LESSONS OF TO-DAY.

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The New York State College of Agriculture is glad of this opportunity to extend its congratulations to its sister and neighbor institution on the completion of its quarter centennary. This has been a quarter century of pioneering and of experiment in experimenting; but for the New York Agricultural Experiment Station it has also been an epoch of substantial leadership and of great and lasting accomplishment. It is only necessary to recall the names of those who have successively composed its staff, to collect the bulletins and reports it has published, and to remember the public services that have been rendered by its men, to estimate the immense contribution it has made to the knowledge and welfare of the State. In more than one great enterprise New York has set high standards and has attained unto them; and one of the most prominent and successful of these enterprises is its State Experiment Station. The State College of Agriculture is proud to join you all in these felicitations, and to be glad in the prospect of many more successful years.

If this institution has developed leadership, it must have touched and influenced many movements that relate to rural questions. The fundamental purpose of any experiment station is to increase the productiveness of the land; and yet, at the very time of this celebration, we are told that the agricultural affairs of New York State are in a deplorable condition of decline. We are reminded of the census figures showing that in the years between 1880 and 1900 there was an annual decrease in the value of farm property of seven and one-third millions of dollars and in the value of land and its improvements of eight and one-half millions of dollars. We are reminded also of statistics indicating that there has been a decrease of twenty per ct. in the rural population. It has been said that there are twelve thousand abandoned farms in the State. What have this Experiment Station and its sister institutions been doing all these years that such conditions should prevail? Are we spending hundreds of thousands of dollars with the result that our agri-

culture is decreasing in its efficiency, even to the point when new and Herculean efforts must be made to rescue it? Or is something fundamentally wrong with the agriculture of New York State, which such institutions as this cannot reach? Or, again, is it barely possible that in some way we have misjudged the nature of the so-called agricultural decline? If we find an agricultural question, what is to be our attitude toward it? Your program announces that I am to speak on "Lessons of To-day:" in these questions I think that I discover my subject.

THE GENERAL SITUATION.

It may be a question whether the census figures of the different years are in all respects comparable. Conditions of money and of values are not the same in any two twenty-year periods. In 1880 we may not yet have passed altogether the inflated values of the war period. These census figures are now old and great changes may have taken place in the seven or eight years since the more recent ones were made. A current discussion of "changes in farm values" published by the United States Department of Agriculture and covering the years 1900 to 1905, makes a very different showing from those that we have been in the habit of quoting. These figures of the Department of Agriculture are estimates and computations, and I do not know whether they or the census figures more accurately represent the exact status of agricultural conditions. Even for the census year 1900, the differences in values as reported by the census and as computed by the Department of Agriculture amounted for New York State to nearly $99,000,000 for the value of land and improvements, including buildings. The computations of the Department as between the years 1900 and 1905 show a gain in similar values for the State of New York of more than $180,000,000. In more specific categories, the following figures from the same source show that there is a decided increase in farm values and therefore presumably in farm efficiency. The values of "medium farms" per acre for the years 1900 and 1905 in New York in the different classes of farming are as follows:

	1900	1905
Hay and grain farms	$40.29	$44.38
Livestock	33.83	37.94
Dairying	46.81	58.86
Fruit	70.87	84.46
Vegetables	69.98	81.91
General farming	38.98	44.00

The percentage increase of real estate value of such farms in the State for the years 1900 to 1905 are represented by the following figures, being much the highest percentage increase of any State in the group comprising New England, New York, New Jersey and Pennsylvania:

	1900–1905 Per ct.
All medium farms	18.3
Hay and grain	10.2
Livestock	12.1
Dairy farms	25.7
Fruit	19.2
Vegetables	17.0
General farming	12.9

A common measure of the supposed decline of farming is the fact that many farms can now be purchased for less than the buildings cost. This statement of itself does not appeal to me as having any special significance. A property is likely to sell for what it is worth, and this worth depends on its effectiveness as an economic unit or enterprise. Most of the buildings on farms were erected as much as a generation ago when the ideas of farming were radically different from those of the present day. It is doubtful whether most of these buildings were ever really effective even for the old kind of agriculture. At all events, few of them are adapted to the business that we must now conduct on the land. Many a farm would be worth more with the buildings off than with them on, for they would not then stand in the way of real betterment. Buildings are not permanent attachments to land and should not be so regarded. A countryman is always impressed, when he goes to the great cities, with the fact that buildings still in a good state of preservation are torn down to make place for new ones. These demolished buildings may not even be very old, but they are ineffective for present day business and it is unprofitable to keep them. The coming business of farming will demand a wholly new type of building in order to make the property effective, and we must overcome our habit of harking back to the time when the present buildings were erected. Every good farm ought to pay for itself all over again, land, buildings and all, every generation. Barns and other business buildings that were erected forty or fifty years ago should owe the farm nothing by this time. My hearer must realize the fact that we are beginning a new agriculture, not continuing an old one.

