

Your Excellency will notice by the financial account for the year ending November 15, 1891, that the receipts have not been sufficient to defray the necessary expenses.

Sixty-five licenses have been issued since last report to holders of diplomas. Seven permanent licenses have been issued on examination. All of which is respectfully submitted.

E. L. BROOKS, D. D. S.,  
*Secretary.*

# PROCEEDINGS

OF THE

## SEVENTEENTH ANNUAL MEETING

OF THE

IOWA STATE

## IMPROVED STOCK BREEDERS' ASSOCIATION

HELD AT

OSKALOOSA, DECEMBER 3, 4 AND 5, 1890.

### OFFICERS:

*President,* - - - *HON. H. C. WHEELER, Odebolt.*

*Vice-Presidents*—HON. D. M. MONINGER, Galvin; DANIEL SHEEHAN, Osage; RICHARD BAKER, JR., Farley; MAJOR J. W. McMULLEN, Oskaloosa; A. T. JUDD, West Liberty; HON. C. C. CARPENTER, Fort Dodge; W. W. FIELDS, Odebolt; MARTIN FLYNN, Des Moines; HON. J. B. HARSH, Creston; W. W. McCLEUNG, Waterloo.

*Secretary and Treasurer*—GEO. W. FRANKLIN, Atlantic.  
[Reported by C. L. DAHLBERG, Des Moines.]

DES MOINES:

G. H. RAGSDALE, STATE PRINTER.  
1891.

OFFICERS FOR 1891.

*President*—Hon. B. R. VALE, Bonaparte.

*Vice-presidents*—Capt. W. H. JORDAN, Des Moines; C. W. NORTON, Wilton Junction; W. W. McCLUNG, Waterloo; Hon. D. P. STUBBS, Fairfield; C. L. GABRIELSON, New Hampton; J. N. DUNN, Marion; A. J. LYTLE, Oskaloosa; Hon. Phil. SCHALLEB, Schaller; Hon. S. P. McNIEL, Garden Grove; Hon. C. C. PLATTER, Red Oak.

*Secretary and Treasurer*—GEO. W. FRANKLIN, Atlantic.

Membership fee, \$1.00 per annum.

The eighteenth annual convention will be held in Waterloo, beginning Wednesday, December 2, 1891, at 1:00 P. M.

The Iowa Short-Horn Association will hold its annual meeting beginning Tuesday, December 1st, at 1:00 P. M.

The Iowa Wool Growers' and the Iowa Swine Breeders' Associations will hold meetings same place, beginning at 1:00 P. M. Tuesday, December 1, 1891.



## PROGRAMME.

### WEDNESDAY AFTERNOON, DEC. 3.

- 1:00. Welcome, by Hon. G. W. Seevers.  
Response.  
President's Address.  
Appointment of Committees.  
Unfinished Business.  
"The Practical Value of Reliable Crops and Weather Reports," by Mr. J. R. Sage, Director United States Weather Service.  
Discussion.

### WEDNESDAY EVENING.

- 7:00. Opening Exercises.  
"Soil Robbing," by Hon. James Wilson.  
To be followed by remarks from Hon. J. R. Shaffer, Secretary State Agricultural Society; Mr. Henry Wallace, editor *Homestead*; Hon. D. M. Moninger and others.  
General Discussion.

### THURSDAY MORNING, DEC. 4.

- 9:00. "The Chester White,—America's First Love," by Hon. B. R. Vale.  
"The Mortgage Lifter," by W. W. McClung, President National Poland China Breeders' Association.  
Discussion.  
"Grasses and other Fodder Plants for Iowa," by Capt. R. P. Speer, Director State Experimental Station.  
Questions.  
"The Horse," by C. F. Curtis.  
"Feeding Corn for Profit," by J. Ward Wilson.

### THURSDAY AFTERNOON.

- 1:00. Sheep, "The Downs," by C. L. Gabrielson.  
Discussion, "How Can the Common Farmer Improve His Herd?" Hon. George Van Houten, Secretary Horticultural Society, Director State Agricultural College.  
Discussion.  
"The Farm and the Factory," Daniel Sheehan.  
Discussion.  
"Practical Hints on Stock Feeding," John E. Brown, V. S.  
Questions.

FRIDAY MORNING, DEC.

9:00. Treasurer's report.  
Report of Committees.  
Closing Business.  
Adjourn.

## INTRODUCTION.

The meeting of the Improved Stock Breeders' Association is on all hands conceded to be the great agricultural meeting of the year. There are a dozen or more minor associations, meeting each year, many of them widely influential, each one representing some phase of agriculture, but the strength, influence and power of all these is grouped and massed together by the voluntary membership of their leading, representative men in the Improved Stock Breeders' Association. It thus becomes a sort of Iowa farmers' parliament, in which all subjects pertaining to live stock interests directly or indirectly, with everything that bears upon the life of the stock breeder at home or his interests abroad, is discussed by the ablest men in the State, while there is no farmer, however humble or obscure, whose suggestions will not receive the most respectful attention.

The meeting was held this year in Oskaloosa, Mahaska county, one of the best and wealthiest counties in the State, and it is safe to say that at no place has the Association met with a more cordial reception. One especially gratifying feature was the large attendance of leading representative farmers and stock breeders of that county.

The most marked falling off ever known in the history of the organization in the presence of the "wheel-horses"—the men who have contributed so largely to the glorious past of this Association—was noted. Coffin, Scott, Nourse, Nichols, Jayne, McHugh, Flynn, Elbert, Hayes, Platter, Justus Clark, H. I. Smith, and many other leaders in Iowa stock-growing—where were they? In times past their words of counsel have formed a most important part of the proceedings of this Association, and their absence on this occasion made a void which was not to be filled even by the able ones who were faithful in attendance.

One of the most impressive scenes at the meeting was the farewell address of Hon. John B. Grinnell, of Grinnell. Mr. Grinnell is an ex-president of the Association and one of the oldest and most influential members, who, except when on a sick bed or absent from the State, has never failed for seventeen years to be present at the meeting. He has been for the past year in very poor health. In order



to meet, as he expressed it, "for the last time on earth" with the men with whom he had labored for so many years for the promotion of agriculture and all that makes life worth living, he arose from a sick bed and came at no little risk of health, and even life, to Oskaloosa. Although his frame is bowed with a disease, evidently mortal, and his voice failing, we have seldom heard him speak with more pathos and power.

The founders of the Association are rapidly passing away. The Association was called upon at this meeting to pay its grateful tribute to the memory of Hon. C. F. Clarkson, one of the oldest and most influential members. Younger men, and in some cases their own sons, are taking their places, but the Association retains the impress stamped upon it and the spirit breathed into it by the founders. It is in itself a most enduring monument to its founders.

The resolutions adopted, which will be found elsewhere, are unusually brief. As published from year to year, they express the coming thought and conviction of the people of the State. The absence of any allusion to the transportation question, as compared with the stout emphasis with which the present railroad law was outlined four years ago, shows that the members regard the solution of the problem as going on on right lines, and while they are keeping an eye on the process which it is believed will reach a just result, they do not desire to embarrass the development by too much interference, and will occupy the interval in the consideration of other important questions. The cordial endorsement and support given to the Secretary of Agriculture, the resolutions in support of the lard and anti-option bills and the suggestion as to the need of reforms in taxation, the stamping out of hog cholera and kindred subjects are worthy of special notice. The treatment of the subject of agricultural education at the Iowa Agricultural College and the emphatic demand for a thorough, complete and radical reform, when taken in connection with the intense feeling prevailing, was very significant. In submitting his report, Hon. James Wilson, chairman of the committee on resolutions, said that no subject of such great importance had come before the committee on resolutions for seventeen years, and none had been weighed with greater deliberation. The resolutions are brief, but go to the very core of the matter and the seat of nearly all the troubles in the past.

As usual the meeting closed with a banquet, given by the citizens of Oskaloosa. It was one of the most enjoyable features of the meeting.

## 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.]



DEPARTMENT OF AGRICULTURE,  
OFFICE OF THE SECRETARY,  
WASHINGTON, D. C., NOV. 26, 1890.

HON. H. C. WHEELER, *President Iowa Improved Stock Breeders' Association,*  
*Odebolt, Sac County, Iowa:*

DEAR SIR: I have often heard of the association of which I understand you are at present the presiding officer, and of the good work which it has done in the improvement of the live stock of your State. Seeing the announcement of your forthcoming meeting next month, I took the liberty of assigning a special agent of the Bureau of Animal Industry, Dr. F. E. Parsons, to attend the meeting of the Association as a representative of this department, and I write to you to bespeak for him a welcome in that capacity.

It is my earnest desire to bring this department into touch with such associations as yours, composed of men engaged in the practical work of agriculture, or devoted to some branch of it, being convinced that the cause of agriculture in this country can be greatly benefited by the cordial co-operation between the various agricultural associations, State agricultural institutions and this department. I want the farmers of the country to know more about this department, and I want the officers of this department to be aided by an intimate knowledge of the conditions of agriculture and the practical suggestions of those who follow it as an occupation. It is in this spirit that I have ventured in the absence of any formal invitation, to instruct a representative of this department to attend your meeting.

With kind regards to yourself, and my best wishes that your association may enjoy a successful meeting and many years of usefulness and prosperity,

I have the honor to remain yours very respectfully,

J. M. RUSK,  
*Secretary.*

The following letter from Hon. Oliver Mills, ex-President of the State Agricultural Society, explains itself, as do others which follow:

LUCAS, IOWA, Dec. 6, 1890.

GEO. W. FRANKLIN, Esq., *Secretary and Treasurer.*

MY DEAR SIR:—I am unable to help carry any of the burdens longer, but am still very much interested in the development of the great stock interests of our country; have read other reports of the meetings at Oskaloosa, with great interest. Herein I enclose my check, \$1.00, my annual membership fees.

With kind regards, O. MILLS.

IOWA STATE AGRICULTURAL SOCIETY,  
PRESIDENT'S OFFICE, Red Oak, Ia., Oct. 27, '90.

GEO. W. FRANKLIN, *Sec'y., Atlantic, Iowa.*

DEAR MR. FRANKLIN:—Yours of 25th received. I have just returned from a trip to Idaho and Utah, hence the delay in replying to your former letter.

I thank you for the invitation to prepare a paper for the stock breeders' meeting, but am compelled to decline, for the reason that business matters will not admit of my attending.

Regretting that I have been unable to give you an earlier reply, and wishing you a successful meeting, I am,

Your friend, JOHN HAYES.

UNITED STATES SENATE,  
WASHINGTON, D. C., December 12, 1890.

DEAR SIR:—I have yours enclosing Resolution of Stock Breeders' Association. I will introduce these into the Senate and have them referred to the proper committee.  
Very truly yours,

W. B. ALLISON.

TO GEO. W. FRANKLIN, Esq.,  
*Secretary, Atlantic, Iowa.*

DEPARTMENT OF AGRICULTURE,  
OFFICE OF THE SECRETARY,  
WASHINGTON, D. C., Dec. 13, 1890.

MR. GEO. W. FRANKLIN, *Secretary Iowa Improved Stock Breeders' Association,*  
*Atlantic, Iowa.*

DEAR SIR:—Your letter of the 9th inst., is received, together with copy of a resolution passed at the recent meeting of your Association, endorsing the course pursued by this Department under the present administration. I am gratified by this assurance that our earnest efforts in behalf of the stock breeders and other agriculturists are so well understood and so heartily appreciated. In return I can assure you that the Department will continue to exert to the utmost its power to better the condition of the farmers throughout the country, and I firmly believe that we shall be able to render them valuable assistance during the coming year.

The report of the proceedings at your convention, forwarded by Dr. Parsons, shows that the Association is accomplishing much good work. Its future successes will be watched with interest from this Department.

Very truly yours,

J. M. RUSK, *Secretary.*



## SEVENTEENTH ANNUAL MEETING.

---

FIRST DAY — WEDNESDAY AFTERNOON, DECEMBER 3d.

---

OSKALOOSA, Iowa, December 3, 1890.

Meeting Iowa Stock-Breeders' Association, H. C. Wheeler, President in the chair.

The Seventeenth Annual Meeting of the Improved Stock-Breeders' Association was opened with song by the high school scholars, conducted by Mrs. Logan.

Prayer by Rev. Mr. Hilton as follows:

Lord God, we are glad to look up and call Thee Father. We are glad to bow our head in Thy presence, rejoicing in the faith that we have that this world belongs to God and that we belong to Thee. Glad for the old story which we read from Thy word that after Thou hadst finished the works of Thy hand, as far as the world was concerned, Thou didst put the reins into man's hands and said to him, Have thou authority. We are glad to be engaged in these things that are well pleasing in Thy sight. We invoke Thy blessings upon these men that are come here from far and near. Give them wisdom, strength and persistency and every needed grace for the work. We realize that their work in the world is not exhausted, but comes back to it again. We thank Thee that when the Nazarine spake and said, I am the way, that he spoke not to his followers alone, but to all men for all time to come. We believe, our Father, that all things tend to the advancement of Thy children. Whether it be spiritual or temporal blessings, all these are well pleasing in Thy sight. The loosing kine, the bleating sheep, the blooming flowers and the ripening grain, all these things are blessings of God; the stars sing Thy praise. We pray Thee for Thy express blessing upon the people. We thank Thee for the civilization in which we live and the hope we have of better things to come. Let Thy benedictions be upon all that will elevate man and bring him nearer to Thee. May we know that they are Thy children and when our work is done here on earth bring us all to the land of the blest through Jesus Christ our Lord. Amen.



