does not so much interest his hearers but he starts them to thinking.

We want to view all these subjects as they are presented, from both standpoints, the information contained and the mistakes that we may see in our work as pointed out to us which should set us to thinking as to how to correct them. As I stated yesterday, the discussion following each paper is just as important to the reader of this report as is the paper itself, because quite often the discussion makes more plain the “meaty” points that cannot be fully explained in the paper.

We have a very full program this morning and the first topic for the morning’s discussion is that of Dairying, and Its Relation to Fortune and Fertility, to be presented by a gentleman who has given several years’ work and thought right along this line. I now am very much pleased to present to you Mr. A. J. Glover, Associate Editor of Hoard’s Dairyman, who will discuss this subject.

DAIRYING AS IT RELATES TO FERTILITY AND FORTUNE.

A. J. GLOVER, FORT ATKINSON, WIS.

Mr. Chairman, Ladies and Gentlemen:—The Chairman relieved my feelings somewhat by stating that there are two classes of papers, one that contains facts and the other of such a nature as to set people thinking. I was feeling somewhat depressed over my effort, but now I feel better, because I hope that my paper will set them to thinking. It has been an easy paper to prepare, and it has been one of the most disappointing papers, I think, I have ever undertaken to bring together facts that could be verified with figures.

We know in a general way what dairying is doing for the farmers of the country, but to get specific facts is a problem.

There is nothing of more importance to all humanity than the fertility of the soil, dependent upon it is the life of every living thing. The future strength, power and general welfare
of this commonwealth, in fact, of this whole nation, is in the hands of men who till the soil.

Dairying is closely associated with fortune and fortune with fertility. They have a close and important relationship. Where there is a rich soil there is usually a prosperous community and when dairying is properly conducted there is a rich soil. It is therefore both fitting and wise that these terms should be brought together and studied in order to bring out, if possible, their interdependent relation.

Historians have paid great tribute to statesmen who have helped to develop and guard the political future of our country but the very foundation of our nation is the soil and the farmers who have it in charge have a greater responsibility than the men who are shaping the legislation of our land. It therefore becomes the sacred duty of every man who owns a little spot of this earth to guard it well. He should leave it better than he found it. But this is not the history of our soil. If the history of American Agriculture is ever written, it will be a story of destruction from the Atlantic to the Pacific oceans. There is no country that has destroyed the fertility of the soil so rapidly, or used it more extravagantly than the American farmer. The foresighted men of every age, have observed this destruction and have given warning of its penalties. But it is only recently that the average farmer has begun to realize the necessity of giving his attention to this all important subject—preserving the fertility of our land.

In the beginning, this country, on the whole, had a rich soil and most men thought it inexhaustible. Our modern methods of farming, which have brought in vogue the rotation of crops, better cultivation, better machinery, tile drainage and with which has developed rapid and cheap transportation, opening markets to all parts of the world for our farm products, have increased our earning capacity but have hastened and encouraged the depletion of our soil.

We are now brought face to face with the problem of developing a system of farming that will not make our land less productive but more productive, for the old phrase “go West young man and grow up with the country” is obsolete. It should now read, go East young man and make the abandoned farms fertile. There is no longer any free land awaiting the destruction of its virgin fertility, but we must begin to practice a permanent system of agriculture.
ELEMENTS OF PLANT FOOD.

Every crop that is grown takes from the soil a certain amount of elements which are necessary for plant growth. The elements considered collectively are called fertility. It is plain then, if the crops are sold from the farm that it is only a matter of a few years before the land will become barren, no matter how rich the soil may be at the beginning. We little realize the vast amount of fertility that leaves the land when the farm products are sold in the form of grains. Let us consider, for a moment, the amount and value of nitrogen, phosphorus and potassium which are the chief elements of plant food, that are removed in a definite yield of some of the most common crops grown in our state. To illustrate these points graphically Dr. C. G. Hopkins of the Illinois Experiment Station who is one of the best authorities on soil, has prepared the following table:

