

PROCEEDINGS  
OF THE  
TWENTIETH ANNUAL MEETING  
OF THE  
IOWA STATE  
Improved Stock Breeders' Association,

HELD AT  
CORNING, DECEMBER 6 AND 7, 1893.

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OFFICERS:

President—DANIEL SHEEHAN, Osage. Vice-Presidents—HON. B. B. VALE, Boone; C. W. NORTON, Wilson Junction; C. MURDOCK, Waterloo; JNO. D. HERRICK, Fredericksburg; J. N. DUNN, Waubeck; J. R. CRAWFORD, Newton; N. J. HARRIS, Des Moines; HON. W. O. MITCHELL, Corning; PROF. D. A. KEST, Ames; EX-GOV. CARPENTER, Ft. Dodge; HON. J. D. YEOMANS, Sioux City.  
Secretary and Treasurer—GEO. W. FRANKLIN, Atlantic.

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1894.

## PROGRAMME.

WEDNESDAY AFTERNOON, DECEMBER 6.

1.30 O'CLOCK.

Welcome, by Hon. W. O. Mitchell.

Response.

President's Address.

Appointment of Committees.

Enrollment of Officers.

"Drainage," by J. W. Bopp.

"Breeding and Feeding the Farm Horse," by B. F. Gove.

"Typical American Horses and How to Produce Them," by N. J. Harris.

Discussion.

EVENING SESSION.

7.30 O'CLOCK.

(Special invitation to residents to attend this session.)

Entertainment by the high school of Corning.

Address, by A. V. Stout.

"Agricultural Education," by John Cownie.

THURSDAY MORNING, DECEMBER 7.

9 O'CLOCK.

Opening exercises.

"Barn Building," by Prof. D. A. Kent.

Discussion.

"The Improved Farm Dairy," by Prof. H. C. Wallace.

Discussion.

"Fattening Animals," by Ex-President C. F. Barclay.

"Sowing Crops During Drouth," by Prof. Jas. Wilson.

Discussion.

THURSDAY AFTERNOON.

O'CLOCK.

"Pastures," by Hon. J. B. Harsh.

Necessary Changes in Stock Business," by Henry Wallace.

"Stock Gossip," by Hon. John McHugh.

"How to Make Sheep Profitable in Iowa," by Jos. J. Edgerton.

Discussion will follow each paper as time will permit.

Unfinished business.

Adjourn.

## OFFICERS FOR 1894.

### PRESIDENT.

W. W. McCLUNG..... *Waterloo.*

### VICE-PRESIDENTS.

J. P. MANATREY..... *Fairfield.*  
 R. BAKER, Jr..... *Farley.*  
 JNO. COWNIE..... *South Amos.*  
 W. B. BARNEY..... *Hampton.*  
 PROF. C. F. CURTIS..... *Ames.*  
 W. W. VAUGHN..... *Marion.*  
 H. D. PARSONS..... *Newton.*  
 C. C. NORTON..... *Corning.*  
 F. R. SHAFER..... *Campbell.*  
 HON. L. S. COFFIN..... *Ft. Dodge.*  
 J. A. BENSON..... *Sanborn.*

### SECRETARY AND TREASURER.

GEO. W. FRANKLIN..... *Atlantic.*

The next place of meeting will be in Ames, beginning October 17th, 1894.

## THE CONSTITUTION.

### ARTICLE I.

This Association shall be known as the IOWA IMPROVED STOCK BREEDERS' ASSOCIATION.

### ARTICLE II.

The objects of this Association are to increase the excellency and to provide for the preservation and dissemination in their purity of the different breeds of improved stock of all kinds.

### ARTICLE III.

Any person who is a citizen of Iowa and a breeder or owner of fine stock may become a member of this Association by paying a fee of one dollar annually and signing the constitution or empowering the Secretary to write his name thereon.

### ARTICLE IV.

The officers of this Association shall be a President, five Vice-Presidents, to represent the different branches of stock breeding and a Secretary and Treasurer, and these seven shall constitute an Executive Committee, of whom a majority shall be a quorum for the transaction of business, and the duties of these several officers shall be the ordinary duties of such officers in like associations.

### ARTICLE V.

The annual meeting of this Association shall be held on the first Wednesday in December of each year, at which time all officers shall be elected by ballot, and they shall hold their offices until their successors are elected and qualified.

### ARTICLE VI.

This Association, at any annual meeting, may make amendments to this constitution, may adopt by-laws, may fix an annual fee of membership and may do any other business not inconsistent with the purposes of this Association; *provided*, that amendments to this constitution must receive a two-thirds vote of all members present.

[The above is the amended constitution. The number of Vice-Presidents have, by the custom of committees, been changed from five to one from each congressional district —Ed.]

## INTRODUCTION.

It was a very unfortunate move when the Association concluded to hold the meeting in the southwestern part of the State. Corning, though a live town in the midst of one of the best agricultural districts, failed to get the crowds which have characterized these meetings in the past. Many members were prevented from attending the meeting on account of la grippe, and many others feared bad weather, while others were so situated that they could not reach this point without many railway changes and much delay.

The general drift of the discussion why the meeting was so lightly attended, led members to the belief that the place of meeting should be a central one and that the date of the meeting be changed to earlier in the season. This Association has had many storms to contend with in years past and gone. Members who have grown gray since enlisting in the warfare against the scrub, have slept in cold beds, remained at secluded railroad junctions waiting for "their train" and have been snowed in at times in out of the way places where hotel accommodations were very meagre, till it has lost all its charms for them. These veterans believing discretion to be the better part of valor, stay at home from the meeting on this one account.

There is another cause to which some of the slack attendance may be attributed. The World's Fair and the stringent times has had its mark made on the attendance. We have many letters of a tenor never before known in the history of this Association. The following is no uncommon reason for not being at the meeting: "I have not the money to spare; this should not be said by a stock breeder, but it is so." "I have been away from home so much this summer attending the World's Fair that I am compelled to stay at home this time." "I am one of the unfortunate owners of horses, and cannot see my way clear to attend the meeting." "I am too feeble and the weather too treacherous at



this season of the year to risk attending the meeting." These and many others are the reasons for not attending the meeting.

It is the general belief that the days of missionary work of this Association has come to the night, and it is the general belief that a permanent home will be made for holding the annual meeting. It has also been suggested that it be held at the same time of the Horticultural meeting, and the two meetings together can get the required number in attendance to get the railroad rates.

This matter will be brought up at the next meeting to be held in Ames and we hope it will be adjusted for the benefit of the Association without clashing.

## TWENTIETH ANNUAL SESSION.

### AFTERNOON SESSION.

CORNING, IOWA, December 6, 1893.

At 2.00 p. m. the convention was called to order by President Daniel Sheehan, who spoke as follows:

Gentlemen, members of the Iowa Improved Stock Breeders' Association, you will please come to order.

You see by the programme that this is our twentieth anniversary, and it is a pleasure to me, coming from the northeast part of the State, to come down into the southwest to meet with you gentlemen, and I hope to go home with a better knowledge of the interests of southwest Iowa.

This association is not clannish; it is not selfish; it is liberal; it is what is called the Improved Stock Breeders' Association of Iowa. We care not what it is, whether it is a horse, a cow, sheep, hogs or chickens, every interest, every industry in Iowa that goes to make Iowa what it is—one of the grandest States in this Union—has a home and a place here with the Improved Stock Breeders' Association.

And now, gentlemen, the first thing on the programme is an address of welcome by Hon. William O. Mitchell, whom I now have the pleasure of introducing to you. (Applause.)

*Mr. President and Gentlemen of Improved Stock Breeders' Association of Iowa:*

On behalf of the citizens of Corning, of Adams county, and the Blue Grass region of Southwestern Iowa, it becomes both my pleasure and duty to welcome you to our city.

We have looked forward to this meeting when our people might meet your men face to face and hear your papers read and discussed with much interest. We have for years past read of your annual meetings in other parts of the State and occasionally some of our people would meet with you, but this was impracticable for many, hence our effort to have you come to our city.

We have known that your association was composed of no ordinary class of men; that your membership included the ablest, most practical and intelligent men of the State, and what state or nation can excel Iowa in her men or all that goes to make up manhood or citizenship? All other interests in Iowa pale when compared with that of live stock.

Take from her farms her horses, cattle, hogs, and sheep, and you have taken her principal sources of wealth, yet we could live, possibly prosper, without them, but with them and all our superior advantages of soil, climate and markets, the future of the intelligent farmer and stock raiser is bright indeed compared to that of his fellow man.

Our conditions require not only improved stock, but improved men. The methods, surroundings, and conditions of a quarter or half century ago would not produce or maintain the quality of our live stock of to-day. The land was then worth \$2 to \$10 per acre, and most of the grazing and hay was free. Now we have to pay as much rental per annum for pasture and hay land as it was then worth. In the near future we must still more economize in the number of our live stock. Fifty dollars an acre land will not produce the average horse, steer, pig, or sheep at a profit. The animal produced must increase in price with the value of land and feed and help. The problem then is how to produce cattle, horses, hogs, and sheep that will bring three or four times the price of such animals as heretofore produced. Efforts tending to the solution of this and kindred problems are what brings you men together in your annual meetings.

Some men say the breeder is like the poet, "born, not made." I am not of those who take the poetical view of the subject, but believe rather that the successful breeder and stock raiser must not only have a born capacity and inclination for the business, but a practical training and experience and to this should be added all the information obtainable from books and periodicals and from the association of men in like pursuits and the free interchange of thoughts and experiences. Often in meetings of this kind is given out by some one the experience of a life time upon some given topic. Then if his hearers and associates can grasp the idea and utilize it to their conditions and surroundings, it might save years of labor, to say nothing of failures and losses occurring in the meantime.

There should be, and probably is, as much difference between the successful breeder of fine stock in Iowa to-day and his methods as compared to his predecessor of twenty-five years ago as those between the aforesaid predecessor and the aboriginal Indian of fifty years ago; as much difference between the best specimens of our domestic animals of to-day and twenty-five years ago as there was of such animals and the wild buffalo, whose wallows can yet be traced in our fields and pastures. It seems both meet and proper that the men representing the live stock interests of this great State should come together and hold their twentieth annual meeting in a region of country which is said to produce and ship more horses, cattle and hogs, fed and prepared for market, than any other like area of territory in the known world.

The region to which I refer has not only become famous for the quality and number of her live stock sent to market, but for years has been regarded as the foremost in the production of corn and hay. In recent years almost a revolution has been wrought in the methods of feeding and wintering of live stock by the use of winter pastures. Our pastures have become as famous, and by many considered more nutritious and valuable, than the far famed blue grass pastures of Kentucky. It is estimated that more than three-fourths of the land in this and adjoining counties, has within the last few years been sown to meadow and converted into pasture land, and that

scarcely a bushel of grain except it be converted into live stock or butter, has been shipped to market from all this region.

While our people have been peculiarly fortunate in raising and feeding stock for market, they have by no means neglected the higher calling of raising stock for breeding purposes, so that scarcely a farm in all this region but what has some pure bred or pedigreed stock upon it. We not only boast of our live stock, but call your attention to the fact that southwestern Iowa is rapidly developing into the orchard and vineyard to such an extent indeed that she promises in the very near future to lead the United States in these industries.

To this region then, more perhaps than any other, abounding in horses, cattle, hogs and sheep, whose cribs and granaries are full to overflowing with golden ears of corn, whose barns are bursting with clover and timothy hay, whose rich pastures are seldom covered with the mantle of snow, whose soil and climate are peculiarly adapted to the growing of orchards and vineyards, we welcome you and trust your stay may be a pleasure to you and your words of wisdom and experience of much value to us.

The address of welcome was received with prolonged applause.

**THE PRESIDENT:** The next thing on the programme is a response, and I do not know who is going to respond. The address of welcome has been delivered to this Association, members from all parts of the State by a resident of southwestern Iowa, and I will call on a man who is well known to the Improved Stock Breeders of Iowa, a man from northeastern Iowa, the Hon. John McHugh to respond to the address of welcome. (Applause.)

*Mr. President and Gentlemen of the Improved Stock Breeders' Convention:*

To have a white head, it is plain to me has its advantages and its disadvantages. If a man in his contact with his fellow men be inclined to become arbitrary, insolent and overbearing, a white head is sometimes a very good friend, and saves him a rebuke or possibly a deserved thrashing. At such a time a white head is an advantage, but at a time like this, when the President of a body of men assembled as we are desirous to enlist some person into service to help him out, to take up some part of a programme, and he casts his eyes around as he did here, the chances are about nine out of ten that if there is a white head in the audience he is sure to catch it. (Laughter.) Under such circumstances it is a disadvantage, and even a red head would be preferable. (Laughter.) But I take it that you are more interested in knowing what is contained in the heads of the membership of this body of Improved Stock Breeders than you are in the color of their hair, though in the course of the debate and discussion at this convention before we get through with it, some of the breeders, especially a breeder of Short-Horns, may tell you that of the many letters that he gets, twelve out of every dozen of inquiries for a masculine calf inevitably winds up with the suggestion that he must be a red one.

You are here as representatives of the business of improved stock breeding in this State. Only a few years ago and men were accustomed to say that any kind of stock was good enough for the farm, any kind would do



for the farm, but if there are any persons who feel that way to-day I would invite them to attend the meeting of Improved Stock Breeders. I would invite him to do more than that; I would invite him to go to our Agricultural College and see the hundreds of the brightest boys and girls in Iowa being educated there, not only in the ordinary branches, but in the higher branches and in the sciences. What for? To make doctors, lawyers or professional men of them? No, nothing of the kind, but to teach them how to become progressive, worthy, intelligent and successful Iowa farmers.

A few years ago and people were pleased—thoughtless people—to designate the farmer as "the granger," "old hayseed," "mud-sills," and "clod-hoppers," and sundry other similar names, but now that Iowa farms are going up in price and Iowa farmers are breaking the banks when they feel disposed to have a little recreation, the tune is changed, and as one sits around the offices of the hotels of the State he may often hear traveling men express the wish that when they lay down their grips they may find themselves able to own forty acres of some good Iowa farm land upon which they may engage in the work of raising chickens and Jersey cows. (Laughter.)

This to us is encouraging, this tendency and says to the Iowa farmers and Iowa breeders who have held on to their farms and flocks and herds, that they are on the right track.

As the gentleman who extended the invitation to us very truthfully and properly stated, \$50.00 an acre farms and scrub stock will not long continue; there will be a divorce; that is rapidly taking place. You cannot afford to raise scrub stock on land that is worth \$50.00 per acre.

It is our purpose here to discuss matters that pertain to our business as breeders—to range up, as it were, side by side our experiences and observations, and appropriate what may seem to us best for future use. We have been most cordially invited by the Hon. Mr. Mitchell, one of our vice-presidents, who alludes with pardonable pride to that product which overshadows all others in this portion of the State, to visit your farms. It has been said, and it is probably true, that in Iowa corn is king, but I can assure you, gentlemen, that up in northeastern Iowa, grass is considered a good, healthy, vigorous prince, and if things continue to go as they are now going, most likely in the near future it will succeed to the throne of its father.

Up in that district, as I told you last evening, the farmers are struggling with each other—a laudable struggle and a very proper ambition—to see which of them can produce a certain number of cows that will secure the greatest financial results for the owner in the creamery business, and the cow that now gives the most milk, can, if the door is open, walk into the parlor and rub herself against the piano without giving offense to any member of the domestic circle.

By the way, I presume that you all know that our President here, has developed such a cow. I am not advised whether he has a piano or not, but judge from his looks that he has not. (Laughter.) He has had the pluck and ambition in connection with his creamery and dairy business, to develop a Jersey cow that in competition with the world carried off some of the highest honors at the World's Columbian Exposition.

With this combination, gentlemen, of dairy interests in northeastern Iowa, and corn interests in southwestern Iowa, and a little of other good

things in both—with this combination, I say, of the best of corn and grass, and the best of steers and hogs, hay and cereals, eggs, butter, vegetables and what not, Iowa farmers are to-day the most independent—yes, the only independent class of people in Iowa or in this country. With this combination of agricultural products, of which grass and corn constitute the basis, we may well feel that we are treading on safe ground, and that it is only a question of time until we become independent.

And what of the future? The present is safe; what of the future?

The future of the farmer in Iowa to me seems radiant with smiles; the future of agricultural interests in this grandest of the Mississippi valley states is glorious, even beyond anticipation. (Applause.)

THE PRESIDENT: Is Hon. B. R. Vale in the room?

A MEMBER: He is not.

THE PRESIDENT: Is Mr. C. W. Norton present?

MR. C. W. Norton is called to the chair.

MR. NORTON: Gentlemen—I have the honor to introduce to you our President, Mr. Sheehan, to whose address you will listen at this time.

MR. SHEEHAN: I see there is an address expected here from the president. Before I proceed with this address I want to make a few remarks.

It has been asked here: Is the interest kept up in this Association as it was some years ago, and as it should be? If it is not, what is the cause, and the next thing, what is the remedy? That will be a good thing for this Association to discuss. It might be a good thing to talk of ways and means to increase the interest.

I am sure we can well feel proud of what we have in the northern or northeastern part of the State, until we get down here and hear the others tell of what they have good in other parts. It put me in mind of a remark that went the rounds of the newspapers years ago, made by one of the greatest men that we had in his day—a man who ran for President of the United States once, but didn't get elected—Stephen A. Douglas. He made the remark in one of his great speeches that Vermont was a great state to be born in, but a poor place to stay. Gentlemen, I say that Iowa is one of the greatest States in the union to be born in, and the best State in the world to stay in. (Applause.)

Gentlemen, we must not lose interest; I do not think we are. This is our twentieth anniversary, and throughout those twenty years we have been acting as missionaries. We have traveled; we have been in the northeast and the northwest and the west and the east, and now we are in the southwestern part of the State, in the Missouri Valley. I feel a good deal like one of the gentlemen

who has spoken; I expected to see this magnificent hall which you have here filled; I did not expect to see standing room. What is the cause?

After the gentleman had made that remark, it occurred to me that it would not be a bad idea to have this meeting, before we adjourn, to have a committee appointed to take under advisement the matter of having at some central point in the State, a permanent home where we can meet from year to year and feel that we have a place. We have never had any home, only as the kind people of Iowa have seen fit to receive us. I think it would be a good plan to consider whether we should not have a permanent home somewhere in the State near the center, where railroad facilities are good and we can reach at little expense. I think it would be a good idea for the committee to act upon this and bring it up before the meeting, say a year from now. That I leave in your hands.

#### PRESIDENT'S ADDRESS.

##### *Gentlemen of the Improved Stock Breeders' Association of Iowa:*

Your humble president feels his inability to address you in a manner becoming this association, on this your twentieth anniversary, and probably the most important year of your history. It was a matter of Greek against Greek, or nation against nation, when Iowa had to come in competition, at the great World's Fair at Chicago, not only with the different states of the greatest and grandest country on the face of the earth, but with every civilized country.

It is needless for me to say to this intelligent body of men, who are undoubtedly well posted in regard to such matters, that the products of the great State of Iowa brought home to her citizens more honors than the products of any other state in the Union. It would, I think, be out of place for me at this meeting to name the individuals or firms that were instrumental in placing Iowa at the front.

If you have kept close watch, as every one of our members should, you will see that commencing with the noblest animal, man's best friend and servant, the horse, it came home with some first prizes. And as one of the most intelligent men of the State remarked in conversation with your humble servant, there was about as much chance of being struck by lightning as there was of getting a first prize at this fair.

It is a pleasure to me to be able to say that the cattle from Iowa got their share of first prizes, and even the great mortgage-lifter, or the porker, which Iowa has more of than any other State. It is gratifying to know that

Iowa received her full portion of honors, and so you will find in all of her exhibits she came home with "flying colors."

In one of the most thorough dairy tests that the world has any record of, it is with no small share of pride that all the people of Iowa rejoice to have her cows do more than their part to sustain Iowa as a dairy State, and gentlemen, the dairy business is one of the greatest industries that you have in Iowa to-day.

I have not seen the Dairy Commissioner's report this year, but last year his report gave in round numbers the enormous sum of \$32,000,000 that the dairy industry brought to the State.

Let me say right here that I wish to refute a remark that I have often seen in dairy papers and heard stated by dairy writers defining the dairy belt of the State; they generally claim the northeastern portion as the dairy belt. There is no part of the State where good grass and good grain grows, where water is found in abundance, where the people are intelligent, that I should not call the dairy belt. I will bound it on the east by the Mississippi river, on the west by the Missouri river, on the north with Minnesota, and on the south by the great democratic State, Missouri. And gentlemen, I will take the same boundary for the blue grass region.

I firmly believe that there is no part of Iowa but what has good dairy cows. The dairy test at Chicago has proven that the three, four, five and six pound cows exist only in imagination. For we have it from the best authority that parties traveled some 32,000 miles, in twenty-two states, spending \$15,000, getting together some fifty-three cows, yet could not find one cow in the United States, or in Canada, or among the imported cows, that would make two and one-half pounds of butter per day for the ninety day test. Out of the 117 cows selected to represent the different breeds in that dairy test, from the final figures that we have from the test committee, only eight cows were found good enough to give milk sufficiently rich in butter fat to make two pounds of butter per day for the ninety days. I think there never was a better lot of cows got together at any dairy test, or that had better care and feed.

I firmly believe that some of those cows were fed more than they could stand for any length of time, without permanent injury to them. So, gentlemen of the Improved Stock Breeders' Association of Iowa, if you want to change from your present mode of farming to dairying, and have got a cow that will give a fair quantity of milk with butter fat sufficient to make from one to one and a quarter pounds of butter per day, and bring forth a calf, that, if steered and given fair care, will at three years old nearly top the market, you have a jewel of a cow. If you want to dispose of such a cow you can always find a customer at a fair price.

Gentlemen, probably we never had a year since this Society was organized, when the whole financial and commercial business of the country felt such a shock. For a part of the year the balance of trade was against the nation.

No man knew whom to trust. The jobbers were afraid of their customers; the people afraid of the banks; the banks afraid of their depositors, and when the shrewdest financiers were almost disheartened, when bank after bank went to the wall, when some of the greatest merchants in the world were insolvent, not one legitimate improved stock breeder has been



compelled, to my knowledge, to make an assignment. Which fact goes to prove that there may be faster ways of making money for a time, but taken as a whole, gentlemen, I believe there is no safer or surer business in this State than ours, and there is no other business that has not suffered more during the year.

It would be quite amusing to any person to take the different papers and addresses delivered at the different meetings of this Association, and see the essays on the horse, the cow, the pig and the sheep. They all have their favorites, and they have all had their ups and downs, but in this year of great depression the cow and the pig are in the lead. There is nothing that we raise on the farm that pays so well at present, and has for the past year.

Gentlemen, we all rejoice that this Association is non-partisan politically. Yet the last national election and the election in the different states, have proven beyond any possibility of a doubt that there is a large per cent of the voters of this country who are non-partisan, and if that vote cannot be led by political demagogues it serves notice on the two great political parties and almost says: "Gentlemen, you must keep in touch with the rank and file of the people and legislate for their interest as well as for that of the great corporations."

Gentlemen of the Improved Stock Breeders' Association of Iowa, I will not take the valuable time of this meeting to go into details as to what caused the great depression in some branches of the industry that we represent, but leave that for the meeting to discuss, which I hope they will do, so that we may in the future avoid the mistakes of the past, which I firmly believe we have made as improved stock breeders. It is quite a consolation in this time of depression to be able to say there is no disease among our domestic animals, to any great extent. Taking the Columbian year as a whole, it is one to be long and favorably remembered by the people of Iowa. If the State has neglected the great opportunity it afforded her citizens to advertise the products, no man living at this time will be able to repair the loss to the State.

Before I close this address let me say to the Association that a thought has often come to me in traveling through this grand State of ours, that when the Lord worked those six days and made this world, in many places he deposited some of the ingredients that go to make a place great. But in Iowa there are more of the ingredients deposited in her soil that goes to make grass and corn than in any like number of acres in any other part of the civilized world. I think at present grass and corn combined are king and the cow and her products queen. The place where these articles can be raised in abundance is destined to bring forth the best crop ever produced, a lot of good, moral, intelligent, Christian men and women, such as cannot be excelled outside of Iowa.

MR. NORTON: Gentlemen, the President's address is before you; what will you do with it? Are there any remarks?

PROF. JAMES WILSON: The stock breeders of Iowa are under great obligations to the President of this Association for the plucky manner in which he took his cows to Chicago and represented the possibilities of the granger's cow at the Columbian Exposition.

The Iowa cow, there among 75, stood third, leading 72 other cows. That is no small honor. I remember how proud we were when Moniger with his "crimson herd" showed what Iowa could do. I remember also the good work done by President Barclay and other men in representing the State of Iowa in other ways. We can generalize in regard to the State of Iowa and have incontrovertible evidence to sustain us. Iowa has demonstrated to the world that the best horse, the horse of the most energy and endurance can be produced in Iowa, and the Iowa horse sells higher than any other horse ever sold in the United States. We have shown the best cattle raised anywhere. It has been demonstrated that Iowa cows can go within one or two of the very front. What we can do in that line if we really try who can tell? With regard to our hogs, everybody knows that there is no real competition between us and any other State. With regard to our cereals, we stand away to the front. With regard to our boys and girls, if you will come up to our college sometime when they are all there, I will show you with a great deal of pleasure Iowa's greatest product, the young men and young women. As they are growing and developing now, they are the finest young people that are being produced anywhere. I want to say right now that Iowa unquestionably is the locality where the coming man is to come from. He is to be cosmopolitan; he is to be broad; he is not to belong to any particular locality, but he is a United States man, and he is being raised in Iowa; we are raising that kind of men in the Mississippi valley; we are raising them in the State of Iowa. In regard to the coming woman, if you will pardon the solecism, she is here now. Look the whole field over; the State of Iowa in climate, soil, weather, minerals necessary for animal life, and other conditions, is really developing the finest samples of animal life, from man down to the lowest domestic animals, that are to be found. Every year it is being demonstrated that no other part of the United States can compete with these conditions of ours. I remember when Mr. Moniger achieved his distinction, we did something that was to be remembered by Mr. Moniger and his children and by his grand-children, and on down the line; we did something that honored us as well as honored him at that time. Now, sir, a greater than Moniger is here. I move you, sir, that a committee be appointed to take into consideration, to take proper action in commemorating the great work done by our President in Chicago during the past year. I move that a committee be appointed for that

purpose—a committee of three, which shall report during this session of the Association.

MR. NORTON: Gentlemen, you have heard the motion, what will you do with it?

A vote being taken upon the motion as made and seconded, it is declared carried.

MR. NORTON: I will take a little time to appoint this committee. Mr. Sheehan resumes the chair.

THE PRESIDENT: Gentlemen, the next thing we have here on this programme is the appointment of committees. I would like to take up this work of the appointment of committees this evening, the first thing during the evening session. We will pass that over at present. The next thing on the programme is the enrollment of members. We will give ten or fifteen minutes to this work of enrolling members. This is an important matter. It is the only feature of the work of the Association with which there is anything like a financial or money condition attached. I do not know of any institution, not even a bank, which you can run without money. It has been proven that to run any business in this country takes money. We are going to give about fifteen minutes now to this work of enrolling members.

MR. C. W. NORTON: Gentlemen, I will announce the committee which it was moved should be appointed upon motion of Professor Wilson. The committee will consist of Professor James Wilson, Hon. John McHugh and Mr. R. J. Johnson.

THE PRESIDENT: Usually, where these meetings are held, we have what we call a local committee to solicit membership. On that committee this year I will appoint Mr. D. Leonard, Mr. W. O. Mitchell, and Mr. C. C. Norton. Now, gentlemen, if there are any more of you who want to enroll, you will have plenty of time. It is best for everyone to get into the band-wagon as soon as he can.

Mr. Bopp being absent, the next paper was read by the Secretary, on Breeding and Feeding the Farm Horse, by B. F. Gove.

## BREEDING AND FEEDING THE FARM HORSE.

BY B. F. GOVE, DE WITT.

Agreeable to the request of the Secretary, I will attempt to write an article on the above topic, though I think at the present time, "How to Sell Horses," would be more acceptable. I am doubtful about shedding much light on a subject which has been talked and written about by able men, as has the subject of this paper. But as most of the allotted three score years and ten are past with me, I may fall upon an idea or two worthy of note.

If there are any who think they have done the all-important thing when they have chosen the sire to breed from, I would say that there are other and fully as important matters to be attended to in detail as the choice of the sire. For the past ten or twelve years the heavy horses have been the fashion, and the owners of horses would load them with fat and brag of their great weight, when the same horses, with less fat and more exercise, would have gotten much better colts. But the fault is not all with the horses or their owners; the owners of the mares are grievously in error in the care and management of their mares. The mare at the time of breeding should be in perfect health and vigor, and as the young thing is nourished by the blood of its dam through the umbilical chord during the period of gestation, it is of great importance that the dam gets proper food, care and usage during this period and after foaling. She should have the kind of food that produces milk, and that, too, of the kind to produce the kind of milk for bone and muscle, as well as growth. This food is contained in the grasses and good hay, supplemented with good oats and bran. I should have said before that a mare should never be bred when tired. If it is a work mare, the morning is the proper time to breed.