## ADDRESS OF WELCOME.

BY HON. G. W. SEEVERS.

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

On this occasion of your seventeenth annual assemblage I am accorded the pleasurable privilege in behalf of our citizens of extending to you a cordial welcome to our city. Why it has thus been arranged I cannot say, for, as Mark Anthony at the funeral of Caesar, "I come to speak only that which you yourselves do know."

But true to my task I may truthfully say that Oskaloosa is essentially an Iowa town, with a citizenship typical of the people of our whole state, deservedly distinguished for a hospitality as boundless as their boundless hearts. Of such and with such a people we feel we have a right to anticipate a feast of reason from your active minds and shall ourselves prepare one during your stay of substantial viands, for your reputedly active appetites.

But turning for a moment to reflect seriously upon the subject more properly before us, we trust we do not under estimate the importance of your meeting or the good results which may flow from it. The great financial cyclone, which has just swept westward across the Atlantic and blown back upon us an avalanche of our own stocks and bonds, has suggested with great force one of the gravest of American problems. This recent experience demonstrates the certainty that, should this disturbance continue in the financial centers of Europe, our markets will continue to be flooded with a volume of securities we have no ability to meet. These securities represent the credit of our great railroad systems with a capitalization of \$800,000,000, and which constitutes and represents the railroad debt of this country, but which we are now called upon thus suddenly to protect. These are denominated railroad securities to be sure, but they have nevertheless been sold upon the markets of the world upon the faith of our national wealth and resources. More than three-fourths of the wealth of this country has been produced from its agricultural resources alone, and in more than that proportion, if at all, must we look to that interest to protect this debt, of what we have been taught to cherish as quasi-public institutions. And having recognized railroad corporations as quasi-public institutions, and extended to them the right to condemn private property to their corporate uses under the power of eminent domain, it still remains an open question in this country how long it will be before we recognize the employees of such corporations as also quasi-employees of the government; and also how long this government will stand by with folded hands and see such employees shot down in cold blood by that organized band of thugs, thieves and butchers known and despised throughout the land as "Pinkerton's detectives," before it will raise its strong right arm to uphold

a fair demand for reasonable compensation for a most exacting and faithful service. Instead of resorting to strikes and labor riots, with their fearfully disastrous consequences, why should not the right be given them to apply to the general government, the only power equal to compete with that of organized capital, for the adjustment of all differences.

We sell breadstuffs, provisions, live stock and other commodities of export value in the free markets of Europe and in return bring back money, or its equivalent, which we must make pay the expense of our farming, open new fields to the plough, give us capital for business, and increase our national wealth. In this way we have accumulated a surplus, but unfortunately this surplus has not been held by the class which has produced it. It has been centered in the hands of a few and invested in railroads and rolling stocks. Corporations have been organized upon them as a basis, corporate stocks issued upon fictitious values which are also sold in the markets of Europe.

These also represent the products of toil and agriculture but which by no process can be turned into cash and returned to this country. It is unquestionably true that your great thrift and economy has enabled these great combinations to be organized and upon your credit these securities have been sold upon the foreign market. But neither the men who have thus contracted the debt, nor the property pledged for its payment are adequate to its liquidation, so you, gentlemen, who have in charge the industrial and agricultural interests of this country, are the sources to which we must look in such times as these for the maintenance of our national credit and as the basis of national our wealth. The unjust, as well as unfortunate, condition of the hour, as we awake to find it, is that the surplus of the country is now combined against the interest which has produced it, and rebounds in the shape of an interest bearing debt to be repaid of your product. It may seem an anomalous proposition, but true nevertheless, that the surplus wealth of this country which the agricultural and stock growing interests have produced, is now withdrawn from their aid and even threatens to become their over powering enemy. Such combinations as we see growing to gigantic proportions in this country are not only a menace to the public weal, but dangerous to liberty as well.

They are organized to control product and regulate prices—they lay tribute upon all classes and in free and independent America they thrive and fatten especially upon the toil and thrift of agriculture. It may seem strong language but I declare to you a power stronger and a danger greater than the Civil War threatens the peace if not indeed the independence of our people. The fear of evil to-day in this country is from the concentration of capital, of combinations and of trusts, the centralization of power in a comparatively small number of selfish and unpatriotic men. Hope lies in the direction of a judicious, deliberate, and conservative exercise of the sovereign power which rests in the should be independent masses of the people. "I am the Sovereign," says the Czar. "I am the Sovereign," says the American Citizen. To this grand sovereign power, which may well rest in the masses of an intelligent and liberty loving people we may ground our future hope. Viewed then in the light of existing facts, too grave consideration cannot be given to that important factor in our nation's wealth which you, as growers of improved live stock, especially represent. It has not been heretofore generally claimed for you that yours is an "infant industry," and therefore entitled to hopefully look for aid or immediate protection through federal legislation.

In the light of recent discussion of the great economic-political problems it was urged yours was an industry too universal to come within the policy adopted for



the protection of infants. It is true that to the equal building up of all industries and the protection of all industrial interest we may look for a larger demand within ourselves and a more hopeful market for our products. But no matter from what cause or principle of economics, nor how old or young your interest, it is from some cause true you have ever had and must continue to rely upon the superior quality of your article or product to recommend it in competition in the free and open markets of the world. And it must be, and is, an inspiring thought that thus unaided and unprotected you have been able to build up and develop this vast empire of wealth upon the western continent and have battled and successfully withstood the competition of the world. We no longer look abroad for importation to bring us the better individual animal or the purer or better strains of blood, but can boast within ourselves both the purest and the best.

I noticed recently 400 head of finely bred cattle from Kentucky were shipped to London, every one of which was fine enough to deserve its picture preserved in oil.

These cattle will go into the English market and furnish the most fastidious lord his choicest Christmas roast. And what may be said in merit of the example just furnished from our sister State is equally true of the product of our own growth.

Should I ask to-day, "where is your monument?" you might well answer, "look around you." This vast empire of wealth, of independence and of prosperity, which stands the marvel and admiration of the commercial world, is a monument to your conquering industry. I have no doubt there are those among your number to-day, who can recall in easy recollection, a time when the now fertile prairies of this great State marked no tread of civilization; were shaded by no roof but the azure dome, and sparkled with no light, save the stars of Heaven. Half a century passed away. Lo, it has become an enchanted ground. More improbable than the picture which McCauley draws of the solitary New Zealander sitting upon the broken arch of London bridge to sketch the ruins of Saint Paul's would have been the man who, fifty years ago, should have stood upon the prairies of our great State and prophesied its condition of to-day. Your industry and economy have made it to "bud and blossom as the rose." As by magic, you have transformed its wig-wags of the savage, to the sanctuary of civilization.

Its beautiful groves, its abundant orchards and growing vines, its houses and barns, its schools, its colleges and churches,—its cattle upon a thousand hills—yea, more than that, you have grown a generation of strong men and women, of honest hearts, and founded virtuous homes. The light from the thousand households of our beautiful State shines out beyond our broadest valleys and over our loftiest hills. As the walls of Babylon were hung with fragrant gardens, so you have adorned these homes with a spirit which far out-shines the brightest colors of the artist and shall be immortal when they have faded—a spirit which speaks to make your fellow men wiser and better and consequently happier.

These are the monuments you have built, firmer than adamant and more enduring than marble. They will stand to your honor so long as honest industry has a friend or Christian virtue an admirer.

Being myself raised upon a farm, there is no part of the actual work of farming or stock growing to which I have in after life felt myself a stranger. This I think enables me to appreciate somewhat the disadvantages and difficulties under which you may at times labor, but in the light of the best judgment I am able to command, I speak the belief that the dawn of a better day is just upon you.

A combination of circumstances which I need not detail have for years contravened your interest. The price of your product has been regulated by that crucial

master, Supply and Demand. You have been embarrassed, too, by unequal competition. But I confidently believe and hope that at least one of your unfair competitors, known as "range cattle," will soon have run his course and the range cattle business of America become a thing of the past and known no more forever.

The "common stock" and "scrub" of every class will follow in the wake of the "range steer," and in Iowa also become a relic of the darker days of your history.

The time has passed when even the fertile fields of Iowa will yield wheat and corn and oats which, if sold upon the market, will justify the cost of production. So only by feeding such to the best and most improved breeds of live stock can we hopefully look in the future for adequate returns from our agricultural interests. And here, too, there is no middle ground. It is only the best on which there is a profit margin. The degrees are few and short indeed from the superior animal on which a safe profit may be claimed downward to the common stock, until you have crossed the line and both breed and feed at actual loss. This problem your society has forcibly demonstrated and put at rest forever. To you it need not be discussed.

An extended trip within the last few days over many hundreds of miles of what is known as the "range cattle country," and a careful comparison of data with the best informed cattle men of the west, extending from the Gulf of Mexico to British America, and upon such authority and compilation it is estimated, there is not now upon the open range more than 30 per cent of the cattle there was in 1884. Take for example the State of Idaho, having in 1886, 1,200,000 cattle, has not now 100,000 upon her ranges. The State of Wyoming in 1884 claiming 2,500,000 cattle, has not to-day, by the fairest estimate which can be made, within her borders 400,000. And within another year it may be estimated that the combined States of Idaho, Wyoming, and Colorado will not be able to gather upon their open ranges sufficient cattle of all ages and classes to supply the markets of Kansas City, Omaha, and Chicago for sixty consecutive days. But the enormous amount of inferior and cheaper grades of beef which has gone into the markets within the last five years has had a demoralizing effect upon all classes of meats and has discouraged the breeding of cattle upon the ranges as also in the cattle growing States. To-day we find ourselves as a nation with 63,000,000 of beef eating population and increasing in round numbers at the rate of 5,000 per day with the supply of beef rapidly decreasing, and in a much greater ratio than the increase of our population. This estimate omits entirely the increased demand for American beef in foreign markets.

Again, experience has thoroughly demonstrated there is but one kind of feed, now extensively grown in this country, from which we can successfully mature perfect beef. That is Indian corn. And we must hereafter look to the corn producing belt of America to mature the beef for this, as well as the foreign markets demanding our exports. That corn belt is comparatively small, being not more than 1,500 miles in length by 500 miles in width. The heart of that belt is now, and will hereafter forever remain, the great State of Iowa. We may hopefully look for the time when the superior article of stock of all classes and varieties will command in the market a price in which you will find your merited reward. It is to the successful and intelligent breeder we must look for these better results. It was the intelligent commingling of blood by a Williams that produced an Axtel. It is the Axtel of Iowa that brings the highest price ever paid for his kind in any market in the world.



I have somewhat emphasized your work as men, in what I regard the most important branch of our nation's industries. But there are other great factors in this work which I should not, and which I feel you cannot, overlook. I refer to the good wives and daughters of the husbandmen of Iowa. Hand in hand they have gone with you and the good part they have taken and the good work they have done is apparent everywhere.

"The farmer's work's from sun to sun,  
His wife's work is never done."

To the good wives of the farmers and husbandmen of this country is due the discovery, that the source of youth, and beauty, and health, and peace of mind is hard work, a few degrees removed from slavery. And it is due to them, my fellow lords of creation, that you see to it that work is made to them congenial and that the heart of the laborer is joined in the task.

I notice an enterprise has just been put on foot in Denmark, corresponding with the needle work industries of England and Ireland to advance the farming and dairy interests for the benefit of women. Little girls are being trained to raise poultry, make cheese and butter; and they are succeeding, and, if given an opportunity, ever will succeed, and will brand these products with the badge of excellence.

And now, gentlemen, the people of this city, in whose behalf I have the honor to speak, ask to join the grand chorus of the people of the whole State and bid you God speed and go forward in the good and great work in which you are engaged. During your stay among us, we take pleasure in extending to you the freedom of our city and bid you at all times welcome to our separate and several places of business, and welcome—yea, thrice welcome to our homes.

#### RESPONSE.

BY HON. JAS. WILSON, OF TRAER.

*Mr. President, Ladies and Gentlemen:*

A few days ago I got a letter from Mr. Wheeler—a personal letter urging me to be present, by all means, at Oskaloosa. I thought he wrote me because he liked me and wanted to see me. An hour ago, however, he told me that I must reply to this address of welcome. Now, you can see the embarrassment that a granger presumably has in coming out before such an intelligent audience in such a city as this, and replying to one of the finest productions of the State of Iowa, as you have just heard it delivered.

While in the name of the breeders of Iowa I would thank the city for the kindly welcome extended to us. He has spoken to us in such a way as we expected the people of Oskaloosa to speak. The gentleman who has just taken his seat has good blood in him and he is a citizen of no mean city; a city in no common county. This gentleman is from Mahaska where we have come this time for our annual meeting.

We, the stock-breeders of Iowa, are not so easily satisfied with our movements and our entertainment. We select the finest cities in the State of Iowa in which to hold our meetings. We have here in this town of Oskaloosa one of the most representative towns in the State of Iowa or of the west.