<table>
<thead>
<tr>
<th>PRODUCE</th>
<th>POUNDS</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>---------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>Corn, grain</td>
<td>100 bu.</td>
<td>100</td>
</tr>
<tr>
<td>Corn stover</td>
<td>3 tons</td>
<td>48</td>
</tr>
<tr>
<td>Total crop</td>
<td></td>
<td>148</td>
</tr>
<tr>
<td>Oats, grain</td>
<td>75 bu.</td>
<td>45</td>
</tr>
<tr>
<td>Oat straw</td>
<td>2 tons</td>
<td>24</td>
</tr>
<tr>
<td>Total crop</td>
<td></td>
<td>69</td>
</tr>
<tr>
<td>Wheat, grain</td>
<td>40 bu.</td>
<td>46</td>
</tr>
<tr>
<td>Wheat straw</td>
<td>2 tons</td>
<td>19</td>
</tr>
<tr>
<td>Total crop</td>
<td></td>
<td>65</td>
</tr>
<tr>
<td>Timothy hay</td>
<td>2 tons</td>
<td>48</td>
</tr>
<tr>
<td>Clover</td>
<td>3 tons</td>
<td>120</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>4 tons</td>
<td>200</td>
</tr>
<tr>
<td>Potatoes</td>
<td>300 bu.</td>
<td>63</td>
</tr>
<tr>
<td>Sugar beets</td>
<td>20 tons</td>
<td>100</td>
</tr>
</tbody>
</table>

Now let us see how much fertility our dairy products contain equivalent in value to 100 bushels corn.

<table>
<thead>
<tr>
<th>Product</th>
<th>Amount</th>
<th>N.</th>
<th>P.</th>
<th>K.</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butter</td>
<td>500 lbs</td>
<td>14</td>
<td>18</td>
<td>18</td>
<td>7.93</td>
</tr>
<tr>
<td>Milk</td>
<td>10,000 lbs</td>
<td>53</td>
<td>19</td>
<td>18</td>
<td>2.83</td>
</tr>
<tr>
<td>Skim milk</td>
<td>10,000 lbs</td>
<td>56</td>
<td>20</td>
<td>19</td>
<td>2.40</td>
</tr>
<tr>
<td>Whey</td>
<td>10,000 lbs</td>
<td>15</td>
<td>14</td>
<td>18</td>
<td>1.08</td>
</tr>
</tbody>
</table>

.15
11.31
11.94
5.01
This table gives a clear exposition of the relation of dairying to fertility. When there is sold from the farm 500 lbs. of butter only fifteen cents worth of fertility leaves the farm and when 100 bushels of corn is sold, $18.18 worth is taken away. We should note, however, when 10,000 lbs. of whole milk is sold, $11.21 of fertility is taken from the land, if sold to the cheese factory, and the whey returned, $6.93. The whey returns nearly all the phosphorus and potassium taken away in the milk, so the element of plant food lost in selling milk to the cheese factory is largely nitrogen. The dairy farmers who sell whole milk for city consumption should purchase 19 lbs. of phosphorus and 18 lbs. of potassium for every 10,000 lbs. of milk that is sold from their farms. The nitrogen may be obtained by raising clover and alfalfa. These are crops that every dairyman should grow, for they supply the protein, so necessary for making milk. Farmers that sell butter have but little to fear in regard to their fertility, but it is probably safe to say that all dairy farms in this state would be improved by the use of phosphorus; ground rock phosphate mixed with the manure is probably the best way to apply it, for the phosphorus is put in a form that the plants can use it in the presence of decaying vegetable matter.

