute nearly 92 per cent. of the total value of exports, viz., Corn, Wheat, Meats and Cotton, but even including these, we consume in this country 90 per cent. of the products of our agriculture.

Sixth :—I have taken the Statistics of Production of our leading crops during the years 1866 to 1886 both inclusive, and, dividing this into three periods of seven years each, I find that during the second period the total crop production increased practically the same upon the average with the increase in acreage devoted to these crops over the acreage and yield of the first period. The increase in acreage averaged 35 per cent., and that of crops 33 per cent. more during the second than during the first period.

But during the third period the average increase in acreage was 45 per cent. while the average increase of crops was but 35 per cent., thus showing a falling off in average acreage production of the leading crops of the United States of nearly seven and one-half per cent.

I might stop here, but as the reason for my faith is here in a nut shell, I know you will endure a brief recapitulation of the foregoing points :

1st. Our population is increasing at the rate of nearly 3 per cent. a year.

2nd. Our consumers of agricultural products are increasing at a more rapid rate by far than are the producers.

3rd. At present we consume 90 per cent. of our agricultural products.

4th. The average crop producing capacity of our soils is diminishing in the United States.

5th. From 1866 to '86 the area devoted to our leading crops increased 127 per cent. while our population increased during this period 69 per cent. and while everything points to the fact that our arable land is largely occupied, as witness the haste to possess Oklahoma, and the efforts to reclaim by irrigation the arid regions of the west, there appears to be no evidence that our population will not steadily increase.

At present 90 per cent. of our products are consumed at home, or 95 per cent., not counting tobacco and cotton. It scarcely ap-

pears as a hazardous prediction that within five years, and perhaps even sooner, the home demand may fully equal the supply of our agricultural products, and then, if they are wise, the farmers of the country will be the masters of the situation, and those words of Napoleon that "agriculture is the basis and strength of all national prosperity," will be recognized as sober truth.

Awaiting then, as I think we may, in confident hope the good time so near at hand, what, we may stop to inquire, are the duties of the hour; and I would say first, study economy in production. Suppose you ask any of the shop keepers of Geneva whether they know what their nails, the sugar, the cloth which they sell you cost them, would they not think you either jesting or recently escaped from Willard Asylum? But can our farmers tell these same dealers what their milk, butter, eggs, hay, oats or corn has cost them to produce? Can our dairymen tell the actual or relative value of the several members of their herd, which are a source of profit, which pay their way, which are being kept at actual loss? Does the farmer who is drawing his hay to market reflect that every ton of hay contains of fertilizing constituents, as Dr. Geessmann, of Massachusetts, says, from \$5.93 to \$9.60 worth of fertilizing constituents, or as an average for the last quarter of a century shows in New York \$6.37 worth in every \$10 worth of hay sold? And yet our farms need this very fertilizing material which this hay contains, and which, by feeding it, might be kept upon the farms and largely increase the fertility of our lands.

And in this connection, I wish to congratulate the farmers of New York, who find it necessary to purchase the so-called commercial fertilizers, that the late legislature, most wisely, as I think, have provided the means by which the purchaser of these products may in future be protected, through the systematic analysis of these fertilizers at your Agricultural Experiment Station in Geneva.

As evidence of the need and the extent of this protection I would quote Commissioner of Agriculture Henderson, of Georgia, who says that such analyses saved the state one and a half million dollars in a single year; and Dr. Battle, Director of the N. C. Experiment Station, declares that the fertilizer control in that state has during the past few years resulted in saving millions of dollars to the farmers of that state. There can be no room for doubt that hereafter the farmers of New York will reap an equal

pecuniary benefit, as also through the publication of results and discussion of the principles of fertilization, practice far greater economy in the saving of home supplies now largely wasted, as also make more intelligent use of these valuable fertilizers, which this wise provision of the Legislature has made possible.

But in the matter of economy, I must not fail to call your attention to the great economy possible in feeding our animals.

Do not understand me as referring to any limiting of rations. Do not make the mistake of supposing that profit begins except when the maintenance ration is exceeded, and such profit increases with the rate of such excess which may be properly utilized by the animal either in the production of milk or the increase of growth.