In the few moments I had to gather my wits about me to reply to this kindly welcome, I looked about to see where we were, and what there is about us. I find here one of the most magnificent counties in the State. There is not a quarter-section in Mahaska county but will make a good farm; not one. You can estimate then how it is possible for a town like Oskaloosa to grow to its present stateliness, strength, beauty and wealth. Here is a town of eight thousand people, according to report, a representative town equipped with all the excellencies that the urbane people of Iowa demand shall surround them. Here is found as high civilization and enlightenment as is found in any of our western towns. Old recollections come to my mind when I think of this town. This was the home of the great jurist Seever, with whom I served in the legislature when the statutes were formed in the interests of our work a few years ago. This is the home, too, of Gen. Cutts, of happy memory. I remember once being in the supreme court room of the United States of America, when the supreme court sat to determine whether the State of Iowa should consider the railroads the creatures of the State, or whether the carriage decision applied and they could run hither and thither and do as they pleased. There sat the full bench. One of the foremost benches of jurists upon the face of the earth. There was an audience of but two men, one was myself and the other was Martin I. Johnson, of New York. There stood the little man full of nerve, energy and fire, pleading for the farmers of Iowa; pleading as a man pleads for his life. Producing arguments that were found in no text-books; giving reasons to that august tribunal why the State of Iowa should control the creatures it had created. That man wrested justice in that great bench and settled forever the principle that the State controls its creatures; and that man was Attorney-General Cutts, of Mahaska, and of Oskaloosa. (Continued applause.)

And this is the home of congressmen, also. The home of the most genial legislator said to have ever attended the session at Des Moines, the genial Ben McCoy. It is the home of three ex-presidents of the State Agricultural Society. I do not think I envy the people of Oskaloosa anything they have except one thing; it is the home of Al. Swalm, that knows everybody and everything, and if I could know as much as he appears to know I should be the best posted man in the State of Iowa. (Applause and laughter.) But we cannot have everything we would like in this world. Those of us who come from the prairie country with which a large part of our State is covered, can fully appreciate a county like this where the whole county is underlaid with coal, and where the people receive a million and a half dollars every year for the coal shipped out of it. With their coal they have water-works, one of the accompaniments of a high civilization. They have electric lights here and street railways; they have three colleges here. There are two classical colleges in this town with full courses and they graduate young men and women; they make as fine scholars of them as any college in the land. It will be only a question of time when Iowa farmers' wives will be educated women and every boy will have a finished education, and if anyone wishes a full business course, here is a business college where he can get that.

I need not tell you that they have one of the finest court houses in the State of Iowa—we can see that for ourselves. You know it is, and if the breeders do not know it, nobody does. They have their fair share of the industrial movements as they come within the State to the people of Iowa.



We are just now discussing the beet sugar movement; we have been paying one hundred millions of dollars for sugar from foreign countries, and are now discussing the wisdom of the legislature in the encouragement they give to such industries. The people of the United States can make all the sugar they want. Half the sugar of the world is now made of beets. You recollect how it began. When the British invaded France and shut Bonaparte in, he gave a bounty for the making of sugar from beets, and now we pay millions of dollars every year to Belgium, France and Germany, which we can save to ourselves when we grow beets ourselves, and can make better sugar than they can. Where is a place in Iowa that is so well fitted for beet culture and beet factories as is Oskaloosa? Here is as fine soil in the Des Moines Valley as you will find anywhere; here is coal for the necessary power. There are five banks here; I have not had the time to inquire what the capital of these banks is, but I will tell you that from my knowledge of what has happened in Tama county during the last five years assures me there is plenty of surplus capital to put into a beet factory. It is only a question of time when this town that has grown up with these advantages and fine accompaniments—yes, I will say that it is even now ready to take the next great commercial step and I have no doubt but that though the coal interests now bring to this town a million and a half dollars each year, it will be but a short time until twice that amount will come here every year to these people.

I enquired how they got into and out of this place, and was surprised to learn that they get in and out by at least eight different railroads; they are just on the eve of paving the streets with brick.

They have a daily paper printed by that serious looking man to whom I referred. There are three weeklies, and I could not ascertain how many monthly periodicals—I did not have fingers enough to count them on. A couple of flour mills, with machine shops and foundries.

I went to that pious friend of mine, the Hon. Wm. Smith, who used to be the president of the Agricultural Society, to learn about the religious status of the city. I asked him what he knew about the churches of Oskaloosa. He says, why, there are six of them within five hundred feet of you. But how many are there in the city? "Oh, thirteen, fourteen, fifteen or more." And now, after this they can claim something else, that they have had the annual session of the Improved Stock Breeders' Association in Oskaloosa.

Fellow citizens, to know the people of Iowa, her institutions of learning, her religious and industrial institutions is of itself a liberal education, and there is no way by which a man can better enlarge his ideas than to keep up with the State of Iowa. He is a remarkable man who can tell you all about one such a town as this.

I will not undertake to follow the gentleman who has just addressed us from the economic point to which he has called our attention. When he said that three of the new states out west were so reduced in their range cattle that they could not feed three of our great cities for sixty days, he told me something I never knew. He has been out there, and has ascertained about this, and it is a remarkable statement. It coincides with the conclusion that the western farmers are rapidly coming to; that our cattle interests are entrusted to combines that control the prices the consumer shall pay, and the price the producer shall get, entirely without regard to the number of cattle in the country. It is one of the problems of the day, and I cannot present a solution for it; but I know this, that during the century that has just passed, since the United States has had constitutional government, through which they have made and formed a great class, that the solution of a question

was always in sight when the people became thoroughly informed in regard to it, and turned their whole attention to it, and we will get around Chicago and the trusts and combines if we have to build railroads in every direction around it. We will see the end of this trust business in our time. I firmly believe that the things which have been brought to bear with regard to the cattle industry, will result in dear beef product and mutton for the people and the scarcity of cattle all over the country; that it will draw the attention of the whole American people to the question, a solution demanded, and the Appomattox will be reached by the people. He spoke of the dangers of these combines and trusts to the cattle interests. There is danger.

At towns where we have been before to hold our meetings the people would sometimes entertain us with draft horses, and trotting horses to walk and trot before us, and their fat cattle to feed before us, but we have never been anywhere before where they brought the finest product of our State, the boys and girls, to sing for us. The high schools and colleges that are training thus the finest product of Iowa, are preparing young people your girls and boys, my neighbor's girls and boys; they are preparing them to enter the college at Ames, and they will be educated to meet this great danger. And, gentlemen, as we never had time during the dark days of the republic through which we passed, to look or to count the future, so do not be afraid now. It will be said, as was said before, after all these trusts and combines that threaten our industries shall have been cleared out of the path of progress, that the government at Washington still lives. (Continued applause.)

#### PRESIDENT'S ADDRESS.

BY H. C. WHEELER, OF ODEBOLT.

*Gentlemen of the Association:*

It is with pleasure that I welcome you to the seventeenth annual meeting of the Improved Stock Breeders' Association. There is probably no institution of its kind in the world that has been better sustained and that is more widely known and universally respected than the Iowa Fine Stock Breeders' Association. The records of our proceedings are sought after both at home and abroad, and in all matters pertaining to live stock our association wields a large influence, not only in our own State, but throughout the whole country.

We have not been blest with as bountiful crops this season as for several years past. Our wheat, flax and hay crops have been fairly good, but our corn, oats, barley, potatoes, etc., are all comparatively light. Iowa has a better yield of all kinds, probably, than any other State, and the increased price will enable our farmers to realize more money from this than from any of the several previous crops.

In 1845 my father pre-empted a piece of land adjoining his farm, thirty miles from Chicago, and since then there has been a gradual taking up and settlement of the land to the west, until much more than all the land, to the west and north, that is worth cultivation, has been appropriated. Twenty years ago I could find no



government land that I preferred to take in place of buying good Iowa land for \$4.00 to \$10.00 per acre. Within a few years I have investigated the supply of unappropriated lands west, south and north, and know of none that can be obtained of the government or from railway corporations that it will pay the farmer to buy at any price. The uncertainty of the amount of rainfall beyond a certain distance west of the Missouri river makes all those lands only fit for grazing purposes, and the irrigation of lands in the west and on the Pacific slope, can only be carried on to a limited extent, for the reason that there is not enough water to irrigate any considerable amount, even if it would pay to convey it to land adapted to that purpose.

The country that has and will furnish the surplus grain, beef, pork, mutton, etc., for our own and foreign countries is comprised within boundaries of say 300 miles north and south and extending from Lake Michigan to 100 miles west of the Missouri river, of which Iowa is about the center. All this country is practically under cultivation now. During the development of this section which has largely been accomplished within the last fifteen years there has been periods, when other countries as well as our own have been favored with good crops,—that we have produced more, over and above our local consumption,—than the world markets would pay remunerative prices for to our producers—which has caused severe depression in prices such as we had a year ago, and whenever we have partially recovered from the effects of too much of our products in sight, the development of new land continued, with two or three good crops in succession, has brought us back to low prices again. I think that now we have reached the turning point, for our population will unquestionably increase as rapidly as it has in former years, and we have no more land that we can reduce to cultivation and thereby increase our product—but on the contrary I think the acreage will decrease to some extent, as I noticed in traveling through New England last summer, that a considerable amount of the lands formerly cultivated has been abandoned and their value has depreciated to such an extent that they are largely held for what timber they will grow. When I made inquiries as to why they had abandoned their lands the answer was: "We cannot stand western competition; we can buy what we want cheaper than we can pay for fertilizers and raise it ourselves." I spent a few weeks in England last summer and I found they had had the same experience, but to a much greater extent. I was shown land that thirty years ago would sell readily for \$250.00 per acre, but now would not bring more than \$100.00, the result having been brought about by competition foreign to their own country and largely by competition from the United States. All the English farmers lost money and a great many of them were ruined, while products were low and the shrinkage in their lands and rents was taking place. Most of the land, however, in England is rented by the farmer and rents are, and have been for a number of years, comparatively very low, and for that reason, and cheap labor, the farmers are doing very well. Labor is very cheap, being at all times, except in harvest, about ten dollars per month and the laborer boards himself. The rent paid for land in the best districts is only \$5.00 to \$10.00 per acre. I was somewhat surprised in England as I did not find the "down-trodden" farmers that we read about, but instead a very thrifty, well to do class of people. They are very economical in their habits, and live much cheaper than we do here, but did they live in the same way that our people do and the same way that they want to live when they come here, the expense would be much greater. The English farmers have more social advantages than the American,

they live largely in small villages, and where they live on the farms they have much better opportunity to mingle with each other, for the reason that their roads are as good as a sidewalk at all seasons of the year.

The lands in our State have been somewhat depressed in price for four or five years, but for the last six months there has been a marked increase in inquiry, and in localities where I am acquainted prices have advanced materially—in some places 15 to 20 per cent and in my judgment the advance in the price of Iowa lands will continue—and I think there is no class of property that is cheaper and none that will give a better return for the investment than good farming lands at present prices.

#### CATTLE.

Our cattle are still very low, but our ratio of cattle to our population is steadily decreasing; and our surplus from the western ranges has been very extensively marketed, and we can reasonably expect that there will be a material advance in prices in the near future.

If our government succeeds in inducing the English government to rescind the arbitrary rule that all cattle from our country shall be killed upon the docks on arrival, it will materially advance our prices—for a cow that sells here for \$18.00 will bring \$75.00 there—and a yearling heifer that will bring \$15.00 here will bring \$50.00 there. The English government claims our cattle are diseased, but the truth is it is the English cattle that have suffered most from disease, but we simply enforce quarantine regulations against them, while they absolutely prohibit ours from going into their country, by requiring that they shall be killed upon the docks—which absolutely shuts out all stock and breeding cattle from the United States, which is the competition the English farmer is afraid of, and I am satisfied the English government will maintain the prohibition as long as possible.

#### HORSES.

The quality of our horses is improving all the time. Fifteen years ago I purchased an imported Clydesdale; it was the only recorded horse that I knew of within a great distance. Now there are twenty within a radius of ten miles, and the Grade is seldom seen. Last winter I took some trouble to find the relative value of the work or general purpose and draft horses in our best markets, and I found that an average 1300 to 1500 horse was worth 45 per cent more than one weighing 1000 to 1200, and the difference in the expense of raising is very little. It will not pay the farmer to raise anything but the heaviest horses. If he wants a light weight horse he will always be able to buy much cheaper than he can raise him.

#### HOGS.

Iowa beats the world in the quality and quantity of hogs. In no country can you find as many choice specimens and as good an average as we have here. I found some finely bred hogs in England and France, but they were the exception; they have as a rule a coarser kind. No section of the country, either in Europe or America, equals Iowa in the quality of their hogs.

#### SHEEP.

Our sheep industry is improving, and will continue to do so. The market for good mutton is much improved, and that, combined with a better price for wool,



makes the handling of sheep much more profitable than it was a few years ago. We are constantly improving our flocks by the importation of the best specimens from England and the continent.

Our dairy interests are very important—may be more so than any other interest in the State. The manufacture of butter and cheese has been reduced to a science, and in quality and quantity produced Iowa stands at the head.

The interest in improved breeds of poultry is more than it has ever been, and Iowa probably ranks even with any other State in the quality of its products in that line.

For several years our country has suffered from scarcity of money at the season of the year when it is most needed to handle our surplus crops,—and this fall it amounts to almost a panic. We should have relief from this money stringency for there seems to be no question but that we have too little currency. It is for the interest of the people that loan their money to have the amount of the circulating medium as small as possible, for the less there is in circulation the higher will be the rate of interest,—but for the benefit of the industrial and producing classes there should be sufficient money in circulation to carry on the business without being subject to this periodical stringency. Our surplus silver should be coined or used as a basis by the government for the issue of silver certificates. There is no better money in the world than a silver certificate with the value of what it represents in silver back of it.