In Wisconsin we knew but little about the use of commercial fertilizers, in fact, we scarcely know what is meant by the term, but in the older agricultural districts the farmers are not only familiar with the name of commercial fertilizers but they are using thousands of dollars worth annually. It is not uncommon for a potato planter to put on an acre of ground, which he intends to plant to potatoes, from twenty-five to forty-five dollars worth of commercial fertilizer; wheat farmers in many cases are spending from three to six dollars per acre and in New Jersey the farmers and gardeners are purchasing about one million dollars worth per year. In Georgia the farmers are paying hundreds of thousands of dollars a year for fertilizers. Think of the enormous amount of money that could be saved if those in the beginning had used the proper methods of farming.

Mr. Chas. L. Hill, a well known Guernsey breeder of our state in writing Ex. Gov. Hoard, sent these facts:

"I am now waiting for a train at Barnveld, 16 miles north of Utica, still in Oneida county. I cannot help thinking of what
you have often said about cheap land here. The station is ¾ of a mile from the village called Trenton. The first farm from the station towards the village has a fine stone house, a basement barn over 100 feet long, a tenant house that would cost from $800 to $1,000 to build and other out-buildings.

There is a fine yard, trees and fences. The owner just died and the farm has gone for the mortgage. They tell me $40 or less per acre will buy it. The farm is only a quarter of a mile from the station with four passenger trains daily each way, and a half mile from the village of Trenton.

The livery man tells us of a farm of 100 acres, a mile and a half out, that sold for $1,200 last fall.

Another farm, he thinks of 175 acres, between Rome and Utica, four miles from railroad and a half mile from a cheese factory, good house and new barn 75 feet long with basement, for sale at $1,400. How is that for cheap?"

If we are wise we will make use of the lessons that these conditions teach. Once these farms were rich and productive but today they are at a low ebb in fertility and made so by careless and indifferent methods of farming.

Soil exhaustion is not alone confined to United States, but it extends to all parts of the globe where the soil is obliged to give up its fertility for the raising of crops. Not long since Dr. C. G. Hopkins wrote Doctor W. E. Macklin of Nankin, China, the following letter:

"It would be of much interest and value to me to learn the condition of approximately level upland plains, lands which are not subject to erosion by surface washing and which do not receive deposits of soil material washed from higher lands. If there are such lands in China, it seems to me, that if they have been cultivated for thousands of years and the crops largely removed they must have become exceedingly unpro-
ductive."

Dr. Macklin replied as follows:

"I think you have struck the problem of China—how to make the table and upland soils productive. I know of a place 10 miles in diameter of such land as you mention where no one lives. There is lots of such land in China and even in North Japan where I have travelled."

There is nothing particularly startling about this statement of Dr. Macklin, for in this country we can find abandoned
farms and others that are not profitably productive, which in the beginning were good land. I simply give these statements to show that the question of preserving the elements of plant food is now new. It is as old as the hills. The present generation however, must solve the question of a permanent system of agriculture.

"If we are ever to adopt systems of soil improvement, says Dr. Hopkins, it must be done while we are prosperous. People living in poverty on impoverished lands have no money to invest in the improvement of their farms, no matter how great returns such investments would promise in future years. Soil that has been running down for a century cannot be built up economically in a year, so as to pay an immediate profit on the improvements.

The dairying comes nearer to solving this question than any other branch of farming, for it makes the rotation of crops possible and retains the fertility of the farm.

JEFFERSON COUNTY.

I have tried to work out a brief history of Jefferson County as it relates to this subject. It furnishes an interesting and profitable lesson.

Jefferson County was one of the first settled counties in the state and was a comparatively easy county to bring under cultivation. The western part of the county was opening and all the farmers had to do was to break the land and sow it to wheat. They needed ready money and wheat, of course, gave as quick returns as any crop that could be grown.

An early settler of Jefferson County in writing about the conditions and practices of farmers prior to 1870 and a man whom many of you know, Mr. C. P. Goòdrich, has this to say: "The early farmers of the county seemed to have the idea that all there was to farming was to plow up the-ground, sow it to wheat and sometimes other grains; when the crop was ripe, harvest and thresh it and take it to market, and the next year do the same thing. Thus they went on year after year. They never seemed to think that with every load of grain sold off there went a part of the fertility of the farm, and if this process was kept up long enough, the fertility would be so reduced that no one could get a living from it.
Occasionally, indeed, there was a man who could see that this was not the right way to farm, and stocked up his farm with cattle or sheep and therefore averted the ruin toward which he was tending."