Let me indicate the possibilities, yes, the probabilities which lie in this direction for the intelligent farmer. Two of our leading New York dairymen secure practically the same average product in butter from their herds, and their results are nearly three times the average results secured in the state. But one of these feeds a ration costing 14 cents daily per cow, the other, getting no better result, feeds his cow a ration costing exactly double, 28 cents per day. But one cent a day saved upon the dairy cows of this state means a saving of over \$16,000 a day, a saving of nearly \$6,000,000 a year upon our cows alone. This is one of the practical problems upon which your Experiment Station is engaged.

And in this connection I cannot forbear mention of a friendly criticism of one of our recent bulletins in which these very important matters were discussed, for while this editor was pleased to say that "this report is of more than ordinary interest to breeders of cattle" he adds that "this book of tables requires the most careful study for at least a day for the reader to begin to obtain an idea of its contents and teachings."

I recall the case of the Irishman, who, after prolonged absence was revisiting the old country, and being shown the great changes and improvements which had taken place during his absence, at last having had pointed out a new church just completed, he exclaimed, "Well, that beats the very devil!" when his companion replied: "Ah, Pat, my boy, that was the very intintion."

Here is a bulletin confessedly crammed with information of the greatest practical value to our dairymen, whose capital is in-

vested in, and whose labor is given to, this industry ; but for the dairyman to possess himself of this valuable information "it requires the most careful study for at least a day." Again I ask, is there any business which can be successfully conducted if but a day is given to the careful study of the fundamental principles which govern it ? Think of the intense study and thought which, not for one day, but for every day in the year, is given by the business and professional men of this city to the details of their work. We hear much said about the necessity that more of brain and less of hand labor be put into the work of the farm, and yet a protest arises—friendly it is true, but none the less a protest—because the dairyman is called upon to devote two or three long winter evenings to a careful study of the principles of his business.

Think, too, of the effect upon our young men, who we hope to see devoting themselves to what Washington declared to be "the most noble, the most healthful, and the most useful occupation of man," if to them the impression is to be given that their lives are to be spent in a business demanding less of careful study and offering less reward for the highest exercise of their intellectual faculties than other fields of labor.

As for myself, after having spent many years of my life in intimate association with professional men, college professors, doctors of medicine, and scientists, with many warm friends among the legal profession, and even among the clergy, I can truthfully declare that I know of no profession, occupation, or business which demands for its intelligent conduct and which offers greater rewards to careful study than does agriculture in its several branches; none more attractive to a man of well-rounded, symmetrical, intellectual and physical development, totus, teres atque rotundus.

Never, perhaps, in the history of the world has there been such an intellectual awakening among those engaged in agricultural pursuits as at this time. Agricultural papers abound, agricultural colleges and experiment stations, farmers institutes and clubs, the Grange, Alliance and numberless other agencies testify to this great uprising. And yet with all this multiplicity of sources of information there is reason to fear that our actual practice does not keep pace with our acquired knowledge.

You remember the story of the old rector called in charge of the new parish, who gave his charge a tremendous sermon against

lying, in which he eloquently set forth the enormity of this sin. It furnished a topic of discussion in the parish till the following Sunday, when to the surprise of his flock he repeated the discourse with amplification. This was counted an eccentricity on the part of the old rector, but when he gave them this powerful sermon a third time, it appeared so personal that a committee was appointed to wait upon the rector and remonstrate with him against what seemed a personal affront. He received them in his study and upon hearing the delegation of malcontents, he asked them whether there were any liars still in the parish. They were compelled to admit that a small number could be found. Well, then, said the bluff old rector, you just go and tell them that when they will stop lying, I will stop preaching against its sinfulness. I fear those sermons are still continued, but seriously, is it not so with our agricultural practice as with our morals, we know the right and yet the wrong pursue. We wrangle over hair splitting points of theology and yet there are those who violate every precept of the decalogue.

But I wish to say a word as to what seems to me the wisest policy to pursue for the immediate future. We have seen that if there is any overproduction it must obviously be of those products which are exported and they are very few in number; corn, wheat, meats and cotton constituting as I have said 92 per cent. of our exports. On the other hand we import annually over \$300,000,000 worth of agricultural products, many of which may be, I am sure, profitably produced in this country, for example, sugar and molasses, wool, hides, barley, fibers and horses, these alone aggregating \$170,000,000 in value or 56 per cent. of our imported agricultural products.

To me it would seem wise to diminish by a little the production of those products which are in excess of our wants and seek to produce those products for which the demand exceeds the home supply.