I desire to say that a narrow stall for a horse is one kind of cruelty to animals. If persons will take notice of horses and colts lying down out of doors, they will see most of them lying flat on their sides with legs stretched out. Observe how they get up; they will be seen to rise on their fore feet, bracing them far apart in the opposite direction of the way in which his hind feet lay, and in this way they raise themselves to their feet. Now please note the area covered in these attempts at getting up, and see how much space is needed, and you will see that a four-foot stall is too small—it is a prison.

I prefer box stalls ten to twelve feet square, but the next best would be that size with a smooth pole between two horses, hanging with ropes so that it could swing sidewise when the horse rises. At weaning time I find



it a good plan to tie the colt and its dam beside each other in such a way that the colt cannot get at the teat, and in four or five days you will have them so they will not fret much when separated. Then, the colt is pretty well halter-broken. I like to have a warm stable for the colts the first winter, with enough good hay and grain to keep them growing. Colts, after the first winter, and other horses not needed for work, can be wintered in good, deep, open sheds, with hay in the racks under cover, and fed corn fodder in such a way that they can all get their share. The sun is a great factor in horse raising; no matter how cold the weather, you will see cattle and horses bask in the sun, if it can be done out of the wind. In fact, I believe it impossible to have good health without the sunlight. I am glad to know that some of the good housewives know enough to let it shine into their homes if it does fade the carpets.

We have several drawbacks to contend with in raising horses. Barbed wire is one of them. I have had good luck in curing the wounds made by barbed wire. We know that when a cut or a break in the skin is made, that all the impurities in the system seek to escape through this cut or wound. My remedy is to rowel the animal that is wounded in the breast with pounded onions. Make a cut in the skin large enough to admit the finger; ream the finger around under the skin till a place is made as large as a saucer. Fill this place with pounded onions, pin it up and leave it for twenty-four hours, then remove the pin and it will work itself clean in a few days and removes the impurities of the blood and the barbed wire wound will get well right off. Perhaps some learned veterinarians at your meeting may make light of this remedy, but I know it to be good, and it is also good in distemper. Pure air is important in distemper. I remember, in 1872, during the epizootic among horses, that those kept in the pure air of outdoors recovered, while those kept in closed stables died. I am aware that I am a little off the subject, but knowing that these meetings usually contain plenty of men able and willing to criticize all such papers, it may be the means of bringing out some good thoughts.

In this connection the paper on Typical American Horses and How to Produce Them, by N. J. Harris, was read:

#### TYPICAL AMERICAN HORSES AND HOW TO PRODUCE THEM.

BY N. J. HARRIS.

The horse has been the servant of man ever since we have had any history of him. Every people, whether savage or civilized, employ this faithful servant. The characteristics or general appearance of the animal is very greatly modified by the modes of life of his master. Among the savage and

half civilized people, he is used mostly under the saddle; hence is small, supple, and of great endurance. In the more civilized countries he is used as a harness horse, consequently he is moulded to better perform the task imposed on him. Hence the heavy, medium, and light harness horses.

All nations or people of long duration have horses of characteristics peculiarly their own. Those nations that are nearest alike in their modes of civilization and physical features of their countries have horses that are nearest alike; notably, the draft horses of England and Scotland, the military horses of France and Germany, and the trotting horses of America and Russia.

When there is a constant demand for a certain kind of horse, and a persistent and intelligent effort to supply this demand, the product is quite uniform and generally satisfactory; for example, the coach horses of France and Germany.

The question has been asked, "Will America ever have breeds of horses distinctly her own?" To which, I answer most emphatically, yes; as distinctly American as the polled Durham cattle, the Poland Chins and Chester White hog, the Vermont Merino sheep, or the Plymouth Rock fowl. The American trotter is purely an American product, and leads the world in his line of work. The American coach, carriage and draft horse will soon follow in the same kind of notoriety. On this subject the *Homestead* says: "The same skill in selecting, breeding and feeding that has developed the trotter would develop the draft horse that, for strength and endurance, would have no equal in the world. So far in the creation of the American draft horse, we have simply collected from all lands the material, which is lying around the site loose, and it needs the wisdom of the trained architect and the skill of the builder, to say nothing of the labor of the workmen, to rear the structure that is clearly possible. In the last twenty years we have gathered in from every horse-growing nation a mass of heterogeneous material, 'gold, silver, precious stones, wood, hay, stubble,' and if the American draft horse is to be created, a new and distinct creation, the architect must develop the ideal, everything must contribute to that ideal, the law of heredity must be used to its fullest extent and to the wants of this new creation.

"We might continue this subject to almost any length, but we refer at present to but one point, and that is, that the draft horse must have the pulling instinct, and love to pull as the trotter loves to trot. Whether in man or beast, success comes only with love of the work.

"In fine, if we are to develop an American draft horse, which will stand as the peer of the American trotting horse, the work of the architect and builder can not be begun too soon. There is plenty of foundation work to be done."

In the same line of thought is the following from the pen of Mr. John Johnson, of Omaha, Neb., in the *Homestead*, November 19th:

"Now, what I desire to ask is this, can not the same start that has already been made with the American trotters be made in other lines? To simplify the question I will now refer only to the heavy draft. It is a good thing to be told to breed large, fine horses. It would help greatly if there were more light thrown on the question of what to breed to. As something in this direction, permit me to suggest the following: Let an American



register for heavy draft horses be established, every horse to be entered in same on his individual merits, pulling, walking, trotting, general action, maximum and minimum weight, maximum and minimum height, etc., and all points called for in a first-class draft horse; any horse of any breeding that could pass examination eligible. Then I would have no horse, however bred, entered in this register except those of such individual merit as filled all requirements referred to above. By this means we will start from the best of all the heavy horses brought here, an *American Breed* that in the generations to come would be as famous and as serviceable for the desired uses as the Clyde, or Percheron, or others we might mention, are in their home; better than any of these, I believe for this climate and soil.

You will notice I suggest that all horses which are entered in this register are admitted on their individual merit only. Just think what a breed would be developed in comparatively few years. In other breeds a registered dam and sire may, and often do, breed a poor colt, but, poor as it is, it is entitled to entry in the register. Not so with our American Draft. He can not be entered in the register until old enough to be passed on and admitted to same by competent judges.

Again I say, think what a breed would be thus developed, one so perfect that before many years, when a farmer desired to breed for heavy draft purposes, there would be no question in his mind in regard to the best course of action.

To which the editor of the *Homestead* answers:

"The suggestion made by our correspondent is a good one—the difficulty is in carrying it out practically. It could be done at once if the breeders of draft horses would agree on a standard based on size and weight, soundness and performance in walking, pulling, trotting, etc., and register animals of any breed in this advanced registry that, after a critical examination by a thoroughly competent man, were found qualified, still retaining their position in their own registries, and it would not be long until the individuals in advanced registry would be bred together and recorded, if, when fully developed, they met the requirements. In this way an American breed of draft horses would, in time, be formed, which, while uniform in color or in minor points, would have the best features of all the draft breeds. To do this requires a high degree of intelligence, and freedom from prejudice against competing strains of horses, a large amount of money, and some man at the head of it who would be as absolute a dictator in draft horse lines as the editor of Wallace's stud book was in trotting lines. It would be a grand thing for the draft horse of America if this were done, and we believe the time will come when it will be done. This breed, if ever established on a high standard, will be confined to rich soils, with abundant tame pastures that are cultivated by men of the highest intelligence. It is only this class of men that can raise first class horses of any kind.

The writer, after having studied carefully the draft horse of all countries and of all the so-called breeds, has arrived at the following conclusions: *First*, that there is no such thing as a perfect breed of draft horses. *Second*, that all the so-called breeds have imperfections peculiar to their breed. *Third*, that all the so-called breeds have some individuals with almost perfect draft conformation, and that these animals are practically alike with the exception of outward markings. *Fourth*, that none of the so-called breeds

transmit draft conformation with any degree of certainty. *Fifth*, that there is no antagonism existing in the blood of horses that are intended for the same purpose. I further find that the stud books of the various breeds are all of very recent origin, and that animals are admitted to entry simply because their immediate ancestors are recorded, without any performing qualification or individual excellence of the applicant, however bad the conformation, disposition, or how great the transmissible unsoundness. And finally, that the future utility horse of America, whether he be either coach, carriage, or draft, will be a combination of the good qualities of the material at our disposal.

Let there be formulated a standard delineating the conformation best suited to the work to be done. If for draft by measuring and weighing draft horses of acknowledged merit—ideals of their class. Also those that have withstood the trying ordeals of hard work for a long time without blemishes. A test at moving heavy loads at a rapid walk (I say walk because I would not allow a draft horse to trot for the reason that a trot is inconsistent with a draft conformation, but the walking gait is impaired by so doing.) I give it as my belief that if the draft horses of any city were encouraged to walk rapidly and not allowed to trot, the aggregate speed would be increased and much better for the teams. I would have the trotting done by horses that possess a trotting conformation.

For a standard for coach, carriage and other business horses, I would weigh, measure and describe the horses that are in greatest demand at the largest prices, for the stately coach, the elegant family carriage, and the gentleman's most desirable road team. Also the horses that have done service the longest in street car, express or fire department work. In addition to measurements and descriptions, I would encourage tests at the various kinds of work in order to develop nerve force and a love for the work. I would work all horses intended for breeding.

By the term coach and carriage we mean one horse in conformation, but several as to size and purpose. If we carefully examine the horses that are in the greatest demand at the largest prices for stately coaches, the elegant family carriages and the gentleman's most desirable road team, we find the same general conformation in all, differing only in size and weight to correspond to the load to be drawn. If we pursue our investigation still further we find the same conformation with perhaps a less finish demanded by the various express companies, the fire and police departments, the undertaker, the general delivery business, cavalry and artillery, and last, but not least, general farm purposes.

The ideal horse of pleasure and utility should stand from fifteen and one half to sixteen and one-half hands high and weigh from 1,100 to 1,500 pounds. In color bay, black, brown or chestnut. It might seem to some that this is too much difference in size and weight in the same type of horses, but it is plain enough when we consider that this diversified work is almost wholly done at the same rapid gait, that of the trot. We can readily see that one and only one conformation is proper for the reason that there can be but one mechanical construction best to movement at this gait. In the make up of our ideal utility horse, the American trotter would probably contribute the trotting qualities perhaps better than any of the so-called coach breeds, but would fail in size and symmetry, from the fact that he has been bred

almost wholly from the standpoint of speed, regardless of other desirable qualities. There are, however, many fine specimens of this breed, which is probably our most available source of supply for foundation stock for our future horse of pleasure and utility. By a judicious combination of the good points of the various so-called breeds of imported coach horses with the best specimens of the American trotter, we may reasonably look for a breed of horses, the like of which can nowhere be found. The Europeans would supply the size and finish and our horses the gait. Such a combination is clearly possible from the fact that isolated specimens can be found that are ideals of size, symmetry and speed combined. Now if by a certain combination one perfect specimen can be produced by a like combination, any number can be produced. Such a union of desirable points ought to give a horse a clean cut head; large nostrils; straight face; broad forehead; large, prominent hazel eyes; rather long between the eyes and top of the head; ears rather long, fine and thin, quite pointed, carried close together at the points; neck long and arched, small at the throat-latch, broad at the base, and adjoin the body in such a way as to carry the head well up; shoulders sloping and muscular; withers thin, high, and extending well back; back comparatively short, broad, high over the coupling; croop high; tail long, fine, and carried well up; hip long; stifle prominent; gaskin broad and muscular; hock broad and free from puffs; leg below the hock should have the cords standing well out so as to give the leg a decidedly flat appearance; pastern comparatively long, moderately sloping; feet medium, a strong, thick, tough shell moderately steep; fore-arm strong and well muscled; knee broad and hard; breast broad and prominent; chest deep; the nervous and muscular systems well developed; an intelligent and kind disposition.

In behalf of the American coach and carriage horse, I would say that he raises our food, extinguishes our fires, fights our battles, takes us out pleasure seeking while living, and hauls us to our last resting places when dead.

MR. BENNETT: Just one word in regard to that onion business. I wish to protest against that. I do not believe in curing a bee sting by letting a rattlesnake bite the other foot. I do not think I shall ever try that remedy. I have had most excellent success by applying tar. If there are any bacteria they cannot live through that.

MR. FRANKLIN: It may not be out of order for me to give my remedy, and that is air-slaked lime put into the wound. I have found that a very good remedy, but I do not say that it is the best remedy.

PROF. KENT: This is the last paper on the program; we would better all take a hand in it. I think Brother Bennett should not condemn things until he has tried them. Have you ever tried onions, Brother Bennett?

MR. BENNETT: I have not.

PROF. KENT: I do not think there is anything on the farm that can beat onions—smelling. If they are of such an offensive

nature in contact with the olfactories, what is the reason they would not get after the bacteria just as well as after our noses? I should not be surprised if the onion would be effective, properly applied.

MR. BENNETT: Professor, he says to make another hole to bury the onions in.

PROF. KENT: I would amend that by saying to put the onions in the same hole. (Laughter.) I will make another suggestion, Mr. President: It doesn't make any difference whether it is a barbed wire wound, or a wound arising from another cause; the first thing and the most important thing is proper disinfection, if you want to secure a speedy and safe cure, and have the wound heal without a scar. If the animal is badly wounded the first thing is to get the wound well, and the next thing is to get it well without a scar. In order to get it well you must disinfect it. The best disinfecting agent is peroxide of hydrogen. This is simply water loaded up with peroxide of hydrogen and bottled up and kept in all the drug stores for sale. A bottle will cost twenty-five cents. Wash the wound with it, and it destroys all the dead tissue and the granulated tissue and all the dead matter and all the bacteria about the wound, and then if it is done up with Brother Bennett's tar, which is also a disinfectant and which keeps out the germs by acting as a subsequent disinfectant, then the wound is all right. There are two kinds of disinfectants; what you would call before and after. I forget just the proper name; if any one here remembers it, let him speak it out. Tar is an antiseptic, and it acts as an antiseptic after it is applied, when the wound has been entirely disinfected.

A MEMBER: Is not the onion an antiseptic?

PROF. KENT: Certainly; that is why I made the motion to amend. After you have applied the tar, if you want the wound to heal without leaving a scar, keep it well oiled, so the new firm flesh and skin may not become hard and dry. Keep it well oiled, and it will then heal probably without further assistance, and without leaving a scar. If your animal is badly bruised by reason of a wound or in any other way, there is no kind of a lotion on earth that will take the swelling and congestion out and restore the flesh to its normal condition better than hot water. There is no use in running for a veterinarian, unless there is a necessity for an operation. The constant application of water as hot as it can be borne by the hand, if used faithfully, will enable the blood to carry off the matter that is lodged there. Hot water is worth millions as a local application in all those classes of injuries which occur to our live stock from



time to time. The idea of the paper which has been read that the wound furnishes a drainage for all the effete matter in the system is certainly a mistake. The dead matter that seems to be draining from the system is merely a local accumulation—simply an accumulation of dead matter in that locality.

**PROFESSOR CURTIS:** There is one point in this paper that I would like to emphasize before the opportunity passes, and that is the care of colts—the winter care of colts, especially. Mr. Gove suggests a warm stable and good feed, and these are, indeed, the highest essentials. I believe there are more horses ruined for life during the first year of their existence than in all other periods. I think it is one of the first essentials to the making of a good horse that in addition to being bred right and being properly cared for during the first season, the colt must be properly wintered. I have taken the ground frequently that a colt properly taken through the first year is more than half made; it is more than half a horse. Unless it is properly taken through the first winter it never will be the horse it might have been with proper care. We are now working at the Agricultural College a pair of two-year-old fillies that weigh 3,500 pounds, and their condition, their size, and their excellence in nearly every respect may be largely attributed to good wintering, both the first and second winter. We have given in our bulletins the method of wintering this pair, and I will not take the time to discuss it here. In the present time of a decline in the price of horses, if we have got a horse that is ever going to pay for the raising it must be properly cared for during the first winter. During the second winter you can make good use of your blue grass pasture, but during the first winter it is essential that the colt have the best possible stable and feed, and if the colt is out of condition and is not thrifty, the more good rich feed and skimmed milk you can give him, and the more growth you can make out of him during the first year, the greater will be the profits.

**PROF. WILSON:** This is a subject that should be carefully considered before we conclude that horses are not paying. We have have gone off on one wrong shoot entirely in horse breeding in the United States. If there is one thing that every man born in the country believes he has as a natural heritage it is that he has all the knowledge anyone can ever have about the horse. We take a great deal of pleasure in our turnouts; we like to go to town with such a team that our neighbors can not pass us on the road, and you have even seen men trot a team that had a load of wheat against a roadster drawing a light buggy. The Americans have

developed one horse, the speed horse. They made the hog just such a hog as is wanted to turn corn into pork, but they have done nothing yet in the direction of developing the farm horse. With the earliest importations of Normans, Clydesdales and Shire horses in this country, everybody started across the Atlantic, and they brought over the most remarkable lot of runts that ever left Europe. They brought over horses from Europe that would not sell there and we have become overloaded with small horses which will not sell here, and our horses are not paying. The stopping of the factories in the east turned a great many horses idle, and these have been put on the market and that is what has made this fall of prices. I do not know what I would do with this poor stock. I think the law would not permit us to eat them. We should not breed them. They will eat their heads off now within a year at the prices they can be sold for on the market. This is a serious question. But what are we going to do? It has been very clearly outlined that feeding has much to do with the matter, and you can make a difference of three hundred or four hundred pounds in the weight of a good horse by proper feeding. Down in Tama county a while ago, a car load of horses sold for \$100 apiece. They were heavy horses. You can sell a good heavy draft horse. If we are ever to get to the point of raising a profitable horse, we must get over the notion that the light horse fit for the carriage is all that is needed on the farm. There are a great many reasons for this. If you will look at it you will discover that the man who works the farm horse is getting to be a man in middle age; he has a white head; he has grown tired, and he hires somebody to do his work, and as a general thing, he hires somebody that is not calculated to take care of a spirited team. Successful farming requires the rotation of crops. Now take the case where you have to go over an old piece of sod and plow it up, when it has not rained for two or three months, and I do not know of any kind of harness by which you can harness a small light team of horses to a plow and break up that old field. We want heavy draft horses in order to have horses that are to be safe in the hands of the average man we have to get to do our work. The question comes now, provided we do everything that can be done in the line of feeding, what are we going to do in the line of breeding? I have thought seriously about the matter, and I believe we have a remedy. I believe that localities, towns, ranches or our breeders should send representatives to Europe to buy the best horses they have there—to pay the best prices for the best horses.



You cannot get first-class horses there without paying large prices. We must turn our attention to better feeding, better development of the colt, and the use of better sires, and when we do you will see Europe *buying horses from us*. Iowa can ship horses as well as beef and pork to Europe. We can raise the horse just as much cheaper than they can as we now raise beef, mutton and pork cheaper than they do. The raising of the horse is one of the legitimate vocations of the Iowa farmer—to breed, feed, rear and train the first-class heavy horse. I do not mean horses of 1,300 or 1,400 pounds; I mean horses of 1,500 to 1,800 pounds. Those horses will sell, and we can raise them. There is no reason under the sun why we cannot on every farm in Iowa raise as heavy horses as the best imported Normans, Clydesdales or Shires, but we must get ourselves entirely divested of this abominable notion that the team that is good enough to go to meeting on Sunday or to the market with eggs is good enough for the farm and is all that is needed there. If the farmer wants and will have a stylish team to go to town with, and to market, and to church on Sunday, let him have it, but we must have better stock as well for the farm—stock that is fit for farm work, and that will sell. As it is now, the State is filled up with a lot of useless, spindling beasts that could not draw a herring off the tongs. (Applause.)

THE PRESIDENT: Any further remarks, gentlemen?

MR. MATTHEWS: This is a question that hits me and interests me, because I have an interest in a couple of dozen horses I would like to sell. As has been said by Professor Wilson, this is really a serious question with us. I think that half of the farmers of Iowa did not breed their mares during the past season at all. It is safe to say that our colts during the next season will not be very numerous. We ought to apply the same rule of practice in this case that is usually preached; when things are down, wade in and stay with them, and when they are up sell out. If we have any good mares, now is just the time to breed them. I think there is no question but that if a man breeds good mares now he will come out all right in the future. Four or five years hence, these factories that are talked about and the city people are going to need horses for driving, and the well-to-do farmers are going to need horses. It seems to me that we need three kinds of horses. The farmer wants just the particular kind outlined by Professor Wilson. He wants the best old-country horses—large draft horses; these will furnish the demand from the city for heavy dray horses. There are probably one-fourth of our farmers who need to keep one or two

draft teams for heavy farm work; then there are about half of the farmers who never want anything else than a team that will weigh 1,200 or 1,400 pounds; they do not want heavy horses. I have talked with the farmers twenty years about this matter of draft horses, and there are about half of them that want the medium horse that comes from Europe. They want colts from a medium stallion and a light mare—that is what they are going to want for trotting horses and for driving horses—carriage horses that the city man can safely send his family out with. Of course there are thoroughly trusty large horses of standard bred stock, and the farmer who has a real liking for his horses and thinks nearly as much of them as he does of his wife, can have a team to suit his own tastes. You want to breed from good mares, having good feet and limbs, and good bone, and plenty of endurance and a good disposition. Disposition is half; if a horse hasn't a good disposition it is a good idea not to breed from that kind.

SENATOR VALE: Were the question a question as to the kind of horses we should raise for sale, then I should not disagree with Professor Wilson, but I find the topic for discussion to be "Breeding and Feeding the Farm Horse." That being the question before us, I am constrained by experience to disagree with the Professor as to the style of horses we want. As to feeding, in the first place, I noticed that the horse from the colt up appreciates nice fresh food. Only evening before last I noticed how the sucking colts carried upon the blue grass along the draws until dusk, after the gate had been thrown open for them to go to the barn. After the horses had come in, they tarried still, picking at the blue grass. It strikes me that the policy outlined for the development of the colt the first year is all right, taken in connection with the winter blue grass pasture. After the first winter is past, then I think perhaps the less grain we feed the animal until the colt is three years old, the better. He may not be so early developed, but he will make a better old horse. In speaking of the character of the horse that we want to use on the farm, let me say that I want the roadster-bred, the high-mettled horse, the horse with vitality—good feet, good eyes, good limbs, a sensible sort of a character, a horse without a superabundance of adipose tissue, who can walk over the plowed ground without exhaustion—a horse that can endure the oppressive atmosphere and the intense heat of our sun—some of these intense days we have that kill horses. On Thursday, the 26th day of June, the day following the Sioux City Republican Convention, we had probably five horses die of the effects of heat

within an area of five miles of my place, and not a roadster-bred horse among them. The only time I care for such a horse is when he is ready for market. I am always willing to let him go. The style of horse I have in mind, though I may not be able to describe him to you, is the horse that in my experience will do more service and do it with greater ease to himself, than the extremely heavy horse. While I may not be able to realize as much for him as for the well-developed, massive horse, I take less risk. He stays with me longer, if I see proper to keep him, and all in all he has proven to my mind to be more satisfactory than the other animal, and I am going upon the theory that the proof of the pudding is the chewing of the string.

PROFESSOR WILSON: What will your horses weigh?

SENATOR VALE: One thousand to 1,200 pounds.

PROFESSOR WILSON: What will he sell for?

SENATOR VALE: He will outsell in Chicago, to-day, according to the reports, any other horse that is going into the market. I suspect, however, that the extremely heavy draft horse should be excepted, but the report does not so state.

MR. FRANKLIN: That kind of a horse brings \$85.00 to \$100.00.

PROFESSOR WILSON: We can not afford, here in Iowa, on \$50.00 an acre land to breed that kind of horses to sell for that price.

A MEMBER: We cannot afford to sell horses at all to-day.

PROFESSOR WILSON: While that idea prevails we had better raise hogs or raise cows; there is more money in it. If it is a man's pride to have a nice stepping horse to drive, that is one thing, but to say what the farmers of Iowa can do in the way of breeding horses to make it profitable, that is another thing. Why breed what we have discovered will not sell? If a horse will not sell at a fair price, we cannot afford to raise him. Better get a litter of pigs or one good cow; it will be more profitable. Now the question is, are we going to give it as our opinion for the guidance of the people of Iowa, with the weight of the views of a leading State senator behind it, to go on raising more of these stylish, light style of horses?

SENATOR VALE: That is not the question at issue at all; that position is not tenable. The question is, "Breeding and Feeding the Farm Horse." We are not talking about selling.

PROFESSOR WILSON: But the kind of horse you are talking about is not a farm horse at all.

SENATOR VALE: There is no comparison at all between swine culture and breeding horses for the market. I have brood sows

that are raising me \$150 to \$200 each yearly. I would not say that of the best horse I know of.

MR. McHUGH: The object in breeding is to breed something which, if we choose to part with it, will bring us a reasonably good consideration. The money result or the financial result to be reached must be kept in view. We must breed so that if we become overstocked, our surplus will find ready sale at remunerative figures. I have had some experience this year, and the result of that seems to lead me into the camp of Professor Wilson. I found myself some five or six years ago with twelve or fifteen light-weight mares, and some person with good and friendly intent told me that if I would only purchase one of those sinewy horses—standard bred, high-minded and all that sort of thing, as referred to by my friend, that I would breed the typical horse. These mares were not standard bred; they were mares weighing 1,000 to 1,200 pounds. So, acting on the advice of my friend, I paid \$500 for a half interest in a stallion. I did not desire to own him, and I said to my friend: "You keep him and take care of him. I want to have him in the vicinity where I can breed these mares to him." So I went on and bred and got two or three crops of colts, and they required a good deal of feed and a good deal of attention, and then presently it began to dawn on me that I wasn't making any money out of the operation. I had in addition to these light-weight mares a few heavy Clydesdales and some high-grades, which I had bred to the best Clydesdale horses I could find. I called a sale of this stock, at which I offered these full-eyed and sinewy horses admired by my friend. I matched them up as best I could and had a man looking after my interests in getting them ready for sale, and the farmers round about, on whom we must depend, turned out in goodly numbers, and there were a few men who shipped horses from our town present. But to make a long story short, the highest price I reached for one of those horses weighing about 1,050 to 1,200 pounds was \$75, and I sold a two-year-old colt, without blemish—all right, apparently, for \$27. I sold a span of Clydesdale mares, four years old, of my own-raising, that weighed 3,300 pounds, for \$380.

MR. FRANKLIN: At the same time!

MR. McHUGH: At the same time. They were a fine team of mares, to be sure, but that is a good price in view of the prevailing condition of the horse market. While I am on my feet I would give expression to one thought in connection with our horse business that I think has had a very injurious effect and has had a



tendency to drive the best stallions out of the market and make it unprofitable for a man to own them and use them for purposes of service. A good many importers in their desire to grow rich, as Professor Wilson informed you, had in mind the horses there was the most money in. They not only failed to secure the best, but those they did get, when the season was about to open, they would farm out to irresponsible parties, whose credit would not secure them a horse by purchase, and say to these irresponsible men, "Go ahead and stand this horse and you can have half of what you make." These men, feeling that they had nothing at stake—that what they made was clear profit, and if the horse died it was a loss to the party that furnished him—they would go ahead and cut rates, and in the end demoralized the legitimate business of keeping good sires for service and drove them out of business. I think that taking that view of it you will agree with me that it is somewhat discouraging.

PROFESSOR KENT: I want to help Brother Vale. I am in favor of the small horse. I do not like to differ from my co-worker and superior, but I guess we have a right to our own opinions when we are as far away from home as this. The horse on the Chicago market to-day that brings the highest price is not the draft horse. The horse that brings the most money to-day in Chicago is the carriage horse; he will sell for \$250 while the draft horse goes begging at \$175. This is just the state of facts. Now the question comes again: While the brother can note that a span of draft horses has sold for \$380, I can note that a span of carriage horses has sold for \$500, and present facts to bear me out. The question comes now, as Mr. Vale says, not so much whether we are raising these horses to sell, but raising them to use. The most of the horses that are produced in this country are to be used right on the farm, and the farmers of Iowa do not want an 1800-pound horse to go into the field to work, because he is too heavy, and because a 1400-pound horse can work him to death, and it takes more feed to maintain an 1800-pound horse than it does for a 1400-pound horse. If we were raising horses to go to the shambles, as they do in France, the heavy horse would have an advantage, but here we are still sticking to beef, pork and mutton. It costs more food to maintain an 1800-pound horse, and his powers of endurance are not as great. There is no reason for his existence, except to bring a fancy price. The man who advocates him may point to the fancy price he will bring, but I can point to a still more fancy price secured for the lighter horse. In regard to the prevailing low prices of horses, this

has also been true in regard to cattle, hogs and sheep. Three years ago Logs were just as low as horses are now, but by the same process of reasoning you might as well have quit hog raising because the prices were low. The price of the horse is coming back, if you will set out to improve. There is just as grand an opportunity for improvement on the line of light horses as there has been on the line of the heavy horse. If you have got a poor draft horse on your hands, it is not worth any more than a poor roadster or carriage horse. A poor animal of any kind won't sell. If you have a good horse, whether he be an 1800 horse or whether he be a fine driving horse, he will sell, and if he is a fine driving horse he will outsell the draft horse every time. I have worked these heavy horses and I have worked the light horses, and I have been able to get more labor out of a properly built horse that weighed 1,300 pounds or 1,400 pounds than out of the heavy horse. The heavy horse will fall down or get mired in the ditch, or something of that kind will happen to him. He is a cumbersome fellow. He was bred for the peculiar climate of Great Britain and Flanders, and never was intended for the hot sun of Iowa, and never will endure it. I do not want these little, sneaking, mean horses; I want a good small horse. I do not mean a broncho pony; I mean a horse that will weigh 1,300 or 1,400 pounds.