"I have in mind a man for whom I worked when a boy. He knew he was not doing just the right way, for I heard him say once, 'I know this isn't the right way to farm it; I suppose it will make the land poorer after awhile, but it will last as long as I live and I do not care a rap what becomes of it then. Let the next generation look out for themselves; I had to look out for myself.' But he either lived longer than he calculated or else the land got poor quicker than he expected, for when he died he left a run-down, impoverished farm which was covered, for all it was worth with a mortgage that cost his sons, with the best methods of live stock farming, a long hard struggle to lift."

Jefferson County was not strong in fertility, and in thirty years the farmers found themselves with land so poor that it was no longer profitable to grow wheat. In 1870 the average yield of wheat was about eight bushels per acre and the mortgage indebtedness amounted to about sixty per cent of the assessed valuation of the farms. Buildings were poor and farmers everywhere were in a hard row of circumstances. Land was worth but $20 per acre and families were leaving for the wheat fields of Dakota. Those who stayed, turned their attention to dairying and the county is now rich and prosperous.

Nearly every farmer has a good home, comfortable barns for his stock and everything about his place shows thrift and profitable agriculture. Land has advanced from $20.00 to $100.00 per acre and the average production of wheat has been raised from 8 to 15 bushels per acre, and but little is raised. The average yield of corn is 42 bushels per acre or greater by five bushels per acre, than the average yield of the great corn state, Illinois.

The total number of farms in the county is 3,129 and the total number of creamery patrons 2,850 and the average employed acres are 75 per farm. The total number of animals on each farm, is 21, consisting of twelve cows, four horses and five head of young stock.

The amount of fertility removed by the grain crops from
each farm, on the average, amounts to $330 and the amount of fertility returned by the animals amounts to $267, or $63 more fertility is removed by the crops than is returned in the manure. The growing of clover and alfalfa will probably more than make up this difference. At any rate, the county is more prosperous than it was at the end of the wheat growing period and the farms are producing more stuff to the acre and the changed condition can well be attributed to dairying.

STEELE COUNTY, MINNESOTA.

The history of Jefferson County has been the history of every county that has raised and sold grain, without using some methods to put back the fertility taken from it by the crops. I can well remember the condition in Southern Minnesota, twenty-five years ago. Wheat raising was no longer profitable and farmers were leaving for Dakota. Steele County, situated in the extreme Southern part of Minnesota, had been a one crop county and after the farmers had grown wheat for twenty-five years, found their soil exhaustive. The county was heavily in debt, farms mortgaged, building poor and the farmers’ credit gone. Something must be done. The co-operative creameries came and farmers began to milk cows and now it is one of the most prosperous counties in the state. Its farms are growing better, the farmers have built good buildings and paid a large portion of their debts.

I wrote to Mr. J. R. Morley, Secy. of the Minnesota Dairymen’s Association and a prosperous dairyman of that county, for some information in regard to Steele County’s present condition. He replied to my letter as follows: “The latest compilation, 1904, shows that Steele County, which consists of only twelve townships, has 23 co-operative creameries, and in that year made 3,542,262 lbs. of butter and paid the farmers $718,026. In regard to the increased yield per acre, it would be hard to give the exact figures, but it would be safe to say that the yield of grain has increased 50 per cent in the past 25 years and the value of the land has increased 300 per cent.”

Jefferson County has 16 townships and 66 creameries and 6 cheese factories and the total income for her dairy products alone is $1,699,540 or $643 for every farm in the county.