Let me mention only the matter of sugar and molasses, for which we annually expend about one hundred million dollars. I have a sample of sugar in my possession representing the result of an extended experiment with several hundred tons of cane, which I have no doubt can be produced at an expense not exceeding one cent a pound; and, within twenty-five miles of

where we now are, was produced, at great profit, a sample of syrup as good or better than any sold in the State of New York.

I should like to have said something about our roads and highways but I forbear only observing that probably no civilized and few uncivilized countries have roads so poor as ours. While in many and most things we have as a people made enormous strides in advance and are the wonder of the world for our achievements, no progress has been made in the matter of our common roads for half century. Their present condition is anomaly and a reproach to us as people, which should not be suffered to continue.

I regret to observe that several of our newspapers refer to the earnest recommendations of our chief executive in behalf of the improvement of our roads as "the pet scheme of the Governor." Now in what I have to say to-day I desire to avoid any suspicion of politics, while recognizing the fact that everything that has to do with production and consumption is a question inevitably of political economy. But in reference to this matter of roads, it seems to me that it should be for the future "the pet scheme" of every man, whether democrat, republican or mugwump, and of every woman and child also, until some action shall be taken looking to their permanent improvement. Within a week I had the pleasure of riding over a stretch of macadamized road nine miles in length, which within two years has been laid in one of the New England States, and I could not but think that such a road, like a thing of beauty, was a joy forever. Consider for a moment the enormous tax which our roads involve, without considering even the millions upon millions of dollars which during the past half century have been expended upon our roads without at present any evidence of improvement in their condition: consider the wear and tear of horses, harnesses and vehicles which the condition of our roads for months in the year involves; consider the loss of time, which also is money, and the wear and tear upon one's patience, for I doubt whether grace has been given to any sufficient to sustain him for a ten-mile drive over any of our roads during several months of the year.

I should like to have spoken of the money value of the beautiful about us, in trees and lawns and flowers. Do not your judges one and all give their prizes, other things being equal, always to that which is most beautiful. What piece of property animate or

inanimate is not enhanced by possessing the elements of beauty? Plant trees. Let me tell you of my personal experience as showing what one liberal-minded, public-spirited man may do to make his memory blessed.

During my senior year while sitting in my college room one day a rap at the door was followed by the entrance of an old gentleman of over 80 who came he said to again visit his old room, which he as a student had occupied over 60 years before, and in which I was to him almost an intruder. He also wished to borrow the keys of one of the libraries, that he might see how it had grown since he was librarian over 60 years ago. Upon returning from his visit to the library he told me how when he was appointed librarian he had taken the library in a wheelbarrow down to the book binders to be rebound. All in a barrow load, and I could not but think, said he, how many wagon loads it would take to carry the present library. But he added, that is nothing to the other changes I see about me. Why, said he, when I was a senior I looked out of that window and saw General Hillhouse while he was setting out the elm saplings along that street, and what a glorious sight they are to-day.

Aye, old man, glorious indeed they are, and to-day the crowning glory of that beautiful city are those overarching vaults of green, which have made the "Elm City" a synonym for beauty wherever upon this planet the English language is spoken, and, need I say it, that they have added hundreds of thousands of dollars to the value of the real estate.

Finally, ladies and gentlemen, let me conclude by urging upon your most earnest consideration the most important matter of all in my judgment, one which, receiving the attention due its paramount importance will open up the way for every good which is possible to the race and hasten the time when the highest success will crown our efforts in every direction.

Fichte said that "if Germany was ever to be free and strong it would be by becoming the chief educational state in Europe; and realize that the education of its youth was the highest care of the nation."

Milton said of England that "the reforming of education is one of the greatest and noblest of designs that can be thought of and for the want of which this nation perishes."

In his volume upon Systematic Technical Education in Europe by Scott Russell, which he dictates to the Queen, he said, twenty years ago: "There are now better educated nations in Europe than the English" and he "entreats her Majesty graciously to consider the case of the uneducated English folk, who are now suffering great misfortune in their Trades, Commerce and Manufactures, as well as in their social, moral and intellectual condition, through having been neglected and allowed to fall behind other nations, better cared for, by the men whose duty it was to lead as well as govern the people."

Permit me again to illustrate by recalling to your minds a chapter from secular history, and this also relating to a city brought to the very verge of despair by a besieging army.