PROFESSOR WILSON: We have two kinds of horses in Iowa, but we do not happen to have the kind that Brother Kent speaks about. There are none of them on the farms at all. We have got a little horse, and we have a big horse. We cannot sell the little horse, nobody wants him. The carriage horse which the Professor speaks about is a horse of which you will probably get three or four pairs in a whole county—the horse that weighs 1,400 pounds, stylish and well built. You can find but very few pairs of them in any county in the State of Iowa. It is a nice question how to breed them. If we had them and the question was whether to continue breeding them, I would say yes, but we are speaking about the farm horse of Iowa. The question is, "What is the best horse for the farmer of Iowa," isn't it? We have got the little fellow that the Professor was speaking about when he sat down, and the horse that Mr. McHugh spoke about that sold for \$27 to \$75, but the difference between these and the carriage horse that Professor Kent has in his mind's eye is vast. The Iowa farmer can't afford a Clydesdale or a Norman or an English draft horse, but I would like any man to get up here and tell me that we can breed a horse we haven't got.

MR. NORTON: Now, this question as I understand it is the breed-



ing and feeding of the farm horse. I went over across the water a few years ago to get some horses, and while in Glasgow I saw horses sell for \$4,000. That is the kind of horses we want to bring over here. Those horses will cost there all the way from \$2,000 to \$4,000. They were long-jointed fellows, built up high from the ground. The American seems to want a compact horse, and a close jointed fellow. I suppose you have got to raise the kind men want who are going to buy your horses. The horses you speak of weighing 1,200 and 1,400 pounds, it seems to me we have enough of that kind. We do not want a horse to sell on our market to-day weighing less than 1,600. It seems to me that we are getting too many of these medium sized horses.

MR. MYERS: I want to make a few remarks. Ten or twelve years ago I went with my father to Kentucky in search of a bull. The man from whom he bought had at that time some hundred head of horses, and he owned a noted stallion, Springbok. I have heard father speak about him several times. Then he was thinking of taking his horses across the river and turning them out, but he sold the Shorthorns off and kept the horses, and the year after that turned out to be a good year for horses. Maybe in a year or two more you will want all the horses you have got.

MR. NELL: The subject here is breeding and feeding. Breeding is one important feature of this horse business. It has been discussed here in regard to breeding and feeding, but in regard to these large horses that we have been speaking about, I agree with this gentleman. We must stick to the best kind of horses we can get. If we stick to the horse that has muscle and style, there is no trouble to find a sale for these horses at any time and place, but if we breed to anything and everything that comes along we will have a class of horses on our hands that are not fit for farming, or anything else. We want to breed a class of horses that will sell. We want heavy horses, and we want style and action, something that will make good property or a good salable horse. This is the kind of horse we must breed. We will get plenty of little plugs; but if we breed to these great big, lubberly, loose jointed horses, we will have a class of horses on our hands that are not fit for anything. We must look out for style and action, as well as size.

PROF. CURTISS: The farm horse has been spoken of. Now, I think the farm horse, or the horse that is raised for farm work, there is a market for, but in order to raise horses for the market we have got to raise the horse that there is the most money in. I agree with this advocate of the small horse for the farm work, for

efficiency of service. We have got to take into consideration the efficiency of the horse we raise for our service. We cannot raise horses altogether to sell to our neighbors; we raise them for the city market as well, and we must raise horses that will bring us the most money if we are going to sell them. You can raise draft horses that will sell, and you can raise horses for farm work that will sell, if you raise the right kind. If you raise the draft horse and incorporate into him the qualities Senator Vale speaks of, I will warrant that he will stand farm work and stand the Iowa sun. I will warrant that the horse Mr. McHugh speaks of had these qualities. If you incorporate these qualities into the carriage horse you will have a \$500 carriage team. The thing we have got to do is to breed our horses for a specific purpose. We have got to consider, in the first place, the right kind of dams. The dam is half of the colt. I know there are men who will take exception to that. Study the principles of stock breeding where you will and nine times out of ten you will discover that the dam exercises as much influence upon the colt as the sire. We have got to begin with the right kind of mares and stallions, and breed our horses for a specific purpose. We cannot go between. We cannot go on and breed horses that are a medium between the draft horse and the carriage horse and put them on the market and expect that they will bring us high prices. The market does not want that kind of horses. There will always be medium sized horses enough, even if we breed for something else. One of the greatest hindrances we have had in the way of breeding carriage horses in this country has been that we have not had the right kind of dams. Take, for instance, the Hackney horse, which is perhaps topping the American market to-day. He is all right of his kind as a breeder, but if you take Hackney stallions and breed to a miscellaneous lot of mares you are not breeding Hackney horses at all. Take the best draft horse we have and if you breed them promiscuously on all sorts of mares you are not going to breed uniformly good draft horses. We must put into all horses the very best qualities that go to make up that kind of a horse, and then we will have horses that will sell. If it is a draft horse, make him the best draft horse that can be made. Perhaps he is not as satisfactory all around as a little different kind of horse, but that is the kind of horse that will make the farmers the most money.

MR. MATTHEWS: I think a good deal of horses, and I want to say a word in this matter as to what is the farmers' horse. One point that has not been brought out to-day in reference to the

medium sized horse, is, that if you want a horse for medium work, a medium sized horse will do that all right. If you want horses for ploughing you can put two or three of them on the plough and do the work of a heavy horse. If you have light work you can use one of them, but if the work is heavy you can take two or three of the lighter horses and get along very well with them. In reference to this city market, the idea might be taken from what has been said that there is only a market for the draft horse and for the superior carriage horse, such as scarcely anybody can raise, but the fact is there is also a market for the kind of horses that are used on express wagons and for such work, and for the horse fit for the ordinary man who keeps a horse and does his own driving and does not expect to buy fancy \$400 or \$500 horses. So I think there is room for a man to breed carriage horses, if his inclinations run in that direction, or if he is particularly fond of that kind of a horse. If he prefers to work with another kind of a horse, there seems to be room for all kinds of good horses. There is one thing further that is of great importance, and that is the question of what we shall do with our ordinary mares, which we do not care to breed for good stock. I think one thing we can do with them is to raise mules.

THE PRESIDENT: The next thing on the program is the Treasurer's report. Is the Treasurer's report ready?

MR. FRANKLIN: The Treasurer's report is very short this year. There not being very much in the treasury.  
(Treasurer reads report.)

#### TREASURER'S REPORT.

1892.			
Dec.	8.	Paid Secretary's expenses to Humboldt .....	\$ 15.45
Jan.	14.	Paid Secretary's expenses editing report .....	10.92
Jan.	14.	Paid C. L. Dahlberg & Co., circulars .....	4.50
Jan.	14.	Paid B. O. Brington, stenographer .....	63.37
Jan.	14.	Paid postage on notices to old members .....	6.00
May	31.	Paid freight on box of reports from Des Moines .....	1.50
June	30.	Paid postage on 160 reports at 7 cents each .....	11.20
June	30.	Paid for wrapping same .....	1.00
Nov.	30.	Paid printing programs of '92 and '93 and envelopes .....	15.00
Nov.	23.	Paid postage on 500 programs sent out .....	5.00
Nov.	20.	Paid postage for year .....	8.19
Nov.	20.	Salary for year .....	25.00
		Balance .....	4.00
Total .....			\$ 171.13

#### PER CONTRA.

1892.			
Nov.	30.	Balance on hand at last annual report .....	\$ 17.13
Nov.	30.	Received membership from 153 members .....	153.00
Nov.	30.	Received for 4 reports sold at 25 cents each .....	1.00
Total .....			\$ 171.13

GEO. W. FRANKLIN,  
Secretary and Treasurer.

Report audited and found correct.

R. A. MATHEWS,  
S. H. BERRY,  
C. W. NORTON,

Committee.

THE PRESIDENT: Gentlemen, you have heard the report of the Treasurer. What will you do with it?

A MEMBER: I move that it be received and placed on file, and that a committee be appointed to examine it.

THE PRESIDENT: How will you have that committee appointed?

A MEMBER: By the chair.

THE PRESIDENT: I will appoint Messrs. Matthews, Norton, and Berry. This meeting is in your hands. If there are any committees to be appointed now is the time to do it. If not, you will see by looking at the program that there is a special invitation from the people of Corning to this Association to attend an entertainment at 7:30 this evening, to be given by the pupils of the schools of Corning. I hope you will all be there. There is also an address by Mr. A. V. Stout, and a paper on Agricultural Education by John Cowan.

MR. FRANKLIN: Did you intend to appoint the committee at this time or this evening to look into the advisability of locating this association permanently?

THE PRESIDENT: I did not know that I had anything to do with that committee. It has been remarked that this association should have such a committee. I have nothing to do with it, it is in your hands.

MR. FRANKLIN: If there has not been any motion for the appointment of such a committee, I move that a committee of three be appointed, either now or this evening to make a report at this meeting, either by resolution or otherwise, as to whether it is advisable to permanently locate the place for our annual meeting, and also to suggest the place.

Motion seconded.

MR. McHUGH: For the purpose of securing a full expression of opinion in regard to locating a permanent home, I would move to amend by having the committee consist of five members.



MR. FRANKLIN: I will accept the amendment.

THE PRESIDENT: It has been moved and seconded that a committee of five be appointed to consider and report to this meeting, whether it would be advisable for this Stock Breeders' Association to be permanently located at some central point in the State, so that it would be more convenient for all members to attend the meetings.

A MEMBER: I move to amend by making the committee appointed by the chair.

A MEMBER: That is always understood if not otherwise provided for.

MR. MATTHEWS: I would like to amend by having the committee instructed to report at the next annual meeting. I should think that a committee of five could correspond with members and report at the next annual meeting.

A vote upon the question being taken, the motion was declared carried.

THE PRESIDENT: I will report the first thing this evening the appointment of these two committees.

PROF. CURTIS: I am requested to announce that the sheep men will have a meeting at Odd Fellows hall at 7:30 this evening. You are all requested to be present who can.

The meeting at this point adjourned to 7:30 p. m. December 6th.

#### EVENING SESSION—DECEMBER 6, 1893.

The fore part of the evening session of the Association was in charge of the Corning high school pupils, who presented a programme of music, recitations and addresses for the entertainment of the members of the Association. At the conclusion of this programme, President Sheehan was introduced to the audience and spoke as follows:

*Ladies and Gentlemen, People of Corning:*

We come here from all parts of the State to meet you and too meet with one another. We have been for twenty years something like the Wandering Jew, traveling from one point in the State to another, pretty nearly all over Iowa. We have been to the east and to the west and to the extreme north, but this is the first time in our lives that we have ever been in south-west Iowa. I will say this, that while we have always had something new to see, we have never been better entertained in our lives than we have been

in this town of Corning. We have had much pleasure to-night in hearing from and in looking at what I have always considered to be the best crop ever raised in Iowa, nice looking, splendid young men and young women. We do not know but what we have heard this evening from a future President of the Nation; we do not know but that we have listened to one of our future Senators, or better than all, one of the future Governors of the great State of Iowa. We do not know but that we have listened to the wife of one of our future Presidents or Governors. I can say for the stock breeders here that we all feel pleasure and will always feel pleasure in remembering the manner in which we have been entertained. I think I can state for the Association that we have never been entertained better. And now, ladies and gentlemen, young women and young men, I am going to call upon one of our members who is not a stranger to you—probably there is no man in the State of Iowa that is better known—Prof. Wilson of Ames.

PROF. WILSON: *Ladies and Gentlemen:* This was not the thing to do. There is no one but a large-hearted, whole-souled Irishman like Mr. Sheehan, who can do credit to an occasion like this. He should not have called on an old Scotchman to talk to this meeting.

I have scarcely missed any of the twenty annual meetings of the Stock Breeders' Association, which have been held, as he told you, all over the State of Iowa. I have been in the different towns in which we have met; some of them have entertained us with music and addresses gotten up for the occasion, and others with different entertainments and amusements, until it has seemed to us that invention has gone as far as it can possibly go—everybody trying to do something new, something pleasant, something unique, to welcome the breeders of Iowa, but, ladies and gentlemen, you have certainly excelled; you have given us something new. You have certainly excelled them all to-night, with these beautiful girls and clever boys; these lovely young women and these young men, who will, as Mr. Sheehan said, perhaps secure the highest places that citizens can occupy in this great republic of ours.

It would require the fiery tongue of Robert Ingersoll to do justice to this occasion. It would require careful deliberation, long reflection and nice discrimination in the use of words and phrases to give full expression to the pleasure we have had in this delightful entertainment by the people of Corning.

Let me assure you that when we go away we will never forget the people of Corning. We may forget the kind words said to us in your homes and on your streets and in the hotel, wherever we have met you, but we will never forget these little children, and we will never forget the entertainment given us to-night. We will never forget how beautifully, how cleverly we have been entertained by your young people here in Corning. We will wonder what the next place will do to keep step with the delightful pace which has been set to-night. (Applause.)

THE PRESIDENT: The Hon. W. O. Mitchell has an announcement to make, and I hope you will all hold your seats for a moment. We will not detain you a great while.

HON. W. O. MITCHELL: I just wanted to say a word. We have with us here on this occasion some of the brightest men there are



in the State of Iowa, men who can give any person, whether a lady, a gentleman, a boy or a girl, very much valuable information. We had hoped to see this great room crowded to its utmost capacity, but I am sorry to say that to-day there was not, I presume, to exceed a dozen of Adams county's citizens in the room. To-morrow we want to see this court-room filled full of people, to show that we have some appreciation of the work these men are doing. We have a great many gentlemen here of the very best talents—the most practical men who have studied these questions all their lives, that are being discussed at these meetings. There is nothing that will be said to which any lady or gentleman could not listen with pleasure and profit, and I hope that you will all make an effort to be present to-morrow.

BY THE PRESIDENT: We have got a very little business to attend to. It was announced that before we closed to-night there would be some committees appointed. (The Committee on Resolutions, the Committee on Officers and Location, and the special Committee on Permanent Location were appointed by the president. See lists of names handed the secretary.)

*Resolutions*—JAMES WILSON, W. O. MITCHELL, JOHN MCHUGH.

*Location and officers*—H. C. WALLACE, E. C. BENNETT, R. J. JOHNSTON, HON. B. R. VALE, JOHN MANATREY, F. R. SHAFFER, W. M. LAMMING.

*Advisability of a permanent home*—PROF. C. F. CURTISS, GEO. W. FRANKLIN, PABLEY FINCH, A. A. BERRY, L. M. KILBURN.

THE PRESIDENT: We will now adjourn until 9 o'clock to-morrow morning, when we should be pleased to have as many of you with us as can make it convenient to attend.

#### MORNING SESSION—DECEMBER 7, 1893.

The meeting was called to order by President Sheehan.

THE PRESIDENT: Gentlemen, are there any matters requiring attention before we proceed with the program?

PROF. WILSON: There is a matter I wanted to call to the attention of the meeting this morning, regarding the old members of our society. The early organizers of the Association are mostly getting to be white headed men. They are not the class of men who like to struggle over the State in cold weather, and yet they

are exceedingly valuable men, if we could have them attend. They are the brightest men who belong to the breeders of the State. I was wondering if we could not arrange to have these meetings held a little sooner in the year, say the last week in October. I do not believe but what we can arrange it. If we can, I think we can get this class of men, old farmers, bright men—men who would be valuable to have with us, but you can not get them at this time of the year. They do not like to go away from home and take the chances of cold beds and draughts and all that sort of thing, but if we could have our meetings in pleasant weather, before snow comes and before the cold winds, I think we can reach that class of men, and they are the best instructors we have got. I wish the matter could be referred to a committee, say the committee on officers and location, to consider, and when they report have them say whether it would not be wise for us to meet sooner. I have not had an opportunity to discuss this with many of the brethren, but I thought I would talk it up this morning and see whether there is enough in it to justify us in taking any steps.

SENATOR VALE: I would simply like to ask the professor in this connection what effect this project would have upon the ability of the professors of the institution with which he is connected to help us out in our meetings? That would bring the meeting before the close of the school, wouldn't it? Would we be able to obtain the assistance from the professors in the school which we have had in the past?

PROF. WILSON: If you will come up to see us about that time you will see the whole school in operation, and that might be of interest to you, and about that time you members of the legislature will be deliberating about how much money you are going to give us for the purposes of the school, and that will give you an opportunity to discover how good a school it is. We can arrange our work so that you will see the school in full operation and see the way the pupils are taught. The college men will treat you as nice as they can. There are enough of us so that we can put our work on one another, and there will be some of us to look after you. If you come up with us next year you will find it much nicer to come in nice weather, to see the boys and girls at their work.

SENATOR VALE: The professor's reply is perfectly satisfactory so far as next year is concerned, but I am talking with reference to our future, when, perhaps, we are away at the extreme border of the State. Then shall we be able to receive the same assistance

from the professors which we now enjoy, without interference or detriment to their work.

PROF. WILSON: Let me say there are four of us here now. That can never happen again, when we meet away from Ames. We have our winter school beginning next Tuesday and the boys are coming there to get ready for the work and there should be some one there to meet them. I feel that I should have staid myself. There are too many of us away. We should be there to look after those boys. The college can always send a man, or maybe two, but we can never have so many away at one time again; we cannot do it. It will be easier for us to go during the latter part of October, when the college is running, than at this time of the year, when we are getting ready for our winter school. The great object of that college is to take care of the farmer's boy, and when he comes there he wants a friend. There should be some one there to look after him.

MR. FRANKLIN: I would say for the benefit of Prof. Wilson that there has been a committee appointed to consider the advisability of locating the association at a permanent home, and the report is now in the hands of the chairman, Prof. Cartiss. I think he can give you some light on the matter. The report will be discussed; it covers the same ground upon which you have spoken.

PROF. WILSON: I do not know what the committee has done, and if I am not here when the matter comes up, I want to say my say now. I advise you to lay that matter over for a year. Take plenty of time to consider that proposition. I want to say now that the college people will be pleased to have you come next year, and if you like us well enough to locate up there, that will be all right, but don't let the impression get abroad that we are trying to force you there and hold you down.

THE PRESIDENT: We will now proceed with our programme. The first paper is one by Prof. Kent, on "Barn Building."

PROF. KENT: I have written seven or eight pages on the subject of "Barn Building." I intended to take up some of my class work and intended to have here some cross sections, water tanks and pig houses, to make more elaborate display than I have here, but I have mashed my finger and have not been able to get it done. I have made these plans in pencil, but did not have any of them inked. I did just what I had time to do, and had to stop there. The first consideration in the building of a barn is the selection of the ground itself. Sanitary conditions are the first consideration in the location of the barn. When animals and men have full

range of the prairie and forest they have no trouble about their health, but whenever you begin to confine animal life in close places, then you have to look after health and hygiene. It is necessary to provide for the disposition of refuse and excrement. That is the medium for the growth and development of all kinds of germ diseases, and as soon as man begins to build, he must study that subject. Many a farmer has lived in an old log cabin for the first fifty years of his life that was ventilated by nature and has never had any trouble about matters of health, and then he has built himself a tight house without any ventilation and without any precautions as to sanitary conditions, and then he contracts a disease from which he dies, owing to the unsanitary condition of his house. So it has become a household saying, that the old man builds himself a house to die in.

The paper on "Barn Building" was here read, from which see—

#### BARN BUILDING.

The first step in building a barn, a shed, or even in fencing a lot is to provide for perfect surface and under-drainage. There is not a farmer in Iowa who has not lost, by unsanitary conditions, a thousand fold more than would have been the original cost of sanitary improvements. The primary objects in building barns are to shelter farm animals and to afford safe storage for the various feeding stuffs. The secondary objects are to provide comfort and convenience for the farmer and to add beauty and elegance to the homestead. These various elements are usually employed in accordance with the taste and competency of the proprietor.

While we would not advise building beyond the safe use of capital, it is certainly becoming to encourage every farmer in the holy ambition to exalt himself and his work by beautifying the farm and home. There is another phase in barn building which catches the man with small capital—the man who must build make-shifts and be content with smaller profits until such time as his small accumulations will enable him to profit by the advantages afforded in more economical arrangements. If we build solely from the utilitarian standpoint; and to make a building as cheap as possible, then a square building, with a hip roof sloping to a central deck and with all roof ornaments, cornice, window and door decorations omitted. Just make a box large enough and strong enough to hold your farm produce and live stock. Make it tight enough to keep out the blasts of storm; make it light enough to let it, in great abundance, the vivifying sunlight, and you have the poor man's barn in closest economy. I note the following items that are of interest and importance in barn building:

The cost per head of full grown animals, in building for stabling capacity and fodder storage, \$25.00.

In building for stabling alone, \$8.00.

The standing room for a 1,000 pound animal tied up, 589 cubic feet.

Storage room for grain for 200 days per 1,000 pound animal, 150 cubic feet.



Storage room for hay for same, 500 cubic feet.  
 Storage room for bedding for same, 600 cubic feet.  
 The daily grain feed (full feed) for same, about 22 pounds.  
 The daily hay feed, about 10 pounds.  
 The daily bedding, 10 pounds.  
 The daily water, including water of food, 70 pounds.  
 The daily ensilage, 1 cubic foot.  
 The daily soiling feed, 125 pounds.  
 The daily cabbage, 30 pounds.  
 The daily roots, 40 pounds.  
 The daily amount of manure accumulation, 70 pounds.  
 The daily amount of hay necessary for sustaining ration, 20 pounds.  
 The daily amount of nutritive substance required, 8 pounds. (Being equivalent to about 20 pounds of ordinary feed.)

It requires six minutes to milk a cow.

Forty-eight per cent of the dry matter of the feed is converted into manure. One cord of manure weighs from three to five tons. One cord of fresh manure weighs six times as much as when the same is well rotted. One animal will produce about ten tons of manure in one year.

The tonnage of a building is computed by reckoning the weights of full capacity of grain, hay, bedding and live stock on all floors above the basement and by multiplying the number of feet of lumber by two and one-third pounds. The sum of all these quantities divided by two thousand pounds will give the tonnage. Then by taking from the tables the resistance of wood columns and beams when weight is evenly distributed we are able to determine the size and number of posts and beams necessary for the building.

From the above data it is easy to determine the size of the building needed for a given number of animals. For example, if it is desired to house the animal and at the same time store sufficient feed for the winter period, multiply the number of animals by one thousand eight hundred and thirty cubic feet, then by inspection determine the dimensions of the building. Or if it is desirable to provide stabling capacity only, then multiply the number of full grown animals by five hundred and eighty cubic feet.

Providing for sheep and hogs requires relatively the same space for a given weight of animals, but the arrangement is essentially different. Brood sows should be separated and placed on small plats two rods square, each plat containing a small house ten feet square, the roof of the house sloping one way. The house should be three feet high on one side and five feet high on the opposite side. It should be floored and arranged so that it can be dragged about from place to place with a team. There should be two 12 foot panels and four 16-foot panels of portable fence for each house; provided you have a series in a row. Such an arrangement permits of settling down a little city of swine where they can dwell with perfect immunity against hog cholera until such a time as the pigs are old enough to go to the pasture, when the swine town can be taken up and the site plowed up and sown to some kind of crops which will destroy all kinds of disease germs, and leave the ground in proper hygienic condition for the next crop of pigs.

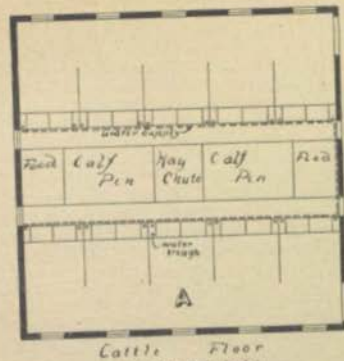
Seven hundred feet of lumber will make the outfit, which, including labor and hardware bill, will make a total cost of about \$15 for each sow and her farrow, or \$300 for a herd of twenty sows. It would require about

one half acre for a town site. I hardly need to comment on the superior sanitary conditions that may be maintained with such a system, nor the comparatively small mortality in young pigs.

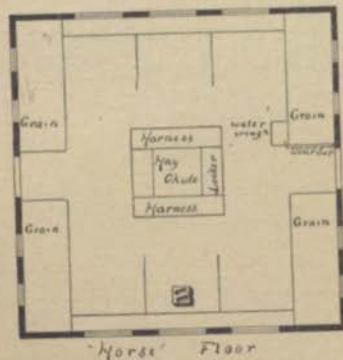
The sheep fold must be arranged so as to keep the animal dry and keep out cold drafts of air. The chief difficulties arising in the management of sheep in Iowa are those incident to bad colds, which develop into catarrh.

The long shed with both ends open is worse than no shed at all. The ventilation should be through the upper portion of the fold. We found one of these long low sheds open at both ends, on the college farm, and the sheep suffering with severe colds. We sided up the north end, cut two ventilators through the comb of the roof, and since this improvement our sheep have not been affected with colds. We give below plans for the accommodation of twenty cows and twelve head of horses, and forage capacity for 700 bushels of corn, 1,500 bushels of oats and fifty tons of hay. The building is forty feet square and three stories high; the first and second stories each ten feet, and the third story twelve feet. The roof may be curb shaped. The basement should have a cement floor. The grain bins on the four corners makes the horse floor as warm as the cattle floor. The water tank placed in the hay loft gives ample pressure for washing any of the stock floors, spraying a buggy or washing an animal, and for the delivery of water to all the animals in the barn, or to any adjacent lots.

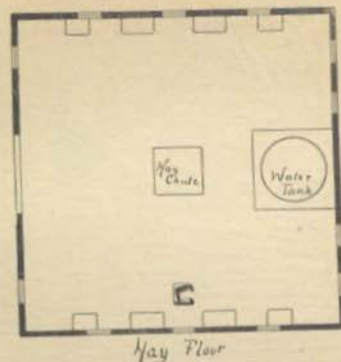
The building will cost about \$1,300. A milk room can easily be added to the basement if it be desired to put in a baby separator, and we would recommend such addition. We believe this will be the next advance step in farm improvement. If we expect to raise calves successfully on skim milk this improvement must be made. The plan herein given is designed for a hundred and sixty acre farm. However, it may be doubled or even trebled to accommodate larger farms. The site should be on an eastern or southern slope, and the outside walk for the horses should be on the side whence the cattle gain entrance, the other three sides being banked. This will make the horse walk serve the purpose of a shed. The following plans are intended for a hundred and sixty acre farm:



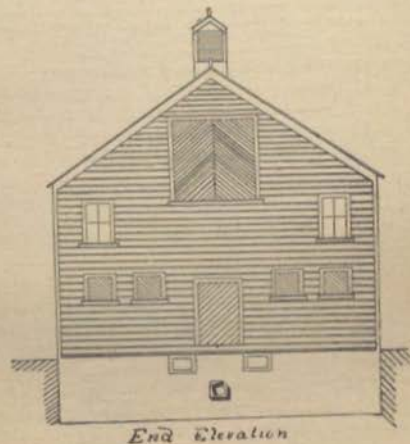
The above cut, lettered A, is the basement floor. The dotted lines indicate the water pipes which lead from the tank above to each stall. Each of the feed boxes should communicate with the bins above by means of a chute. The two calf pens are designed to accommodate calves of two different ages. The hay chute passes through the horse floor and into the hay mow as far as possible without interfering with the hay fork.



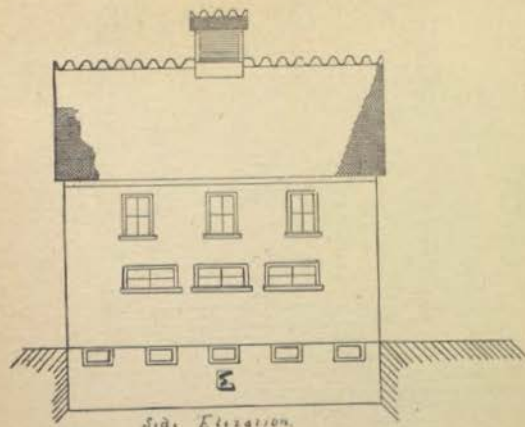
The four grain bins represented in this cut add much to the comfort and convenience of this floor. The lockers added to the sides of the cattle hay chute will be found very convenient for the purposes indicated.



This cut contains the hay, tank room and water tank. The cattle hay chute is in the center and the hay chutes for the horses on the side, as indicated by the little squares.







This cut represents a side elevation. The building would be best situated north and south. The south end is the cattle entrance and winter entrance for horses. The entrance for the horses must be bridged.