Trusts and combines are being attacked in different States with success,—and they should be pursued until the country is thoroughly rid of them.

The World's Fair at Chicago in 1893 will enable Iowa to show the world the great productiveness of her soil, her great wealth in minerals, coal, ect., and her immense amount of live stock, second in quality to that of no section in the world. And at this meeting arrangements should be made for making our show of live stock at the World's Fair second to that of no other section.

The main object of our society is to aid in improving our live stock,—and I hope to see the time when it will take a day's journey to find anything but a pure bred sire in the hands of our farmers.

Gentlemen of the Association, we come here to learn from one another, and to derive benefit from an exchange of ideas, and I hope all present will take part in the discussions.

It is with heartfelt sadness that I remind you that one of our most prominent members has passed from our midst never to return. No one has ever done more to benefit the farmer and stockraiser of Iowa than Father Clarkson,—and it is with great satisfaction that I remember that I had the honor, as chairman of the Committee on Nominations, of presenting his name to the Association as its president. Father Clarkson will always have a warm place in the hearts of the people of Iowa.

A motion by Mr. Sheehan that the president of the association appoint a committee of one from each congressional district to select the place of meeting and the officers for the ensuing year, prevailed.

Motion by Captain Jordan that the president appoint a committee of three on resolutions was amended by making it five instead of three. The amendment was accepted and the motion carried as amended.

The following are the names of the committee on location and selection of officers: Captain W. H. Jordan, Hon. B. R. Vale, A. C.

Tupper, W. W. McClung, John A. Evans, S. S. Sessions, Harry C. Wallace, J. N. Dunn, Major J. W. McMullen, George Van Houten, and C. D. Boardman.

Committee on resolutions—James Wilson, Henry Wallace, C. L. Gabrielson, C. F. Saylor and L. L. Klinefelter.

Chairman: Gentlemen of the Association, I want to call your attention to the fact that Dr. F. E. Parsons, of the Department of Agriculture at Washington, D. C., is here with us by request of Hon. Jeremiah Rusk, Secretary of Agriculture.

Dr. F. E. Parsons: Mr. President, ladies and gentlemen—I felt indeed highly honored when the secretary at Washington announced that he should send me to meet you at Oskaloosa. Not particularly because I wished to represent the Agricultural department at Washington, but because I wished to meet such an association as I knew this to be. The object of my coming here was to assist as far as possible, in bringing into repute the Agricultural Department at Washington and the agricultural people of the country, and do my share, knowing that this association is one of prominence, that it is sustained by the intelligence of the state, that it took a great interest in all things that were being done by the Agricultural Department, especially in regard to the study of diseases of animals, plants and such things, the secretary thought it best that I should come here among you, and I have no words to utter to you here this afternoon except that the Secretary of Agriculture desires the support of the agricultural interests of the whole nation. He is determined that just as far as in him lies—in as far as authority is given to him and means placed in his hands to do so, to compass all this country and to assist the farmers of the country—not to control them, but to assist them in that department. He wants your aid in reaching the foundation of disease and stamping it out if possible; he wants your support and not only your support but he wants to know that he has it. He wants to hear your voices and know your desires and wishes, your hopes and fears; he wants to know what you have learned in the researches of your scientific and skillful men in order that these things may be brought together and all the agricultural interests of this great nation be brought together so that you may be thus not only brought together but study together and labor together. This department was struggled for by the farmers all over the country. I remember in the farmers' congress of the United States it was a question very much discussed. I knew that the grangers had been struggling for an agricultural department and desired that the secretary of the department should be a cabinet officer, and thus occupy a place where he could be heard and not simply a place through which to distribute seeds. By



your voice and constant work you have at last obtained your wish and now have a department of your own at Washington, and I am happy to state that you have as your chief to-day a man who is thoroughly in earnest for your cause. He wishes to be taught as well as to teach in the things that may be learned there, so that all things may be brought together for your own good.

I will add a few more words. Having been there lately through the laboratories I can say that there is persistent work being done night and day, especially in the question of diseases, to find out all that can be found out. Dr. Smith, under the direction of Dr. Solomon, is constantly prying into the various diseases with his coat off, and looking for them to annihilate them. It is desired that you shall make inquiry and if you have skillful veterinary surgeons to have them report anything that may be of interest and thus to help things along. They are looking into the value of the beet product down there and reports come in such a way that what they ascertain goes to prove that saccharine matter through a certain belt of this country is there and may be obtained in abundance through the sugar beet. An effort will be made to push it; to try to get farmers to plow where it will best grow and yield the best sugar matter, so that we will be able in a few years to raise all the sugar we want and we can do it if we will. This will add another great farming industry. It will demand a good price and will help you out. If your attention is turned to that you will raise less cattle and get a better price for them; raise less wheat and you will get a better price. Secretary Rusk thinks it will be better to make the experiments in the sorghum right there and I am happy to tell you what he told me a little over two weeks ago, that they had reached what they called a climax; that they were going to discard the old process and had succeeded in reaching an output of sugar from sorghum with an advance of seventy-five per cent on what they had found before. For instance, if they had got five per cent, they had added seventy-five per cent of that five per cent. I will illustrate further; if he had already got fifty per cent seventy-five per cent of that added to it would make eighty-seven and a half per cent. That a substance had been found which would separate the sugar but it had to be distilled out of the stalks, and that substance was alcohol. I do not know how that sounds in prohibition Iowa. But we are going to get sorghum sugar in this country as sure as the world. I speak of these things because it is in the agricultural department that they are being ferreted out and continually being worked at and these things in particular. You can easily see how the Secretary of Agriculture should be desirous of operating with you and you farmers should be willing to respond with all that you learn

and work in harmony with whoever may be your secretary and give him such aid as will encourage and help him out. The new law which permitted him to appoint a veterinary inspector to inspect stock when it gets to our shores if it is diseased is a step in the right direction. If such animals are found diseased they may be transmitted back to Europe wherein the disease started. All these things have been reached but not enough has been reached yet. When he wishes a law made so as to take certain things out of the hands of the treasurer and give it into the Agricultural Department some one objects. When he wishes to get a law by which he may co-operate with some of the States in order to crush out diseases, some one says it is unconstitutional. There ought to be some way by which the Secretary of Agriculture can be sustained and the voice of this great agricultural country heard. And those who object to wholesome laws for your support, your encouragement, and your safety should be taught a lesson that they should not stand in the way of the great agricultural advancement of this country on any ground whatever. You have a Secretary who is with you and willing to do all in his power for your work. The work that has already been done in your interest is wonderful. This law you now have—and I believe Mr. Wilson of this State was very active in getting the present law—you can see some of its worth now in stamping out pleuro-pneumonia in cattle. They made a law similar to that which left swine out of the calculation. A veterinary surgeon can do much but he cannot do everything. The Department of Agriculture should have money prepared for the purpose of stamping out these diseases. A law with reference to inspecting cattle should be changed. The law in regard to the inspection of stock reaches cattle and swine and leaves horses out. I do not know who railroaded that law through and made it that way but it needs amendment.

If I am sent to inspect a ship-load of stock, on my rounds I come to horses and find them glandered I pass them by. If I am asked what I am going to do about it I say "nothing," I guess we cannot touch them. The law stops there where it ought to be strong. You want to maintain these laws and get them as strong as they can be made and then get the co-operation of the entire nation. Insist on legislation. Insist upon legislation which will assist American product because it has dawned upon this nation and the people of this country that there is something in this question; that there is a great share of intelligence among the farmers of this country. It is dawning upon the nation that the generations are growing up educated and prepared for duty and farmers are becoming men of education and the time is fast coming when it will be the great industry of this



country because agriculture is elevating and more men are being educated and fitted for the work that will control it by and by. (Applause.) As you have heard, the boys and girls are rising up to take our places and we want them more intelligent than we are; we want them better educated than we are; to have more scientific knowledge than we have and we want them to have a more practical knowledge than we have and you are in the particular channel to get it. You have plead for a department of your own in the cabinet at Washington, and it is now standing holding out its hands to you saying, come and help me. I will be here until the end of your meeting to speak for the agricultural department at Washington and wish to be able to say to them on my return that we have at least the agricultural intelligence of Iowa standing at our backs saying to us that in so far as your power goes you will assist us politically or otherwise to make the Agricultural Department of the Nation what it ought to be. (Applause.)

Mr. Franklin: Mr. President and Members of the Association:—I was somewhat chagrined when I came to make my last report when I found that the Twenty-Second General Assembly had considerably cut down the provision for printing our reports from three thousand as it was formerly, to two thousand copies of the report of this Association. The law as it existed before this reduction provided for the distribution of twenty-five hundred copies. The law repealing the provision for the printing of three thousand copies provided for the distribution of twenty-five hundred copies and giving us only two thousand copies to distribute made us short five hundred copies. Last winter when I was in Des Moines arranging the transcript and looking over the proof sheets of the proceedings of the Association I learned for the first time that the Twenty-second General Assembly had passed an amendment to strike out the banquet proceedings of our meeting. There were a few pages of the transcript of the banquet proceedings already prepared by Mr. Dahlberg and I ordered the transcribing of that part of the proceedings stopped at the request of the Governor, as he said he could not allow that feature printed according to the law and that had to be omitted. I succeeded in getting one hundred and ninety-nine copies of the proceedings which were printed in pamphlet form for members of the legislature which helped us some, but we are crippled in this matter as I have stated. On my way coming down to this convention I learned that provision for this could be made by the Executive Council of the State and I would suggest that a committee be appointed to wait upon the Executive Council and see if provision cannot now be made to supply our

wants in this regard as we have been unable to supply the demand this year.

Chairman: If there is no objection this matter will be referred to the incoming president and secretary.

The Association here adjourned until 7:30 P. M.

### WEDNESDAY EVENING SESSION, DECEMBER 3.

The Association met at 7:30 P. M. in the Court House. The first paper on the program was then delivered, entitled:

#### THE PRACTICAL VALUE OF RELIABLE CROP AND WEATHER REPORTS.

BY J. R. SAGE, DIRECTOR IOWA WEATHER AND CROP SERVICE.

Mr. President and Gentlemen: I esteem it high honor to be invited to occupy a half hour of valuable time at this annual meeting of the foremost agricultural association in the State, representing the brainiest as well as the most beefy of Iowa's yeomanry.

I heartily congratulate you, and the farmers of the country, upon the brightening outlook of agriculture, and also upon the newly-awakened and lively consideration exhibited in behalf of that great industry in the executive and legislative departments of the general government. The farmers now have a representative sitting at the president's cabinet-table, who is alert and active in the promotion of their interests.

In the new Department of Agriculture there is in operation an efficient

#### BUREAU OF STATISTICS,

with ample equipment for the collection and dissemination of the data of production and distribution, estimates of acreage and yield of crops, the number and condition of live stock, prices of products, etc. And there is soon to be added to that department the Weather Bureau, which is to be transferred from the War Department, and reconstructed and extended for the benefit of agriculture. This bill providing for the transfer of the weather service, and for the widening of its scope in the practical direction indicated, I regard as one of the wisest measures of recent enactment. There is where it properly belongs, for in matter of fact, the observation and recording of weather data, the making of forecasts, and the collection of crop statistics, are correlative branches of the public service, and should be under the same general directorship.

Commendable efforts have been made in recent years to extend the weather service for the benefit of agriculture, but the chief officer was handicapped by the



meagreness of the annual appropriation for its support, the average congressman having very little appreciation of its practical or scientific value.

The Secretary of Agriculture in his last report says: "I deem it evident from the discussion which attended the passage of this act, and from the wording of the act itself, that in making this transfer of the Weather Bureau to this department, it was the intention of congress that the work of the bureau should be extended, in so far as it might be necessary to a full co-operation of this branch of the service with the work of the several divisions already established in the department for the benefit of agriculture, without in any way restricting its general scope. In this spirit I have submitted estimates for the coming year on the basis of the wider range of work thus contemplated."

It is to be hoped that congress will liberally respond to this demand for an increased support of this service, even if it should in consequence become necessary to cut short the allowance for the improvement of navigation at the head waters of Salt Lick Creek in the Podunk "Deestrick," or increase the revenue by an added tax on liquors and luxuries. And the farmers, whose faintest whispers are now becoming audible in the halls of legislation, should give expression to a demand for the most ample support of their special department of the public service. Ask and ye shall receive, and in this instance it is not necessary that your asking shall be couched in the form of very humble supplication.

#### NECESSITY OF CO-OPERATION.

But, it should be remembered, that even with millions at its command, the department cannot effectively serve the farmers of the country without their active and intelligent co-operation. In this respect, the beneficence of the government is like unto divine grace—the subject thereof must be a willing recipient and an earnest co-worker to get the fullness of the blessing. So we have here another instance illustrating the necessity of faith and works in any great enterprise for the promotion of human welfare. The greatest obstacle to be encountered is the unbelief or indifference of the producing classes themselves as to the practical value of statistics of farm production. The doubters ask: "What's the use of all this labor and expense in procuring and publishing farm statistics, and making estimates in advance of production? and what's the practical good of your weather tables and forecasts?" And many of these skeptics are saying that all this work is really being done for the benefit of speculators and option gamblers, rather than the farmers.

But even where there is no positive opposition, there is still a vast amount of a vast amount of inertia to be overcome to secure that measure of hearty and intelligent co-operation essential to complete success. For, it should be understood, that in addition to the officials employed in this work, there must be a very considerable-sized army of volunteers, or unpaid observers and crop correspondents employed in procuring the statistics and data which form the basis of official estimates. These volunteers, to secure reliable reports, must in turn depend upon their neighbors and townsmen for the facts and figures which they report. So it will be seen this is a service of the people, by the people, and for the people.