We must be careful, also, not to be misled merely by the appearance of farm property. It is often said, for example, that Tompkins County, from which I come, is a region of abandoned farms and declining agriculture, and the great number of deserted farm buildings is cited in proof. Now, the abandonment of farm buildings may or may not be a cause of apprehension and regret. Buildings may be abandoned because two or more properties have been combined into one and not so many buildings are now needed; or because the farmer has moved from an old building into a new and better one. In many parts of the State the buildings are no doubt too many and the farm properties too small for the greatest effectiveness. These properties were laid out or divided at a time when there was no great West and when these eastern lands grew the grain and other tilled crops for the large markets. Some of them were probably laid out in their present form in war time, when conditions were wholly abnormal. Many of the buildings were erected when lumber and other materials were cheap and when the comforts and facilities now placed in barns and residences were unknown. Moreover, deserted farm buildings are likely to stand until they fall down. In cities, land and location are valuable, and old buildings are torn down to make room for the new structures. Therefore, the country contrasts strongly with the city in respect to its buildings. The staring and windowless farm houses appeal to the imagination of the town visitor, and he accepts them at once as evidences of failure and decline.

In order to determine the significance of deserted farmhouses, we have made an inquiry in Caroline township, Tompkins County, cited as one of the abandoned farm regions. Every deserted farmhouse in that township has been seen by our representatives. Conditions in Caroline are as bad as anywhere in the county. Many of the farms are on the volutia silt loam, often undrained, high in elevation, and far from markets. Yet by actual count, there are only forty-five vacant farmhouses in the township, the area of which is more than forty-five square miles. One might draw the conclusion at once that there are forty-five abandoned farms in the township. It is doubtful, however, whether there is a single really abandoned farm in this area. It is true that there are many fields on the higher farms, especially in the south half of the township, that are not used except for hay and pasture and some that are not even used for these purposes. Practically all these so-called abandoned farms are either owned or rented by nearby

farmers and have really become a part of the adjacent farm. The house is unoccupied for the simple reason that the farmer needs but one house. In at least one case a new house was built and the old one left because the farmer had not found time to tear it down. A few vacant houses have been deserted by families who have lost their homes on mortgage, but apparently not primarily from fault of the land. Many others have been sold because of discontent on the part of the owners, who wished to try their fortunes elsewhere. In some cases the owner has died and the house been left unoccupied because the estate has not yet been settled. A few more are vacant because tenants cannot be secured, and the farm is rented to whomever is willing to take it on shares.

Similar remarks may be made with respect to many of the apparently abandoned fields. Because of inability to secure labor, the fence-rows and fences are often not as clean as formerly, and the roadsides have a shabby appearance. Fields are often grown to weeds; yet these fields may be only resting until the owner finds time to put them into crop, or they may be used for light pasture, or they may be in the process of returning to forest. Of course, they are relatively ineffective pieces of property, but the conclusion must not be reached, because they are unkempt, and not in use at the time, that they are abandoned or that the owner considers that he is obliged to desert them.

THE SIGNIFICANCE OF THE GENERAL SITUATION.

It is unquestionably true that there is lessening utility of some of our farming lands. In the face of this fact, however, three other facts stand out prominently: (1) Markets are as good as ever, for there is no decline in the purchasing power of the people (rather there is a reverse tendency); (2) the land is still productive, notwithstanding a popular impression to the contrary; (3) good farmers are better off to-day than they ever were before.

We have heard much about the abandonment of farms and we are likely to think that it measures a lessening efficiency of agriculture. We must not be misled, however, by surface indications. We are now in the midst of a process of the survival of the fit. Two opposite movements are very apparent in the agriculture of the time: certain farmers are increasing in prosperity, and certain other farmers are decreasing in prosperity. The former class is gradually occupying the land and extending its power and influence. The other

class is leaving the land. Abandoned farms are not necessarily to be deplored; rather they are to be looked on as an expression of a social and economic change.

The older farming was practically a completely self-regulating business, comprising not only the raising of food and of material for clothing, but also the preparation and manufacture of these products. The farmer depended on himself, having little necessity for neighbors or for association with other crafts. In the breaking up of the old stratification under the development of manufacture and transportation and the consequent recrystallizing of society, the old line fence still remained; persons clung to the farm as if it were a divinely ordained and indivisible unit.