This is not a large sum but it means the difference between
Prosperity and poverty. Then too, there is a greater profit than is shown by these figures, for the farmer has the skim-milk for his hogs and calves, which easily amounts to $150 per farm. Besides the income from the milk there is sold from Jefferson County each year $240,000 worth of dairy cows and some years $500,000 worth. All these things combined, and with the increased crops, have brought Jefferson County from poverty to prosperity, and the credit for this beneficial transformation is due largely, if not exclusively, to the dairy cow.

To be more specific in regard to dairying increasing the fertility of the soil, I will cite the yields of corn which are obtained by two prominent dairymen. Forty years ago when Mr. H. B. GURLER of Illinois, began to work his present farm, it then yielded only 30 bushels of corn per acre. This same farm, without the use of commercial fertilizers, simply by husbanding and returning the stable and barnyard manure from a dairy herd, has increased to an average yield of 80 bushels of corn per acre and some of his fields have averaged as high as 93 bushels.

Mr. Chas. L. HILL, of our own state, a dairy farmer as you all know, raises 150 baskets of corn to the acre, or about 75 bushels of shelled corn. His farm is at Rosendale where it was once thought that corn could not be raised.

THE DIETRICH FARM.

To give a still more striking example of what dairying will do, I will briefly give a report of that wonderful farm in Pennsylvania, so commonly known as the Dietrich Farms. There is probably no better example of the profits to be derived from dairying, than is described by Prof. W. J. Spillman in his interesting and instructive Farmers' Bulletin, No. entitled, "An example of Model Farming." The report describes how a 15 acre, run-down little farm was managed so as to make it pay a handsome return.

When the farm came into possession of Mr. Dietrich it would scarcely support three animals, but with intensive dairy farming it was brought up in fertility with the use of barnyard manure only, so that it produced enough roughage to feed 30 animals a year and it was only necessary to pur-
chase $625 worth of feed in order to manufacture $2,400 worth of milk, and besides this three or four animals were sold each year at $100 a piece. This little farm gave employment to one man and a boy during the entire year and at certain seasons more help was required. The average income per acre, per year, for milk, was $160 which is surprising to anyone who has not considered the possibilities of dairying. The land yielded 25 tons of green corn to the acre and 87 tons of cured hay are grown per year, making an average yield of 6.7 tons for every acre under cultivation. Certainly such a system of farming pays beyond comprehension.

No man can serve his country better nor leave his children a richer heritage than a spot of mother earth in a high state of cultivation, and no animal is so helpful in doing this as the dairy cow. She will reward you richly, if you will learn her ways; she will give healthy and profitable employment for yourself and children and endow you with a competency for old age, besides leaving your farm more fertile, more productive and more valuable as year succeeds year.

Fortune follows fertility; fertility follows dairying, and this is how dairying is relative to fortune and fertility. It is a case of cause and effect.

DISCUSSION.

The Chairman: This is one of the papers that should set us all to thinking. It set me to thinking backwards, and it may be well to hark back once in a while. In 1894 when I took charge of the Wisconsin Institutes, it was suggested to me by a party very much interested in the Institutes that it was possible that we ought to change the programs of the Institutes so that they would be more interesting to the people, and especially the plan that had been followed for several years of discussing soil fertility, barnyard manures, crop rotation and those subjects that related to the husbanding of the fertility of the soil, that they might be dropped for a time and other subjects put in their place; and the thought of changing the program was favorably looked upon by myself and I had about concluded to make such changes when I went down
and was making an exhibit in the Madison Square Garden in New York. I had heard a great deal about these depleted farms and about the methods followed by Eastern farmers, so I made it my business while there a week to ask the farmers about agricultural conditions. They lamented, complained that times were bad, charging it up in the main to the natural fertility of the West and the competition they had to meet, with the cheap agricultural production coming from the West. The fertility of the Western soils, and the cheap freight rates on long hauls were the two things that seemed to be specially troubling them, and they would go on and tell me that they might make a little money, were it not for the fact that they had to spend about all they got for commercial fertilizers, so that they could grow a crop with any profit at all.