Probably no measure of this stolid prejudice warps the judgment of this intelligent association, and my main purpose in this discussion is to incite you to missionary work among your unbelieving brethren. And to this end I would give emphasis to the statement that this crop service, both State and national, was instituted for

#### THE SOLE BENEFIT OF PRODUCERS,

to place them upon an equal footing with dealers in the products of their labors. There was no occasion to establish a Bureau of Crop Statistics for the information of the men who buy and sell and get gain in the great marts of traffic, for they had found means of helping themselves to the facts and figures of production. And if the government should close up its statistical bureaus and withdraw every agency from this field, the heavy dealers would soon again have their expert observers and agents in every county, and they would be swift to reap advantage from their exclusive information. They now make use of the government reports, but they draw upon many other private sources of information; and the most successful operators on the boards of trade are the best posted as to the facts relating to supply and demand. The gambling operations are not altogether games of chance; and the shorn lambs soon learn that the men who fleeced them were possessed of superior knowledge. Here, then, we have the most potent reason why the producers should be furnished equally ample means of information, that they may hold their own in the marts of trade. And there is no agency so efficient as the government itself for the collection of the necessary data.

The Hon. J. R. Dodge, of the National Bureau of Statistics, says in his annual report:

"The benefit to farmers resulting from the publicity of crop reports is measured in millions of dollars. It is now impossible for speculators to misrepresent successfully the crop situation to depress temporarily the prices until they can obtain possession of large fragments of salable crops. The crop report is a regulator of the market which reduces to a minimum the effect of exaggerations put forth to cause wide fluctuations in market prices. A knowledge of crop conditions, to be of any use to the farmer, must have the widest publicity in the marts of trade as well as on the farms. It cannot annul the law of supply and demand, but it can largely control the temporary fixing of prices in violation of the law."

#### "WHAT SHALL THE HARVEST BE?"

is the question thousands are anxiously asking, even in advance of seed-time. But another question has priority, viz.: What will the weather be? And this illustrates the practical value of meteorological observation in connection with the making of crop estimates. It has come to be understood that the weather is the prime factor in crop production. Given, the acreage planted, the measure of rainfall and the prevalent temperature in the growing season, it is easy to estimate the output of the harvest. The dealers are sharp and practical students of meteorology, not from a love of science, but for the money value of knowledge; and at all boards of trade, and in the brokers' offices, the weather maps and bulletins are thoroughly studied. The producers should be supplied with as ample means of information, to be placed upon an equal footing with the speculators in their products. Surely, no extended argument is needed to enforce this point.

The Secretary of Agriculture in his late report said:

"It is indeed self-evident that to complete the study of soil conditions, of animal and plant life, a study of the climatic conditions of our country is indispensable."

In the collection of data to serve as a basis of the study of climatic conditions, it may be added, there must be employed a corps of skilled observers, and a still larger number of volunteers of the service.



In the remaining portions of this paper I will briefly refer to some of the results of my own studies of

#### THE CLIMATE OF IOWA

and contiguous territory of the west. The conclusions I have reached are highly gratifying to State pride. I came from the east over twenty-one years ago, filled with some measure of apprehension of personal danger from wintry blizzards and summer tornadoes, concerning which I had read graphic and harrowing tales in the eastern papers. And now, having safely passed through the perils of twenty-one winters, and the terrors of twenty-two summers, I have settled down into a feeling of comfortable security. In all these years I have felt the invigorating breath of a half dozen alleged blizzards, but have vainly tried, with all the zeal of a newspaper man, to get near enough to a genuine tornado to interview the "critter" and take note of its behavior. True, we have had a few twisters within the area of the State, but they have been exceedingly rare, shyly avoiding the gaze of the curious or the scientist. We have some extremes of temperature, ranging from the nineties in midsummer to twenty-five below zero in winter; and we have some tidy gales and occasional severe squalls, but on the whole, for all-the-year-round residence, for the promotion of the health, physical vigor and prosperity of the people there is no more salubrious climate on earth than in our own favored State.

I have undertaken, through a temporary occupancy of a position in the weather service, to correct misapprehensions and properly set forth the facts relative to the climate of Iowa. And there are millions in it; for of late climate has come to have such high cash value that it has boomed to marvelous heights some very thin, rocky and arid real estate. When all the facts are fairly represented and understood, it will be known abroad as well as at home, that Iowa possesses the dual advantage of an invigorating and healthful climate and a soil of unexcelled fertility. These are the two prime factors of our future prosperity. The fact should be emphasized and widely advertised, that in all the years since the first white settlers began the cultivation of Iowa soil there has never been a failure of the staple crops in even the most unfavorable seasons. So there is no danger of famine in Iowa. It has come to be well understood, at least by people within the State, that our average soil will endure greater extremes of wet and dry and yet produce fair crops, than the soil of any other State in the Union. And this fact should be as well advertised abroad as it is understood at home.

Since January, 1887, somewhat

#### ABNORMAL WEATHER CONDITIONS

have prevailed. We have had two phenomenally mild winters, and three exceptionally dry summers. The total deficiency of precipitation in these last four years is about 50 inches. And yet we have had quite fair crops, on an average, and last year (1889) our corn crop was the heaviest ever raised in this or any other State. This year corn was cut short about 25 per cent below the ten years' average, not altogether by the drouth, but by the hot winds imported from neighboring States under the original package decision!

This deficiency of rainfall in recent seasons has affected streams, wells, springs and the sources of water supply of stock farms, more than the crops.

#### IS THE STATE DRYING UP?

And now the croakers are saying the State is going dry, that the arid belt is gradually extending eastward—that Iowa will in time become as drouthy as western Nebraska and Kansas, and that, in short, tile drainage of our wet lands and cultivation generally have served to dry up the ponds and sloughs, and thereby lessen the amount of our annual rainfall.

I take no stock in that sort of gloomy prognostication. Tile drainage and cultivation serve to *increase*, rather than lessen the capacity of the soil to retain moisture, and if any effect is produced by the work of man on these prairies it is to increase the amount of rainfall.

But the records show no evidence whatever of a change of climate in this western region. There were drouthy seasons in the years when not a rod of ditching had been done, and no more than one twentieth of the arable area of the State was in cultivation. For instance, the total rainfall in 1848 measured only 26.29 inches; in 1854, 23.35; in 1855, 28 inches; in 1860, 25 inches.

This year the average rainfall in Iowa for the summer months—June, July and August—amounted to a little over 13 inches; whereas, in 1852, the amount in the corresponding season was only 8.70 inches; in 1854, 6.21 inches; in 1858, 6.99 inches; in 1860, 9.99 inches; in 1861, 7.17 inches, and in 1863, only 3.45 inches, all those former years being considerably below the average summer precipitation of recent drouthy years.

The average rainfall of the State during the past 15 years has been about 35 inches, which is ample to secure the best results, as experience has shown that the best crops are raised in relatively dry years. The special feature of our climate is that our more abundant rainfall comes in the crop months when most needed. So we are saved from the eternal drizzling endured in other States.

No, there is not the slightest ground of apprehension that this fertile valley is gradually drying up, or that it will soon become a desert. Who shall not go totally dry until the waters of the

#### GULF OF MEXICO

have all evaporated, or passed off through the Gulf Stream, for the Gulf is the permanent fountain whence comes the larger portion of our water supply.

The humid winds from the Gulf, drawn northward by the passage of low area storms, deposit their moisture in form of showers in the front and rear quadrants of these cyclonic movements. We have no occasion to fear that our fountain will dry up, or that the beneficent order of nature that has made of this great valley a paradise of plenty, will be permanently reversed. We will have in the future, as in the past, seasons of excess and deficiency, but in my opinion the rainfall of the next 50 years will be not far above or below the average of the last half century.

I take but little stock in any theory that implies a very large measure of

#### HUMAN POWER OVER THE ELEMENTS;

that we may, by taking thought, add a single cubit or inch to the measure of rainfall, or that we may reduce it to that extent. But evidently we may wisely conserve the moisture that comes from above, by providing ponds or reservoirs for the storage of the surplus that falls in wet seasons, to mitigate the severity of occasional



drouths. Stockmen, especially should provide storage for water, of sufficient capacity to supply the wants of their stock in case of shortage. And wherever practicable, they should sink artesian wells to the deep sources of unfailing water, that they may be protected against the occasional encroachments of the parching breath of our American desert.

The corn crop of Iowa this year would undoubtedly have been fully up to our fifteen year average, but for the scorching.

#### DESOLATING WINDS

that came into our State from the southwest, after almost wholly destroying the fields in Kansas and portions of adjoining States. This is a matter of so much public interest that it was made the subject of a senate resolution of inquiry as to the cause, and the possibility of prevention of the recurrence of the visitation. I believe good results will be reached through scientific investigation, and I also have faith that the evil may be mitigated, if not wholly prevented. At the risk of wearying you by prolixity, I will suggest a theory as to the cause, and a possible remedy. We have had two consecutive mild winters in this mid-continent region; and co-incident therewith it was observed that the cyclonic storms, or areas of low pressure, in their movement across the continent from west to east, passed far northward of their normal track, thereby filling the Upper Missouri Valley with warm air from the Gulf. In former winters the great bulk of these storms passed either across or to the southward of our State, resulting in frequent cold waves and prevailing low temperature, sufficient, at least, to produce abundant harvests of ice.

My observation has been that this same abnormal northward trend of storms continued throughout the larger portion of the year, causing extreme dryness and bringing excessively hot blasts from the sandy, treeless plains at the southwest. This briefly stated, is the cause.

#### A REMEDY SUGGESTED.

The remedy in my opinion, is possible and wholly practicable, viz: By extending the area of cultivation in the direction whence the trouble arises, through systematic irrigation, by the creation of extensive reservoirs by damming the streams, and by the planting of trees wherever a tree can be made to grow in that now desolate and desolating region. In short, an abundance of vegetation in that section, of trees and hardy plants, will measurably shade the ground and prevent the rapid radiation of the heat that is carried on the wings of the wind to blast and destroy the products of our farms.

Only the government — that is the people in their collective capacity — can command the means and the force to apply this remedy. And this again is an illustration of the possibilities of benefit from the national service.

I will close by venturing a little forecast. I predict that the coming farmer will know as much concerning the statistics of his vocation as the men who buy and sell the products of his labor; and that he will know as much about the weather as the men who preside over the State and National Weather Bureaus. In other words, the successful farmer will keep up with the procession.

Chairman: Gentlemen, the paper is now before you for discussion.

Mr. Richard Baker: Mr. President and Gentlemen — It seems to me that this matter of reservoir supply and tree planting over this big desert is rather a big job. I should think it would be better to cover it over with tame grass that comes up and fills the air with moisture. I would think that the more feasible plan of action.

Hon. James Wilson: This is a subject that we could well discuss with a great deal of freedom if we had time, but it is too much like the Secretary of Agriculture getting that department and the farmers together. Mr. Sage is bringing us in speaking terms with the clouds but we have hardly got the necessary power. He has given us a paper that when printed in our proceedings will give us a basis for study. He has got the primer in there. I look for a great deal from the science he has been attempting to demonstrate.

A song by the Northwestern Glee Club, "Comrades in Arms," was loudly applauded, and the club on being requested sang a comic piece entitled, "The Swine Association Trio."

Following this was a paper by Hon. James Wilson on "Soil Robbing."

#### SOIL ROBBING.

BY HON. JAS. WILSON.