We are now approaching a time when the traditional boundaries must often be disregarded. The old farms are largely social or traditional rather than economic units. Because a certain eighty acres is enclosed with one kind of fence and assessed to one man does not signify that it has the proper combination of conditions to make a good farm.

We must consider that the agriculture of the eastern states is now changing rapidly. It has passed through several epochs. The possibilities of agriculture in New York and the East lie largely in a new adaptation to conditions, and in its diversification. This diversification is already a feature of the East. It is significant to note that while New York ranks fourth in value of farm property, it ranks as low as seventeenth in farm acreage, showing that the yield per acre is far greater than in many of the competing states. In the total value of farm products New York is exceeded by Iowa, Illinois and Ohio. In the value of farm crops in 1899 it held fifth place, being exceeded by Illinois, Iowa, Texas and Ohio. Considered with reference to the value of farm products per acre it leads the states in this list, the figures being New York $15.73 per acre, Ohio $13.36, Illinois $12.48, Texas $12.25, Iowa $12.22; and New York is exceeded by New Jersey and some of the New England states. Considering the fact that New York State is one of the largest states east of the Mississippi, this condition also indicates that New York is internally less developed than some of its competing states. Illinois ranks first in value of farm property and first in available farm acreage; Iowa ranks second in the value of farm property and second in available acreage; Ohio ranks third in value of farm property and third in available acreage; New York ranks fourth in value of farm property and seventeenth in

available acreage. The above statements indicate the reverse of decadence in our agriculture whatever may be the statistics that express changing values or whatever may be the popular fancy to the contrary.

A further evidence of the great diversification of agricultural enterprises in New York, as a representative of Eastern conditions, is shown by the fact that in a list now before me of twenty-two leading products of this latitude, New York stands first in the production of eleven of them, whereas no other State ranks first in more than two or three of them. While the agriculture of the State in general shows a decline as measured by the census figures, the main lines of special development are in a condition of increased vigor and effectiveness; and this remark may be extended to other Eastern States. The wonder is, not that certain lands are returning to forest, but that, in all this shift, we have been able to hold the position that we still occupy.

This rapidly moving readjustment and diversification will produce fundamental changes in the mode of farming and in the economic, social and political outlook of the people. In the mode of farming, it will force new business organization; and when new acres cannot be had, the old acres will be doubled by using them to greater depths. In very many ways, the shift is now demanding a new kind of study of agricultural questions. This reorganization of agriculture is bound to come in every State; it is naturally coming first in the East, and, in the interest of the whole country, we should meet it hopefully.

Nor would I have my hearer feel that this readjustment is all in the future. It is proceeding at the present time, and with greater momentum and effectiveness that many of us, I suspect, are aware. After many years of touch with the problem and with the men who are capable of judging it, I am impressed that the persons who are most alarmed are those confined largely to offices and who are given to the study of statistics.

THE SITUATION OF INDIVIDUAL FARMS.

A discussion of statistical generalities does not exhibit the status of the individual farmer nor give us specific reasons for the decline of profitableness in farming. Every farm is a problem by itself and what may have been responsible for the defeat of one farmer may not have been the cause of the embarrassment of his neighbor. Some of the decline no doubt lies directly with the man, quite inde-

pendently of the land; it is psychological and perhaps even hereditary, and in its community aspects it is social; but these phases I am not now prepared to discuss.

The larger number of the farms of apparently declining efficiency are in the hill regions. Many of them are on soils of the volusia series, particularly on the volusia silt loam. This soil is of low humus content, usually with a high and compact subsoil, and limited root area. Many of these farms are unsuccessful in part because of their climate. They are elevated. It is often impossible to grow with profit the common varieties of corn and even of other grain. Sometimes the difficulty lies in their remoteness and the cost of transportation, together with the poor schools and social disadvantages that are a part of such isolation. Usually these hill lands are expensive to work and they do not lend themselves well to open tillage. Very frequently they suffer for lack of underdrainage. If the elevation is too high to grow good wheat it may also be too high for good clover, since clover is usually seeded with the wheat. These high and rough lands are not so frequently plowed as lower and flat lands and, therefore, they are not cleaned, do not receive the benefit of rotation and they are likely gradually to deteriorate in physical condition. There has also been great change in market demands. Beef raising has gone out of the East. It was a simple thing to grow the beef and to raise the milk in the old time, but it requires a high type of skill to grow and market a modern steer and to tend a modern dairy herd. With relatively few cattle, there is insufficient enrichment of the land. The farmer on these hills is likely to practice direct sales; that is, he sells his timothy hay and other products direct, removing thereby a large amount of fertilizing value and saving nothing of the crop except the roots and stubble to return to the land. This primitive mode of general farming allows a man to make a profit only on a single sale. The manufacturer tries to turn his property over more than once, each time expecting to realize a profit. When the farmer is able to market his forage largely in the shape of animal produce, he will not only save fertility, but should make a profit on both the crop and the animal. The selling of baled hay rather than pork and beef and milk and eggs, cannot be expected to yield much profit or satisfaction to the average farmer or to keep his land in living condition. Taking it by and large, no agriculture is successful without an animal husbandry.