After that week's observation and discussion with these people I came back to Wisconsin with my mind fully made up that so long as I had to do with the Wisconsin Institutes that under whatever head we could place them, we would study in the Wisconsin Institutes those subjects over and over again and that was fourteen years ago.

Now, when you quoted from Friend Hills' letter about selling cheap farms, I concluded it was all right for Mr. Hill to write in confidence to Gov. Hoard about the great chances to build up homes in the East, but it was all wrong to have that published in the state of Wisconsin, because the state of Wisconsin is paying money to maintain an Immigration Board to draw people into our state to settle up our cheap lands, and here Mr. Hill, through your Bureau of Publicity is going to advertise the cheap lands of the East, and upset the efforts of our Immigration Bureau.

Now, there are a good many questions that might be asked on this paper and we are ready for them, or for any statements that you may wish to make.

Mr. Linse: I want to ask about those cheap lands in Wisconsin way up at the North Pole.

Mr. Glover: There are such, yes.

Mr. Taylor: I would like to ask if the Government land policy has not had something to do with this system of exhausting soil; that is, being able to get land so cheaply when the land farther East was worn out, instead of using fertilizers or a proper system to make it profitable, has not the
tendency been to go on West and take the land, because it was so cheap? Would not the result have been to bring in more intensive farming earlier had the government charged a little more for the land?

Mr. Glover: I think it is true that where a thing can be obtained for nothing, or at a very low figure, it is of little value, and undoubtedly what you say is true. The land came to many for nothing, rich land, and they did not prize it very highly.

The Chairman: That has been the mistake, possibly, in one sense, of our Government in giving away these public lands, that has had the effect not only of producing a lot of careless farmers, but our Rockefellers and our Harrimans; just that policy has done it.

Mr. Taylor: I would like to ask also with reference to those New York farms that are so cheap, if at the present time they are yielding so much less than Wisconsin farms? In Jefferson County, New York, for instance, I found farms this summer that were yielding as large a profit per acre, and were rated on the same basis as any Wisconsin farm, upon which the landlord will get just as much out of the land per acre, and the land there was held at only $50 an acre, whereas such land would be held at $90 in Rock County. Now, how would you explain a difference like that?

Mr. Glover: I think in some places in Wisconsin that the land is too high for what we are getting out of it, and perhaps the land in the East is selling for less than it should be, but I think, as near as I can get at it, from those people who have been there, that the lands selling so cheaply are yielding less grain per acre than our lands. Mr. Hill has just been down there and has been studying the subject; we will be glad to hear from him.

Mr. Hill: I, of course, did not see those lands with the snow off; at the same time as near as I can find out it is not because those farms are worn out; you can see from the condition of the fences and the buildings that the farms are kept up in good shape. I think the explanation of that is that they have not the foreign population there and the young men have been attracted away from the farms. There isn't anybody who wants to rent them, consequently they have to rent them cheap to get anybody to take them. The lands
are much more infested with noxious weeds than they are in Wisconsin, but they can be readily got out of the way, and those lands are selling, considering the market conditions, very much below our lands, and at all those stations milk was selling at four cents a quart this winter. They are not such worn out farms as we talk about in New England, and they are really selling very much below their value.

Mr. Linse: Isn't it a fact that if a certain nationality lives in a certain location, it will change the conditions and values of the land altogether?

The Chairman: Yes, that is so.

Mr. Linse: I have reference to the Dutchman, of course.

The Chairman: If those Dutchmen were all Linesses, land would certainly go up.

Mr. Scott: Are we to infer from your paper that in five hundred pounds of butter there is only 15 cents of fertility removed from the soil?

Mr. Glover: Yes, that is according to the authorities.

Mr. Scott: Then a man can put his hand in his pocket and pay for that fertility that is gone with fifteen cents?

Mr. Glover: Yes, sir.