During those cruel wars of Phillip II, when the Spanish army invaded Holland and laid siege to the city of Leyden in 1574:— who has not heard the terrible story? How that beleaguered city, wasted by famine, saw 6,000 corpses lying in its streets out of a population of only 20,000; and how in its last extremity, the dykes being cut, the intruding sea swept the invading hosts from the country, and brought relief in the flotilla of William, Prince of Orange. You will recall how, in reward for their consummate bravery and devotion, the Prince offered them the alternative of entire release from all taxes for a long period of years, or the establishment of a University in their city; and how this people, impoverished by war, exhausted by famine, added a crowning glory to their achievements by accepting the latter, and during the 300 years which has marked the life and growth of this grand old University of Leyden, no one has been found to say that they chose not wisely. Recall a few of those students and teachers of Leyden whose influence has largely shaped the affairs of the world for centuries: Boerhaave, the most celebrated physician of his century; the younger Scaliger, the "Father of Chronological Science;" Arminius, the famous theologian, whose thoughts are today a mighty power in Christendom; Descartes, the distinguished philosopher and mathematician; Grotius, that "monster of erudition" as he was called, the "Father of International Law."

Never was there a time when those words of Job and Solomon— "The price of wisdom is above rubies," and "how much better is

wisdom than gold"—were so true as to-day. "Knowledge is power" not only, but it is wealth.

I recall a little inland town in one of the New England States which for half century had become famous for its eminent men, for whenever the affairs of state demanded, this town sent men equal to any emergency. Such men as really constitute a state, better far than "high raised battlements and labored mound, thick walls and moated gates" in those immortal lines of Sir William Jones. I once asked one familiar with the history of that section the explanation, when he told me that it doubtless all arose from a good town library which had been established nearly a century before and the debating club which developed the young men of that community; leading them to acquire and apply their information.

As I would urge upon the farmer that he cultivate his fields, rather than to abandon them to weeds and brambles, so would I urge upon them, especially the young men, that they cultivate their minds and fill them with lofty thoughts, for no mind can long remain quite empty, but like an untenanted house, rats and bats and owls must soon possess it.

It is well also to bear constantly in mind that, as yet, we have not even begun to approach the limit of even profitable production upon our lands.

I have from a friend an account of his personal observations in certain sections of Europe, which are entirely in accord with the statement of a recent writer in the Forum, Prince Kropotkin, who states that in the district of Saffelare in East Flanders, comprising 37,000 acres of originally unproductive sandy soil, 30,000 inhabitants devoted wholly to agriculture, not only obtain support but actually export agricultural products, paying from \$15 to \$25 per acre rent for their land, two-thirds of which is devoted to cereals, flax and potatoes, while the remaining third supports a total of 10,720 cattle, 3,800 sheep, 1,815 horses, 6,550 swine, or a total of 22,885 animals.

Also, upon the Island of Jersey, Mr. Bear, an English agricultural writer, states that 13 acres, under cultivation by Mr. Bashford, yields an amount of products which "greatly exceed those of an ordinary English farm of 1,300 acres."

These examples teach us what is possible in the future of Agriculture in America.

The importance of the grass crop may be, and we think generally is, overlooked by most people. The value of our hay crop in New York State was, in 1888, more than three-fourths of a million dollars greater than that of all the corn, wheat, rye, barley, oats, buckwheat and tobacco crops combined. Counting all these, [including hay] at 100 per cent., the hay crop comprised 53.2 per cent., and all the others only 46.8 per cent.

But more striking even than this is the rate at which the hay crop has been falling off while the most important of the other crops have nearly or quite held their own.