The popular mind pictures these so-called abandoned lands as exhausted in their plant-food, but this is probably not often the case. Very many of them are potentially as productive as ever, but they are not able to satisfy a man who lives in the twentieth century. Human wants have increased. What would have made a good and comfortable living twenty-five or one hundred years ago, would not support him in the way in which he ought to live to-day, nor would it attract his boys to remain on the land.

All these and other causes of the decline of individual farms can be expressed as a lack of adaptation to the natural surrounding conditions. It is a biological fact that animals and plants cannot thrive unless they are well adapted to the conditions in which they live; and if they are wholly unadapted, they perish. Now, farming is not yet adapted to the natural conditions of soil and climate and market and other environmental factors. In fact, we really do not yet know what the soil factors are, if, indeed, we know to any degree of accuracy what any local factors are. If some of our Eastern farms have changed from corn and wheat to hay and if they have not prospered under this change, then it follows that they have not yet found their proper adaptation. It is not at all strange that this adaptation is lacking, since there has been no means of putting the farmer into touch with his own problem. Not one of the older farmers before me was adapted to his environment by the church or the school or by any other educational or social agency. If he is now adapted to the conditions in which he lives, it is because of some accident of heredity or circumstance. We can never adapt the business of the farm to its conditions until we understand thoroughly all the problems involved, and there has been no serious effort to understand these particular problems until within very recent time.

Much has been said about the disadvantage of the Eastern farms in competing with the Western farms. I am convinced that they often suffer quite as much by competing with each other or with regions close at hand. I recently took a thirty-mile drive, in the course of which I traveled a flat country where oats were a good crop and harvested by machinery and drawn from the fields in high-piled racks; on the same day I climbed a country of high and steep hills in which oats were a poor crop and not harvested by machinery and were hauled from the declivities in small loads. It was evident that the latter region could not compete in the raising of oats with the former, although they were less than twenty miles

apart. The one region seemed to be well adapted to oats and the other, at least on the hillsides, was not a profitable oat country. In other words, the farmers on the hills had not adapted their farming to the hills. I suspect that a bushel of oats cost them at least 50 per ct. more than it cost the man at the other end of the county. Yet, I think that there is a way of profitably farming those hills; many men have proved it.

THE REMEDIES.

While I am convinced that the general condition of New York agriculture is prosperous and hopeful, we all know that there are very great problems before us and that some regions are much more disadvantaged than others. If we are to discuss remedies we must first of all establish a point of view.

We must first disabuse our minds of all prejudgments and consider the conditions as they actually exist and in their relations to the general progress of the race. Our outlook must be forward rather than backward. We must overcome the influences of many phrases and trite statements that have long been public property. It is said that the farms are the bulwark of the nation. Like all trite sayings, this is both true and false. We need a conservative element of the farm, that has its feet planted directly on the verities of the earth. But we must remember that poor lands usually raise poor people. I do not conceive it to be necessary that all the lands in any commonwealth should support farm families in the sense in which we have understood it in the past. It is much better for the commonwealth, both from the economic and social points of view, that many of the lands should be devoted to forests or even allowed to run wild rather than to produce people that are only half alive. I should want to keep the conservatism of the agricultural peoples, but I should want this conservatism to be constructive and progressive.

I am not ready to admit that the traditional "independent" farm family on 80 or 100 acres of land is necessarily essential, as we have been taught, to the maintenance of democratic institutions or to the best development of agriculture. The size of holdings and the relation of the family to the land, are likely to change radically in many regions, and we must be prepared to accept the fact.

In the discussion of abandoned farms, I fear that we have been misled or even scared by a phrase. We have accepted the term "abandoned farms" as itself a statement of fact and have seemed

to reason from it as if it presented a single condition of affairs. Our imagination has often outrun our reason. It is not so much a question of abandonment as of shifting occupancy and radically changed conditions. If these conditions had been expressed with equal emphasis by some other phrase, the discussion of the question might have taken a wholly different direction. Suppose, for example, that a part of the problem had been expressed in the term "farms becoming forested;" the least imaginative of my hearers will at once see that a wholly unlike line of thought might have evolved from the discussion and wholly different conclusions might have been reached. There is really no problem of abandoned farms as such. The so-called abandonment of farms does not represent one condition, but many conditions; not one series of facts, but many series of facts; not one forthcoming result, but many results. The condition of agriculture, even though we admit it to be bad in many particulars, is not a cause for alarm, but is rather a reason for new and careful study. Nor is this subject peculiar to agriculture; it is rather a great question of public policy that fundamentally concerns the organization of society, and it cannot in any way be separated from the discussion of the great public questions of the day.