Mr. Scott: Hasn't it taken feed to produce this five hundred pounds of butter?

Mr. Glover: It certainly has.

Mr. Scott: And has not the animal extracted the manurial matter from the feed?

Mr. Glover: Yes.

Mr. Scott: How is that paid for?

Mr. Glover: It is in the skim milk.

Mr. Scott: We have been laboring under the impression that there is about 25 per cent. actually consumed by the animal and extracted from the feed, that much lost in making butter.

Mr. Glover: Well, there is. I did not say what got back to the farm. If a man puts his manure out in the yard and permits it to leach away, he can lose that much. I am talking about what is sent off the farm.

Mr. Scott: When you are feeding that skim milk to hogs and calves and they are making their growth out of it, where does that come from?
Mr. Glover: You sell to them for a certain sum; but at the same time it is your nitrogen that goes away.

Mr. Scott: I am in favor of dairying, I am dairying and I preach dairying in our Institute work, and we know that the State of Wisconsin has profited immensely by the dairy interests, I agree with you fully that our farms can be kept up through the dairy better than they would be in any other line, but at the same time I wouldn't want the farmers and dairymen to believe that they are going to keep up the fertility of their farms indefinitely by feeding only what they grow upon those farms to dairy cows, and remove this very small amount in their butter. We want to know if it is a fact, and I believe it is, that we have got to buy something to feed to those cows to return to the soil to make up for this fertility that we are taking from the soil.

Mr. Glover: I said in my paper that where there are ten thousand pounds of milk sold to-day that it would probably be well to return about nineteen pounds of phosphates and eighteen of potassium. The nitrogen you can get in growing legumes. I also said that the cows in Jefferson County return $26 worth of fertility. Now, how much of that goes back to the land, depends on how the man cares for his manure, and the principal element that is lost from fermentation is nitrogen, and we have a great storehouse of nitrogen in the air and we can get that nitrogen, plenty of it. What we must look out for in Jefferson County, and this whole state, is the phosphorus and potassium.

Mr. Scott: When Mr. Hill is raising his calves, he has to feed them something besides what he is growing on the farm?

Mr. Glover: Yes; I think it would be well for every dairyman in Wisconsin to make it a point to use ground phosphate rock. We are doing it on our own farm, putting it in the gutter, and in the presence of the decomposition of the manure this phosphate rock is broken down and becomes favorable as plant food. It must be brought in connection with the decomposing vegetable matter. Humus is also an important element and that is brought to the soil by dairying. That is one of the many things I did not mention.

Mrs. Howie: You said Mr. Dietrich had thirteen acres under cultivation. How many cows did he milk?
Mr. Glover: He had thirty head of stock, and he raised the roughage for them.
Mrs. Howie: Wasn't that a pretty lucky number thirteen?
Mr. Glover: Yes, it seems so.
Mr. Scott: I have heard the question so often raised why
Mr. Dietrich left the farm.
Mr. Glover: His land was absorbed by the city for public
city lots, and then he went to a larger farm in Pennsylvania
and began on a larger scale.
Mr. Scott: We have got to hear from him again, then.
Mr. Glover: Everything was going very nicely, but the
man, I guess, with whom he was working, spent a little bit
too much money in his family matters.
Mr. Scott: If he was as good a preacher as he was far-
mer, he must have been a "dandy."
Mr. Taylor: There was one question suggested to me this
morning, and that is if the farmers in the other state should fol-
low after Wisconsin and do just what is the most profitable
thing here, go into the dairy business; would the sale of dairy
products keep up? Suppose Illinois and the other states
where they are growing corn and selling it, suppose they
should go into the dairy business, would it put the price of
butter down so that we would have to go back to growing
wheat to some extent?
Mr. Glover: It might if we all went to dairying, but there
is no danger.
Mr. Linse: That same question bothered my head con-
siderably because I was making butter, and when these fel-
lows began to move around the state and preach how good
butter was to be made, I said to myself, "You will have to
give up making butter; your butter won't bring any twenty-
five cents a pound." And yet it brings a bigger price all the
time. The preaching hasn't done a bit of harm.
Mr. Scott: If the gentleman would go to the Fairs of
some of the states, especially in the South, he would see that
there is no danger.
Mr. Glover: There is nothing to worry about.
Mr. Hill: That question has been raised every year twen-
ty-five years to my knowledge, and dairy products have been
going up all the time; that is, good butter.
Mr. Nordman: Notwithstanding all our preaching, peo-
ple continue to go right out West and farm these new soils and exhaust them, and they will do it as long as there is new soil to exhaust. Now, when the time comes that there isn't any more new land or any of this cheap fertility, then the Wisconsin farmer, or any farmer in the East, will find the prices of grain will be high enough so he can afford to turn his attention to the production of grain. But as long as these men out West continue to grow their grain from these rich lands and have nothing else in the future to consider, they can grow them cheaper than we can in Wisconsin.