Our present works on agriculture treat of the old world, and of the older States, and outlined methods by which the soil is to be made productive. The European farmer buys bones and guano, and phosphates, and grains, and blood, and uses sewerage, and lime, and gypsum, sending to the ends of the earth to get these manures to keep his soil good. He keeps full stocks of farm animals, and carefully puts back to the soil everything taken from it after it has performed its office in the feeding stable. The grains and meats, the bran and meals, all find their way to the lands at last, to grow new crops. We sent them \$100,000,000 worth of wheat and flour last year; \$35,000,000 worth of corn and meal in the last nine months; \$150,000,000 worth of meats during the last fiscal year; \$5,000,000 worth of oil meal and cake, all of which eventually went back to the land of those foreign countries to keep it up. They carefully rotate crops with grasses and fallowing, and through these means steadily increase the volume of their crops and sustain a steadily increasing population for the most part. The history of the farm in our country



is one of waste and robbery. The hills have been leached and the valleys depleted. The grain grower has marched from ocean to ocean, robbing the valleys and plains as he went. From the Atlantic to the desert ours is a kindly soil, responding promptly through heat and moisture that favor the husbandman, whether he pulls down or builds up. During the occupation of the land by white men settlements have been extending westward. Light population and unlimited acres of good land have given assurance of plenty to draw upon. Population poured over the Alleghenies, attacked the woods of Indiana and Kentucky, destroying as it came. It possessed the prairies to the banks of the Mississippi, sending grain back by lake, canal and railway. It crossed the Father of Waters in our day, devastating the plains of Iowa, and crossed the Missouri into Kansas, Nebraska and the Dakotas, sending hundreds of millions of bushels of grain all over the world, rejoicing in the increase of men and railways and the subjugation of the prairies. It passed over the desert and laid the valleys of the Pacific under tribute. A missionary to the South Seas preached the resurrection to a heathen chief. "What," said he, "will all those whom I have killed and eaten rise again?" He was assured they would. "Then," he said, "there shall be no resurrection. I forbid it." The grain raiser had killed the fertility of the prairies and needed more territory to rob, whereupon he exclaimed: "There is no desert." From southern Texas to Northern Dakota the railway, the plow, and seeder went merrily to work. Population crept up the Red River, the Canadian, the Arkansas, the Kansas, the Platte and the James river growing wheat and corn and flax for sale. Last summer called a halt; hot winds asserted their right to reign over an empire of land from the British possessions to the Bragosa river; from Central Nebraska to the Rocky mountains. The occupation of the soil robber is gone. It is high time for the Iowa breeders to look over the situation and see what is coming. The good, ready farming lands of the republic that can be plowed and leached are substantially taken up and yielding. Without new lands the average yield will gradually decrease. We have wet lands that can be drained and put at work, but the soil robber is not the man to do it. It costs about as much to drain a wet acre as to buy a dry one. The great yield of the valleys of the Pacific coast gradually decreases. Thirteen bushels an acre are the average of the California wheat crop. We can observe the operation of soil robbing in Iowa. Farmers grew wheat until the soil refused to yield. Then we turned, everyone, to his own way. Some grew corn and oats and flax and barley and sold the products. Many of those are ready to go west to new lands, if there were any new lands to go to. They have come to the end of their tethers and send up a Macedonian cry for help. They are ready for bones and guano and phosphates, but all such are out of the question in Iowa. They are not to be had for the prairies. Our crop prices would not justify their use if they could be had. Luckily for the State all our farmers are not soil robbers. Many of them took the hint when wheat failed and turned to the tame grasses, and the cow and the dairy and the feed yard and department farming with a rotation of crops. Their farms yield as well as they ever did, and hold out hope to those who by unwise management have ruined their acres. Clovers will rejuvenate the worn out prairie farms, but not for the purpose of perpetually selling grains again. Redemption of worn-out lands can only come through full equipments of animals that graze pastures and eat hay and grain. Those depleted soils send grain to the Eastern States and to Europe, by which Eastern farmers and Europeans maintain the fertility of their soils. They must stop this, and do with their grains what foreigners do. It will not do to turn to exclusive hog raising. That will ruin the soil as certainly as grain selling, unless

different habits prevail on the pork producing farms. The farm requires ruminants. We think there are better times ahead for good farmers. We see population increase two millions a year. Industry is being diversified. The towns are growing. We will soon require all our farm products at home. We have the best grass lands of any country. We can produce horses, cattle, sheep and hogs, butter, cheese and poultry cheaper than any of our competitors can, if we see to it that our acres are kept good.

In Central Iowa we had stopped growing wheat when Sheeham grew his big crop in 1877. About so many years pass by and then the wheat crop suddenly fails. Although crop failures come to Iowa farmers in the fifties. Mr. Baker holds that "soil robbing" is permitted when the stubble of any kind of grain is allowed to stand and bleach and ripen instead of turning under at once when the crop is removed. Has found a difference of ten bushels of corn per acre where the land had been plowed immediately after the corn was shocked.

During the discussion clover came in for a liberal share of attention, a leading point in which was that the roots of clover reaching, as they do, to great depths, become the outlet of surplus water during wet weather, which makes the roots or the spaces occupied by them, a system of underground drainage.

Hon. H. Wallace: Mr. President, and gentlemen, I do not know of a more important subject that can be brought before this association than this subject of soil robbing. The western people have been taught, for these many years, that the western soil is inexhaustible; that it needs but to be tickled with a hoe to laugh with a harvest. But the facts are, that comparing the last decade with the one preceding, the United States over, the production of grain is decreasing three bushels per acre, or about twelve or thirteen per cent of the crop. This, notwithstanding the addition of two states of large wheat growing proportions, the two Dakotas, to our wheat crop, there has been, actually, a small decrease in the yield of wheat per acre. Another important feature is, that in parent New England the yield of grain per acre is uniformly greater than in the fertile soils of the west. Now, these are most significant facts, and they correspond with what we of the west should know from our own experience, and that is, that there is a constant waste of the fertile parts of our lands in the west in America and in the world, that are used exclusively for the purpose of growing grain for sale in distant markets. I challenge the history of civilization to show where a country, no matter how rich, if cultivated as the country from the great divide of Iowa to the Rocky mountains is cultivated—I say, I challenge history to show a case in which land is cultivated on that system where the soil has not speedily failed. Look at wheat raising, if you please. In my young days and yours, the Tennessee valley was the great wheat producing region, and it failed. Then came Illinois, Wisconsin and Iowa, and



they failed; it is so in Kansas and Nebraska; it is so in Washington and Oregon; and it will speedily become so in the Dakotas. If you think for a moment you can see how this happens. Nearly every soil has an abundance of everything needed for food plants except three items, potash, phosphoric acid and nitre. The humus is exhaustible and favorable to this nitre. When our prairie soils are broken up full with the accumulated fertility of ages—when they are exposed to the atmosphere the humus that has been stored up therein, and that is not itself available, becomes changed into nitrogen and is taken up by the roots of the plants. I know this is denied by eminent men, but the experiments of Sir J. Laws, of Northampton, England, who has charge of one of the largest experiment stations in the world, has shown that at the time of the year when the soil is not filled with the roots of living crops, nitrogen escapes through the fertility of the soil in wet seasons. It has also been observed that in seasons following excessive rainfalls there is a deficiency in the soil, of nitrogen. There are two sources by which lands become impoverished. We cut down our crops and they are taken away out of the field, and as soon as taken away the washing of the soil begins. See how that has worked in this State. You do not grow any spring wheat in Iowa; why? Because your soil is not strong enough to bring wheat in the ninety days in which it is required to grow. You can grow winter wheat because the clover has stored up the fertility and the soil has nine months instead of ninety days to mature the crop; and so we see our soil impoverished for spring wheat simply through inaction of the laws of nature. What is the remedy? I am not going off on the clover question to-night, but will simply say that in maturing the clover gives nitrogen. I will not discuss that question, but ever since the time of Cato, the Roman, who served his country by living on his Sabine farm, as well as by his public services, it has been known that grain crops, such as wheat, barley, oats, and all such things, do well in soil where clover has been grown, because it stirs up the soil and leaves it in the form in which it is needed and grows increased crops, so far as nitrogen is concerned. The trouble is, that the soils in Iowa and Nebraska are lacking in nitrogen. The professor at the experiment station in Nebraska told me that the richest soil is poor if it is abundant in potash and phosphoric acid. The remedy is clover. If you had all the land from the divide in Iowa to as far west as California, the same amount of land in pasture that you have in eastern Iowa and Indiana, you would absolutely revolutionize the markets of the world and stop what we call hard times. You would solve the railroad problem. The remedy is simply going back to the good, old-fashioned doctrine that friend Wilson had preached—you must go "to grass."

Enrich your lands with clovers. You can impoverish your lands beyond the hope of redemption. If you will increase your crops of clover you will take in phosphoric acid, and you have got to put it in some way, if you have to do it by commercial fertilizers, and there is no way to get out of it. But when you go to put in commercial fertilizers west of the Mississippi river you will see harder times than ever before. The remedy is in your own hands. It is only a question of better farming. Put a foundation under your lands and keep it there. Diversify your industries. Use your farmers' sense, and you will be able to look up without a blush in the face of any man and feel that you are an independent, reliant, resolute and determined Iowa farmer. (Applause.)

Mr. D. Sheehan: I want to ask Mr. Wallace a question. Why is it that a piece of land, such as we have a great deal of up in the northern part of the State—good, dry, limestone land, that has never been touched with a hoe, plow or cultivator, can be broken up, as we used to do years ago, but you cannot raise a crop of wheat upon it? I would like to hear from you upon that point.

Mr. Wallace: Why does it seem you cannot raise wheat upon it; don't your wheat grow?

Mr. Sheehan: Yes, sir.

Mr. Wallace: Then what?

Mr. Sheehan: It grows rank. Why is it that on your land which you have in clover year after year, you cannot raise oats the first crop? I think I saw in the *Homestead* that the *Honestead* farm had had an awful pretty crop of oats. I saw in the experiment station report from Ames, that Iowa has got so it can't even raise oats.

Mr. Wallace: I would like to know wherein it is that the wheat crop failed yet you have straw of rank growth.

Mr. Sheenan: That is what I want you to tell. I know land in the county where I live that has never been tickled with a hoe or plow—has never been touched at all—broken up within the last few years, yet upon those lands you cannot raise wheat as you did fifteen or twenty years ago.

Mr. Wallace: I did not want to be understood as saying the lack of fertility is the only reason why you cannot raise spring wheat. There are climate changes as well. For instance, you have an exceedingly hot season; the temperature above ninety-six degrees in murky weather will spoil the best crop of wheat that ever grew on that soil whether the soil is perfect or imperfect. There are times when you have the best crop of oats destroyed by rust as they were this season. This is not because of a lack of fertility of the soil. When I make the assertion that the wheat crop is growing poor because of



a lack of fertility of soil, I do not mean that this is the only reason, because there are other things that come in as well. I believe our climate has been undergoing a change that is advantageous, within the last ten or fifteen years. I believe the better plan is now to grow winter wheat which ripens before these conditions occur. I grew spring wheat on my farm this year. While winter wheat suffered from some cause the other failed on account of blasting—on account of weather that would spoil anything. Wheat does not affect the fertility of the soil, however.

Mr. Sheehan: One question more. In 1877, I presume we had the best crop of wheat Iowa ever raised. There was some lands that had been tickled with a hoe and plowed for eighteen, twenty and some to my knowledge for twenty-four years, and in the year 1877, which you all remember, I have seen as high as thirty-eight bushels of wheat per acre. Never on that farm has there been that amount of wheat (thirty-eight bushels to the acre) raised since. It was so in the next year or for two or three years afterwards, but never in that neighborhood have they been able to raise more than ten or fifteen bushels to the acre since that time. Why did all this change just come in one season?

Mr. Wallace: Simply because in one season you have every circumstance favorable and everything conspires to make you a good wheat crop. You obtained all that was possible for the land to produce. In the other seasons you have not this or that circumstance. Every soil must not only carry enough fertility but a great amount of fertility if you are to have success every year. I would illustrate it in this way; that under some circumstances men of moderate ability have had remarkable success while under other circumstances the best of men make failures.

Mr. Sage: I would like to say one word in part answering Friend Sheehan's question. I will illustrate my point by referring to fruit. When I came to Iowa, twenty-one years ago, it was not a surprise to me, that this State, new as it was, to find that some of its orchards raised the most perfect apples I ever saw in my life. I have seen bushels and bushels without a worm apparently in an apple; without the appearance of a worm or insect, smooth, round and full. Now, if you go into the markets to-day you can find no such apples, and why is it? With men and civilization has come the parasites—a multitude of parasites; with our cultivation and crop growing have come innumerable millions upon millions of parasites in the form of fungi, rust and vegetation growing upon vegetation. These things are recent introductions. They are new to our State. I saw no rust twenty-five years ago, comparatively speaking. To-day the fungi affects from ten

to twenty per cent of our crops. That is the answer I wish to make, that we have carried with our civilization the parasites of civilization.

Mr. Wilson: I would like to say one word in regard to wheat growing. We had stopped wheat growing substantially in 1877, as Friend Sheehan had stated. We had turned to other departments of the farm. There are orchards in my neighborhood that are ten, fifteen and twenty years old, and if you plow up any of those old orchards in the fall we can grow anything on them the next summer that ever did grow upon them. We can grow the finest crops of wheat if the climatic condition and the season is favorable on those old orchards as ever grew in the original virgin prairie when it was first broke up. I recollect in 1836, we had a magnificent wheat crop. We had another fine wheat crop in 1858, but on account of the climatic causes, wheat in 1857 was almost an entire failure. That was away back in the early breaking of the prairie. That failure could not be attributed to the difference between the breaking of the prairie then and now. There was an utter failure of the wheat crop in that year, coming as it did, between the two bountiful harvests of 1856 and 1858. In the county which I lived, and I will venture the assertion that in every county in Iowa where the land has been pastured with cattle or manure put out on the farm and the land taken care of as it should be, that the acres will yield grain better than when new and will yield wheat just as well as it ever did. But when the hot winds of the desert come and such disturbances as that, I do not care what the condition of the soil is, you cannot save an average crop and you are very sure not to get one.

James Wilson: Clover seeding in the central part of the State to be successful, must be early; before possible drouth overtakes the roots of the young plants trying to go down. You are not certain of the clover crop, to sow it late in the spring, and you are not sure until winter is over if you sow it in the fall. But if you sow it when the ground first begins to thaw, and sow plenty of it, there is no question about getting to harrow it in with a harrow, and you will have no trouble about getting a clover stand in all parts of Iowa.

Mr. Young: I have learned something I never knew about getting a stand of clover. I commence sowing oats in the morning, and sow twenty acres in the forenoon. I had a seeder, and concluded to sow clover seed in the afternoon, on the oats, and I commenced back where I had in the morning. I had sowed about four acres on top of the plowed ground when I caught up with the plow, and then went on and sowed on the unplowed ground, plowing it in afterwards with the shovel plow. I found that so far as where I had plowed the clover seed I had a perfect stand of clover, and where I had sowed it on top



of the ground, even though I had harrowed it three days after I sowed it, I had very light clover. That was some time in March. I plowed it in with a shovel plow on stock ground, and I had a better stand of clover on the ground where I plowed it in than I ever had before. Where I sowed it on top of the ground it was scattering.