Following the reading of the paper, Prof. Kent gave considerable time to a description and explanation of several drawings, plans and elevations of barn buildings which he had prepared for the occasion. As his remarks referred altogether to the drawings, they cannot be here reproduced without the productions of the diagrams.

#### DISCUSSION.

THE PRESIDENT: Now, gentlemen, if you want to make any remarks or go into a discussion of the paper, we will have a few minutes time.

PROFESSOR KENT: I wish to say something in reference to the proper care of the hog. I believe in looking after the safety and health of the animal, and instead of putting twenty-five or thirty or fifty sows in one building, as I have said I would put each sow on a little plat of land and build her a little house set on wheels, so that the house could be wheeled about on the ground and the last vestige of foul matter removed. I think that the land upon which hogs feed or live should be renovated every year. There is no animal whose excrement is so foul; there is no animal which has a tendency to

befoul the soil as quick as the hog. This matter is a deadly poison, and there must be precautionary steps taken to keep the farm rid of it. These little houses are inexpensive; you can just as well have fifty of these little houses that can be put upon fifty little plats of ground, so that each sow with her little family can be by herself, and when she is through, the house can be moved and the poison eliminated, and then you will be ready to start in again next year. To put fifty sows in one house, it is difficult or impossible to get rid of the stench and poison. I would simply have one of these little houses on a small plat of land for each sow and give it to her for herself.

MR. JEROME SMITH: I do not want to take up the time, but this barn question is one that I am much interested in, perhaps as much as any other one man, and I would like to see it discussed more fully than it has been here. The part I am particularly interested in, on account of my own work, is the kind of a barn that can be built for from \$300 to \$1,000. That is the kind of a barn I would like to hear discussed.

PROFESSOR KENT: That kind of a barn is illustrated right here. The only reason that this plan is marked at a higher cost is because it takes care of more stock. If you are rich enough to take care of a large number of stock, you are rich enough to build a barn large enough for them. I gave you for a unit \$25 a head as the cost of building a barn for the care of stock and the storage of grain and necessary bedding. If you take care of the grain outside, you can build a barn for one-fourth that amount. This is the point for you to bear in mind: It costs \$25 to care for each animal, providing you care for his food and bedding in the same building; but if you keep the hay and grain outside, then divide the cost by four, which would make the unit of cost one-fourth of \$25, or \$6.25.

MR. SMITH: That is the point I wanted to get at. I started out here early in the '70's, and did not think I wanted a barn, because the papers where I came from said that cattle did not need shelter in this country. I got rid of that notion the first winter I was here. Then in my spare time, when it was too cold to work out doors, I tried to figure out a plan for a barn for stock, but it would run up to \$3,000 or \$4,000 before I got through with it, and so I went along with my temporary sheds. I found out that I would die an old man before the profits of the farm would build that kind of a barn. Then I figured out a barn that I thought would answer my purpose, and a few years ago, when they were talking about their self-feeding barn at Ames, I went there to see that barn, and that

turned my thoughts in another direction. I built a barn that answered my purpose very well, and winter fifty to sixty head of cattle and eight head of horses for \$700, and the barn is handy and convenient. If our farmers could be taught how to build such barns, and could be made to believe that \$500 to \$800 would shelter all the animals and feed usually kept on a quarter section of land, there would be a great many more barns built.

PROFESSOR KENT: If any man will send to me for the most economical plan for a given number of stock, with or without storage capacity for feed, I will send it to him, and will figure it down as complete as it can be done.

MR. SMITH: The trouble with most farmers is not the question of barn building; there is not a lumberman or carpenter, hardly, but knows a good deal more of what you want than you know yourself. I have had that to contend with. I built a barn and a good many farmers visited it, and they thought that for the money it is probably the cheapest and best of any, but none of them have built anything like it, because the carpenters will say that they can build something a good deal better, and they will go to work and change the plans altogether.

PROFESSOR KENT: If anyone has anything more to say on this subject now, I will be glad to hear it.

THE PRESIDENT: We have a large program to go through with, and there is another paper on the Improved Farm Dairy, by Professor Wallace. Is the Committee on Resolutions ready to report?

PROFESSOR WALLACE: The Committee on Resolutions is not yet ready, but the Committee on Officers and Location is ready with its report.

THE PRESIDENT: We will listen to the report of the Committee on Location and Officers.

PROFESSOR WALLACE: The Committee on Officers and Location, beg to report as follows:

*Mr. President*—Your Committee on Location and Officers beg leave to report as follows: For location of next meeting, the Iowa Agricultural College, Ames.

For president, W. W. McClung, Waterloo.

Vice-presidents, J. P. Manatrey, Fairfield; Jno. Cowrie, South Amara; Richard Baker, Jr., Farley; W. B. Barney, Hampton; Prof. C. F. Curtiss, Ames; W. W. Vaughn, Marion; H. D. Parsons, Newton; C. C. Norton, Corning; F. A. Shaffer, Campbell; Hon. L. S. Coffin, Fort Dodge; J. B. Benson, Sanborn.

For secretary and treasurer, Geo. W. Franklin, Atlantic.

The committee also recommends that the time of the next meeting be the third Wednesday in October.

H. C. WALLACE,  
W. M. LAMING,  
R. J. JOHNSON,  
F. A. SHAFFER,  
E. C. BENNETT,  
J. P. MANATREY,  
B. R. VALE.

In regard to the matter referred to us this morning, the committee recommends that the next annual meeting be held on the third Wednesday in October. The intention of the committee was to make this recommendation for the next meeting, and then, if desirable, fix the time permanently.

THE PRESIDENT: I understand that that recommendation applies to the next annual meeting only.

PROF. WALLACE: Yes, sir.

THE PRESIDENT: Gentlemen, you have heard the report; what will you do with it?

MR. BENNETT: As I understand this last matter, it involves a change in the constitution, and would, perhaps, have to be taken up on a vote of the house, two-thirds of the members present having to vote for it. I would suggest that these matters be taken up separately.

A MEMBER: I second the motion.

THE PRESIDENT: It has been moved and seconded that the recommendations of the committee be taken up separately. All in favor of the motion say Aye.

The motion is declared carried.

THE PRESIDENT: Now what will you do with the report of the Committee on Officers and Location?

SENATOR VALE: I move its acceptance.

The motion of Senator Vale is seconded, and a vote being taken it is declared carried.

THE PRESIDENT: Now, gentlemen, what will you do with the recommendation as to the change of time of the meeting? First, will the secretary read the article of the constitution which refers to the time of meeting?

Article V of the constitution was read by the secretary, and also article VI, relative to amendments.

THE PRESIDENT: Now, gentlemen, if I understand these articles as read, it will be necessary for some one to make a motion to instruct the secretary to cast the vote of the convention for these



officers recommended by the committee. Will some one make a motion that he cast the vote of this association?

MR. JOHNSON: I move you that the secretary of this convention cast the vote of the convention for the officers named, and the place recommended in the report of the Committee on Officers and Location.

The motion is seconded and carried.

THE PRESIDENT: Now, gentlemen, what will you do about changing the time for the next meeting?

SENATOR VALE: I move the adoption of the recommendation.

MR. FRANKLIN: The adoption of the recommendation will not correct the matter. The articles of the constitution have to be amended.

THE PRESIDENT: If I understood these articles as read, I think the way would be now to call for a rising vote of the members, and I think that a motion to that effect would be in order. I think that can be done without any trouble, but of course it is in your hands.

PROF. CURTISS: I think that something like this would effect what we are after: I move that article V of our constitution be amended by inserting "the third Wednesday in October" instead of "the first Wednesday in December."

THE SECRETARY: The constitution would then be amended until this alteration is repealed.

PROF. CURTISS: That will have to be done anyway, unless you waive and disregard the constitution for the next year.

MR. KILBURN: Would it not be well to amend so it will read that the meetings shall be held at such time as is named at each annual meeting, each meeting to fix the time for the next succeeding annual meeting? That would not make it absolutely necessary that the meetings should always be held on the third Wednesday in October, but it seems advisable that the meeting should be held at that time next year, but at the next meeting they might like to change it to some other time. Of course they could change the constitution in the same way; it might be changed annually. I would move that the constitution be waived in this case, and that the next annual meeting be held on the third Wednesday in October, as recommended by the committee.

The motion was seconded, and a vote being taken, it was declared carried.

THE PRESIDENT: Is any other committee ready to report?

PROF. CURTISS: I have the report of the special committee that

was appointed to consider the matter of the permanent location of this meeting. We beg leave to report as follows:  
(Report read.)

We, your committee on the advisability of determining a permanent location of the annual meetings of this association, believe that the method of holding the annual meetings at different points in the State has not called out the local attendance desired by the founders of the association.

We therefore submit the following amendment to the constitution in lieu of article V, for the consideration of this association at its next annual meeting.

The annual meeting of this association shall be held at Ames, beginning on the fourth Tuesday in October of each year and continuing three days, at which time all officers shall be elected by ballot and they shall hold their offices until their successors are elected and qualified.

C. F. CURTISS,  
G. W. FRANKLIN,  
P. FINCH,  
A. A. BERRY,  
L. M. KILBURN.

THE PRESIDENT: Gentlemen, you have heard the report of the special committee on permanent location; what will you do with it?

MR. MITCHELL: I move that the report be accepted and placed on file.

SENATOR VALE: Before this motion is seconded, I believe this would be the proper juncture to offer an amendment to that recommendation. I like the recommendation of the committee, but I believe it is subject to an amendment, and I think this would be the proper time to offer the amendment. I move that the recommendation of the committee be amended and the name of the place of permanent location be inserted as Des Moines instead of Ames. This is only a recommendation anyhow, but I would like it to read Des Moines instead of Ames, if I can get a second to my amendment.

PROF. CURTISS: I would like to say on this point that this recommendation or report of this committee is not now before this meeting for action. It is submitted for action at the next annual meeting, and we inserted the name of Ames there simply to complete our recommendation. If we had the question before the meeting for consideration and it was desirable to substitute the name of Des Moines for Ames, that will be all right. It is for the association to determine whether or not they want to fix a permanent place of meeting and what that place shall be. The change in the time of meetings has also been discussed here, and there seems to

be a general desire for an earlier meeting, and if the place selected is Ames, it would also be desirable on the part of the college that the time should be earlier in the year. I think this matter should simply go on the records now, and this will insure its being brought before the meeting a year from now.

Senator Vale's amendment is seconded.

SENATOR VALE: With the consent of the gentleman who has seconded my amendment, I will change it so that the name of the place, instead of being Ames, will simply be left blank, without the name of any place at all—eliminating the name altogether.

The amendment is accepted on the part of the gentleman who seconded it originally.

PROF. WILSON: I think the purpose was to get the committee to submit a proposition to be considered at the next meeting. We are not to act now. This debate is unnecessary. There is nothing under the sun to prevent us going on and changing the wording of the recommendation as we want it, but the next question is the adoption of it. Logically, if you entertain one amendment, you must entertain another, and after that is disposed of, still another, and so on. The next question you cannot avoid is the question of adoption. The proposition is to leave action upon the matter open for one year, but then we might go on with another amendment and strike that out and consider it now. Of course, that is for this Association to determine, whether we are going to consider the matter now, or whether we are going to leave it for a year. That is the point I wish to call your attention to.

PROF. WALLACE: I think this is out of order altogether. I do not see how a man can make an amendment at all unless he was on the committee. It is for us to consider whether we will adopt the report of the committee.

SENATOR VALE: That is mere sophistry. The committee have made a report and laid it before us for acceptance or rejection. It is for us to say whether we will accept it or amend it as we please. We are pleased with their recommendation except that we wish to eliminate all prejudice as to place, and leave that open, free, untrammelled and unprejudiced, so that we can act upon it at that meeting. It is certainly perfectly tenable and feasible that we should amend their work before adoption if we see fit. There should be nothing in the premises which will not leave us free to act as we see fit, when we come to act permanently.

PROFESSOR KENT: The only object we have in bringing this association to Ames is to benefit our college. From our stand-

point, of course, we expect to render an equivalent service, but our object is the upbuilding and upholding of the agricultural department of the college. Unless you can go there without a quarrel, of course we don't want to have that, I would rather that this or any other association should never meet there, than to get there and fight. The very object and purpose of going there would be lost. I will not eat meat for my whole life if it is going to offend my brother.

PROFESSOR CURTISS: I will say that the purpose of the committee in postponing action upon the matter was to give the breeders of the State a year's notice, and to defer any action until then. That article of the constitution can be amended if the association sees fit, and you can fix on any point in the State as a permanent home. We simply submitted this recommendation for consideration at the next annual meeting, so that the breeders might have general notice that such an amendment was anticipated, and at that time I am just as willing as any one here to insert the name of Des Moines or any other desirable city, if that is the wish of the association. We are not disposed to take the association to Ames if you do not want it there. If that is not most convenient and desirable you can do as you think best in regard to continuing the meetings there. If you wish to continue them there, all right. It seems to me that this whole matter can just as well lie before the association until next year, and then any name we wish can be substituted for Ames.

MR. JOHNSON: I move we lay this matter upon the table until the next annual meeting.

A MEMBER: I second the motion.

THE PRESIDENT: I shall have to rule that motion out of order.

A MEMBER: I move that the amendment be laid on the table.

MR. KILBURN: I wish to explain, as a member of that committee, about signing the report. I am not in favor of having the meetings at Des Moines. I belong to one or two associations that meet at Des Moines, and I find that while it is the best place in the State to get to, it is the worst place in the State to hold a meeting. I signed the report of the committee and we made the place Ames, but I suggest we leave it for the next meeting to consider. I believe the Agricultural College should be the head of the agricultural interests in this State, but I can see that it would be a great deal better to adopt Senator Vale's suggestion and leave the name blank, and leave it to the next meeting to fix the place at which the meetings shall be held.



PROF. WILSON: The thing I do not like about this is that this body should fight on the question at all. I would suggest this—that one of two things be done now: Either that the committee withdraw the report or substitute a blank instead of the name of Ames, leaving that blank, and then we will not have to divide on the question at all.

MR. FRANKLIN: Do you make a motion to that effect?

PROF. WILSON: I move to refer this report back to the committee with instructions to report with a blank in the place of the word Ames.

A MEMBER: I second the motion.

A vote being taken the motion was declared carried and the report was referred back to the committee.

THE PRESIDENT: Is the Committee on Resolutions ready to report?

PROF. WALLACE: We are not ready.

PROF. CURTISS: The special committee is now ready to report back its recommendation. (Amended report read by the secretary with the word Ames eliminated.)

THE PRESIDENT: This report discusses the advisability of having a permanent home for the Improved Stock Breeders' Association. Will you adopt this report as amended?

PROF. WALLACE: I move that we adopt the report of the committee as amended.

The motion being seconded and a vote taken, it is declared carried.

THE PRESIDENT: The next thing on the programme is a paper by Prof. Wallace on the "Improved Farm Dairy."

PROF. WALLACE: I think the paper just following mine by Prof. Wilson is of more importance than mine. I will give my time to Prof. Wilson, and after that if we have time, I will present mine.

#### FEEDING THE DAIRY COW.

BY PROFESSOR JAMES WILSON.

Our domestic animals are the products of our pastures. This is illustrated through the series of cows from the Kerry to the Short-horn; from the Shetland pony to the English Shire horse; from the Suffolk hog to the Yorkshire; from the Moor sheep to the Leicesters. Keeping controls size,

Milk giving and meat making are the results of habit. Heavy feeding will give us milk or meat from the same pasture. We can compound rations to encourage the one or the other, and by selection breed in either direction. The first consideration for the dairyman is what his pasture and feed bias are equal to. Conditions in Iowa differ from any other dairy locality in the world. We have as fine grasses and grains, and cheaper grasses and grains than any other people, but our climate differs from other dairy localities in this or the old world; this gives us different plants to feed with and different constituents in the same plants. These variations will result in the development of distinctive dairy cows for Iowa. We must feed well, and only heavy feeding on pasture in summer and in the barn in winter will give us satisfactory profits. We work at an advantage in dairying. Eastern and European dairymen send to us for corn, oats and oil meal; to the northwest for bran, and to the south for cotton seed meal. We can gauge our enterprise by looking at the price of corn in the various dairy districts that feed it. It sells for 25 cents a bushel here to make butter for the New York or London market; it sells for 40 cents to the Illinois dairyman who makes butter for the same markets; it sells for 60 cents on the Atlantic seaboard to dairymen who compete with us in the same markets; it sells for seventy-five cents to the British dairymen, and perhaps for a dollar to the Danish dairymen who sell butter in London. We can measure ourselves by which ever price our intelligence as dairymen permits. The man who pays the highest price for our grains has a profit or he would not buy. How to feed the dairy cow is a different question all along this route from Iowa to the Gulf of Finland. The dairyman in each locality has grass in summer, but each has a ration for winter differing from all others. We feed corn and hay generally. A few Iowa dairymen provide clover hay, but wild hay, timothy hay, straw and corn make up the rations for the majority of our cows, and one hundred and fifty pounds of butter is the average product of one cow. Bran and silage are fed in the more advanced dairy neighborhoods; oats in the sheaf are cut up to mix with corn meal; oil meal is given with corn meal by a few; roots are being experimented with here and there, but corn and hay make the bulk of the Iowa cow's ration in winter. Eastern dairymen who buy feed for their cows and fertilizers for their soils consider the two together. They do not feed our corn exclusively as we do, because more nitrogenous grains make more milk and better manure. They buy our oil meal and oats, the bran of the Dakotas and the cotton seed meal of the south. European dairymen follow the same plan in buying grains to make meals and dairy products. Whenever western and southern dairymen get their eyes open wide enough they will feed these nitrogenous nutrients at home, and dairying will comparatively cease in the eastern states and in Europe; at least it may be said that its growth will be where grasses and grains are grown cheapest. The feeding of the dairy cow is with us the most prominent question of the day. Those who read eastern and European farm papers readily conclude that we are fairly ahead in the dairy and fairly behind in the feeding barn. Others give attention to winter feeding; several stations inquire into it; the farm papers discuss ration making, and our farmers' clubs, institutes and granges make it prominent. I thought it well on this occasion to look into methods of keeping up the flow of milk during our summer drouths that are factors in profitable dairying at some period

every season. Many creameries stop when the pastures become bare, the cows are dry and profits cease for the season. We need at such times something as good as pasture grass, that should grow on our farms, that will do for us what the vetch does for the British farmer, what the soja bean does for the Japanese, what the cane pea does for the southwest, what rape does for northern latitudes, what the angled pea does for Russia—in short, we want a legume, or a succession of them, that will suit our climate and soils, that will complement corn and perfect it as a feed for the dairy cow and other domestic animals, that will enable the dairyman to keep up the flow of milk in his herd from plants grown cheaply on his own soil. It is necessary that we should know how much we can grow on an acre of promising plants, what effect they have on the cow, what kind of butter they make fed entire or combined with each other. For three years the Iowa station has been working in this direction. We tried to get comparisons between cows in the field on pasture and cows in the stable on green feed in 1891; we tried to get indications of the value of green feed by keeping up the cows at night and pasturing them during the day in 1892, and we tied up cows during the hottest weather and fed them on different green crops in 1893.

We weighed, sampled and tested the milk of four cows on July 18th and 19th, while they were grazing on an abundant blue grass pasture. They gave seventy-four pounds of 3.35 per cent milk at four milkings. They were then tied up in a shaded, well ventilated barn, fed on peas and oats, during a period when we got eighty-seven pounds of 8.57 per cent milk. They were fed for a like period on green clover, when four milkings gave us eighty-three pounds of 3.48 per cent milk. The next period was on rape, from which we had seventy-three pounds of 3.33 per cent milk. Then upon sweet corn, from which we got seventy-two pounds of 3.35 per cent milk. They were then turned back into the pasture, at the end of a week, when we got fifty-nine pounds of 3.85 per cent milk. The fresh pasture gave us 2.47 pounds of butter; the peas and oats gave us 5.10 pounds of butter; the clover gave us 2.88 pounds of butter; the rape, 2.43 pounds of butter; the sweet corn, 2.41 pounds of butter; the dry pasture in September, 2.27 pounds of butter. The milk was taken to the dairy and made into butter. It was scored by the experts there on a basis of 45 perfection. The butter from the fresh pasture scored 42; from the peas and oats, 42; from clover, 42; from rape, 39; from sweet corn, 45. The nutritive ratio of the green blue grass was 1 to 5.4; of peas and oats, 1 to 3.9; of clover, 1 to 5.4; of rape, 1 to 3.2; of sweet corn, 1 to 13. The ration fed the cows was 125 pounds each daily of peas and oats; 125 pounds daily of clover; 110 pounds of rape to each cow daily, and 110 pounds of sweet corn to each cow daily. The yield per acre of peas and oats was 36,800 pounds, having 6,655 pounds of dry matter. The yield from second cut clover was 14,400 pounds per acre, having 2,860 pounds of dry matter. The yield from rape was 54,400 pounds per acre, having 5,755 pounds of dry matter. The yield from sweet corn was 36,800 pounds, having 12,512 pounds of dry matter. The peas and oats had 32 per cent of dry matter; the clover, 20 per cent; the rape, 16.35 per cent, and the sweet corn 34 per cent. It will be seen that each cow, while eating peas and oats, had 40 pounds daily of dry matter; on clover, 25 pounds daily; on rape, 11.63 pounds, and on sweet corn, 37.40 pounds. During this experiment each cow had four pounds of corn meal daily, and

during the forty-nine days there was an average loss of twenty-five pounds in the weight of each cow. During a similar experiment in 1891, on similar green feeds, with twelve pounds of corn meal daily to each cow, during the same number of days, there was a loss of thirty pounds average on the cows, showing that the feeding of corn meal to a milch cow is a controlling factor in the gaining or losing of flesh. Much the greatest gain comes from feeding peas and oats, but it will be seen from the amount consumed and the nutritive ratio that the cows on that feed had much the largest amount of nitrogenous matter, and while the dry matter in a day's rations was much the lowest while eating the rape, yet the cows would not consume as much rape as they would of peas and oats. Our corn plant stands out distinctively as making the finest flavored butter. The butter from the rape would sell very low in the market. The butters that scored 42 are such as sell for western extra in the eastern markets. The amount of protein in the corn plant is too low for the production of butter. It is evidently necessary to feed some plant in connection with it of a more nitrogenous nature. The first crop of clover has grown and been secured long before the earliest corn is ready. The second cut of clover with our summer conditions of frequent drouth, is not always abundant. The problem presented to the Iowa dairyman is, what will supplement a bare pasture during the interval, and add protein to the corn crop when it is ready? Chemical analysis of these several plants shows that the volatile acid in the sweet corn is much the highest. The scoring of these butters suggests to us that feed has much to do with the flavor. This also suggests to us why Iowa butter excels all others in the market. Corn enters more largely into the ration of the cow than in any other state. There is quite a list of plants that can be fed with corn without materially injuring its flavor, but the butter from corn, pure and simple, as far as the indications from this experiment go, has a finer flavor than that from blue grass, peas or clover.

MR. NOXTON: I notice you say that the flavor of our butter in Iowa is always first-class, and is caused by feeding so much corn. I noticed that in Chicago—they made a test there, and invariably the Short-horn led in flavor.

PROFESSOR WILSON: Yes, and invariably the Short-horn was fed the most corn.

MR. KILBURN: Did you weigh these cows while you were conducting these experiments so as to know whether you put on any additional flesh while the experiments were going on?

PROFESSOR WILSON: Yes; you will find in the bulletin an interesting discussion of that point. These cows lost on an average twenty-five pounds apiece, except the Red Poll, and she just held her own. There is an interesting feature along the line of this enquiry which has just been made. This Short-horn cow is number 209, and in our experiment in 1891 we fed two pounds of corn a day, and this time four pounds of corn. Then the cows gained on an average fifty pounds apiece in forty-nine days, but this time they



lost twenty-five pounds each, showing that in feeding corn there is a line beyond which you must not go. Corn can always be used to a certain extent. We did not feed enough, evidently, because the cows lost one-half pound a day. We could have given them a little bit more. You can easily see that there are still many things that require experimenting.

MR. KILBURN: Did these different feeds you used make any changes, any gains or losses except in the butter?

PROFESSOR WILSON: We only took their weights at the beginning and the end. It was only about two weeks that we had the cows on any particular feed. It may be said, why didn't you run them for two months on one feed, but before we could have gotten through, these cows would have been dry or having calves again.

MR. NORTON: From which breed did you obtain the best quality of butter?

PROFESSOR WILSON: We did not have the milk of the different cows separately analyzed.

MR. NORTON: Is it true that the butter of the Jersey will become rancid quicker than that of other cows?

PROFESSOR WILSON: I could not answer that. I believe the feed has more to do with the flavor of the butter than either the man who makes the butter or the cow herself. You see I am perfectly honest in saying that I don't know. I don't know half as much as I used to think I did about these things. I am only beginning to have some understanding of the way to go about learning.

MR. NORTON: I would just like to say that in the two-year-old test of Jerseys, Guernseys and Short-horns, the little Jersey beat the Short-horn twenty-five cents in twenty-one days, it being so close. And did you notice the feed? Didn't they feed the Jersey about the same as our folks do the Short-horn?

PROFESSOR WILSON: They fed the Jersey about the same as our folks do the Short-horn.

MR. PRESIDENT: If there are no more questions, I understand that Professor Wallace is going away, and I know you will be interested in his paper, "The Improved Farm Dairy."

## THE IMPROVED FARM DAIRY.

BY PROF. WALLACE.

Every year brings its lessons, especially to the farmer. The past five years have been unusually prolific in this respect. The farmer who takes these lessons to heart and profits by them is the one who gets the most pleasure and profit out of life, and whose family is the happiest. During the past few years many Iowa farmers have made radical changes in their systems of management. The years 1885 to 1891 carried with them lessons that convinced these farmers that it was no longer profitable to keep the average cow a year for the chance of a calf; and that the butter fat in the milk was worth more money when made into twenty to thirty cent butter than when fed to calves that made only four cent beef. And being convinced, they changed their farming operations to meet changed conditions. They are milking the cows and making butter or selling the milk or cream. Some of them do not bother with the calves; others raise them on the skim milk; the wisest feed with the skim milk grains to take the place of the fat removed, and they raise good calves. Intelligent neighbors are following the example set by these men, and the dairy industry is growing in Iowa with wonderful rapidity. And it is well. No State is better adapted to profitable dairying than ours. Our pastures are luxuriant, grains grow in abundance, the climate is salubrious, all the natural conditions are favorable. Nor do these statements apply to only one portion of the State. We hear much talk of the Iowa dairy belt; in the past there has, perhaps, been such a belt, but it was made, not natural. All of Iowa is adapted to dairying. If one part of the State is slower to take it up than another, it is not because of unfavorable natural conditions, but because the residents of that particular part have been slower to see the necessity for a change in the farming operations and the advantages of dairying.

Profitable dairying is naturally divided into two parts: *First*, the production of the greatest possible amount of the valuable milk constituents at the least cost; and *second*, the conversion of these constituents into high selling products with the least loss.

The most valuable constituent of milk is butter fat. It exists in the milk in the form of very minute globules. We are not able to state with accuracy the exact manner in which it is elaborated by the cow, nor from exactly what foods it is produced. We do know that it is more plentiful in the milk from some cows than in the milk from others, and as the amount of butter fat in the milk seems to be more or less a characteristic of the individual we see the necessity of care in selecting the cows for the dairy. Other things being equal, the cow that gives the greatest number of pounds of butter fat

in the course of a year at the least cost per pound is the most valuable cow for dairy purposes. This holds good no matter to which breed she belongs, no matter what the color of her hair, no matter what her form, no matter what her size. The value of a dairy cow cannot be measured by breed, color, form or size; actual performance must be the criterion by which she is judged; utility must be the watch-word. A year ago the standard for a dairy cow was much higher than it is at the present time. Then cows that gave a thousand and over pounds of butter per year were commonly talked of. In the Columbian barns were seventy-five cows, such as the world never before saw collected in one place. The best one of these seventy-five cows gave on an average two and four-tenths pounds of butter per day for ninety days, when she was at her best, and a performance for a year, that would be much lower than previously credited records. Our honorable president brought no small honor to Iowa by sending a cow whose performance was superior to that of sixty-five others in the great cheese test. His name should be placed among the archives of this association, beside those of Monier, Elbert and Fall and Barclay.

Cows that give one to two pounds of butter per day are more valuable now than they were before the Columbian test. It is said that the dairy cows of Iowa average about one hundred and twenty-five pounds of butter per year. Considering this butter worth on an average twenty cents per pound the year round, that would be twenty-five dollars, which would about cover the cost of production. We can double, and more than double the amount of butter per cow by selection and rejection and better methods of feeding and care. Among the grade cows of this State are thousands and thousands that would yield good profits in the dairy. The trouble is that the profit from these cows is too often used to buy feed for poor cows. Mr. B. P. Norton read a paper before the State Dairy Association in which he said that his cows averaged over three hundred pounds of butter each year. On being asked what kind of cows they were he said that they were grades, mostly grade Short-horns that he bought from his neighbors. He selected the best of these cows and fed them well and kept them in comfortable quarters. Each cow returns him over eighty dollars per year, aside from the value of the calves and the skim milk. To use his own language, he is "doing pretty well" financially.