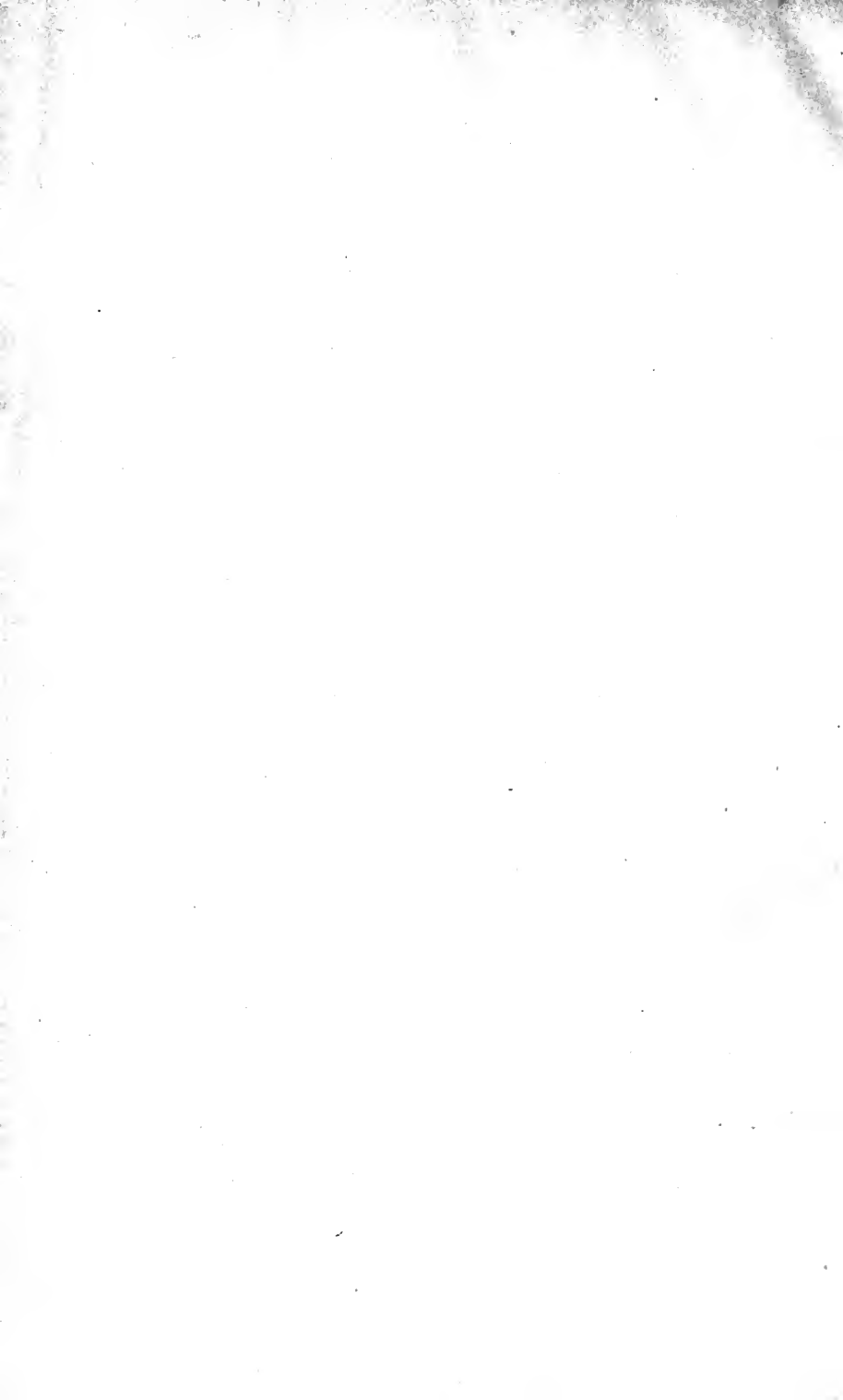
This steady decline in the hay crop has gone on, in part, no doubt from the fact that the average farmer uses his manure on the cultivated crops, which the hay crop has thus been regularly contributing to support, while itself neglected. Not only is the value greater, but the acreage of the hay crop stands to that of all the others, as 55 to 45.

This showing does not include pasture grass, which supports almost the whole of our dairy, sheep and growing stock about half the year, and is second to no other than the hay crop itself, if indeed it is second in value to that.

It seems desirable that some special attention be given to improved methods of culture to finding out the best species for hay and grazing and finally, for diffusing a better knowledge of some of the forage species of this great family of useful plants.

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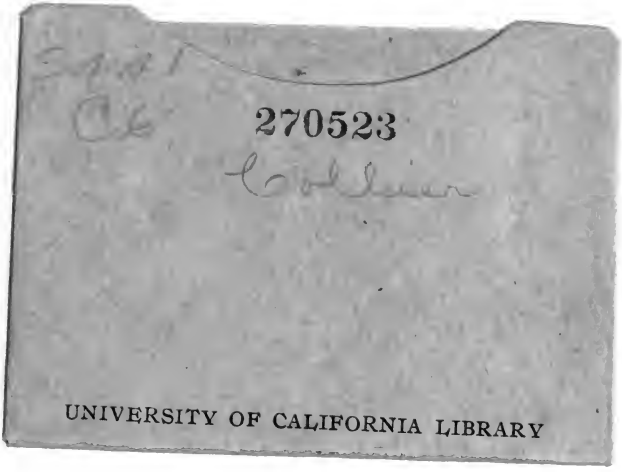
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