James Wilson: I want to say just one word upon that point, for the reason I recollect crossing ideas with the *Homestead* once, and I do that so seldom that when I happen to not get a thing as they get it, why I remember it. I never shovel-plow oats or grass sowed, for this reason: our old pasture lands on which we grow crops, are so rich that if we do not sow on top without plowing in, oats grow down and grow so heavy in the stock. I rely, and my neighbors rely upon certain stand of clover by very early seeding, and we sow oats very early in our county. Shovel-plowing will do if your land is not so rich that there is danger that your crop goes too much to root and straw, and that is the point, I believe, Mr. Wallace and myself differ on.

Mr. Wallace: I want to remark that in this dry year many in the western slope of Iowa, as well as my friend who has just taken his seat, have had splendid success in clover by simply sowing the clover at the same time with the oats, and sometimes two weeks before it, then covering the clover just as they cover the oats. There have been some remarkable successes reported by that method, not only with the clover, but also with the oats.

C. L. Gabrilson: For ten years in northern Iowa I have made a practice of putting the clover in with a seeder, the same as the oats, and we generally use six quarts to the acre, but I believe Mr. Wallace recommends rather more.

Mr. Knowlton: I raised sixteen hundred bushels of rye this year, on twenty-three acres. My neighbor across the road, raised ninety bushels; his farm had been used twenty years in grass; he is as good a farmer as I am. My soil is rather better than his. I bought the land about ten years ago, and it has been farmed probably twenty-five years without any grass. I raised one crop of corn, or tried to, but had more cockle-burs than corn. I sowed it in clover and fed cattle three years on the clover, and then broke it up and put it in corn. The first planting the seed did not come up. I got seed and replanted it; but it did not come good and I sowed it in rye; some of the sowing was too thick, and there was a storm came through that part of the county and blew it down where it was too thick. There was no ground but yielded about sixty-three bushels to the acre. My neighbors say if the storm had not come it would have had ninety bushels to the acre. It was not my good farming, but the clover and feeding the cattle.

Mr. Chambers: I would like to ask Mr. Wilson if he wishes the members to understand that his experience of shoveling in oats made them grow ranker than if harrowed in, in the spring?

Mr. Wilson: Partially so, and partially loosening the soil, so the roots got down deeper to catch in the soil.

Mr. Chambers: I live in the southern part of Iowa, and it is my experience that ground plowed in the spring will clod much worse, and also, that if we shoveled clover in, we had better success than where it was harrowed in.

Mr. Mathews: Mr. President—I came across a very interesting farmer a few years ago and was quite interested in his success. He had a very rough piece of land and had made quite a wonderful success with it. In talking with him I found it was his rule with all his small grain crops to sow clover whether he wanted to use it or not. In each case he was pretty sure of reaping a crop because if he had a drouth the clover assisted in preventing the escape of moisture from the earth and in case there was too much rain the water was more rapidly soaked away. I was quite struck with this, but have since found other similar experiences. It seems to me that this is a lesson by which some of the young farmers might profit. The clover seed expended on a farm in this way would not be very expensive. I throw this suggestion in for what it is worth.

Song by the Northwestern Glee Club, "Jolly Jonathan," which was loudly applauded.

Hon. B. R. Vail: Mr. President and Gentlemen—I move that we tender a vote of thanks to this Northwestern Glee Club for this pleasant feature of our entertainment. Motion carried.

Adjournment was had for the night until 9 o'clock to-morrow morning.



## THURSDAY MORNING SESSION.

9 o'clock A. M., December 4, 1890.

Chairman: The first thing on the program will be a paper by Mr. James Ward Wilson on

## FEEDING CORN FOR PROFIT.

J. WARD WILSON, TRAER.

The corn that is raised in Iowa is consumed to a great extent in a very wasteful way. It is the principal stock food, and not being so plentiful as usual, it at once becomes necessary to economize. It will not do to starve the animal or put it on half rations. It must be done by preparing the food for the body so that it will use less of it. All animals eating grain unground consume far more than they ever get the benefit of. Cattle in a yard, feeding for beef, are the greatest wasters. They actually eat one-half more corn than there is any need of, and digest hardly any of it. If each animal has two shotes following it the feeder may get out, but if the hogs have been killed off by cholera he cannot afford to make beef with ear corn. The New England farmers have solved this problem long ago. They buy our corn at a high price, get it ground, pay a toll, feed it with cut hay, and then make money out of it. Calves, horses, and hogs chew their grain fairly well, but adult cattle make poor work of it, so much so that small ingestat as a mouthful of grain, go direct into the third stomach, instead of the first. It is too coarse for the delicate structure to grind and it passes on into the fourth stomach. This is the true digestive organ, but if corn or any other grain is no, ground, if the cellulose coating of the kernel is not broken it will not digest. So on it goes through the alimentary canal. Corn will grow after having gone through the animal. The value it receives from it as a food is practically nothing. When adult cattle eat properly prepared food they swallow it partially chewed into the first stomach, or rumen; when they are full they hunt a suitable place to lie or stand; then mastication begins. The terminal end of the oesophagus, known as the oesophagal groove, is opened on the under side. This opening is so constructed that it grapples the rough food and regurgitates it into the mouth, where it is ground up fine. The saliva of the mouth converts the starch into grape sugar, thus preparing it for digestion. When it is swallowed the second time it goes into the third stomach, or omasum, the same as ear corn, being of

about the same feeling to the walls of the oesophagus; the maniplies grind the food rather than digest it. From here it passes into the fourth stomach or abomasum, where it comes in contact with the true gastric juice, and is partially digested. The rest is accomplished in the more tortive portion of the alimentary canal. In order to make the most out of corn during this time of scarcity, it should be ground for all kinds of animals. Cattle especially should be fed meal, not alone, but with cut hay, not moistened, if it will freeze, but dry, in order to have it stop in the rumen, be remasticated, have the necessary change take place with the starch and saliva, and have the animal get the value of it as a food. Corn meal, when fed alone, is not regurgitated, because when it is swallowed it goes past the first stomach into the third. Nothing that goes past the first stomach when swallowed is ever regurgitated. In order to have food left in the first stomach it must be of a rough nature, in order to impress upon the nervous mechanism of the terminal end of the oesophagus to open. Corn can be ground for about two cents a bushel and hay can be cut very cheaply. It is of no use to speak of other foods as bran, oilmeal and the like, because the ordinary farmer cannot afford to use them. We must take into consideration the methods by which foods are rendered most valuable that are raised on the farm.

Mr. Wilson: At home we grind the corn and part of it is mixed with cut hay and the value of the feed is thus enhanced and it takes about as much to satisfy the appetite of an animal and the feed does not begin to use up the profits in feeding.

Mr. Gove: What power do you use for grinding feed?

Mr. Wilson: Steam power.

Mr. Cook: Do you shell your corn or do you grind cob and all?

Mr. Wilson: The corn is shelled. Cobs have no nutrition in them any more than so many chips.

Chairman: This is an important matter and I would like to hear from all that are disposed to speak on the subject.

Mr. W. P. Young: I think it depends a great deal upon circumstances. I think if corn is fifty cents a bushel it will pay to grind feed; if it is twenty cents I doubt it very much. You get more out of the feed than the grinding, and where you have hogs to follow the cattle you get about all there is in the corn. But if you have no hogs to follow the cattle you want to grind the corn. There is a difficulty about the grinding that we want to control. Friend Baker says he looks on and sees the cattle do the work. If the corn is high I think it pays to grind it. It does not pay to make meal unless there is something to mix with it. It depends entirely upon the price of the corn. I do not think there is any better feed for cattle than to take corn and if a man is prepared to feed it in a proper place where he has hogs that can pick up the leavings, I do not think there is any more profitable way to feed than that. It depends upon when you want to get the cattle into market. If you have the time to spare it is much the best to put them through on the whole corn.



Mr. Bennett: The best feed that I ever used was cut hay mixed with meal. There are lots of feed grinders and feed cookers all over the country and I have wondered if any of you men have tried any of these machines for the purpose of cutting the ear corn and slicing it. They claim by their use that a man can cut from thirty to forty bushels of ear corn in an hour, cut up into slices. I believe this is a good feed and if any one has tried it I would like to hear from him.

Mr. Dickens: I cannot answer the question of the last gentleman but we have used a fodder cutter made in Kentucky that is very speedy. A man with four horses, which are necessary to run it, can run through from four to eight thousand bushels a day. This is probably a little better than shelled corn. The stock will eat some of the cobs but not all of them. I have fed cattle all my life; I have fed shucked corn; have fed the ear corn in the troughs; I have had corn shelled and ground and have had the corn and cobs crushed together, but I find there is about the same amount of gain on the animal taking the one as the other; that is from fifty-five to sixty-five pounds for a month's feed. But there is economy in grinding the feed; to grind grain up in three or four parts. I think that is the most economical way to feed cattle. We can get more that way for the work than any other. This grinding corn and cob together; as to the expense, you can use the Giant crusher or some of those mills and it will cost you about two cents or two and a half per bushel to prepare it at home, but you can take it to a mill from two to five miles away at about the same expense.

Mr. Moore: I would like to ask if you can feed ground feed in open-troughs without some of the cattle getting too much.

Mr. Dickens: We feed in a trough so constructed that we fill it up and it has an opening in the bottom where they can eat all they want. We also have clover hay in the barn and we feed all they can eat. I believe in feeding all the animal can eat.

Mr. Chambers: I am a stranger here. I came here to learn something. I see our young friend who has just read a paper does not believe there is any virtue in cobs, and I learn from the remarks of the gentleman last on the floor, that he thinks there is. This is a question in my mind and I believe there is some question in the minds of many other feeders on that subject. I believe Mr. Moninger is also here, and he has been one of the most successful feeders in Iowa. From his reputation I believe he has had experience in bringing about this high point of feeding to which he has attained. I would like to have him state for my information, as well as that of others, his way of feeding and what he does to gain these grand results that he has published to the world.

Mr. Moninger: Mr. President and Gentlemen—I am pleased with Mr. Dickens' remark and can only refer you to his statements and say that I endorse them. I do not consider myself a model feeder, but I endorse Mr. Dickens' statements and you can, I think, take that for granted and excuse me, but I would like to ask Mr. Dickens a question. Do you find any advantage in cutting hay?

Mr. Dickens: I have had no hay cut up and think it is unnecessary work.

Mr. Moninger being called upon said:

Mr. Moninger: I will say that I have no fancy way of feeding at all. It is just a plain way of feeding corn and hay and plenty of it. I would endorse the statements about the different methods of bringing about the same results.

Mr. Everett: This is the first time I have had an occasion to speak in an association of this kind. I wish to add a statement of my experience to that of one of the gentlemen who have just been on the floor in regard to feeding crushed corn. There is another question that is important and that is the labor question. A farmer that has labor in Iowa—that has sons growing up, can afford to do this extra work. He can grind the corn and crush the corn, but if he has to hire labor done that is an element to be taken into consideration. He should try and utilize these advantages spoken of; they must be taken advantage of. I have been on a farm fifteen years and I commenced by feeding ground feed. I have had to hire all my help, and I found that the hiring of help consumed all the profits that there was made in having my feed ground. I have come to this conclusion, that I will chop the corn for my cattle. My hand is able to do that, the hand which I keep the year round. I run the pigs after the cattle, and sheep after the pigs, and I utilize all the feed. It is the cheapest way I can feed corn. I find I can get more money out of the corn that way than any other way I have found.

Mr. Redman: I would like to know something of the diseases of cattle. For instance, enlargement of the neck, a swelling or lump on the jaw. Would it be in order to inquire the experience of the different cattle growers on this question?

Chairman: Yes, we have with us Dr. Stalker and Dr. Parsons.

Mr. Redman: I had an experience last fall. I bought about twelve head of cattle and when I got them home I found six of them were afflicted with something like big jaw. I came to Oskaloosa to inquire of Dr. Brown what to do and he advised me to change their pasture. I put them on blue grass pasture that was pretty short and then afterwards put them on some clover meadow, and the matter run along with but little change in their appearance. I cut one of the lumps



open and found it full of matter which run out. The other I did nothing for but it has now passed away. I would like to know whether it will result in anything serious or what the outcome?

President: I would like Dr. Stalker to answer Mr. Redman. You mean the big jaw, I suppose?

Mr. Redman: I don't believe it is the big jaw. It seems to be a lump that is loose under the skin.

Prof. M. Stalker: I do not know that I get the bearing of the question. I just came in, and I did not fairly hear the statement of the question.

Mr. Redmond: The glands of the neck and those about the kernel of the jaw become enlarged. It is not connected with the jaw bone. The lump appears to be loose, and I cut one of them open and found it full of thick matter, and the others have come and gone—the most of them, and I would like to know whether there is any further danger of these cattle, and would be glad to know if possible what the cause of it is and what the remedy.