There are two things necessary to the production of butter fat profitably. The first thing is to get a good cow. The second is to take good care of her and feed her well. The dairyman may not always be successful in selecting a good cow, but there is no excuse for keeping a poor one. The genius of Dr. Babcock has given us a method of determining the value of any given milk for butter making in an easy and rapid manner, and the Babcock test should be found on every dairy farm. With the aid of the test and the scales a record should be kept of the performance of each cow in the herd throughout the year, and by that record she should be judged. The most satisfactory method of keeping such a record is to record the weight of each milking for each cow in the herd and take from it a sample to be tested for butter fat. The testing is simplified by keeping a composite sample and testing once a week. Some dairymen shorten this work by weighing and testing the milk only twice each month; that is, weighing each milking for three days the first week in the month and three days the third week in the month, averaging

the amount of milk given in the month by these weights; the test is applied in the same manner. While this method is not strictly accurate, it gives results close enough for all practical purposes and makes the work of testing the cows easier. When records are kept in this way, the dairyman can know at the end of the year just which cows have paid him and which have not, and he can reject the latter. It is only by actually testing the cows that the most profitable dairy herds can be built up; any farmer of average intelligence can do this, every farmer who is milking cows and making butter or selling milk or cream for butter making should do it. There are too many cows in Iowa that are consuming the profits yielded by the good cows in the herds; they are found in all breeds and of all forms and colors, and under all conditions. The test reveals their true natures; it should be applied and they should be cast out.

The entire dairy field cannot be covered in the course of one paper, and I pass the feeding and care of cows and will discuss briefly methods in the dairy proper.

There is little advantage in producing large quantities of milk and butter fat even at a minimum cost, unless that fat is saved and converted into a high priced product. The value of butter fat lost as the milk passes through the dairies of this and other States reaches figures that are appalling. In one hundred pounds of average milk there are perhaps three and one-half pounds of butter fat, which, if it were all saved, would make over four pounds of butter. It has been estimated that under average conditions that prevail on the Iowa farms, one-fourth of this fat is lost in the skim milk and buttermilk. On first thought this seems a high estimate, but I am of the opinion that the opposite is true. During the past summer we have made somewhat of a study of this matter. We secured samples of the skim milk and buttermilk from dairy farmers living in the vicinity of the Agricultural College. We found that some of these farmers were losing in the skim milk half of the fat they had to start with and a few even more than this. Taking the average of all the skim milk tested we found that the calves and pigs were getting one-third of the total amount of fat produced. In the buttermilk the loss is even greater, proportionately, than in the skim milk. In some samples of buttermilk we found as high as seven and two-tenths per cent of fat, while the average test of all the samples was two and five-tenths per cent fat. Add this to the fat lost in the skim milk and we find that these farmers are feeding to the calves and pigs almost half of the total amount of butter fat produced. Good butter to-day is worth thirty cents per pound; the enterprising private dairyman can get twenty-five cents per pound the year round for it. Twenty-five cent butter makes expensive feed for calves and pigs.

These losses can be avoided only by a careful study of the principles which underlie dairy methods and the use of the most improved machinery. Even under the most favorable conditions the old method of setting the milk in cans or pans for the cream to rise is wasteful; under average conditions it is flagrant extravagance. The man who has only a few cows is probably compelled to follow this method. He can reduce the loss to the minimum by selecting those cows whose milk creams most easily and thoroughly, setting the milk in ice cold water immediately after it is drawn from the cow and before it has been allowed to cool, and taking the inch and a



half of milk immediately below the cream line with the cream when he skims. In this way he can reduce the loss to the lowest point, but it will still be heavy. The man who milks eight or ten cows the year round cannot afford to raise cream by the gravity method; he should either buy a small separator or sell his milk to a separator creamery that pays for the milk according to the per cent of fat it contains. The separator, when properly managed, removes all of the butter fat from the milk. When eight or ten cows are milked the butter saved by using the small farm separator will very soon pay for it.

In churning the amount of fat lost in the buttermilk depends upon three things: the richness of the cream, the temperature at which it is churned and the amount of cream in the churn; the latter is least important. The quality of the butter depends upon the manner in which the cows are fed and cared for, the manner in which the milk is handled, the cream ripened and churned and the butter worked, salted and packed. The cows must be fed wholesome food and have an abundance of pure water; they must be kept in clean quarters; the utmost cleanliness must be observed in milking and caring for the milk afterwards; the cream must be ripened properly and the butter churned, worked and packed in such a manner that the grain will not be injured.

The ripening of the cream is one of the most important and at the same time one of the most difficult operations connected with the dairy. If the cream be not ripe enough the butter lacks that "nutty" flavor characteristic of a gilt edged article; if it be too ripe the butter is of a strong flavor and quickly becomes rancid. If the cream be not ripe enough the loss of fat in the buttermilk in churning is heavy; if it be too ripe this loss is excessive. The success of the dairyman depends very much upon the manner in which he ripens his cream. The ripening of cream is analogous to the souring of milk; it is simply a partial decomposition of the albuminous matter and the conversion of a portion of the sugar into acid. To produce the best butter in the most economical manner the dairyman must ripen his cream properly. To do this he must ripen it all at the same time. If more than one day is required to collect enough cream to make a churning, the first cream must be kept sweet until sufficient is secured to make a churning and then all should be ripened together; that is, simply removed to a room where the temperature is sixty to sixty-four degrees, and allowed to stand until ripe. Ripened cream does not mean sour cream as the latter term is generally understood; cream should never be allowed to become "clabbered," or even very thick. It is very difficult to determine just when the cream is properly ripened. An acute sense of taste and smell and long years of experience are necessary. We have been studying the relation between the ripeness of the cream and the loss of fat in the buttermilk at the college creamery during the past six months and have been using an acid test to determine the ripeness of the cream with most satisfactory results. Under normal conditions the ripeness of the cream is measured by the amount of acid it contains because as the cream ripens acid is produced. The test referred to is a simple method, which any man of average intelligence can apply, to determine the amount of acid present and consequently the ripeness of the cream. By the aid of this test we have been able to churn without the loss of a trace of fat in the buttermilk when the churn is filled not more than half full and

the cream is at the proper temperature. Concerning temperature we have found the old temperature, sixty degrees in summer and sixty-two in winter, to be too high. Under Iowa conditions we must churn at fifty-six to fifty-eight if we hope to produce the best butter with the least loss of fat in the buttermilk.

As the papers read before this convention are expected to be suggestive rather than exhaustive I have touched very briefly upon the matters I consider of the most importance to the farmer and dairyman. In conclusion I will only say that the successful dairyman must be a business man, he must keep business cows and conduct his dairy work on business principles. The strife of competition will drive all others to the wall.

MR. BENNETT: I understood the chairman to say that Mr. Wallace had to leave after dinner. I hope it will be possible for him to stay, because I think the people here would like to ask him some questions.

PROF. WALLACE: It will be impossible for me to stay. I have to get away on this noon train.

A MEMBER: I wish to ask how to apply this acid test?

PROF. WALLACE: This is a very simple thing. As I said, as the cream rises acid is produced. Under normal conditions, the amount of acid measures the degree of ripeness of the cream. There are some liquids which we call acid and others that are alkaline. Bring the two together and the one neutralizes the other. To test the condition of the cream, take the alkaline liquid of a certain standard strength and introduce it into the cream until the acid is neutralized; that measures the comparative amount of acid. Suppose you want to test the state of your cream. We have an alkaline liquid of a certain known strength; it doesn't matter what strength it is, so it is the same all the time. We put that in a measuring glass with a certain definite amount of cream, introducing this alkaline liquid into the cream, a few drops at a time, until the acid is neutralized. It is necessary to have what we call an indicator. Some liquids are one color in the presence of an acid, and another color in the presence of an alkali. The one we use in this work is *phenol thalien*.

MR. BENNETT: Would litmus paper do as well?

PROF. WALLACE: It is not as satisfactory. For this test we use say fifty cubic centimeters of cream and five or six drops of phenol thalien, stirring it up thoroughly. If you use litmus paper you can only make a test of one certain part of the liquid, and that is why it is not so satisfactory. Then drop in the alkaline solution carefully until the color changes and becomes pink—just decidedly pink. That indicates that the acid has been neutralized. Then

read the amount of the alkaline solution you have used, and that tells you the condition of the cream.

A MEMBER: Is that in such shape that it can be used in practice every day?

PROF. WALLACE: Yes sir.

MR. BENNETT: What will it cost to get up that apparatus?

PROF. WALLACE: Not more than \$2.00 or \$3.00. All that is necessary is a burette, a long glass cylinder, probably the size of this stick, with a pinch-cock at the bottom so you can run the liquid out, and a graduated scale down the side. You fill the burette with the alkaline liquid to the zero mark, so you can see where the liquid stands, and then drop it out and read what you have used of it. That is really all the apparatus necessary except the alkaline liquid and the phenol thalien. Of course the accuracy of the test depends upon having the alkaline liquid of a certain standard strength.

MR. SMITH: What alkaline solution do you use?

PROFESSOR WALLACE: We use what we call potassium hydroxide.

MR. SMITH: I can see the necessity of determining in some way the ripeness of the cream, but the idea is to get something simple enough so that the ordinary butter maker can apply it.

PROFESSOR WALLACE: We have a number of special dairy students there at the college, and we have no difficulty whatever in teaching them in half an hour how to use this process.

PROFESSOR KENT: Wouldn't an ordinary potash solution answer the purpose?

PROFESSOR WALLACE: No, sir, I think not. It is always desirable to have tests of this kind as exact as possible, and there is danger of getting them so that you destroy the benefit. A man could buy enough of this potassium hydroxide to last him a year in an ordinary creamery for fifty cents or a dollar.

MR. SMITH: Then if you found the cream was not of the desired degree of ripeness, when you used these solutions, you would keep it until it attained the point where it would take a certain amount of the alkali?

PROFESSOR WALLACE: Yes, sir; there is another point to be remembered, in making these tests, and that is temperature. We found that where we had to take a certain amount of alkali, we must churn at a lower temperature than when it requires more. If in the morning you test your cream and find that it is not ripe enough, you can reduce the temperature and go right ahead.

MR. SMITH: I can see that that could be worked out properly so as to be made practical.

PROFESSOR WALLACE: When the cream is either not ripe enough or too ripe, we need a lower temperature in churning, although it is impossible to get a complete recovery when the cream is too ripe.

THE PRESIDENT: Were you ever able to get all the butter out of your cream by the use of this method?

PROFESSOR WALLACE: Yes sir, we have on three or four different occasions, but the difficulty of the matter lay here, that we could not tell how to do it the next day. We could tell the temperature at which we churned and the amount of cream in the churn, and we could get the same temperature and the same amount of cream the next day, but we could not get the same result. We could not tell by taste or smell the condition of the cream in regard to ripeness. We have been able every once in a while to get that result, but we could not tell how to do it again. A man who has had long experience can tell with reasonable certainty that the cream is in proper condition to churn, but the condition of the cream necessary to get all the fat out of it, that is something that even the most experts are not able to tell.

PROF. WILSON: What loss did you find in those samples that were analyzed?

PROF. WALLACE: Three-tenths per cent, but there should be an explanation made in connection with that. That sample in which three-tenths per cent was lost was brought to the college by Mr. Jones, but he had carried it for a couple of days so the butter had been churned, and we did not get an absolutely fair test. There was more than that per cent which we did not get out.

PROF. WILSON: What do you say is the average loss?

PROF. WALLACE: Something like six-tenths per cent. In one case we found a loss of two and one-half per cent.

MR. SMITH: Can you tell me where I can get the burettes for measuring?

PROF. WALLACE: I think you can get them from a firm in Chicago.

I will give you the address.

PROF. WILSON: This is all written up in full in a coming bulletin, isn't it?

PROF. WALLACE: Yes, sir.

THE PRESIDENT: If there are no more questions, is the Committee on Resolutions ready to report? If not, we will stand adjourned to 1:30 this afternoon.



MR. SHAW: I want to say to the citizens of Corning and Adams county that the membership in this association is not by any means what it should be. There have been but thirty-one members signed here, whereas last year there were more than eighty. I want to ask that all citizens who feel an interest in this matter will come up and join the association. The membership is only a dollar, and for that they get the proceedings of the association in book form, and they become members of the association. I feel that we should do more in this direction.

An adjournment was taken until 1:30 P. M. of this date.

DECEMBER 7, 1893.

The convention was called to order at 1:30 P. M., President Sheehan occupying the chair.

THE PRESIDENT: There were some committees appointed yesterday which have not yet reported. Is the committee which was appointed to examine the treasurer's report ready?

MR. BERRY: We have examined the report of the treasurer and find it all satisfactory and straight, according to vouchers and receipts.

THE PRESIDENT: What will you do with this report, gentlemen?

A MEMBER: I moved that the report be adopted and the committee discharged.

Carried.

THE PRESIDENT: If there are no further reports of committees, we will listen to a paper on "Pastures," by the Hon. J. B. Harsh.

#### PASTURES.

*Mr. President and Gentlemen of the Iowa Improved Stock Breeders' Association:*

The idea first conveyed to the mind by the word pasture is a wild tract of land more or less covered with grass and other herbage. This may be said to be partly inherited and partly gained by perusal of books telling of the struggles of man in the nomadic or wandering stages of his history. Readers of the Bible recall the passage where it is related that on

account of the great number of the patriarchs' cattle the grazing regions were taxed to their greatest capacity and frequent quarrels arose between the herders. Something had to be done to prevent trouble and provide sufficient pasturage. The old patriarchs, therefore, divided the world between them, one going to the right hand, occupying the valley of the Jordan which we are told was fertile and well watered, and the other took the land on the left hand, or to westward, and there raised his flocks and tended his herds. Since that time necessity has caused the land to be divided between the inhabitants thereof and again and again divided until, subdivision being no longer profitable, man has been forced to resort to other means to furnish sustenance for his meat-producing and work animals. And thus he has learned to recognize, as a benefactor to his race, the philosopher who can teach him to grow two blades of grass where but one grew before. The green pasture and the quiet, grazing herds have ever furnished the painter, poet and orator with examples of peace, happiness and contentment.

The psalmist says: "He maketh me to lie down in green pastures," thus indicating that restfulness, peace, plenty and contentment are qualities which attach or pertain to land covered with grass as with a carpet and used for the purpose of pasture. What is more pleasing to the eye of the traveler, on carriage or train, than a pasture, through the valley of which meander pebbly streams and whose hillsides are stocked with fine purely-bred cattle, horses, sheep and swine feeding on the rich, deep covering of succulent and nutritious grasses.

But it is not of the pasture's history or its aesthetic qualities that I would speak to-day, but rather of its utilitarian or practical aspect. The value in dollars and cents of the yearly product of the pastures, even of a single State like ours, is almost past the skill of the statistician to enumerate. We have furnished us, at the end of each year, in long columns of figures, the value of our wheat, corn, oat, and even our hay crops, but no expert has ever attempted to tell us the value of the crop upon which we largely depend, and which, to a greater extent than other crops, is productive without planting, without cultivation, without harvesting, and without housing in granary, barn or silo. Though possibly more valuable than all other crops combined, it requires no handling by man, and unlike all other forage crops, reaches the stomach of the horse, cow, sheep or hog in nature's way, and is returned by the same method to mother earth to enrich and prepare her to perpetuate the supply from year to year. No other crop exhausts the soil so little, and no crop requires so little care and attention. I am told by travelers there are permanent pastures in Europe which are older than the recollection of any inhabitant in their respective regions, and that their fertility increases with their years.

I have often wondered that so valuable a thing, and one with which man has been in contact from the earliest period of his existence on this planet, is not more highly prized and utilized to a greater extent. Nothing on a farm pays so well as a well formed and properly treated permanent pasture.

With our Iowa climate and soil the possibilities of our pastures are, it seems to me, little comprehended and less appreciated by our people. The average farmer has long known something of the value of the pasture for the spring and summer months, but it is only recently that he has learned that, properly arranged and prepared, the winter pasture is equally if not more valuable.

When reading a paper on this subject to this body some years ago, when it met near our northern border, the statement was made that it is possible, in the portion of the State in which you are assembled, to profitably keep horses and cattle on pasturage the entire year. But if not the whole year, the feeding may, in ordinary winters, profitably be cut down to at least thirty days for horses and say 40 to sixty days for cattle.

I well remember the look of astonishment and incredulity that appeared on the faces of my audience when that statement was read on the occasion referred to, and the more than half-hour that I stood answering questions at the termination of my discussion of the subject.

That paper and others in a similar vein, which appeared among the printed matter circulated by the Blue Grass League, has since, I am glad to say, met with ready reception and awakened an interest in the subject of permanent and especially winter pastures, that is not confined to our own State.

The literature referred to has found place in more than one volume devoted to the publication of information for the masses, by State Agricultural or kindred societies, and letters by the score, asking for further directions as to preparing ground, seeding and care of pastures, have been received. Right here I desire to answer some of the questions asked in those letters concerning the blue grass pasture of 100 acres, referred to in the paper above mentioned. It is still a pasture and is, I believe, the equal of any to be found in Kentucky or elsewhere in the republic. I call it blue grass because that variety of grass predominates therein, but there are many other varieties of grass on that tract of land. Twenty-three years ago when the property came under my control it was prairie and covered with blue stem, wire and other grasses common to the prairies of this portion of Iowa. With the settlement of the country and the tramping of animals blue grass "came in of itself," and gradually took the place of the more worthless of native grasses.

Let me here mention that I saw in the development of that pasture a good sample of the survival of the fittest in nature. On some spots there still exists the native blue stem, and on others some of the best varieties of the common prairie grasses. These "hold their own," and where they do, I am satisfied, all things considered, none of the others, whether tame or wild, would be better adapted to pasturage purposes. Some eight years ago the tract was heavily stocked with sheep, and during the early spring following grass seed (for the purpose of this paper clover is classed as grass) was scattered all over the land; timothy and orchard grass for the upland, red clover for the hill-sides, alsike and white clover for the bottoms, while an acre or two, where the sod had been more or less broken, from different causes, was scattered meadow oat grass, English blue grass and a mixture of all kinds left over from seeding the main body of tract, after which the portion last named was gone over with a harrow.

Previous experience had convinced me that there is scarcely a tract of land of even twenty acres in extent that does not contain a variety of soils, exposures, under surface drainage, etc., as to be benefited by the providing of different varieties of grass for the several soils and conditions.

The pasture under consideration was much improved by the seeding above described. There seems to be fresh, succulent grass, so to speak, for

every day in the year. In the early spring the orchard grass tufts seem to vie with the blue grass as to which will produce the first "green bite," while the remaining blue stem and timothy come forward next to give the former a chance. Afterward the clover and blue grass form the bulk of the pasture until late in the fall, when blue grass does duty alone during the winter months. Last spring I rented that pasture to one H. M. Bauman, of Ringgold county, who kept eighty head of large steers thereon, turning them in about the middle of May when the grass was fairly started and keeping them there until the latter part of September. When he took them out they were sleek, fat, and fit for the butcher's block. The pasture was then rented to F. J. Taylor, the showman, who placed therein about sixty head of horses and mules, used during the season in his business. They have lived and grown fat therein ever since being in there, at this date, and will likely remain there all winter, except during severe storms, when he will stable them and feed them hay, turning them in again when the storm is over. I have at this time horses, including mares with present season's foals by their side, doing excellently well on winter pasture formed by timothy and clover and blue grass which had nothing therein from May to October of the present year. There is nothing like blue grass to make bone and muscle, especially for horses. Oats, one year with another, do not compare at all favorably with blue grass in this part of Iowa for that purpose. Our dry fall days cure the grass, left for the purpose, in such a way as to make our blue grass winter pastures the admiration of all close observers and a source of profit to their owners second to nothing in the line of forage for live stock on the farm.

I have cows and heifers on such pastures on my farm in Colony township in this county at this date (remember, it is December) that are ready for shipment to the Chicago market. They have had no corn, and will not have until two or three days before shipment, and, from like experience, I know that they will sell for corn fed animals. In fact they will be better, having as firm and much more juicy and wholesome meat than though corn fed by the usual method.

Overstocking the pasture is one cause of failure to obtain the best results therefrom, and another cause is the failure of some owners to fertilize and feed their pastures. True, the droppings of animals keep up the fertility to a marked degree unknown to the plow-crop method, but the best results can only be had by liberal top dressing with well rotted manure.

To prevent overstocking let me say a good rule is to keep the summer pasture so a fair swath of grass can be cut thereon any time from the middle of May to October, so as to provide some seed stems to re-seed the tract and leave a liberal coat of grass for winter protection of roots and ground after the stock is taken out in the fall to turn into winter pasture.

The winter pasture should not know the hoof of any animal from May 10th, in this latitude, to October 1st of the year intended for winter use. A permanent pasture for summer or winter use, so far as my experience and observation go, can, in this part of our State, best be made on a tract that has never known the plow-share, something after the plan hereinbefore indicated. If one, however, has none such and desires a permanent pasture, let him prepare the ground as for corn. Rich soil, deep cultivation, smooth surface well firmed down, are essentials. Next in importance, a



knowledge of the kinds of grasses adapted to different parts of the tract and good, strong seed, free from seed of noxious or other weeds. Sow as early in the spring as the ground will work well, being sure to roll thoroughly afterwards.

Use very lightly the first season, or, what is still better, keep stock off entirely until after fall rains begin, and mow the ground over (setting the sickle high) often enough to keep the weeds down until the grass is stout enough to withstand the sun, wind and dry weather. Every pasture should be gone over at least once each summer or during early fall with a hand sickle or some other implement in hand for the purpose of cutting down, before going to seed, every thistle or other weed that either mars the beauty or crowds out the more useful grass. It is well, also, to go over the tract at least once each year and scatter suitable seed on any bare or thin spot that may appear. Pastures so kept and prepared are in my judgment profitable to the owners and a joy to all beholders.

Pastures save much plowing, planting, harvesting, feeding and hauling out of manure, besides retaining, especially on rolling ground, the fertility of the soil. My plea is therefore, for more and better pastures, and less plowing, sowing, harvesting and pitchforking of crops and manure.

#### DISCUSSION.

PROFESSOR CURTISS: I would like to ask the senator what his custom is as to the number of animals he turns into a fresh blue grass pasture?

SENATOR HARSH: Of course that last word "fresh," fixes it up in good shape. There is usually as much difference between pastures as there is between animals. Of course, the size of the animal and the age of the animal has much to do with it. Those steers I spoke of in this pasture were all large three-year-old steers, and there were eighty head kept there, and there are more than sixty head of horses there now. I think it is possible to keep for the entire year either a horse or a cow on two acres of pasture, but as to what we have in practice, I do not know as that will bear me out. I think perhaps two and one-half or three acres should be allotted to an animal for the year.

PROFESSOR CURTISS: What is your custom with those cows and calves you spoke of? About how many of those do you raise to an acre?

SENATOR HARSH: I had twenty-one cows and heifers; they were mostly cows, and I had thirty acres. I divided this into two fields, making about fifteen acres in each field. We put them there in the early spring, and they are there yet. There were twenty-one cows and fourteen calves by their sides in that pasture of thirty acres from early spring up to the present time.

PROFESSOR KENT: Do you think you could divide one hundred

acres into two fields and get more pasture out of them than if you had it all in one field?

SENATOR HARSH: My idea is that if I had things just as I wanted them, I would have my pastures in about ten acre tracts, and keep the animals on one portion while the other was being cleaned and getting started. I would not allow them to remain over a week or ten days in one, and a week or ten days in another.

MR. BERRY: Were you ever troubled with rag-weed?

SENATOR HARSH: No, sir. Thistles have always bothered me considerably in my pastures, but never rag-weed, to any considerable extent. I presume that in the older portions of the State, rag-weed would be a bother.

MR. BERRY: I do not know of a permanent pasture in Page county that has not rag-weed in it in large quantities.

SENATOR HARSH: I am only about twenty miles from here.

MR. LEONARD: When you find rag-weed in your fields, isn't it where the pasture has been farmed out?

MR. BERRY: I have seen rag-weed plentiful in permanent pastures in thick blue grass.

SENATOR HARSH: Was there plenty of grass?

MR. BERRY: Yes, sir.

SENATOR HARSH: I am not so particular about weeds if there is plenty of grass. I myself think that weeds are a good thing. While I would not sow weeds, still they do not matter so there is plenty of grass. Frequent seeding and re-seeding will prevent the presence of weeds, so far as I know anything about it.

MR. NORTON: You would not think it advisable to go through the fields in the early part of the season and cut out the rag-weeds?

SENATOR HARSH: If the rag-weed was present in any considerable amount, I would mow the whole tract, and that would interfere with the growth. Then I think it is very essential to have some seed thrown onto the tract every year.

MR. BERRY: That would destroy your crop of blue grass, unless you ran your mower very high.

SENATOR HARSH: I will say that so far as my personal experience goes, we are not bothered in this part of the State very much with weeds in our pastures.

PROFESSOR CURTISS: Do you make a practice of sowing a mixture of grasses in your pasture?

SENATOR HARSH: No, sir; wherever I have seeded except in the brush, where I have left it for blue grass alone, I have always selected the seed I thought was adapted to the particular spot. As

I said in my paper, there are so many different kinds of soil and exposures and drainage to be taken into account, and you must therefore have a good knowledge of the different kinds of grasses in forming a pasture.

PROFESSOR CURTISS: What kinds of seed do you sow on these different kinds of soil?

SENATOR HARSH: On the uplands I have found the larger clovers, red clover, to do very well; on the hillsides, white clover; and on the bottoms and in wet places and in the sloughs, alsike, with blue grass everywhere. On this tract I spoke of, there is considerable orchard grass and timothy. The orchard grass is especially valuable for early pasture; it furnishes food before anything else.

PROFESSOR KENT: How soon do you turn out on the pastures in the spring?

SENATOR HARSH: As soon as I take the herd off the winter pastures, and that depends upon how far along they have got with the winter pastures—sometimes earlier and sometimes later. If there is still a good covering of grass on the winter pastures, I let the animals remain until it is all eaten up. I like to have the spring pastures get well started. Not until after corn-planting time, anyway, would I turn onto the spring pastures.

PROFESSOR KENT: Do you cultivate your pastures?

SENATOR HARSH: In the sense of fertilizing?

PROFESSOR KENT: In the sense of using a plow.

SENATOR HARSH: No, sir. I do not know what you mean by cultivating a pasture: what do you mean by it?

PROFESSOR KENT: I mean with a disk harrow, cutting it up thoroughly, or ripping it with a common stirring plow—turn the sod right under just before it freezes up in the fall of the year—turn the whole field right over, as shallow as it can be turned.

SENATOR HARSH: I have never seen any of those methods used except the harrow.

PROFESSOR KENT: Did you ever try mulching with straw?

SENATOR HARSH: No, sir, except where the manure was not well rotted.

PROFESSOR KENT: Do you think you can get as much off an acre of permanent pasture as you can get off a pasture where you employ a system of rotation?

SENATOR HARSH: I do not know that my experience has gone far enough to answer that, but I have had excellent results with permanent pastures.

A MEMBER: Have any of you had experience with the condition called "turf bound?"

A MEMBER: Simply manure will cure that.

SENATOR HARSH: It will have that tendency.

A MEMBER: Will not the blue grass eventually run out all other grass in the pasture?

SENATOR HARSH: No, sir. That seems to be the common impression, but I think if you have any sort of grass on the spot that is adapted to it, it will hold its own. On the pasture I spoke of, the common wild blue stock holds its own against anything, and furnishes the best of pasture at certain seasons of the year. If you get certain kinds of grass in their own home, they defy all inroads from other grasses.

PROFESSOR CURTISS: How long do you keep your stock off that winter pasture? How long a time do you give it to grow?

SENATOR HARSH: Usually from about the 10th of May until some time in October.

PROFESSOR CURTISS: Do you pasture in the spring up to the 10th of May and pasture all through the winter until the 10th of May?

SENATOR HARSH: Yes, sir.

MR. NORTON: Is there any difference between Iowa and Kentucky blue grass?

SENATOR HARSH: I do not think so; I think it is the same thing. Mr. Wallace, a few years ago, when he used to live up on a farm, sent for a carload of the Kentucky article, and I went over to the car and looked at it, and I could not see any difference at all.

MR. NORTON: I think probably you would not by looking at it, although I think the seed looks larger than our Iowa seed.

SENATOR HARSH: I have seen it sown, and I cannot detect any difference whatever. I think it is the same thing. The fact is, grasses all look different upon different soils. The Kentucky article in its own home is not as thick as ours here, but produces more stems. It looks prettier as a body when it is in seed, but to all other intents and purposes it is like ours, but not so good.

MR. BERRY: Do you use upland or bottom land pasture?

SENATOR HARSH: Both. This particular pasture that I have spoken of is probably 25 acres of bottom.

A MEMBER: What do you say, if a man has a farm of 160 to 320 acres, as we have through this part of Iowa, would it be best to keep a considerable part of that land in permanent pasture, or would it be more profitable to rotate the crops? Would it be more profitable for the ordinary farmer to rotate his crops, and raise big crops



of corn and grain off these pastures, or to keep considerable portions of his land in permanent pasture?