The Chairman: Isn't there another point there, that the whole of the United States cannot go into dairying very well, owing to climatic and other conditions?

Mr. Glover: Well, that is very doubtful, whether we have any climate that would not permit people to go into dairying with ice machines.

The Chairman: But to meet the competition of districts that are more favorably situated as far a climate is concerned.

Mr. Glover: That is a debatable question. I sometimes think the South is better adapted to dairying than our climate. For instance, Mr. Gurler has bought some farms in Mississippi. He can grow grain and everything else that is needed and more of it, and we will hope that he can get the help he needs for milking among the negroes.

Mr. Hill: That is one of the conditions in New York. It is almost impossible to get help to milk. We don't know anything about the hired help proposition on a dairy farm as compared with New York, although it is a little hard here sometimes.

The Chairman: Before I close this subject, I want to give you another of my back thoughts. When I was a boy, I was being reared on a farm in Waukesha County. We were raising wheat. I remember three years of scarcity in the crop. For three years our wheat yield ran from five to seven bushels. That was in the days of the chinch bug. Conditions were changed on our farm, there was some dairying and pigs, sheep were put on the farm, more grain raised, and after that had been continued some three or four years so that the rotation, including clover and a light covering of barnyard manure had gone all around the farm, instead of raising sixty
...acres of grain as we used to on that farm, we had reduced the grain acreage to twenty acres and for three years after this rotation had been put in force I remember making a comparison with the figures I had, showing that for three years we grew more grain on this twenty acres of the farm that we had in grain than when there were sixty acres sown, and we had taken in a great many hundred dollars from our cattle, sheep, wool, swine and butter. It was a very pleasant change in the farm conditions on that eighty acre farm.

For want of time we will have to close this and take up the next topic. I said yesterday that Wisconsin people were very proud of what Wisconsin had produced on her farms, and at this time I am going to introduce to you another product of the Wisconsin farm, not the calf, though that is a product of the farm, and the subject is How to Raise a Dairy Calf, but it is the person who is to present this subject, that I refer to as being the Wisconsin product, developed in Wisconsin, and I take pleasure now in introducing to you Mrs. Adda F. Howie, of Elm Grove.

HOW TO RAISE A DAIRY CALF.

MRS. ADDA F. HOWIE, ELM GROVE.

The dairy interests of our state have assumed such important proportions, that it is now necessary to give every phase of the business our most earnest consideration, and, while I am not here to advocate any special kind of cattle, and, furthermore, have no intention of making discrimination in setting forth the merits of each dairy breed, I would most respectfully suggest that those desiring to engage in this line of work, would give the matter more than the usual amount of deliberation. And, while I would not advise the ordinary farmer or dairyman to put aside his native stock and replace it with pure-bred for the reason that I don’t believe one man in fifty is competent to care for highly developed cattle, I would suggest that every farmer or dairyman build up his herd and I earnestly assure you that while you are