Mere public propaganda cannot solve these questions of land occupancy. Associations and conventions cannot solve them. Importation of labor cannot solve them, much as it may help the individual farmer here and there. It is a debatable question whether we should try to restock many of the present farms merely by putting a foreign family on them. Perhaps the very reason why these farms are in the process of decline is that they are necessarily ineffective economic units and are not capable of being directed into a farm management that is adaptable to present conditions. Merely to put families back on many of these farms would be to continue the old order; and it is this old order that we need to modify or to outgrow.

Viewed as an economic question, the shifting of farm occupation should not disturb us more than other shifting of population. In the present day, some of the lands that are now "abandoned" would not have been settled. They would remain in timber; and now, by the inexorable power of economic forces, they are returning into forest. The first flush of the settlement of the West has passed. Manufacturing industries have attained stable conditions. Persons are looking again to the country. The better farms again

are being farmed. Farmers are buying up adjacent lands and extending their business. Near the railroads, city people are building cottages and retreats on the sites of old farms, to find respite and peace. Other lands hang in the balance between the old and the new. Change of ownership is perhaps the first step in the solution of the problem. The difficulty is that farm management may not change with the ownership, but a new set of ideas is likely to follow sooner or later.

No mere treatment of symptoms can have much permanent effect on agricultural conditions. The agitation about these so-called "abandoned farms" is largely misdirected. It is well enough to make great effort to sell the abandoned farms, but it is better to combine this effort with a movement to reorganize farming. No hasty or clamorous propaganda is likely to be of much service; no introduction of mere extraneous agencies or forces can count much toward the solution of any problem. Many agricultural localities are making great effort to secure summer boarders. This may aid a certain class of persons; but as the summer boarder advances into the open country, agriculture is likely to recede.

Let us bear in mind that the questions of ineffective farming are not new. Just now the emphasis seems to be placed on the so-called abandonment of farms and on certain kinds of propaganda that promise to solve these difficulties. We have passed through many epochs or eras of agricultural propaganda, in each one of which some one factor was supposed to afford the means of relieving agricultural distress. I can recall many of these eras. I remember that at one time the emphasis in agricultural discussion was placed very largely on the farm mortgage, but we have now learned that a mortgage on a farm is not inherently different from a mortgage on any other property. I recall very well when the era of compounded fertilizers was at its height: all one had to do was to have the soil and plant analyzed, to determine the deficiencies, and then to prepare a medicine to cure the disorder. I remember the advent of farm machinery, which was supposed to be able to solve the farmer's difficulties. I saw the beginning of spraying for insects and plant diseases, and it was figured up for us what losses we suffer from bugs that prey on our crops: it has cost us more to fight bugs than to fight Indians, counting the value of crops that they destroy; spraying would provide a remedy, and yet bugs are still with us. At one time the emphasis was placed on underdrainage, and we need a recrudescence of this teaching. In parts

of the great West the emphasis is naturally placed on irrigation. We have looked to the rural free deliveries of mail as one of the great means of alleviating agricultural isolation and failure. The good-roads people have been sure that the lack of traversable highways is the cause of the so-called agricultural decline. Lately, various kinds of extension work have been strongly in the public mind. We are just now in the era of soil surveys and other soil studies. We are beginning to talk in a new way about the old and yet unknown subject of farm management. We are talking freely of social questions, without knowing just what they are.

Every one of these epochs has placed us on a higher plane, and yet we have never heard more about agricultural decline than within the past ten and twenty years, notwithstanding that this is the very time when the agricultural colleges and experiment stations and governmental departments have been expanding knowledge and extending their influence. The fact is that all these agencies relieve first the good farmers. They aid those who reach out for new knowledge and for better things. The man who is strongly disadvantaged by natural location or other circumstances is the last to avail himself of all these privileges. We have learned that it is not sufficient merely to start good movements, but that we must have some active means of reaching the last man on the last farm. This is by no means a missionary work; it is rather a duty that the State owes to its citizens, to provide those persons in difficult positions with the best possible means of making their property thoroughly serviceable. It becomes in the end, therefore, a personal question as to how information and education can be taken to the farms in such a way that the farming shall profitably adapt itself to its environment. Whatever may be the relative position of New York State as an agricultural region, or whatever may be the increasing effectiveness of our farming as a whole, it is nevertheless true that there are a great many farmers who are not making headway, and this may be less a fault of their own than a disadvantage of the conditions in which they find themselves.