SENATOR HARSH: I should say I would like to have a permanent pasture on any farm. I believe that in point of profit one would find that they would be as great as though they rotated their crops. Of course there will always be on any farm in this region a tract of rough, hilly land—there can be no question about that—that could be kept in permanent pasture. If it was all good tillable land I would say give us 20 acres out of 160 for permanent pasture.

MR. MITCHELL: I would like to ask you how you get rid of these thistles you speak of?

SENATOR HARSH: I arm myself with a hatchet and go over the ground before I consider the seeds are ripe enough to grow, and chop them down, leaving them lie just where they fall. That is the only way I have found to be effective. One year I tried to go over with a scythe before the thistles had arrived at that stage of their growth, but I found they sprouted up from below, so after that I went at the root of the thing with a hatchet.

PROP. KENT: Wouldn't a spud be more convenient?

SENATOR HARSH: I don't know but it would, but I am quite a believer in not investing too large an amount in different kinds of tools.

A MEMBER: Or a hoe?

A MEMBER: With a hoe you must cut down so as to cut off the top of the root.

MR. BERRY: What kind of thistles are these?

SENATOR HARSH: Just common thistles.

MR. BERRY: Not Canadian thistles?

SENATOR HARSH: No, sir.

MR. FRANKLIN: I would like to ask whether you think it is profitable to let a pasture remain for five months without any stock running upon it, in order to get a winter pasture?

SENATOR HARSH: I think it is. I think there is nothing that will pay better. That question goes right to the root of the whole matter. That, it seems to me, is the question which brings out the value of the winter pasture. If it don't pay, of course we cannot afford to do it.

PROP. KENT: How much snow do you have?

SENATOR HARSH: Scarcely any. I think I may say that we have as much now as we usually have.

PROP. KENT: Does it lie for any length of time?

SENATOR HARSH: Not usually. It does not interfere with the use of the pasture for practical purposes at all, especially if we pasture horses and cattle together. The horses paw the snow off of the grass and the cattle can follow them up. I went last Saturday out in the northeast part of this county—you remember it was snowing pretty hard last Saturday—I went out to the winter pasture and found the horses grazing around as though it was a nice summer day.

A MEMBER: Did you winter any stock last winter without feeding hay, in those pastures?

SENATOR HARSH: I think perhaps there were none but that had hay at some time in the year. I cut only the hay that was on 40 acres, and I had 49 head of cattle—all large cattle, 16 calves and about 30 head of horses, and I sold 12 tons of hay this spring off of 220 acres.

A MEMBER: You had probably 120 tons of hay on that land?

SENATOR HARSH: No, sir, I did not. I had perhaps between 80 and 100 tons.

PROF. CURTIS: What is your opinion about grass that has been under the snow during the winter? Has that the same feeding value after the snow goes off in the spring as grass which has not been under the snow?

SENATOR HARSH: I think if there was sufficient snow to cover it all winter it would perhaps be in better condition than if there were no snow, but if the snow were coming and going there would be considerable loss.

PROF. CURTIS: Then its value is not the same as though it was covered up through the winter?

SENATOR HARSH: Not at all. The reason our pastures in this part of the State have more value than those in the same latitude in Illinois is that we have more bright weather here. When our blue grass is curing in the fall of the year we have bright weather, and we practically cure it as hay right on the pastures. In this same latitude in Illinois there are a great many wet, foggy days that wash the nutritious qualities out of the grass. I do not know of any place else where the winter pastures will pay so well as they do in this region.

THE PRESIDENT: The next thing on the programme is a paper by Henry Wallace, "Necessary Changes in the Stock Business."

MR. FRANKLIN: Mr. Wallace is not present.

THE PRESIDENT: The next paper is a paper on "Stock Gossip" by Hon. John McHugh.

HON. JOHN McHUGH: I regret exceedingly that the able and talented editor of the *Homestead* is not here to give us in his own practical way suggestions which no doubt would be of great benefit to us in the conduct of our stock business. I may say that I have been very much entertained by the able paper read you by Senator Harsh in regard to his method of treating his pastures, and I would reinforce his position by stating before reading my paper that I have had some experience in that line, and I believe that the best method of producing the best results in our pastures is by top-dressing. I have had poor pastures and top-dressed them with well rotted manure year after year and have made of them good pastures, and the grass is more nutritious and more enduring. I think it is the only method of producing a rich and abiding pasture—by soiling or top dressing. I have seen my neighbors plow their pastures up and re-seed, but the stocks of the grasses were spindling and did not seem to thicken out and cover the ground, as they do by top-dressing, and afford that amount of rich nutritious grass that we get in our old pastures.

MR. NIXON: How is it with those pastures in England, which are permanent pastures of a hundred years standing—how can they successfully keep those pastures going for that length of time, when we cannot here?

MR. McHUGH: England, of course, as you know, is a moist country; it has that advantage that we do not enjoy. Our pastures are more liable to be injured by drouth than they are in that country, and in England they appreciate the advantages of this very system of top dressing which I advocate.

MR. SMITH: May I ask why you use rotted manure? Won't it rot after you put it on the pastures?

MR. McHUGH: It is liable to cover the grass and retard its growth—prevent it from coming up and spreading out over the ground for a longer period of time than if it was well rotted and well distributed. It is simply to avoid covering the grass up and choking it out that the manure is put on well rotted.

MR. SMITH: If the grass is strong it should come through any-thing of the kind.

MR. McHUGH: Yes, but it takes a long time. After you have covered the ground, in order to get a more even distribution, run a light harrow over it; that is a very good thing. Now, gentlemen, the paper which I propose to read is entitled, "Stock Gossip," but that is a misnomer. That would mean that I should touch on various topics connected with the stock business. In this paper,

after paying my respects to some of our horse importers, I confine myself to a single point. The paper might more properly be called, "Hold Fast." In it I deprecate, as you will see, the idea of disposing of our horses, cattle, sheep and swine, and so on during a time of depression.

#### STOCK GOSSIP.

BY JNO. McHUGH.

Observing persons need not be told that men engaged in either breeding or farm work, spread their sails so as to catch the breeze. They are not slow to adapt themselves to breeding or producing that which promises the richest return for their labor and investment.

While the breeding of a certain kind of stock or the growing of some particular cereal is conducted with an abnormal profit we see men deserting the less profitable lines and rushing into those that have become suddenly more remunerative.

A few years ago horses were in active demand at high prices and men, in large numbers, engaged in raising them; some in a small way on the farms, more on ranges scattered throughout our western states and territories, while yet others, stimulated by a desire to "make hay while the sun shone," crossed and recrossed the Atlantic, bringing hither from France, Belgium and Great Britain consignment after consignment, all of which aided in the work of over-production. I would be pleased to give every horse importer in the country credit for enterprise not marred by a lust for gain, an earnest desire to improve our horse kind, rather than to suddenly enrich themselves by overstocking the market, but in the presence of continued recent importations which can only intensify the demoralization that confronts the draft horse interest, we cannot help criticize and withhold from some that need of praise due a less selfish feature of breeding enterprise.

Whilst American breeders and importers were thus engaged in overdoing a good thing, the genius of Edison was rapidly destroying our most profitable source of demand by his extension of electricity as a motive power—the large number of draft horse men who are daily rushing into some new "Kidorado" will be helpful to those who remain. Possibly the work of uniting certain inland waters by ship canals, as advocated by some of our prominent statesmen, or a general and protracted European war, which a day may bring forth, will help stimulate the now lifeless business and bring better results to those who persevere.

Without intended discouragement to any laudable effort among breeders generally, but rather to encourage and promote a more reliable and profitable industrial policy among them, I would suggest that the law of average results when applied to agricultural pursuits is not less marked than in



other fields of occupation. This much admitted, it follows that the man, whether he be a breeder or farmer, who carefully selects and pursues a particular business with energy and intelligence is more certain of success and his efforts more commendable than in the case of a shifting, dissatisfied person who has failed utterly to stamp his personality on a particular line of action. The man who abandons his first selected line of breeding in order to secure a greater profit on some other line, a profit which is often temporary, becomes a mere trafficker and not a devotee or person to be emulated in the presence of a convention of breeders.

The same criticism will apply to the common farmer who seeds down all his corn and oat land when timothy or clover seeds are high priced, stops raising three dollar hogs and tries six dollar mutton, who will not touch a steer when beef is low and tries of the creamery business during the dull months of June and July. As a rule these "rolling stones" fall in gathering much moss, and if, perchance, one has profited by his varied engagements he is not a safe guide to follow. The more safe and certain way is to get a definite idea of what you want, push it with vigor, stick to it through sunshine and cloud, and a well-rounded success is most certain to reward your efforts. If you are only a farmer, don't despair when your hogs are low for a season or your dairy product is not in as active demand as usual, since a more prosperous time is sure to reward labor well directed and persistently followed.

Do not become dissatisfied if you do not become rich in a day. The mere possession of wealth is not always a correct measure of success. Don't grow too anxious else you may become the prey of the gold brick speculator or the tramp with a political salve warranted to cure every financial ailment and swiftly right every industrial wrong. He who is willing to become independent in the old-fashioned way is by far the safer guide for our growing young men to follow. A competency, either as breeder or farmer, is the certain reward of the capable and industrious lover of his work, especially if his operations be conducted within our own peerless State of Iowa.

What a gratifying assurance for our boys fast growing to manhood on Iowa farms, to know that nowhere else is the greeting between intelligent labor and compensating results more certain than in our own univocal commonwealth.

Seasons of depression may come to us as breeders and farmers, but a determination to succeed means a certain success to him who persevereth. But do not aid in destroying our market by forcing the sale of any property that you can possibly hold, at an inopportune time, for as surely as the seasons come and go and darkness will be succeeded by daylight, so surely will depression in our agricultural pursuits meet its legitimate reward.

As breeders we see values fluctuate, but never is the maximum price obtained on all lines at the same time. We have recently seen a large contingent of men, backed by ample capital, engage in the breeding of trotting bred horses to the neglect and detriment of the heavier sort.

The deborning of cattle, a comparatively recent practice served to stimulate if not to boom the value of the hornless kind.

Only yesterday, as it were, and the sheep breeder was the lucky man, and customers crowded each other in their eagerness to secure them.

To-day the black face, with its heavy fleece and wealth of carcass is slow of sale, while men are paying hundreds of dollars for a single stock hog, the future value of which is measurably dependent upon the conscience of a few hog operators in Chicago. But enough is stated to exhibit our unsteadiness of purpose particularly as breeders. It is this restless and ever changing policy, both in our breeding operations and farm work, that I here aim to deprecate. This trend of purpose robs our business vocation of its legitimate enthusiasm and reduces it to the level of a purely stock brokerage business. If, as breeders, we would but typify the practice of our greatest general to "continue the fight on that line," no doubt that like him our labors would win success.

In marked contrast with our ever changing policy as breeders, I will state that two years ago it was my privilege to visit Northallerton, the home of the Booth cattle, where for more than a hundred years breeding has been conducted on a continuous line. I met young Mr. Booth, the fifth in descent of a name that will never perish from the memory of man so long as cattle breeding continues to be a business. I saw the close of a deal of three females to a German breeder at 300 pounds sterling each, or \$1,500 our money. Imagine my surprise to learn that neither bull nor cow had ever been sold to a British breeder. The annual hire for bulls brought the Booths a much larger income than our best American breeders would be willing to take outright for equally good beasts, while the surplus females found customers in European countries, in North and South America, India, Australia and other British colonies. Among the many good thoughts conveyed by Wm. Booth, yet acting as administrator of his brother's estate, and one which I desire to impress upon my fellow breeders in whatever branch they may be engaged, in reply to my inquiry as to what they did during a time of depression in their business, he promptly replied: "We breed and hold for a return to better prices, which always follows a period of dullness."

"Your American practice of closing out valuable herds during a temporary depression is simply business suicide," said this venerable breeder who, assisted by sales covering more than a hundred years, was in a position to be accurate. I am willing to make due allowance for the difference in financial conditions that lie behind most American breeders and men similarly engaged in Great Britain, but if all who can, will adopt the policy of not helping to make bad worse, the effect will be greatly felt in the improvement that is sure to follow. Hold fast to the good things you produce rather than crowd them on an unfriendly market. It has been my aim in this hurriedly prepared paper to present a single thought rather than cover more ground with possibly less profit and acceptability.

#### DISCUSSION.

PROFESSOR KENT: The paper, of course, almost rises beyond and above eulogy and favorable comment. It gives us some maxims that should outline our policy in the management of our affairs. It would seem to be true that if that series of suggestions were to be carried out literally, this business would eventually be driven to the wall, but you can always depend on some one not to carry it

out. The men who attend the annual meetings of this and similar associations keep abreast of the times, get the benefit of our mutual exchange of thought and know what is going on, and are necessarily better off than those who pay no attention to how things are going. The man who drags behind and never finds out what is going to happen until it has happened is the man who never gets on, and who can never look forward with anticipation to success in life; but the man who knows what everyone is producing the world around and the value of products on the markets of the world is the man who gets ahead. The mariner who knows when to take in sail—when to anticipate a storm—is the man who outrides the storm, but the man who does not take in sail until the storm is upon him is the man who does not get through.

A MEMBER: Why didn't you tell us that last fall? (Laughter.)

PROFESSOR KENT: Why didn't you ask me last fall? (Laughter.) It has been said that success in life does not depend upon never making a mistake, but in never making the same mistake the second time. This is the principle that Mr. McHugh spoke of in his paper. The low price of sheep will check themselves. If you have them, hang on to them, and by and by you will come out all right. This present depression in the price of horses will check itself. If I wanted to make money out of horses, now is just the time I would buy; now is just the time to buy cheap colts. You can buy yearling colts now for \$15 or \$20—horses that will sell inside of three years for \$150. A man could get a lot of these and turn them into his pastures and by and by he would make enough money out of 100 head of these colts to buy him a farm, as sure as the rising and setting of the sun. I tell you that day is coming, and all we have to do is to bide our time and be ready when it does come.

MR. MOFFETT: I do not know but that this same principle holds true with every industry. If we are watchful and notice results, we will discover in what line we will succeed. It seems to me the principle that has been given to us in this paper could be made to apply to almost every industry we have. The man who thinks and has his eyes and ears open and his hands ready will be the man who succeeds.

MR. LEONARD: We would like to hear from the man from Minnesota. (Laughter.)

MR. BENNETT: There is one point I would like to hear more about. I would like to hear from Mr. McHugh in regard to winter pastures, so we can compare his experience in northeastern Iowa with Senator Harsh's.

MR. McHUGH: I would say it is rather an exception, though there are more people practicing it every day. That method of treatment is on the increase. People are beginning to find out the wisdom of soiling or treating their pastures by top-dressing.

THE PRESIDENT: Will Mr. Norton please take the chair.

MR. NORTON assumes the chair.

MR. SHERMAN: Mr. Chairman, I presume I am the one who was meant as "the man from Minnesota;" I will try to respond. I have been interested in both of these papers. Let me say that Minnesota is not a bad state; it is a mighty good state to be born in if a man only has sense enough to move down into Iowa to live. I think there is no man that is a greater admirer of the permanent pasture than myself, and probably there is no better permanent pasture than the blue grass pasture. The thought occurred to me while Senator Harsh was talking that there is a great difference in location, and a great difference in the land we have. Where I live I happen to live on land that is all limestone bottom. I do not believe there is any better blue grass land in the world than we have there. I have got a pasture on my farm that the plow has not touched for twenty-seven years. I do not think that is very profitable, but I keep it so because it is close to the barn, so we can run the horses and sheep and calves out upon it. Yet I think where the land is all dry and all tillable land, as we have got it where I live, about as profitable a way as we can farm is to rotate our crops. I well remember some ten or twelve years ago I stood up in a convention like this and advocated clover. I believe if you will look up the records you will find that the man who comes from up pretty near Minnesota was the first man to get up in this convention and advocate clover. At that time there were several that got up and fairly roared because I said anything about clover and because I did not talk blue grass, when I was just as much of a blue grass man as they were. At that time, if you remember, Mr. Wallace was called a clover crank, but now he cannot talk anything that is not blue grass. But that depends upon location—it depends upon where you live. Iowa is a great State; it is a great ways from the north to the south, and from the east to the west. What will do for one part of the State won't do for another. The question is, where does the most profit come in? Mr. Franklin just struck the great key-note when he asked that question, which is the most profitable. Our proceedings are read in almost every state in the union, and I have been told that they are in some of the libraries of Europe, and I think we should be careful about these



remarks, that we may not make them too strong, as we have such a diversity of soil and conditions. I have found out while I have been farming that a man to be successful has to have good sense. While he may not be a chemist or be able to do this work of analyzing he must have what you might call horse-sense enough to know what his land will produce to the best advantage. That is what we want to know, and what the people of Iowa want to know. We must lay out a plan of what is best for southwestern Iowa and what is best for northeastern Iowa. For instance, we can raise almost everything in northern Iowa but oats. And, by the way, I think we have got a remedy for that. There was a missionary up there last winter and he told us about some oats raised down in Texas, and he induced some of us farmers to try the experiment with them—

SENATOR HARSH: Don't tell us anything about them; that savors too much of Bohemian oats.

MR. SHEEHAN: For our common white oats we got thirty-five cents a bushel, and for those we got sixty-five cents.

MR. McHUGH: I do not wish that we should go away from here with any wrong impressions. There is no great difference between the way in which I would treat pastures and rotate crops and the methods of our worthy President and those of Senator Harsh. I may say that I may almost be termed a clover crank, also. In the last two years I think it might almost be said that I have paid \$750 for clover for land that I have worked myself. I have in my leases that tenants shall seed fifteen acres to clover on each quarter section, showing you that I am a believer in the use of clover. I take off a crop and when the second crop is in blossom plow it down, and follow that with corn for two years and then probably with oats or barley, if the land is not too rich.

PROFESSOR CURTIS: Since this grass question has been introduced again, I wish to say that I have naturally had a great interest in the blue grass region of Iowa, and I feel that I have been much instructed by your methods. While you may not have a better blue grass section than some other parts of Iowa, I believe that according to the system outlined by Senator Harsh's paper you have a better system of management of your pastures than is used in many other sections, and I believe that is largely the secret of your success. I might say something of the management of the creameries in various parts of the State, particularly in the northern and northwestern and central. The product of those creameries in the northern part of the State, where the cows graze entirely on wild

land, during the months of fall and summer pasture invariably sells higher than the product of the creameries in the central part of the State, where there is nothing but cultivated pastures. The reason, I believe, is that the pastures in the central part of the State are poorly managed. There is an idea that is very general on the part of the farmers which is, that anything is good enough for a pasture, and whenever a piece of land is enclosed with a fence and the stock is turned out upon it, that is the end of pasture management. I do not believe that any greater mistake was ever made, but that the average farmer is making it there can be no question. I believe that we must feed our pastures as well as the other parts of the farm. We must avoid overstocking, and give them the constant care and attention and the top-dressing that is necessary to secure a uniform growth of grass. Our pastures, many of them, are the poorest land in the farm—land which we cannot get a plow upon because they are so lilly or so low—and when the stock goes on to these pastures in the winter they are practically bare, and the result is that grass is entirely winter-killed by the time another season comes. Now I do not think that we have any land that is too good for pastures. I do not believe that there is any part of the farm that will return us more than the pasture, and I do think that the pasture requires the best of care and attention. I think we would do much better to turn a larger portion of our farms into pasture land. We can depend upon our corn fodder; that will take the place of half of our meadow area, and the corn fodder would be otherwise practically wasted, aside from winter grazing. We can just simply turn half of our meadow land on the average farm into pasture and thus prevent overstocking. Don't overstock, and keep a good vigorous growth of grass and keep the surface well covered and the soil well enriched.

MR. BENNETT: I want to mention incidentally one feature. The remarks in this paper by Senator Harsh apply in one way here in which they do not apply with us. We do not have that long summer drought which you have here to injure the winter pastures. Our cows must have a barn for winter. I want to say to you in regard to this that the paper by Prof. Wilson is of especial value to you. They say we get more for our butter than you do; yes, and we get one third more the year round for each hundred pounds of milk than you do. In my county we have two and one half creameries to every township of six square miles, and we sell three tons of butter for every square mile. We do not have the trouble with summer drought. Our cows all of a sudden will shrink 20 per

cent all in one week, and then comes sweet corn and they do not shrink any more. We do not have the summer drought to contend with; our pastures do not commence so soon and do not continue so long in the fall. I hope you will keep this distinction of location and circumstances in mind; it is important.

THE PRESIDENT: The next thing on the program is a paper by Mr. Joseph J. Edgerton on "How to Make Sheep Raising in Iowa Profitable."

The paper by Mr. Edgerton was read from manuscript.

#### HOW TO MAKE SHEEP PROFITABLE IN IOWA.

BY JOSEPH J. EDGERTON.

Many of you may think that if we are to have free wool it is not worth one's while to discuss sheep any longer. But the day for raising sheep simply for the wool is past. There are other sources of profit in the sheep business; some of them indirect; which fact, perhaps, accounts for their being less recognized, as it is hard for people to realize returns that do not come direct and in "cold, hard cash."

In conversation a few days ago with Mr. Dewey, of the Agricultural Department at Washington, D. C., he said: "One way to make sheep profitable is to use them in exterminating the Russian thistle, which has become such a pest in some parts of the country." He has been travelling considerably over the United States and he mentioned the fact that the clean farms always had sheep on them. Sheep and chickens are the only domestic animals whose digestive tract weed seeds will not pass and yet grow.

Mr. Stringfellow, of Oskaloosa, Iowa, said to me a couple of years ago that his sheep saved him the expense of two to three hands in clearing out weeds and under-brush on land that he was clearing of timber. With these facts before us, let us enter the fold at yeasting time and endeavor to follow the lamb through its season of wants and misfortunes to the shambles; and the dam through the exhaustive process of suckling, the period of recuperation in the late summer and early fall, the breeding and the delicate period of gestation. We will suppose, first, that the ewes have been brought to this period in good thrifty condition, and that the lambs are strong and healthy. The building—this is supposing the lambs to be yeasted before the ewes have been turned out to pasture—should be such that it can be made warm and comfortable, with the ventilation entirely upward, having no draft to chill the lamb before it gets on to its feet.

Under these conditions, if the ewes have been properly tagged, there will be little trouble in starting the lambs. But they should, nevertheless,

be well looked after to make sure they are well started, for the first twenty-four (24) hours of a lamb's life determines, to a great extent, its future possibilities.

There should be a number of light, portable pens provided, about 3x4 feet, that can be set over a ewe and young lamb until they become thoroughly acquainted with each other. This precaution will, with few exceptions, prevent any disowning of lambs. These are especially essential in case a ewe gives birth to two lambs, as it is an exceptionally good mother that can keep track of a pair of lambs when they get in the notion of straying. At this period be with your sheep as much of the time as is practicable, and have them so they will be gentle and not uneasy at your presence. Do not be in too great haste to lend assistance to a ewe in labor. But be on the alert for any difficulty and if any trouble occurs do not allow it to go without attention until the ewe becomes exhausted, as she must be kept in good heart. If she is not, the result will be a scant supply of milk of poor quality, the lamb will get such a weak start it will not have the capacity to increase the flow of milk; and it will be similar to the plant that, starting from a weak, imperfect seed, develops but feeble roots, which, in turn, produce a sickly top, and it never gets to be a healthy, vigorous plant. If there are forty ewes, or upward, in the flock, those with lambs should be placed in a lot by themselves. And as soon as this bunch attains a little size and age, start another lot out of the younger ones to prevent their being robbed by those older and stronger. These, as they get strong, can be transferred to the older bunch.

Take a nice warm day now and then and dock and castrate all that are well strengthened up. Do not allow them to get too large and fleshy before performing this operation.

In a warm corner of the pen containing the ewes and lambs place a creep made with perpendicular slats eight and one-half or nine inches apart. The lambs will run in here to avoid the disturbance of their rest by the crowd, and if there is a little bran and corn meal placed there, so that it will keep clean, they will very soon begin to nibble at it. These creeps should be maintained so long as the lambs are allowed to remain with their dams.

It takes a certain amount of nutriment to maintain the equilibrium of the animal, and all that is assimilated beyond this is gain. It, therefore, stands to reason that, other things being equal, the quicker you make your mutton the greater will be your profit; as you not only have a larger per cent of gain during the feeding period, but you will also have decreased the time for which the sustaining ration must be furnished.

When the lambs are about four and one-half or five months old they should be separated from their dams, placed on good fresh pasture—but not too washy—and have access to a self-feeding trough filled with a mixture of corn, oats and bran. Select, and place in a separate lot, enough of the choicest ewe lambs to replace all old and inferior ewes that should be culled out, as it is not necessary to crowd them so hard as those that are being fitted for the shambles, nor will they be strong enough to take their part with the older ones.

The lambs that remain in the feed pen, if properly cared for, should, by the time they are nine months old, if they belong to one of the mutton breeds, weigh on an average 100 pounds. And it will be such meat as you



will not be ashamed to send to market, and such as will advertise itself and bring in the cash regardless of a gold, a silver or a double standard. The delicate eastern palate is rapidly acquiring a taste for sweet, juicy, tender mutton; and right here on our rich Iowa soil is the place to manufacture it. That there is an increasing demand for mutton and at good figures is demonstrated by the fact that all through the fore part of last summer and through the spring, although on account of the free trade scarce sheep were rushed on to the market in numbers never before equaled, yet the prices ruled higher than usual, choice sheep ranging from \$5 to \$6.50 per hundred pounds and lambs from \$6.50 to \$7.40 per hundred pounds. (This was on the Chicago market.)

Returning to our warm, cosy barns where the little lambs are skipping about, let us see what is to be done with the ewes. They should be fed with care in the start, and with some light feed. A few roots, if you have them, will be a good thing. Increase the grain ration and roots gradually. In about four days they should be receiving all the good, wholesome food they will consume. Not only should this be clean and sweet, but it should contain a variety. The transition from hay to grass is, perhaps, the most critical period of the year. The grass at this time is so near all water, its tissues so undeveloped that it contains comparatively little nutriment. So do not set down grass as a remedy for all ills and think that as soon as the sheep can get a bite of grass they need nothing else. On the contrary, they need their usual feed of grain and all the good hay they will eat. For the best results they should be fed a grain ration during the time of suckling. Keep a close watch, especially if the ewes are fed high, for garget. If a ewe walks as though her udder was sore or her hind legs stiff, it is very probable she has garget. Make an examination immediately. If the udder is at all caked apply solution of laudanum and turpentine; one part tincture of laudanum to four parts turpentine. When the lambs are weaned the ewes may be placed on rather dry pasture for a few days to check the flow of milk. Within two or three days they should be handled over and milked clean. It is not always necessary to handle the flock the second time. But they should be noticed carefully and if there are any whose udders become distended attend to them. At this time cull out all the old and inferior ewes and relegate them to the fattening pen.

If the ewes have plenty of good pasture they will need no grain until within a week of the time you desire to begin coupling, when they should be given a little corn. They should be in good flesh before cold weather sets in. It is much easier to fence against cold with fat than with feed; besides, the vigorous, thrifty sheep is in much the best condition to withstand the attacks of such maladies as grub in the head, liver fluke, etc. It is a true saying that "Grub in the belly is a good preventive of grub in the head." Feed with a liberal hand, for although feed is not the only thing necessary to make a breed, yet it is the foundation upon which has been built all these fine breeds which we have to-day. One great highway to success is good judgment as to what, when and how to feed, and then to not be afraid to feed.

In preparing winter quarters keep in mind the comfort and health of the animals as well as cheapness of the shelter. Remember that the first cost of any article does not determine its cheapness. Have ample ventilation,

but not by a draught over the sheep. Do not leave the sides bedecked with cracks and knots through which the wintry blasts may wreath in fantastic shapes the driving snow, or in their shrill notes chant the death dirge of some poor unfortunate, helpless creature within. Leave plenty of opportunity for opening the building on the south side. In mild weather do not close this side too tightly; leave chance for plenty of pure air. In making your doors and gates make them about six (6) feet wider than you think they ought to be, and if possible make them to slide or roll instead of swinging on hinges. Have plenty of rack and trough room, so that the weaker will not be compelled to take their share. If at all, after the rest have selected the choicest parts. Also have them so constructed and so placed as to keep clean and dry. The racks should also be so formed as not to allow any litter to get into the wool on the neck and head. The hay will bring much better returns if transformed into wool than simply mixed with it; even when wool is on the free list. It is well now, too, to look out for the hunter's friend and feed him a little as occasion demands. In all cases you will find it more economical to not allow him to do your butchering.

Set apart a bit of pasture in the fall to grow up for winter. Allow the sheep access to this whenever the weather is fit and it is not too deeply covered with snow. A method of wintering ewes, which has been found very economical and convenient and which brings them through the winter in fine condition, is to give a feed of shock corn in the morning (in the pasture) and while they are out fill their racks with sheaf oats. One great advantage in feeding shock corn is that it insures the exercise so necessary for the development of the fetus. A few roots will be beneficial if they are not allowed to get chilled. But if there is a fair supply of winter pasture and plenty of corn fodder or clover hay these will not be essential until after lambing.