It is fairly incumbent on the State to provide effective means of increasing the satisfaction and profit of farming in the less fortunate areas as well as in the favorable ones, both as an agency of developing citizenship and as a means of increasing the wealth of the State. The State cannot delegate this work, nor can it escape the responsibility of it. It is primarily an internal question. The questions must be attacked just where they exist, and with the sole purpose of solving them for the good of the people who meet

them. The location of the work and the character of it must not be influenced by any consideration of personal politics. The time has come when government by influence should cease.

There are three classes of remedies for the ills that overtake the tillers of the soil:

1. Remove all handicaps and disadvantages that are not a natural part of the business, as the inequalities of transportation facilities, the effect of combinations in the interest of the few, discriminations in legislation, the oppression of systems of marketing.

2. Give the farmer information to aid him in making a living and in enjoying it.

3. Set some activity at work to arouse, energize and inspire, to set out the possibilities of living on the land.

These are primarily functions of the State. New York has the land, the location, the people and the wealth that should enable it to work out these ends. It also has three institutions of fundamental importance, already well established and actively engaged in the work:

1. The Agricultural Experiment Station, which is discovering the facts, which is unexcelled by any other, and which is devoting itself without reserve to the public weal.

2. The State Department of Agriculture, which, in breadth of organization, in extent of operations, and in the results it has accomplished, is not equaled, so far as I know, by any other similar department.

3. The College of Agriculture, which, I hope, will in time also be equal to any other.

These three organizations, liberally supported with money and good will, officered by capable and far-seeing men who are not disturbed by public alarm, hold the keys of the future for the farms of New York State.

A SPECIFIC EXPERIMENT.

If the problems that we are discussing are personal, then we must begin with the individual man on his own farm. The College of Agriculture at Cornell University has long tried to extend itself to the man and to see the problems as he sees it. Many "surveys" of special industries have been made in former years and the results have been published in readable expository bulletins. Recently this idea has been extended to the making of a complete census of all the farms in Tompkins County, in order that the actual agricultural status may be known and judged. This county is chosen because it is near at hand, allowing us to work out the method

at the minimum of expense; and also because the region is representative of a great area of the hill country of the State. It is hoped that the inquiry may be extended to other counties. Already several counties have been surveyed in their fruit-growing relations. I speak of this work not so much to show what has been accomplished, as to illustrate the nature of the questions now under discussion and to let it be known that a beginning has really been made.

The "Tompkins County Agricultural Survey" was begun in the summer of 1906 when the townships in the western part of the county were surveyed. This included Ulysses, Enfield and the eastern two-thirds of Newfield. During the summer records of 486 farms were made in these three townships, practically every farm being visited and a record secured if possible. In the summer of 1907 Groton and Caroline townships were surveyed. In these two towns all the farms were visited and records of 474 farms secured. This makes a total of 960 farms studied in the two years. The work will be continued until every farm in the county is visited. We were fortunate to have the advantage of the soil survey of the county, made by the United States Department of Agriculture.

An attempt has been made to secure accurate tabulated information in the following lines:

Name and age of owner of farm.
Number of tenant farms.
Amount of rent paid by tenants.
Average acreage of farm.
Value per acre of land.
Amount of waste land.
Amount of timber.
Condition and extent of drainage.
The most profitable farm products.
Average yields of all farm crops.
Amount and character of all live stock.
The estimated value of farm cattle.
Total expenditures of each farmer.
Increase or decrease in soil fertility.
Increase or decrease in farm values.
Systems of rotation followed.
Condition of farm buildings and fences.
Condition of public and private roads.
And many other phases of the social and business side of farming.

It is hoped that by a careful study of the records valuable information of the following kinds, and others, may be secured:

Effect of system of farming on profits.

Effect of soil type and climate on system of farming.

To what extent are farms declining or abandoned.

Effect of topography and transportation facilities on prosperity.

To apply this knowledge in the actual management of a farm in the surveyed region, and by co-operative experiments with the farmers there.

A consideration of the methods followed by the most careful farmers in various sections of the country, to aid us in making suggestions of value to other farmers of the county and State, who have like problems.

In view of the frequent statements that this region is one of abandoned farms, the following figures of average value of land and buildings for five townships of Tompkins County may be helpful. According to the census report for 1900 the average value of land and buildings for New York State is $39.20 per acre. The table shows the value per acre of five townships in Tompkins County. Two of these are in the southern half of the county and are made up largely of hill farms of the volusia silt loam type of soil. Many of the farms are what are popularly known as "abandoned" farms. If the average for the whole county was known, the value per acre would not unlikely exceed that for the State.

Ulysses	$59.12 per acre
Groton	45.62 " "
Enfield	36.85 " "
Newfield	28.57 " "
Caroline	21.65 " "
Average	*38.26* " "

The question is often raised as to whether farm values are decreasing in this part of New York State. In order to secure accurate information, the question was included in the blanks for the townships that were surveyed in 1907. The figures give the percentage of farmers reporting in the different categories for the last five years; and they would appear to indicate that there is a steady rise in farm values at the present time:

	Increase.	Decrease.	Stationary.
Groton	64%	11%	25%
Caroline	46%	26%	28%

It will now be worth while to compare the yields of staple crops in these townships with yields for the State; these figures show that the lands are capable of good agriculture:

	1905				1906		
	Ulysses	Enfield	Newfield	N. Y. State	Groton	Caroline	N. Y State
	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.
Corn	34.0	34.5	30.0	31.0	35.5	33.7	34.9
Wheat	21.8	19.6	17.7	21.0	20.3	18.7	20.0
Oats	43.9	38.3	33.2	34.2	33.5	28.1	32.3
Barley	35.6	27.6	24.5	25.7	22.7	20.5	26.3
Rye	18.1	15.7	14.5	17.5	17.5	15.0	17.6
Buckwheat	23.1	21.9	19.3	19.0	23.6	19.2	19.0
Potatoes	....	....	....	....	107.2	97.6	105.0
	T.	T.	T.	T.	T.	T.	T.
Hay	1.59	1.57	1.31	1.30	1.60	1.08	1.28

We also raised the question of increase or decrease in soil fertility. Each farmer was asked how long he had lived on his farm, and whether the soil had increased or decreased in crop-producing power in the years that he had personally known the farm. Only those cases are recorded in which the farmer had known the conditions for five or more years. Many farmers had resided on the home farm for fifty years or more, but the results given in the following figures represent a knowledge of conditions for an average of about twenty-five years. The records of only two townships are given here, Ulysses and Enfield. Enfield township is often spoken of by those not familiar with actual conditions as being in a badly run-down condition. If the statements of farmers who are actually running the farms are to be credited the results seem to indicate that conditions are really improving:

	Percentage reporting increase fertility.	Percentage reporting decrease.	Percentage reporting stationary.
Ulysses	53%	21%	26%
Enfield	60%	16%	24%

One finds good farms right in the so-called poor farming region. One man from two hundred acres sold last year over $5,700 worth of produce, raised under general farming operations.

The number of acres per farm animal for these five townships of Tompkins County was also taken. It is often stated that the number of farm animals in this county is insufficient to keep up the fertility of the land. This may be partly true, yet in comparison with other sections of the State, Tompkins County is very likely up to the average. From very accurate information at hand it would seem that in this section general farming may be very profitable if at least one farm animal is kept for each six acres of land. By one farm animal is meant a full-grown horse or cow, this being the unit. Five calves, swine, or sheep are considered a unit, or two colts or heifers. The following figures show the number of acres per animal in the five townships surveyed:

Groton	6.08	acres	per	animal
Ulysses	7.8	"	"	"
Newfield	9.0	"	"	"
Enfield	9.05	"	"	"
Caroline	9.4	"	"	"

THE OUTLOOK FOR THE HILLS AND REMOTE LANDS.

Wherever farming is not now profitable, a special effort should be made to readjust it to the conditions of climate, soil topography, markets and the like. New York is admirably adapted to trees and grass. Anyone who has traveled much even in the Northern States will have noticed the superior quality of the tree growth and the grass cover in our region. Of course, our unprogressive areas, whether on hills or plains, present very many conditions and they are adapted to many kinds of agriculture; but in the particular type of hill land and remote land which is now most in the public mind I look for the development of three strong forms of farming:

1. Fruit growing for export. We have developed great skill in the methods of caring for orchards on the relatively level lands of the special fruit sections, but we have given very little attention to the growing of first quality apples in the higher hill regions. In such regions we cannot practice the type of clean tillage that we advise for other lands. Some relatively simple and inexpensive type of farm management must be applied to them. There is every reason to think that vast areas in New York State that are now practically unknown to fruit may grow a grade of apples that would be in great demand in the foreign trade.

2. A revival of the animal industries and the extension of dairying. The dairy interest is now the leading special agricultural industry in New York. With the continued development of great city markets the dairy industry must grow. Many of our hill and outlying lands are no doubt admirably adapted to pasturage and forage crops for cattle and sheep and swine, but the livestock interest aside from dairying is altogether too small in New York, and in the East in general.