A word in regard to the selection and care of the ram and I will close. First decide what breed you like best. Then form an ideal to which you would like to conform. Then select a ram as nearly as possible in accordance with the requirements of your conception. Do not allow your ideas to run from one extreme to another as the seasons progress; when it becomes necessary to replace this ram get one of the same style else your flock will become uneven and look like the tail ends of a half dozen flocks. Do not allow the ram to run with the ewes. At coupling time have him in a good thrifty condition. And here I wish to reiterate and emphasize the statement made in the fore part of this paper, and that is, do not be afraid to feed. If, as is often the case, the ram is restless out in his accustomed pasture lot after breeding commences, keep him in the barn and supplement his grass with roots. Give him all the roots and clover hay he will eat twice a day, and a good grain ration of mixed corn, oats and bran. The best method of treating the ram is to stand him. Have him in a stall whose front is grated; place the ewes at night where they can come to the stall. As they are bred mark them so they will not be returned. This will be but little trouble and much better for the ram. The next best plan is to paint the ram's breast and turn him in the flock at night, removing each day those that are marked.

## DISCUSSION.

PROFESSOR CURTISS: I am interested in horses and sheep, even if the outlook is rather discouraging at times. You have been told in this paper that the time has come when sheep will no longer pay for wool alone; the time has also come when cows will not pay for calves alone. We were told incidentally that the tendency of the age is toward specialization, but this is an exception. We have got to look out for two things now; we must look to wool and mutton, and the mutton must be the primary consideration. We have got to raise mutton sheep; we have got to learn in that respect from the hog men. The hog men have set to work here in this country and made an American hog that far surpasses all of them. We have got to begin with our sheep where the hog men began, and develop those which have the best maturing and fattening qualities. We can improve the mutton qualities of our sheep and at the same time retain a high grade of wool and get a fair clip. These two things are not antagonistic. It is a notable fact that this country is bare of good mutton sheep. A few weeks ago in Chicago at a prominent sheep banquet at which there were a number of representatives of foreign countries, it was the almost universal testimony of those foreign representatives that they hadn't tasted a piece of good mutton since they came to this country until they struck that banquet. That indicates very well the condition of our production of mutton. The sheep that are going into our markets are below standard, from a mutton standpoint. To be sure, there are some men in this part of the State, like McFee, Franklin and a few others I might name, who have improved mutton sheep, but of the sheep that are going into our markets now, 75 per cent of them are not good mutton sheep. We are very much larger mutton eaters now than we were a few years ago. Statistics show that we are consuming one-third more now than we did five years ago. If we will improve the quality of our mutton, we will double the consumption in the next five years. The American people have not had the reputation of being big mutton eaters, but the cause of that has been that we have not had good mutton. Of course we must make our sheep raising profitable. Our wool is worth as much to-day, as wool in England has been worth for the last ten years, and I think it will bear the statement that it is worth a little more than it has been there for the last ten years. Their land is worth \$300 to \$400 per acre. You sometimes hear the statement that our land is too rich. There is not an acre of land in the world that is too good to grow sheep on. One of the causes of the present

depression has been the general desire to get out of the sheep business on account of the low price of wool, and as a result many flocks from this western region have been rushed into the market in a half fattened condition, and it could not result otherwise than in a depression of prices. Good mutton sheep are as likely to sell for good profitable figures as good hogs, and when you can grow a pound of mutton on your farms here as cheap as a pound of beef or a pound of pork, and at the same time secure a valuable fleece, there is no cause for any discouragement in the sheep business. (Applause.)

MR. McFEE: Mr. President, I did not come here with the expectation of making any speech whatever; I have had no time to prepare anything of the kind. But in the first place I must congratulate Mr. Edgerton on the very able paper he has read before you. It comes up to my ideas exactly, and also Professor Curtiss' remarks. I must say that I am in somewhat the same boat as Professor Curtiss; I am something of a horseman, and something of a sheep man, and now they are both on the free list! (Laughter.) I do not think there is any good reason why we should stop raising sheep, because my experience has been that we can raise a pound of mutton just as cheap as we can raise a pound of pork, and a great deal cheaper. I have had lambs five or six months old that weighed 140 pounds. I have had them this fall weighing 140 pounds at six months old. In order to make the sheep business profitable; in order to make it a paying business, we must thoroughly look after the sheep, just as the hog man looks after his hogs. I have always, during my experience, given the best attention to the sheep. I have in no way neglected them, where I could give attention to them properly, and I do not think there is any better paying business in southwestern Iowa to-day than the sheep business, and I do not think it is profitable for any man to try and dispose of his flocks even if we have wool on the free list. I say, stick to your sheep, attend to them and care for them, and they will pay you as well or a great deal better than any other stock you have on the farm.

PROFESSOR KENT: What is your choice of breeds?

MR. McFEE: Shropshire and Cotswold. I believe that under the present outlook for wool, we have got to handle mutton sheep to make them profitable. We can handle certain breeds of mutton sheep and they will also furnish fleeces that will bring \$1.50 to \$2.00, even with wool at the present low prices. I have always thought that we would have to combine the two. I have found out



one thing: If you have a heavy shearing sheep, he is not generally the most profitable to fatten. The heavier the fleece the harder the animal is to fatten.

PROFESSOR KENT: Which do you regard as the most hardy?

MR. McFEE: I think I may be partial, but I think the Shropshire the hardiest breed I have handled.

PROFESSOR KENT: Have you ever handled the Merino?

MR. McFEE: No, sir; I have not. I have never had any experience with them.

MR. McHUGH: This sheep talk suits me exactly, although I am not a sheep man, and have no sheep.

MR. FRANKLIN: I can tell you where you can buy some. (Laughter.)

MR. McHUGH: Speaking of the development of mutton sheep, I would say that there are many things in the farm work of many farms that do not meet with my endorsement. For instance, I go along the roadway and see a house that is not painted and that has been standing without paint for many years, and I conclude at once that there is a shiftless farmer occupying it. I go a little further and see a butcher's cart in front of another house, and conclude at once that there is something wrong there. I see weeds in his fields that could be eaten down by sheep which might be kept with profit, so that he could raise fresh meat for his family and hired help. This is the way we did business where I was raised. I was raised on a farm and I mistook my calling when I left it. I may say that I never knew what it was to have a suit of store-made clothes until I was furnished with a wedding suit. (Laughter.) The butcher's cart was never seen in front of my father's house. The sheep we raised furnished us with wool, which after being carded in town was spun at home, and then it was taken to the cross-roads where the old weaver lived and was woven into cloth, and then it was taken to the fulling mill and they made a very presentable cloth of it. I think that here in Iowa you would find it profitable to conduct the sheep business on every farm in a moderate way. Let us regard the matter of the fleece, upon the present outlook, as incidental, if you please, and try it from the standpoint of the mutton alone. From that standpoint I feel that it is a source of profit and will be found so by every farmer who will provide himself with a few mutton sheep and take good care of them. He kills his sheep or lamb and salts it down, and it continues to be fresh and palatable until it is all eaten up. I would advocate the sheep for its great saving to our farmers from the standpoint of mutton, and there is

also something worth considering from the standpoint of the fleece as well.

MR. MEYERS: Suppose we come into power after a while and put a high tariff on this wool, then what about these mutton sheep? (Laughter.)

MR. McHUGH: I do not know what "we" means. "We" are in power now. (Laughter.)

MR. FRANKLIN: The horse and the sheep are rendering mutual sympathy with each other. They are weeping on each other's neck, as it were. The sheep owner has the advantage of the horse owner, in that he has a market for his flock if they prove unprofitable at any time, and he generally finds that they are unprofitable when pushed on a congested market as is the case at this time. I believe the only thing which prevents the horse man from going out of the business at once is the lack of an opportunity. His product cannot be used as a human food in this country. I am quite willing to have the combination of both mutton and wool in the sheep industry of the future in this State, but I wish it to be distinctly understood that I wish the mutton quality predominant. When the sheepman of to-day will bend his efforts to improve the sheep in mutton quality and quantity, as the Merino breeder has done in the past, we may well expect a revolution, and it would be difficult for us to imagine the makeup of the result of such skill. Mr. McFEE has said that he could produce a pound of mutton cheaper than he could a pound of pork, and that he produces lambs five and six months old that will weigh 140 pounds. If he can do this, there are others who can do it, and if it can be done and is done to my certain knowledge, why is it not profitable? The man who would succeed in the sheep business must take care of his flock. It is a sorry flock, and an unprofitable one as well, that is used for scavenger purposes, or to clear the farm of weeds and brush. The farmer who anticipates such sheep husbandry had better engage in some other business. I read somewhere, I do not now remember where, that Sir John Randolph would walk a long way out of his way to kick a sheep, so great was his antipathy for sheep. We have John Randolphs with us to-day who have been kicking themselves because they have sheep at this time, and they are falling over each other to get rid of their flocks. This kicking business has been handed down from the time of John Randolph to the present, and if I mistake not it will be in vogue in a very few years in the future. These same men will be found engaged in a well directed self-kicking process for having sold flocks in times

of depression. Good sheep are profitable now, notwithstanding the general howl sent up by a few politicians, Merino sheep breeders and all the rest of it. Lambs were sold in the Chicago market just last week of a pronounced Shropshire character which were good enough to bring \$4.50 per head. These lambs did not cost their owner one-half that much to produce them. These results cannot be obtained in the hands of a John Randolph, nor in the hands of a scavenger, or hazel grubber. The scrub sheep will not bring such prices. Sheep sold on the same day for one dollar per head, which did not weigh any more at four years old than these lambs did at eight months. These times will prove a blessing in disguise to the sheep man who will stick to his flock. The poor flocks will go to the market; the owner cannot afford to keep them. The man who is not adapted to keeping sheep will also have to close out. A better class of breeders will take the place of the John Randolphs, and a better grade of sheep will substitute the scrubs sent away. A demand will be created for good rams to head flocks, and the sheep industry will be generally placed on a better footing than it could possibly have attained in years of good times. I say keep sheep, and keep nothing but good ones. No matter what breed, so they are good sheep.

MR. SMITH: I am not directly interested in the sheep business, but I am after information. I have a couple of boys that have started with a few sheep; possibly they have got some good sheep but they may have bad habits. You spoke about sheep that will eat weeds, but these won't eat weeds at all. They take the very best food I have got on the place. I do not know whether it is because they have the wrong kind of sheep, or whether they got them from the wrong man. One boy got his start from Daniel Leonard. Is it force of habit that makes them act so? (Laughter.)

MR. FRANKLIN: You have not the wrong kind of sheep. They are in the right kind of hands, the right kind of a man owns them.

MR. HARRIS: I would like to hear uncle Dan Leonard defend his sheep. (Laughter.)

MR. LEONARD: I have heard a number of expressions here that I don't endorse fully. It sounds to me after this fashion: that there is nothing wrong, and that there is nothing to discourage us. I never was discouraged in my life if that isn't the case right now. In saying there is nothing to discourage us, you put me in mind of a little incident that occurred at a shucking bee forty years ago. I saw my grandfather after the corn shucking was over come into the house where the shucking had been held. There had been

whiskey there at the time, as was customary on such occasions, and the whole neighborhood had been drinking quite freely, and there was a fellow there who went up to my grandfather and says to him: "There has been a disturbance in this neighborhood, and it is my duty to let you know it," and then he commenced striking grandfather, saying, "It is all in friendship; it is all in friendship," and he kept on striking him, saying all the time, "it is all in good part." (Laughter.) That is the way I understand this thing now in regard to this sheep business. You tell me it is all in good shape, and that there is nothing to be scared at, but to see one man go up to another and begin pounding him in this way, it certainly is not very encouraging, and not very much of a sign of good times, even if you do keep crying that "it is all in good part." (Laughter.) That is the way I feel about this sheep business. There has been such a blight upon this country within the last fourteen months that \$50,000,000 won't pay the bill, and yet you talk about there being "nothing to discourage us." And that is not all; what is it that has stopped the mills? Why is it that the mills have not been running as usual?

A MEMBER: Politics.

MR. LEONARD: I know I am running it into politics, *but I don't care a cent if I am*. It is said that we should not hurt one another's feelings, but then *whose feelings have been hurt?* (Laughter.) I feel as though my feelings have been hurt to the extent of perhaps \$3,000 in the last fourteen months, and now I do not feel so delicate about hurting feelings. (Laughter.) Go and look at the statistics; what do they show? They show that as fine wool as can be produced in the world can be laid down in the port of New York to-day at five cents a pound. Now, who is going to care whether he is in the wool industry or out of it at that price? Why, there is wool in this town to-day that you cannot even get a bid on. And yet you say there is no discouragement! I don't want you to talk that way. Yet I believe there is money in sheep, if we could only get it out. In my judgment sheep are a splendid thing for the farm; it is the best way in the world to manure a farm, but the way things are now, when I go to look at my flock, I don't hardly want to see them. I have been on the farm for the last sixty years; there has been only a few years of my life that I have not been connected with sheep. The farm that I was born on had sheep on it, and I do not remember anything but sheep all my life, except about three years. I am fearful from what I have been reading that inside of the next few years frozen mutton will be sold in the port of New



York from Australia. From appearances they can bring their mutton to New York cheaper than we can. They can bring wool from Australia to New York cheaper than we can. Now I think these things are quite a little discouraging. Mr. Edgerton has produced one of the choicest of papers, and there is perhaps only one thing in it that I would object to. I may not have understood him properly when he was speaking of the grub, but if I did, then I think he was mistaken. What is it that produces the grub? It is a fly that lays an egg in the nostril.

MR. FRANKLIN: How did the fly get there?

MR. LEONARD: Just like any other fly; it flew there. (Laughter.)

MR. FRANKLIN: Mr. Edgerton said that when there was plenty of grub in the stomach there was no danger of grub in the head.

MR. LEONARD: As I was going to say, the grub originates by an egg laid by a fly in the nostril, just like the egg of the borer in your apple trees. It is laid there and covered over with a kind of moulage.

MR. FRANKLIN: The apple tree can't get away from the borer and the sheep can, if it has plenty in its stomach and an opportunity.

MR. LEONARD: Sometimes you will see your sheep all standing with their heads together, and they will stamp and then you will see them start and run. What is the matter? If they can get their noses down into a bunch of grass so as to prevent the fly getting at their nostrils, that is what they are after. If there is no egg there, there will be no grub. A preventive of the trouble is this: take some fence boards and nail them together in that shape and put some salt in your trough, and then take a can of tar and dab tar around it, and when they go after salt they will get tar on their noses. If you will do that three or four times in a season you will have no trouble with grub. Several years ago we used to be troubled with the grub, but since we have been using tar in this way we have gone two years and not lost a sheep.

SENATOR HARSH: I want to call Mr. Leonard's attention to the fact that he has not defended his breed of sheep from the attack Mr. Smith made upon them. (Laughter.)

MR. LEONARD: They have changed their habits since they left my place. You want to change them from one field to another; they want to be changed often, and if there is a different kind of grass from that where they have been they will take after that.

MR. FRANKLIN: Maybe they eat weeds because of the grub in

their heads. (Laughter.) I want to say that I have been engaged in the sheep business something like sixteen years, and I never lost a sheep in my life from grub in the head. Grub in the head with sheep is a good deal like cholera with hogs. There are a great many hogs that are supposed to die of cholera, when in fact I do not believe they have cholera; so it is with sheep. I think there are more sheep die of internal parasites, and the rest of it, than die of grub in the head. I think I have a better remedy for this trouble than Mr. Leonard's. My remedy is a dark barn. Sheep that are pestered by these flies can go out in the morning and graze and then go in this dark place in the middle of the day, and the flies will not go in there. Then in the evening when it gets a little late, and the flies are not flying, then the sheep can go out again and feed. I say, too, keep plenty of grub in the belly and you will have no grub in the head.

MR. LEONARD: What is this grub?

MR. FRANKLIN: You have told us that it is a grub caused by the laying of an egg, and this grub crawls up into the head. But I will guarantee that there are not five intelligent sheep men in the State of Iowa that ever lost sheep by the grub in the head.

MR. LEONARD: Maybe there aren't five intelligent sheep men in the State of Iowa. (Laughter.) Of course whenever you get your sheep in a dark place where the flies won't bother them, then there will be no eggs laid and there will be no grub in their heads.

MR. FRANKLIN: I must say that I do not like to have all this go upon the printed records of this association. I would like to have it understood that the sheep men of Iowa are going to stick to sheep, and are not going out of the business. The sheep man who understands his business is buying more sheep now, instead of selling. He is not contemplating going out of the business at all.

THE PRESIDENT: This has all been very interesting to me. It has brushed all the flies off of this meeting.

We have had no report from the committee on resolutions yet. Are they ready to report?

(The report of the committee on resolutions was presented by Mr. McHugh.)

WHEREAS, The railroads of Iowa have refused to give to our Association the customary reduced rates, by requiring an attendance so large that it is impossible to secure the advantage,

Resolved, That we hope the transportation companies of Iowa are not seeking to punish our Improved Stock Breeders' Association, whose meetings and objects are helpful to a better and increased traffic, by punishing

our body for imaginary injuries inflicted on their properties by the law makers of the State.

*Resolved*, That we petition the coming legislature to maintain the present freight laws of the State, and prohibit all discriminations in favor of any class of travelers as the best solution of the passenger traffic problem.

*Resolved*, That strenuous efforts should be made by our State and National Dairy Associations to secure more effectual legislation to prevent the fraudulent sale of oleomargarine.

*Resolved*, That the thanks of this Association be tendered those breeders of horses, cattle and swine, for their successful exhibits at the Columbian World's Fair; also, to the President of our Association for the dairy honors secured to our State for his skill and energy in producing a cow capable of winning high honors.

*Resolved*, That we extend our thanks to the citizens of Corning for their thoughtfulness in providing for our entertainment and making our stay in their city one of pleasure.

THE PRESIDENT: Gentlemen, what will you do with the resolutions?

The adoption of the report is moved, seconded and carried.

THE PRESIDENT: Gentlemen, what is your further pleasure?

PROFESSOR KENT: I would like to go back and take up Mr. Bopp's paper on drainage, or the subject of drainage.

A MEMBER: I would be glad to hear that subject discussed.

(Mr. Bopp's paper was not furnished in time for publication in report.)

PROFESSOR KENT: I will tell you what I want to learn on the subject myself. I have understood that there are certain sections of the country down here that have a subsoil so impervious that a tile drain cannot be laid in it. I want to know if there is any one present who can give any information on that point. For my own part, I have never seen a subsoil in Iowa so impervious that it could not be drained if tiling was laid in it, and I want to know if there is such soil. Anywhere in Iowa, does anyone know of a subsoil within four feet of the surface?

MR. NORTON: Yes, sir.

PROFESSOR KENT: Do you know of one?

MR. NORTON: Yes, sir; down ten miles north of Muscatine there is a place where a farmer will turn up a furrow over a small section of land, where the water will stand until it dries up.

PROFESSOR KENT: Can you spade that kind of clay in the spring?

MR. NORTON: It is almost impossible. It has been tiled, but it did not seem to answer the purpose. Of course, if the season was just right it might raise a crop of corn, but if the season was wet the corn would not grow, even over the tiling. I should not think the soil was more than ten to fourteen inches deep.

PROFESSOR KENT: How much was there of it?

MR. NORTON: Not more than a section or two of it.

A MEMBER: Is it level?

MR. NORTON: It is level land; yes, sir.

A MEMBER: Have they ever tried to drain it?

MR. NORTON: Yes, sir; a quarter section, with poor success.

A MEMBER: How long has it been in?

MR. NORTON: It has been in, I should judge, ten years.

A MEMBER: How deep was it laid?

MR. NORTON: I should judge two and one-half feet. I do not want land unless I can raise corn on it, and I do not think you could put tiling enough in there so it would amount to anything. I just drove over this place and the water was standing right on the top. There hadn't been any rain for a week or ten days. I think they have considerable of that kind of land in Missouri.

A MEMBER: I did not know of any of it in Iowa.

MR. NORTON: I do not think there is much of it in our State. I have not seen it except in that locality.

PROFESSOR KENT: I have seen men try to carry out this idea of drainage on the level prairie, running a ditch around one of those little basins out on the level prairie. He was simply wasting his time and money. I believe that half of the drainage that has been done in Iowa will have to be done over again, if the people expect to get anything like perfect work. There are thousands of dollars wasted in Iowa on account of unintelligent drainage. I have seen men lay ten-inch tile drains two feet deep; they might as well hang it up on a limb in the air. This is something that the people should be enlightened upon. Such tiling should never be laid less than four feet deep. The reason is that it takes four feet of soil to hold a cubic foot of water. The soil holds water in relation of one to four. If you have the soil drained to the depth of four feet, there will never be rainfall heavy enough to bring water to the surface; you are safe against the extremest condition of rainfall. You can always farm on the low land as well as on the high land. The depth should be four feet.

A MEMBER: Do you contend that every place the depth should be four feet?

PROFESSOR KENT: Every place I have ever done any draining it should be laid at a depth of four feet. If there is any such thing in Iowa as an absolutely impervious clay, perhaps you must lay your drain on the clay, but you must be sure it is impervious. I have seen some of this absolutely impervious clay in Arkansas,



where the water would stand as it would stand in a pail, until it was evaporated. You can take any of this soil and make it hold water, whereas, if it is drained it gradually becomes more and more porous, and gradually will allow the water to run off. I have seen these hard, indurated clays that would hold water like a bucket, that would act in that way. I believe it can be said that all the land in Iowa is susceptible of drainage. It don't matter if there are little veinings of impervious clays, the tendency of the water is to find little water-ways and by and by break up the impervious strata. I have never seen in Iowa hard-pan of a foot or so thick but that you could get through it and find another formation under it in which you could get an easy flow of water.

SENATOR VALE: This seems to be a kind of a love feast. While we are talking about this subject of drainage, I appreciate there are many things we would like to do which we are not able to do. I am working myself in some directions after the manner of one in straightened circumstances. I have to do the best I can, often. Now, while we all admit the practicability as well as the correctness of the theory of tile drainage, we are not able to buy our farms over again for the sake of seeing the water run out of these little holes into the sloughs. We cannot prevent the water from falling upon the surface of the ground; it is bound to rain, but we want to get rid of that water as quickly as possible. On our black muck lands, I do not object to the water falling, but I do object to its lying there until the sun gets up next morning. My theory is to put in a lot of surface ditches. I do not think there are very many men who practice that. I make these ditches go around and through the fields, six, eight or ten feet wide and twelve to eighteen inches deep, making the ditches sufficiently large to simply carry off the water, so that though it may rain torrents during the night, the water will have gone below the surface in the morning, and there will be no water lying upon the surface. You can do that very economically. We can do this work at a minimum expense, and while tiling is profitable and beneficial to reduce the water level down three or four feet, still, if we contemplate resorting to one or the other theory of drainage to the exclusion of the other, I should take the surface drainage to the exclusion of tile drainage, but I want them both.

MR. LAMMING: I have been upon the Senator's farm and been upon the land that he speaks of, once after a very heavy rain, and it does drain the land effectually, but I am bound to say that if the Senator had tiled his field he could pay for it by the waste land

used by those big ditches. In going across those fields you would think you were going across an old vacant burying ground. (Laughter.)

SENATOR VALE: Usually the first thing after a man gets \$100 or \$200 ahead he goes to work to buy tiling enough to tile his draws, but I should use this other plan and then put in tiling when I got able.

THE PRESIDENT: I understand the people of Corning have an announcement to make.

A MEMBER: The people of Corning appreciate the feast that you have given them in your meetings, and they are anxious to return the compliment in some way; they want to send you away from Corning full, physically, and they are going to tender you a banquet to-night at the Hotel Bacon. We have endeavored to extend invitations to all our guests that are here, but I want to make the announcement that if any have been missed, we would be to see all our guests from abroad at the Hotel Bacon to-night at 8:30 o'clock. (Applause.)

PROFESSOR CURTISS: Before we adjourn I would like to say a word in reply to the gentleman who followed me on the sheep question. I do not want to go on record as saying that I do not appreciate the conditions prevailing to-day. I have been intimately connected with the sheep business for a good many years. I understand that conditions are discouraging in a good many respects. During the last season there has been a combination of circumstances which decreased the value of many of our products, but the sheep men are themselves somewhat responsible for this condition because they have become unduly alarmed and forced their products upon the market without reason.

MR. BENNETT: There is one matter that I think we should take up before we adjourn. We have had four of our Agricultural College professors with us here, and have derived much pleasure and profit from their participation in the discussions of these subjects before us. I therefore move that we extend a vote of thanks and appreciation to these professors for their aid and great assistance to us in our work.

Motion seconded and carried.

THE PRESIDENT: There is still one very important matter which I wish to speak about before we adjourn. I can see in looking around here that there are very many who would doubtless like to become members of this Association. If there are any, you can walk up and pay Mr. Franklin your dollar, and you will then be

entitled to the report of the proceedings of this convention, which I assure you is well worth your dollar. There is no place in Iowa, I think, in which you will get so much good common sense as there is between the covers of this book that will be published next year.

MR. NORTON: While we are upon this subject, there is quite a number of copies of the proceedings of last year's meeting of the Iowa Short-horn Breeders' Association which you are welcome to take to your homes and read.

THE PRESIDENT: Gentlemen, I have not words enough to thank you for the kindness and courtesy I have received at your hands. I want you to remember that if I have made mistakes in any decisions, it has been the fault of the head and not of the heart. Never have I been at any meeting where I saw more interest taken than I have seen here, and I will say for the gentleman whom you have elected to preside over your deliberations a year hence that I am sorry he is not here. It is good for you to know that he whom you have elected to preside over you for the ensuing year is worthy of your esteem.

PROFESSOR KENT: There is nothing in the world as good for a man as an expression of the good will of his fellow men. I have heard it said around me here that our outgoing president has met the highest expectations of all our members, and contributed to the highest order of good feeling by his work in this convention, and I think that we should extend to him, by resolution or otherwise, a hearty vote of thanks. I, therefore, move you that we extend to Daniel Sheehan, our retiring president, our most tender and earnest vote of thanks for his work in this convention.

Carried unanimously, by a rising vote.

MR. SHEEHAN: I have no words to express myself, but my heart would indeed be callous, as would any man's, if he did not feel in going to his home a hearty appreciation of such an expression of good feeling from such an intelligent body of men as we have had here. I do not feel like making a speech, but I thank you heartily from the bottom of my heart for this courtesy.

The meeting adjourned at this point, to 1894.