3. The growing of forests. It is to the forest crop that vast areas of the roughest, highest and most inaccessible lands of the State are best adapted. As near as I can determine, about one-third of New York is woodland. In some counties, even outside the Adirondack region, two-fifths of the land is reported to be in wood lots. This is a greater area than is devoted to any other crop, and it probably yields less profit per acre; yet in the census year New York led all the States of the Union in the value of farm forest products. We must re-orient ourselves to the subject of forests. The forest is or ought to be considered as a crop. Natural forests are not necessarily the best forests so far as the production of timber is concerned. Nearly all natural forests abound in unproductive acres, and in trees of very slight commercial value, which are as much weeds in the forest as Canada thistles are weeds in the corn field. Man can produce a better commercial forest than nature usually does.

RECOMMENDATIONS AS TO STATE EFFORTS.

I am convinced that the State in its own interest should greatly extend its efforts for the betterment of its farming industries. Several new policies or enterprises are needed, four of which seem to me so urgent that I propose to state them:

1. A thorough-going survey of the exact agricultural status of the State should now be made. Such an inquiry made carefully and without haste by men who are thoroughly well prepared, and continuing over a series of years, would give us the data for all future work with local problems. We must have the geographical facts. We are now lacking them. We talk largely at random. We must discover the factors that determine the production of crops and animals in the localities, and the conditions that underlie and control the farm life. One part of this inquiry should consider the soil conditions. A study of these conditions involves a knowledge of the kinds, classification and distribution of the soils of the State and the relation of place and altitude to production of crops and

livestock; determination of the best drainage practices on various soil types; a study of the cultural experiences and manurial needs as adapted to the types; and other questions in furtherance of surveys and investigations now under way. Such a survey of the State should be broad and general enough to consider the status of all the agricultural industries in the State, and it should also take cognizance of educational and social conditions.

2. The State should establish experimental apple orchards of large area on some of the higher and cheaper lands in several parts of the State, at direct State expense, and under the guidance of experts, for the purpose of determining how far such lands can be used for the growing of export fruit, and what new methods must be developed for handling such plantations.

3. The State should make a thorough-going special inquiry into the status and prospects of the animal industries, collecting data on which safe and fundamental recommendations can be made for the improvement and extension of these industries.

4. There should be also a strong system of instruction and discussion of the farm forest wealth of the State, a movement which of itself would direct the utilizing of all lands otherwise unproductive, and which would be the greatest single contribution that the State could make to the solution of the questions that we are now discussing. Such a movement would be working in the line of least resistance and with nature rather than against it; for it would direct, hasten and concrete the natural and inevitable evolution of our higher and remoter lands. The State is giving good instruction in many kinds of crops that are of far less importance, both to the farming community and to the public weal than the forest crop.

AN APPEAL TO YOUTH.

Young men and women, I have something to say to you. I hope that I am speaking to some young person who has the love of the open country in his heart and who looks out to usefulness in the world. The opportunities out in that farming country are more numerous than the men or the farms that you will find there. Every question that is asked by a farmer suggests a subject for inquiry, and we all wait for the solution. Take hold of something because you feel that it will help your fellow man or woman. Do not be afraid to see visions. The man who never had a vision is dead. No person should enter into service for the purpose of developing leadership; he should serve for the sake of the service.

Leadership is a result of good service and will come as a natural consequence. Whatever the problem and no matter how small it may seem to you, if you solve it, greater things will come to you. The opportunities will be measured only by your ability to see them and to handle them. Most of us are so blind that we never see the opportunity that lies directly before us. I bid you then, go back into the rural country, fully inspired with the idea that great opportunity for service awaits you. Here is a new thing in the world, and a new opportunity for usefulness.

I am convinced that the opportunity for personal development is now as great in the open country as in any other direction. Every man or woman on the land who makes a real success at farming and at living is a marked person. He is not buried in the mere multitude. The good new things that need doing are so many that I do not see how a man can escape them.

Above all, old and young, we must never lose faith in the soil. It is the source and condition of our existence. It never grows stale and it never wears out. The earth is always young.

The fields were parched with summer's heat,
  The life and green from swamps had fled,
The dry grass crunched beneath the feet,
  And August leaves dropped stiff and dead.

Then light south winds 'cross wood and shore
  Brought cooling clouds and slow sweet rain,
And hills and crops were new once more
  And grasses greened on marsh and plain.

So swift the magic sent its spell
  Thro' burning corn and pastures dumb,
'Twas clear the world had rested well
  Against the time when rain should come.

So virile is this earth we own
  So quick with life its soil is stung,
A million years have come and flown
  And still it rises green and young.