## LIST OF MEMBERS.

B. F. Gove, Roadsters, Short-Horns and Poland Chinas.....	De Witt
Jordan & Dunn, Short-Horns and Poland Chinas.....	Wanbeck
C. L. Gabrielson, Dairyman and Shropshire Sheep.....	New Hampton
J. G. Brown.....	Salon
H. E. Brown, Short-Horns.....	Anita
W. D. Pratt, Short-Horns.....	Anita
Prof. James Wilson, Professor of Agriculture.....	Ames
Dan. Sheehan & Sons, Short-Horns.....	Osage
A. F. Collman, Nurseryman and Holsteins.....	Corning
Daniel Leonard, Sheep.....	Corning
Hon. Joe. Mollugh, Short-Horns.....	Cresco
Hon. B. R. Vale, Chester Whites and Holsteins.....	Bonaparte
B. F. Myers, Short-Horns.....	Corning
E. C. Bennett, Red Hogs and Dairyman.....	Tripoli
John Manselrey, Short-Horns.....	Fairfield
Prof. D. A. Kent, Agricultural College.....	Ames
J. W. Morris.....	Corning
Prof. H. C. Wallace, Dairy Department.....	Ames
A. A. Berry, Herefords.....	Clarinda
C. W. Norton, Short-Horns and Poland Chinas.....	Wilton Junction
R. J. Johnson, Short-Horns and Poland Chinas.....	Humboldt
Hon. P. Finch.....	Humboldt
J. B. Peterson.....	Creston
A. Conley, Short-Horns.....	Osceola
W. R. Matthews & Sons, Roadsters and Short-Horns.....	Sully
A. Shaw.....	Mt. Etna
C. C. Norton, Short-Horns.....	Corning
W. M. Lambing, Poland Chinas, Black U. S.....	West Liberty
H. Cade, Red Polls.....	Lenox
Hon. L. M. Kilburn.....	Fontanelle
Prof. C. F. Curtiss, Assistant Director Experiment Station.....	Ames
Martin Flynn, Short-Horns.....	Des Moines
Jerome Smith.....	Corning
P. G. Henderson, Holsteins.....	Central City
D. E. Moffett.....	Corning
W. H. Seaman.....	Davenport
G. W. Franklin, Suffolk Sheep, Chester Whites and Short-Horns.....	Atlantic



Samuel Niell.....	Corning
Hon. W. O. Mitchell.....	Corning
F. A. Shaffer, Poland Chinas.....	Campbell
S. Farquhar.....	College Springs
J. M. Williamson, Cotswolds and Shropshires.....	Nevinville
C. M. Symonds, Poland Chinas.....	Mt. Etna
F. H. Cresswell, Short-Horns and Poland Chinas.....	Lenox
Jos. J. Edgerton.....	Ames
Hon. H. C. Wheeler, Percheron and Shire horses.....	Odebolt
Richard Baker, Jr., Short-Horns.....	Farley
D. P. Stubbs & Sons, French Draft Horses.....	Fairfield
Dr. J. C. Shrader.....	Iowa City
J. T. Brooks.....	Hedrick
W. W. Vaughn, Chester Whites, Short-Horns.....	Marion
Wm. Cook & Son, Short-Horns, Chester Whites, Cotswolds.....	Marion
W. A. Henry, Aberdeen, Angus.....	Denison
Hon. L. S. Coffin, Shropshires.....	Ft. Dodge
Hon. A. V. Stout, Short-Horns.....	Parkersburg
B. S. Brown.....	Hampton
M. K. Prine & Son, Short-Horns, Berkshires.....	Oskaloosa
J. R. Sage, Director of Weather Service.....	Des Moines
Hon. Oliver Mills.....	Lewis
C. L. Dahlberg, Stenographer.....	Des Moines
J. Wragg & Son, Nurserymen.....	Wauke
L. M. Van Auken, Poland Chinas.....	Mason City
Henry Wallace, Short-Horns.....	Des Moines
J. A. Benson, Poland Chinas.....	Sanborn
Phil. S. Kell, Editor Iowa Turf.....	Des Moines
J. F. Morris, Short-Horns, Poland Chinas, Shropshires.....	Ireton
Hon. W. Larrabee, Brown Swiss Cattle.....	Clermont
J. W. Blackford, Poland Chinas.....	Bonaparte
Hon. S. B. Packard, Herefords.....	Marshalltown
F. N. Chase.....	Cedar Falls
Hon. S. S. Sessions.....	Algona
Nate Jacques, Poland Chinas.....	Danbury
Prof. G. E. Patrick, Ag. Chemist.....	Ames
A. A. Bryan, Short Horns.....	Montezuma
C. M. Baxter, Short-Horns.....	Lewis
L. Smith, Short-Horns, Cotswolds, Poland Chinas.....	Keystone
W. K. Laughlin, Light Brahmas, Mammoth Bronze.....	Ft. Dodge
S. L. Benedict, Short Horns.....	Mitchell
A. J. Graves & Son, Short-Horns, Chester Whites.....	Ames
G. W. McKay, Holsteins.....	Geneseo
Lefebure & Sons, Belgian Draft Horses.....	Fairfax
H. M. Reasoner, Jerseys, Roadster and Draft Horses.....	Reasoner
G. W. Schnoor, Polled Angus.....	Mt. Auburn
John Cowrie.....	South Amara
W. A. Bryan, Short-Horns.....	New Sharon
S. C. James, Short-Horns and Shropshires.....	New Sharon
A. M. Nelson, Berkshires.....	Canton, S. D.

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## APPENDIX.

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## APPENDIX.

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The Iowa Draft and Coach Horse Breeders' Association met in the parlors of the Savery House January 9, 1894. The following are the papers and addresses delivered at the meeting:

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### PRESIDENT'S ADDRESS.

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#### *Gentlemen of the Association:*

This is the third time that it has been my duty as well as my pleasure to preside over your deliberations and to assist in the transaction of the business pertaining to our association.

When we look into the field of operation and view the conditions that have overtaken us and all others in the rearing and development of the horse in his various grades and characters, we shall have to acknowledge that this industry has reached a point not anticipated by any of us.

A more laudable undertaking never engaged the attention of the American stock breeder than the one whose interest we now have under consideration.

The condition of the equine race in this country, until within the last fifteen years, was anything but commendable to American enterprise. As a class our horses were generally small, inferior, nervous, uncontrollable, and not suited for the great undertakings and heavy service that the horse was expected to perform.

It was a rare occurrence to find any of them over 1,200 pounds in weight while horses for the coach and road, if any could be found, were exceptions to the rule, none being bred or trained in that special direction. Here was a wide field inviting the enterprise of our people to a much needed improvement and development of that desirable and indispensable stock without which progress could not be made.

During the late war it was a common saying by teamsters in the quartermaster's department, that "all the balky horses in creation have been sent to the commissary department of the army." I am of the opinion that about the same kind went into the service that remained at home.



To remedy these imperfections and to make the great improvement demanded, many of our most enterprising citizens entered upon the undertaking of correcting the defects that were everywhere apparent in the various breeds of our horses; many of them facing the perils of the ocean, undergoing great hardships and investing, yes, I may say, hazarding their entire fortunes, to make this undertaking a success. Many of our people took hold of the industry at home and worked well and intelligently for its advancement, but more of them acted in a contrary direction.

Now, looking at the matter retrospectively, and at the condition as it exists to-day, what do we witness? We have made great improvements, as a matter of course, and think we have laid the foundation for prosperity and success, but we have to acknowledge that our country is filled to overflowing with poor horses, and that the improvement on a general scale has not reached the point contemplated, nor have we established the great standard that we expected. No one's expectations have been realized, and the importers have not reached the goal they set out for. I think I am safe in saying that the most of them have been stranded in the movement. While I am not willing to admit that the enterprise has been a failure, I will say that we have not done as well with the opportunity afforded, as we might have done. Where does the fault lie? Has it been with the importer altogether, or has it been with the common breeder of the country? It is true, that in some instances horses were imported and sold at a high figure that should never have been brought hither. In every breed there is good, bad and indifferent. Many horses were brought into the country that were of excellent quality, well bred, and of great individual worth. These but served to advertise the breeds. Many others, which were claimed to be of the same kind and pedigree, though really inferior, were also brought and sold at very high prices, when in fact they should have been found as geldings harnessed to European carts and wagons. In many instances these inferior horses were purchased by our breeders because they could be had for a few hundred dollars less than the well-bred, first-class horse. These horses were put up at less service fees than could possibly be afforded by owners of first-class stallions, and thus the inferior came into direct competition with the superior. Some men, not exercising good judgment, took the inferior because of the difference in price, and their course has wrought a material detriment to the horses of our country.

In addition to this our farmers contending against all odds and combinations, have been compelled to sell, in the days when horses would sell, in order to get money to keep out of the way of the sheriff their best horses, because they have always been the kind that would sell to the best advantage, and retain the inferior, the scrub, the unsightly and the most worthless ones to breed from. This course has given us, to say the least of it, a great many undesirable horses.

While the horse industry was being taken hold of by our people other great enterprises and inventions were coming forward and have developed into active operation which seem to be the crowning examples of the civilization and progress of the age in which we live. The cable and the electric car lines are now doing the work of many tens of thousands of horses, which has in some degree been the cause of the great depression in prices.

Our western cities have not been in a prosperous condition for some time. There seems to be more demand for charity for the unemployed thousands than for horses, which should be demanded for the growth and prosperity that these cities would command, under such financial legislation as should have been given. You need never expect a high and lasting degree of prosperity here in the Great West, where we do the work and produce the food for the millions, while we are hampered by a condition of things that show facts to be as they have for some time existed.

Our late census shows that during the last census decade Iowa, young and vigorous, with all her growth and development, gained but seventy-nine millions of dollars in wealth, while Massachusetts gained five hundred and sixty-seven millions. These are significant facts that should be looked upon with the deepest solicitude by every western man.

We see the facts that confront us, what shall we say? What can be done to alleviate this distress? Shall we say, "let the horse go?" "breed no more?" "go back to where we were before we commenced the great work?" I think this association will enter its emphatic protest against such ideas. We must not say that we have failed by any means, as we have made great progress.

The horse is the great and indispensable adjunct to the human family, almost equal in beauty and intelligence. The highest progress and civilization will be associated with him for all time to come. If it is not possible to sell horses at high prices just now, it is practicable for almost every farmer to be surrounded by and have at his command first-class horses. It will pay him in many ways. They will do more work and do it better than the inferior ones. The pleasure of being with them is of great worth—it is absolutely elevating. A man can live in a sod house or a log cabin and have his health, but he does not feel that elevation and self-composure that he does when he has a fine residence and his surroundings are elegant. And so with the horse; you can go to town, mill or church with the common "corn-stalk horse of the days of yore, and live and perhaps enjoy yourself, but you have not that complaisance and feel that reliance that he does who has the big fat sixteen or eighteen hundred pound horse, or the high-stepping coach horse.

Men who have the little inferior balky horse, should go to church more frequently to make atonement for the too often use of bad language in the management of them.

I would say, take advantage of the times; make prosperity out of adversity.

Now, then, even good horses are cheap, I would say to the farmer, get rid of your inferior stock and breed the best you can. Let every man who can, get a full blooded, pedigreed mare, get a filly if he can and see that she raises a full blooded colt from the best sire possible. No odds who is clamoring for money, keep all the full bloods on the farm, break them, use them, get rid of the inferior, sell off or give away your scrubs, and in ten years' time you will have nothing on your place but the full bloods, and you will feel your own importance as well as that of your horses; you will be a benefactor and be happy. Now is just the time to commence and carry on this great work.

This association has, for the past two sessions of our legislature, asked

our representatives to enact laws for the protection of the stallioner by giving a lien on the mare for service fees and, for the better protection of our valuable stock, by making the penalties heavier for the willful and malicious injury or destruction of valuable stock; but they have not seen proper to give the legislation asked for. You may think proper to again impress upon the present assembly the necessity of acting in this direction.

STATE CENTER, IOWA, January 8, 1894.

Prof. C. F. Curtiss:

MY DEAR SIR—Since I saw you in Ames and promised to prepare a paper, my wife's mother has been very sick and I have been constantly at her bedside nights during the whole time and have not been able to prepare the proposed paper. I am sorry to disappoint you, and intended until to-day to be with you at the meeting and lend my voice to add what I could to the progressive breeding of good horses.

Please apologize to the meeting for me and tell them not to be discouraged, for the present stagnation of the business is the best possible thing that could have happened to the future success of horse breeding. It will accomplish at one stroke what the progressive breeders have tried for years to bring about—good ones or none at all. The Chicago fire made Chicago, so the stagnation of the horse market will make sure the success of those who stay by and breed the best. But I again urge the point, "get the mares," cross them intelligently, follow one line closely, and you will have buyers looking for you and your stock, and pay prices that will pay you and be a credit to the State. I have had more enquiry for young stallions during the present winter than all of the balance of the time that I have been connected with the business. This I feel is flattering.

There is a good demand in England and Scotland to-day for good cart or draft geldings at \$250.00 and \$300.00 each. Why should not Iowa raise horses for export, to fill a market that to-day cannot be filled by any country on the earth? Raise them and attempt to export them, and you will find that you will not be able to get further than New York City or Boston until stopped by some one, shaking the cold cash, demanding the horses.

I am compelled to go to Webster City to-night by pressing business, and am sorry I cannot be with you. Do not let the interest of the D. and C. Association of Iowa in any way lessen; now is the critical time for horsemen to stand by their colors, and in less than twelve months you will see the effect will be good.

Yours truly,

L. B. GOODRICH.

# NECESSITY OF A STANDARD BY WHICH TO JUDGE HORSES.

BY N. J. HARRIS.

This society, as well as all others of a like nature, has (or should have) a two-fold object. First—The education and benefit of its members and that of the public. The masses are not educated so much by reason as by object lessons.

The State Horticultural Society, which, by the way, has done an immense amount of good, teaches the people, not only by exhibiting its products grown in various parts of the State, but gives lists of fruits adapted to the several districts. So the would-be planter does not have to rely on his own knowledge or that of some tree peddler, as to what is best to plant, but has the accumulated knowledge of the best informed horticulturists of the entire State from the organization of the society to the present time. Hence he can plant with a reasonable assurance of success without having to spend half a life time and considerable money in experimenting.

Not so with this society. We meet annually and urge the breeders to raise better horses without even telling what a good horse is. The advocates of the various draft and coach breeds are here; each reads to advocate the claims of their favorites. Each claiming to have the best. This to the average breeder is confusing. Would not this society confer a great benefit upon the farmer and small breeder as well as the general public, by formulating a standard, delineating a conformation best suited to the draft and coach horse. There can be no question but there is a conformation better adapted to moving heavy loads than any other. Not one built for Paris, one for London, one for New York and one for Chicago, but one for all. It only remains to find what that particular one is. The same can be said of the coach and carriage horse.

The various draft and coach breeds have been developed under different environments, and by individual effort, each having his own peculiar idea as to what constitutes a proper draft or coach conformation. Some contending that a long sloping pastern was best, while others wanted a short and steep one. Another great source of confusion was the fact that many of the draft horses of Europe were originally used as an all-work horse, and when the demand for heavy horses came from America, they sought to supply this demand by increasing the weight of their horses without an equal increase in bone and muscle. The result was a large horse on small legs, the animal having the appearance of having been fitted for the shambles.

I remember one instance where an imported horse called Jumbo, whose weight was 2,300 pounds, that had not bone enough for a 1,500 pound horse. His colts seemed to have the trouble intensified. Their legs were not only



long and slim, but looked as though they would not carry the colt's weight. Many of them were curbed before old enough to work.

This horse did the country ten times more harm than he cost.

It is not every horse that weighs a ton that is fit to be a progenitor of draft horses. There is another difficulty to be overcome in the production of the utility horse; that is the plan of recording. All the registering associations, with the exception of the American, so far as I know, register all animals whose sire and dam are recorded, however bad the conformation, ugly the disposition, or however great the transmissible unsoundness. There being no tribunal before which to arraign such unfortunates, they go on the books as full bloods, and on the stand to perpetuate and intensify their imperfections. The result is a thoroughbred scrub, the very worst kind of a scrub. Some might say that this thing would adjust itself in time, but from the nature of the case it cannot; the parties having the power to bring about this reform often do not care to.

Another would say that a lack of patronage will, in time, cure this evil. This cannot be from the fact that a large majority of those who raise only a few colts each year are not judges of horses, but will patronize anything large that is called a draft horse. Consequently he is more likely to breed wrong than right, from the fact that the chances are largely against him. The same is true, even to a greater extent, with the coach and carriage horse.

Now the question is, would not the material interests of all breeds, and the country at large, be greatly benefited by the adoption of a standard of what constitutes a perfect draft or coach conformation? This is clearly possible, and, I think, practical. If for draft, by weighing and measuring draft horses of acknowledged merit, ideals of their class. Also those that have stood the ordeal of hard work a long time without blemish. For a standard by which to judge coach and carriage horses, I would weigh, measure and describe the horses that are in greatest demand at the largest prices for the stately coach, the elegant family carriage and the gentleman's most desirable road team; also the horses that have done service in street car, express, police and fire department work for a long time. After the standard is formulated by a careful and competent committee from this association, I would have it published as a part of the proceedings of this organization, as an object lesson for those that are raising draft and coach horses. By way of suggestion, and an object of bringing out the ideas of others, I will give what I think a proper conformation for utility horses. For the draft horse, I would say he should be low, long and broad; head in proportion to the body, broad between the eyes, which should be large and prominent; the ear medium in length, pointed and free from coarseness. A fine eye and ear go a great way in making a fine countenance, so much admired by every one, and bespeaks docility and intelligence. The neck should be medium in length, broad at the base, and join the body in such a way as to carry the head well up. The shoulder should be comparatively straight; back broad and comparatively short; loin broad and slightly raised at coupling; croup high, tail carried well up; hip long; stifle strong and standing well out; legs short, broad, flat and hard; knee broad from front view, and hock from side view; cannon bones short; pasterns short and rather straight; the feet large and tough, thick shell and well open at the

heel. As to weight and measurements, he should not stand over sixteen and one-half hands high and weigh not less than 1,500 pounds. Should measure at least eleven inches below the knee, twelve inches below the hock, and twenty-four inches around the arm.

The muscular system should be particularly well developed, especially over the loin, thighs, arms, shoulders and breast, which should be particularly broad and full. Nerve force should not be neglected, for as much depends on this as on a good bone and muscular development.

For coach and carriage, would say, he should stand from 15½ to 16½ hands high, and weigh from 1,000 to 1,500 pounds. In color, bay, brown, black or chestnut. Circumference of muzzle, 19 to 22 inches; width of forehead, 9 to 11 inches; length of head, 26 to 29 inches; length of neck, 34 to 37 inches; length of back, 27 to 33 inches; width of hips, 28 to 33 inches; from point of hip to point of hock, 40 to 44 inches; from point of hock to ground, 25 to 27 inches; circumference of thigh, 16 to 22 inches; circumference of shank, 8 to 11 inches; width of chest, 16 to 18 inches; circumference of arm, 20 to 24 inches; circumference of cannon, 8 to 10 inches. The width of the leg should be considered as well as the circumference, since width is more desirable than thickness. The wide range given in the standard is to correspond to the various sizes of horses with the same conformation that is to work at a rapid gait.

The horse that draws the retail merchant's delivery wagon should have the same conformation, style and finish as the horse that draws the ponderous trucks of the fire department. The only difference being in size and weight to correspond with the work to be done.

#### DISORDERS OF THE FOAL'S DIGESTIVE TRACT DURING EARLY LIFE.

You are doubtless aware that what might be termed early colthood is a critical time in the life of the horse. A little inattention, thoughtlessly on the part of the well informed breeder, but through lack of knowledge in many instances is often the cause of trouble which may quickly result fatally.

At your last meeting I called your attention to the umbilical region and discussed some points relating to the care of that region and some of the bad results arising from its neglect. I now propose to call your attention, briefly, to two or three derangements of the digestive tract which frequently cause serious trouble. Before speaking of these disorders, however, let us notice the physiology or function of the digestive apparatus as learned by a study of its anatomy and the observance of how the foal naturally takes its nourishment.

The principal organ of digestion—the stomach—concerns us most; this we find small in proportion to the size of the body, in the full grown horse it holds only about three gallons; not only is it small but the opening into it

by which the food enters is arranged in such a way that after once entering the organ it cannot possibly return, hence, the colt and horse never vomit. Compared with other domestic animals we find a great difference; the stomach of the calf with its four compartments will hold several times as much, even the dog has a larger stomach in proportion and the channel by which food enters it is so large that vomiting readily occurs, consequently, if the puppy be a little overfed the organ is quickly emptied by vomiting. Compared with our own there is much similarity and we find the foal and the infant, consequently, fed much alike. A study of this organ shows us that being small in size it is capable of containing but a small amount of food at once and that if overfilled it cannot be gotten rid of by vomiting.

What does a study of the way in which the colt naturally takes its food, teach us? It teaches much in regard to the proper way to care for them. In the first place, the foal, like all other young creatures, has a good appetite. As soon as able to stand it seeks for the maternal teat and takes its first meal. This proceeding it repeats every half hour or less, taking only a little at a time. At no time until weaned does it fail, unless prevented, to suck frequently. By suckling so often it can secure only a small amount at a time, and consequently the stomach is never overfilled. That this is the natural way, is shown by the arrangement of the mare's udder. This is small, and the milk sinuses hold only a small amount of milk; on the other hand, the milk sinuses of the cow's udder are much larger, and we find the calf sucking only two or three times daily, and taking a large amount at a time.

By remembering these facts many cases of sickness can be readily accounted for which might have been easily prevented by proper care and attention. The first disorder to which I desire to call your attention is the failure to pass the meconium or first feces. This is of quite frequent occurrence, but is not very serious if properly attended to. It is supposed that early foals of mares which have been fed exclusively on dry feed are most liable to it, the milk at such times being deficient in purgative qualities. The symptoms appear usually the next day after foaling, the colt ceases to suckle, tries to pass feces, and may show symptoms of severe abdominal pain by rolling and looking toward the flank; the pulse and breathing are frequent; if not relieved inflammation of the bowels sets in and the colt dies.

The treatment is usually simple and effective. The mare for some time before foaling should have some soft food; if possible grass, if not bran mashes occasionally. The colt should if possible receive the first milk from the udder, as this possesses purgative properties, and should be watched close enough to observe whether or not a passage occurs. If a passage does not occur within a few hours an injection of warm soap suds should be given. This may be repeated if necessary. In some cases a portion of the dry material can be to advantage removed with the well oiled finger. The injection will, in most cases, be all that is necessary. If constipation continues castor oil should be administered.

The principal trouble, however, to which I wish to call your attention is *diarrhoea*, or what is commonly called *scouring*. This is a very serious trouble, inasmuch as it occurs very frequently and is in many cases fatal. No other trouble, except the one discussed last year, carries off as many young foals. It is more prevalent some years than others, but cases occur every year.

More than one form of diarrhoea is recognized by some writers, but we will not take time to classify and discuss each separately. Diarrhoea is due to a great variety of causes. Errors in dieting on the part of the mother, irregular feeding of the foal, change of food, and the growth of bacteria in the intestines leading to the production and absorption of poisonous ptomaines, are some of the prominent causes. In many cases the cause cannot be traced. Giving the mare an excess of laxative food, as marshes and in some instances grass, and the administration of purgative medicines may be sufficient to cause diarrhoea. Irregular feeding and a sudden change of food are the most frequent causes. We have found that naturally the foal suckles often and takes but little at a time, but we know that many breeders prevent this by shutting up the foal when the mare is worked—making it go without food for one-half day in many cases. The colt then overloads the stomach and indigestion and diarrhoea result. While this practice may not always lead to bad results, it should be condemned. Changing from the milk of the mother to that of the cow is the cause of many cases, the trouble being not so much due to the difference in composition of the milk as to the large amount given at a time. Not being familiar with the size of the stomach and not thinking how little the foal receives from the mother, almost everyone will give too much at once, especially to begin with. When the stomach is overloaded, it cannot be gotten rid of by vomiting, and indigestion followed by diarrhoea is the result.

It occasionally happens that several in the same stud become attacked—the trouble becomes enzootic. These cases are supposed to be infectious, due to bacteria which exist about the premises, getting into the intestines with the food or water. There they thrive and produce poisonous ptomaines which cause the distressing symptoms. This is no doubt the cause of some cases. As yet, however, we know but little about bacteria of the intestines of domestic animals, and they may be a more frequent cause of trouble than we now suppose.

The symptoms of the trouble in question are so familiar to all of you that a description of them is hardly necessary. I will say, however, that there is quite a difference in the cases. Some are very acute, the evacuations being very frequent and watery, quickly leading to prostration, inflammation of the bowels, and death. Others are milder and spontaneous. Recovery may occur. In general, it may be said that when a colt only a few days old is attacked, the symptoms are usually acute. The foal ceases to suckle early, becomes rapidly prostrated and soon dies unless relieved. When occurring several weeks after birth it is not usually so acute, and not nearly as apt to terminate fatally.

While the mare and her foal should be so cared for that the disease will be prevented, it is to the necessity of *early and energetic* treatment that I wish to especially call your attention. I believe that if treated *promptly and properly* most of these cases can be saved.

It is not my object to point out how you may thus treat your own cases, but to emphasize the fact that you should call your veterinarian *early and insist* that he give the case his personal attention. They are not cases which can be prescribed for as we would prescribe for large animals. The patient is small, and the nature of the disease such that the size of dose nor number of doses necessary cannot well be determined. In many cases it is



imperative that the discharges be checked as soon as possible. To do this satisfactorily, it is necessary that the effect of the medicine be noted, and the dose increased or diminished, as may be demanded. My own practice is, whenever possible, to examine the patient myself, and if bad, to administer myself the first dose, remaining with the patient long enough to check, at least partially, the discharge.

Some cases when taken in hand very early can be cured by some of the domestic remedies in common use. The best remedies of this class are scalded milk and eggs and strong coffee. Scalding the milk is beneficial in two ways. The heat kills all bacteria and at the same time renders the milk slightly constipating. In mild cases this will often be all that is needed, but in the severe attacks it should not be relied upon and no time should be lost in calling the veterinarian.

The medicinal treatment which should be carried out by the veterinary surgeon depends very largely upon the case and need not be discussed here. I may say, however, that in most instances I rely principally on tincture of opium and alcohol. Pepsin, prepared chalk, rhubarb and others have their places and are valuable in certain cases.

In closing I will say that when the breeder, on his part, learns to recognize the necessity of early treatment, and the veterinarian, on his part, the advantage of giving these cases the closest of attention, the loss from this disorder will be small.

W. B. NILES.

*Mr. President and Gentlemen:*

I promised to discuss the subject "The Best Horse for the General Farmer to Raise," but I did not know at that time that I had to go next day to Colorado, and soon after I got back from Colorado I had to go to Kansas. That is the reason that I cannot come to the meeting.

The best horse for the general farmer to raise without a doubt, the horse that is able to do all kinds of farm work the best and sell for the most money when offered for sale (but there are many different opinions in regard to what kind or breed to raise to get such a horse). One claims that the trotter is the best horse for the farmer to raise, another claims that the coacher is the best, another claims that the Clyde or Shire is the best; others claim the Percheron and others draft horses are the best farm horses. Our American trotting horses are all right for the farmer to raise if they are large enough.

A smooth, fine built, stylish trotter, that weighs over 1,250 pounds and can trot in three minutes or better, if he is quiet and gentle, is a good farm horse, and will sell as a good coach or carriage horse. Farmers that have that kind of mares will do well to breed them to a stallion of the same kind; the heavier they are, and the faster they can trot, the better they are; but farmers that have small trotting mares that weigh from 1,050 to 1,200 do best to breed to fine large coach horses, with good style and action and gentle disposition. To what breed of coach horses they belong does not make much difference. If he is a good individual and a descendant from the

same breed for many generations back, then he will transmit his own good qualities to his offspring and breed uniform. But farmers that have small, little bits of mares that can't trot in less than 2:40 will do better to sell them for what they can get and buy larger horses; the small trotting horses are not the best horses for the farmer to raise. He is not able to train them himself and to have them trained it generally costs two colts to find out the speed of the third one, and if he happens to raise a speedy one he will not get a big price for him, but will be beaten out of him by some jockey; but if he selects fine large trotting bred mares and mates them with extra good American or other coach horses he will be sure to get a good general purpose horse, and good selling horses from the imported coach breeds.

Hanoverian coach horses are the best, but I think it will not be many years when the American coach horses will beat all other imported coach horses. But the easiest to raise and the surest horse for the farmer to sell at a good price is a good draft horse, not a big, clumsy, overgrown nor an ugly built or rangey horse—such horses are good for nothing—but low down, smooth, square built, stylish horses with clean, flat legs, good feet and plenty of action, weighing from 1,600 to 1,800 pounds. Such horses will always sell at good prices, and they are the best horses for all kinds of farm work. Much damage has been done to this country by importing so many poor quality, big, clumsy, overgrown, meanly limbed, graded draft horses which were really nothing but grades, even some of those that were recorded in the old country, but only for the purpose to sell for big prices in this country.

Many imported horses have been sold in this country from \$1,000 to \$2,000 because they were imported, big fat horses and believed to be full blooded horses, when better horses in every respect, but raised in this country, could be bought at home for less than half that price. Our American draft, coach and carriage stud book adopted a higher standard than most all the foreign stud books, but horses recorded in it and raised in this country will not sell as high as when imported because they are raised near by and did not come across the ocean, but that is very foolish; the horse should sell according to his merits, not to his paper pedigree. A good horse with a good pedigree is all right, but a scrub horse with a good pedigree is no good.

If farmers breed to good Percheron or other French draft horses that weigh from 1,600 to 2,000 pounds, low down, square build, with good style and action, clean, flat legs and good feet that can trot a mile in less than four minutes, and take good care of their colts, and feed plenty of oats and bran and stable well, their horses will sell for a good price and give a good profit.

The Percheron horse has made more money for the importers and breeders in America than all the other draft horses combined.

C. F. KLEINMEYER.

## RESOLUTIONS.

*Resolved*, That it is the sense of the Iowa Draft and Coach Horse Association that the revision board of the State Agricultural Society should be more specific in the classification of American utility horses, so that horses of a different conformation and purpose will not come in competition with each other, and that premiums should be offered for the encouragement of the walking gait in the draft horse classes separate from the others.

*Resolved*, That while the depression in the horse market has been discouraging to breeders, it has not been more so in this than in other branches of industry, and that with a renewal of business in our cities the demand for good horses will at once improve, and we urge upon the farmers and breeders of Iowa the necessity of breeding only their best mares, and those of thoroughbred sires of individual merit. Realizing the great loss sustained by the farmers of Iowa in breeding to grade stallions that transmit defects of the ancestors to their offspring, we recommend to the breeders and farmers of Iowa to discontinue the use of grade stallions and breed only to pure bred sires. Believing it to be to the best interests of the State at large that stallions should be free from inherited defects and perfectly sound at time of service, we further recommend that the legislature make an apportionment for a thorough examination of all stallions at the commencement of the breeding season, by a competent veterinary surgeon, and that on proof of same and satisfactory evidence that the horse is of pure blood, a license shall be granted by the proper officer allowing a fee to be charged for service. The expense of such examination and license not to exceed three dollars (\$3.00), and that any contract with the owner of a stallion standing for service without such license shall be void. We further recommend that the president of this association, with two members, bring this matter before the legislature.

*Resolved*, That the Draft and Coach Horse Association of Iowa should not lessen its efforts or become slack in its duties to keep Iowa in the front rank of horse-producing states.

Adopted.

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