Prof. Stalker: It may be said that there is a great many causes for these enlargements about the throat and neck of cattle. Cattle are subject to this form, I might say to this variety of forms. Some of these are cancerous in character. One of them is known as the big jaw, and when once practically seated it is considered incurable, or as much so as any cancer is. We are aware that it may be created—that the germs of special formation of a specific as well as a malignant growth. That is true both in veterinary and human practice. Cattle may be treated in the same way. It is not safe to say that any of them are absolutely incurable. Any of them may be cured if done in time. I think this is one of the types which is purely malignant. There is another form that accompanies to tubercular existence in cattle. It is well known that cattle are liable to be affected with other superficial growth of glands in the system. The disease is hereditary. The same as it is in human family, and is an enlargement of the glands of the neck, which may be eradicated when taken in time. There is a variety of causes that are not well understood by anybody, which results in a formation of growth, and which are more or less benign in their character; simply abscesses that come from impurity of food. We do not recognize the cause of these in every instance. This evil may be often checked by using some eschrotic or caustic, such as corrosive sublimate or the oil of turpentine, which is in its nature destructive to anything it comes in contact with. It will destroy these microbes or germs, and when once destroyed will heal just as it will heal on a man. There is nothing specially lingering from the tuberculosis if you remove the cancerous growth. The system of

an animal that is relieved of that difficulty they remain just as thoroughly in good health as though it had never been troubled with it whatever, or had any trouble or growths from tubercular matter in the system.

Mr. Gove: Two years ago, at Iowa City, I spoke of some animal ailments and gave a description of some cattle I had lost. That was an enlargement of the throat right where the tongue and windpipe join. It is my recollection now that I wrote Prof. Stalker several years ago on that subject. I lost a very fine thoroughbred cow about the time I was attending the meeting at Iowa City. One of her calves was coming two years old in the spring. I stated this case at that meeting and some one gave me a remedy he had used as corrosive sublimate, saying that he had used it with good results. About a year ago now I had a calf from the the same cow. I had what they called a corrosive liniment that was strong enough to take the hair off the skin when applied outwardly, namely, corrosive sublimate and pulverized camphor. I had put this liniment about this enlargement pretty near clear around. When that was done I did nothing more with it. In about eight days there was a puss about the size of a goose egg came out of it, and the animal got well.

Prof. Stalker: Mr. Gove's was quite in the line of what I suggested, and I should consider it good veterinary practice.

The Vice-Presidents present were called to the platform by the Chair.

Announcement by Captain Jordan that the horse show was to begin on the square just after dinner.

Chairman: We will now hear the report of the Committee on Resolutions.

The report of the resolutions was read by Hon. J. Wilson, as follows:

## RESOLUTIONS.

Mr. President, your committee on resolutions respectfully report the following:

1. We heartily approve and commend the efficient administration of the office of the Department of Agriculture by the Hon. Jeremiah Rusk, in the manner in which he has stamped out pluro pneumonia, in his wise regulations for the inspection of meats, live animals at home and abroad, in sending a delegate here to attend this meeting on the request of some of our members, and in his general efforts to bring the farmers of the country into touch with the federal government.



2. We regard the decision of the Interstate Commerce Commission requiring dressed hogs to be carried at as high a rate as the live animals, to be wrong; both as it relates to the cost of carrying to the interests of Iowa packers and Iowa farmers, and we ask congress to set it aside by legislative act.

3. We urge upon congress the passage of the Conger lard bill, and the anti-option bill now pending.

4. We regret that no provision was made by the last legislature for encouraging and assisting farmers' institutes, and advise the farmers of the several counties to organize, call upon home talent and discuss farm matters.

Mr. Wilson: I come to the resolution in regard to the Agricultural College at Ames. You are all familiar with that institution; we hear much of its fame and interesting work, but with all the work it has done it has not met the anticipation of the farmers of Iowa. It is amply endowed; it has the sympathy and moral support of all classes of the State of Iowa; they all want it to succeed. Allowance no doubt needs to be made for the creation of new fields of education which the old methods know little about. Some degree of progress has been made up there. There is probably as fine veterinary skill there as you will find in the United States or in America. (Applause.) The chair, or department of Horticulture, has made for itself a world-wide reputation. (Applause.) The scientific engineering corps is furnishing young men who are superintending some of our most important engineering works in the United States, and the mechanical institutes are giving universal satisfaction to the friends of the college. These things can be honestly said, however careful the investigation may be. An expense of \$15,000 has been made to establish the experiment station for the farmers of Iowa as well as the farmers of the other States of the Union. That is a new creation, and we are proud to say that we are more than gratified and surprised to see the progress made in that direction. (Applause.) So that many good things can be said of this farmers' college at Ames. I have been actively interested and an officer in a good many colleges in my time. They all have to go through what is known as the quarrelling period. It takes time to fix men into these important places, and an educator in an Iowa institution like that before he fully meets the ideas and wants of his friends, has to rise above that of common educators. But we see there has been friction more or less there, the same as in other colleges. Remarkably the chair of Agriculture has not been satisfactory to the people of Iowa—to the farmers of Iowa. There have been charges with regard to it that have not been well founded. We are satisfied that the trustees are anxious to learn and do the best they can. They have been unfortunate, perhaps, in not getting anybody to fill that chair from men of such mental calibre of that of Professors Henry,

Sanborn and others of other States of whom we have heard. We meet here as the Stock Breeders' of Iowa; we meet here to spend our time in discussion of that which pertains to ourselves. They come here asking us to take action with regard to the future of that college. That is a very delicate matter. In order to do that we must give a hearing to both sides. We do not wish to go outside of our sphere as breeders. We can command nothing. If we ask specific things to be done up there with regard to this we may find other farmers who are asking for things that are directly opposed to what we ask for. Yet they are farmers that have the same right to ask as we have. Your committee has tried to confine itself to a dignified position with regard to the matter so that we would not be ashamed of the course taken after it is over with. With these thoughts in mind we have prepared the following resolutions, considering all these questions as best we could; considering that we are not satisfied with the course in the Agricultural College so far as it has gone, but want it to be made better.

Reading of resolutions continued:

5. That the board of trustees of the Agricultural College be requested to revise completely and thoroughly the course of study, eliminating from the course of "Science and Agriculture" all studies that do not have direct reference to agriculture, thus establishing a distinctively agricultural course, in which no place will be found for purely academic and scientific studies.

6. That we request the board of trustees to establish a short course in agriculture during the winter months.

7. That we urge the board to establish as part of the agricultural course a well-equipped, theoretical and practical dairy school.

8. That we urge the maintenance of the experiment station as a distinct department of the college, directly for the benefit of the farmers, and incidentally for the benefit of the students, and that the mutual relations between this and other departments be maintained, as essential to the welfare of all.

9. The thanks of the Improved Stock Breeders' Association are due, and hereby tendered to the people of Oskaloosa for their gracious welcome and their kind attention to us during our visit.

10. We thank the railways for reduced rates.

JAMES WILSON.  
HENRY WALLACE.  
C. L. GABRIELSON.  
C. F. SAYLOR.  
L. L. KLINEFELTER.

Mr. Wilson: This ends the report of the committee. We have tried to take time to discuss the matters that came before us, and have tried to prepare resolutions for the breeders of Iowa that would contain such worth and dignity as the breeders of Iowa and other States would be satisfied with.

Hon. J. B. Grinnell being loudly called for, spoke as follows:



*Mr. President, ladies and gentlemen:* I have just said that no three persons could get me on the stage, I mean physically, but I am here all over, bodily, physically and spiritually. I have come from a sick-bed. I came here to meet the royal yeomanry of the imperial State of Iowa, of which you are the owners. I had a letter from your president asking me to be present, and I felt as if I must come. This society, of which we might well be proud; this society which never had an ax to grind or hatchets but what they were taken away as dull as they came, and some of the people who brought them went away duller than their hatchets. Here is Mr. Wilson, Mr. Moninger, and my friend Smith, here,—what would they have been if they had not been presidents of this society? I advise all you fine young men to put yourselves in order; trim your whiskers and throw away your old cigar you used last year and fall in line with the farmers of Iowa, the stock men of Iowa and the gentlemen of Iowa; with men who come here as they have for the last seventeen years, for the purpose of mutual benefit and the benefit of our State. Last year at this time I was flat on my back with the grippe—you know how to spell that, I don't (laughter), and if you never had it may the Lord preserve you from its visitations—is all I have got to say on that subject. I have since tried to travel, and tried to get more lungs to breathe with, but I never shall have them; but I have the love of a woman for you, my neighbors and friends with whom I have associated for the last seventeen years. I have not the breath to speak, but I desire to say just a word in regard to the resolutions which have been read. Do I understand that they are adopted?

President: They are adopted.

Mr. Grinnell: Well it is no use to talk about them after they are adopted, but I wish to remark that this Agricultural College is a great affair. I am somewhat connected with another institution at home, one of which I am not ashamed, but what is that in comparison with the Agricultural college of Iowa? I am looking in the eyes of Prof. Stalker who is with us who has done so much for the upbuilding of this school; this is a great affair and we are the natural guardians of this great institution. I do not mean to say that the man who lives down at Keokuk and attends the Association occasionally because he has a half-dozen hens and a blooded rooster but I mean the people of Iowa that are out here on their farms; that have horses, cattle and swine, and who are seeking to get out of debt; to get better houses, to get a new carpet on the floor and new furniture for the house and to send the boys and girls to school. What is the income of the College now, is it \$65,000?

Prof. Stalker: About \$75,000 all told.

Mr. Grinnell: It is a great affair. I will sleep in my grave before another meeting but I have the particular satisfaction of having circulated the first paper, so far as I know, in the State of Iowa and sending on the request for the establishment of the Agricultural College. Senator Morrell has that paper and my name stands at the head. I did not think it would amount to much but it does amount to a great deal because it started in Iowa. Perhaps some of you will say, now don't boast of Iowa. I say to you this is a State to boast of. In the first place God made it. God gave us more rich land according to the number of square acres in our State than any other State in the Union. God gave us the father and mother of waters that sweep by on either side. We have coal enough here in our State—far more than enough for our own use. Brother Smith here sent out a million tons last year. Now don't put on your coal (cold) faces. (Laughter.) Now in this State in all its history we have had no kickers, and among all the State officers we have no defaulters. Never let us cease speaking the praise of Iowa. You talk about Michigan with her pine forests, with Lake Michigan on one side and Lake Huron on the other and Lake Superior on the north. They speak of Wisconsin but I know all about that. It does not compare with our State at all because in order to make up a State it needs education. And I am proud to talk about education in the State of Iowa. Of course we do not need to praise the State. I knew a man once who had a pair of horses to sell and when he found a customer one day he went around to the off horse and kept praising him and talking about his fine qualities until finally the prospective purchaser says, why don't you say something about the other one. He replied, my lord, he don't need it. And so it is with our State. Here is a State that does not need praising. The Lord Almighty has given us land and has given us men and has given us this society. This society used to be the unum thunum.

I refer you to Brother Wallace if that is not right; he knows.

There is the sardonix stone, the Wallace for the Agricultural College of the State of Iowa. I have no criticism to make of anything in the past. In fact I come within one vote of being president of the Agricultural College myself but I am connected with another institution as I have said, and I am too orthodox. I believe in a hell. I know there has got to be one. (Laughter.) If there is not one there ought to be. And they didn't want me in that college but I am glad of it. I went down to Washington and had something to do with trying to get this bill in shape and now we have that magnificent institution, the Agricultural College of Iowa. It has been well managed. Here is President Welch, who is dead—he was a scholar.



President Welch was in every way *a man*. I saw him in the United States Senate when he was Senator from Florida. I know he was a carpetbagger, and every one of you would go down and carpetbag tomorrow if you knew you would come back to fill a seat in the United States Senate. That is, I mean everybody would but a president of this Association or somebody that is looking forward to being governor, or something of that kind. I believe the presidency of our Association, however, is still better than that.

Now I think the resolutions introduced by Mr. Wilson and others are very well indeed but if I was going to offer an amendment it would be that this society, this Improved Stock Breeders' Association should appoint a committee to confer with the trustees of the College. This committee could say to them, let us compare books. You need not come before you are called for, but suppose you appoint a committee that I could name from this body, representing the cattle interests and the horses and swine and everything pertaining to agriculture of every form or color—a committee to confer with them if they desire. Why wouldn't that be a good move. It certainly would. I notice that a man sixty-six years old does not think a great deal of himself—thinks he is a very poor fellow. He is very much like Blackhawk was when he was captured in Iowa and taken down before General Jackson. I did not see it but I heard the story. Blackhawk was brought in chains before President Jackson, and what did Blackhawk do? Just like any Iowa man that has been in Iowa the greater part of his life. He laid his hand upon his breast and said, "I am a man and you are another; how do you do, Mr. Jackson." That was Blackhawk. Now in that spirit of mutual friendship and interest I would come before this board, a good board of intelligent men, and tell them, if you want any advice you can have it without money and without price, but we shall not come without whistling for us, but if you do we will come at our own expense.

### THE CHESTER WHITE—AMERICA'S FIRST LOVE.

BY HON. B. B. VALE.

The Chester is the oldest distinctly American bred hog in existence to-day. His popularity has gained for him many appellations, such as the above title—"The Ladies Favorite," "The Poor Man's Collateral," "The Feeders' Stake," "The Breeders' Eureka," and many other such expressive Americanisms.

He being the oldest brother in the American hog family, has had much with which to contend. Many burdens have been laid upon him because of the evident favor in which he was held by his master. He too had a younger brother of shady hue, smaller stature and of doubtful parentage, becoming wearied with the prevailing presence and lordly dignity of his elder, the Chester, went forth from the parental nest with jealousy in his eye and envy in his heart determined to avenge himself in fields untried, and if possible, where his senior had not been; but after years of wandering in search of the hidden mystery—"typical perfection," becoming disgusted with the result and about to return with abandoned hopes, the extremity of the occasion brought the happy recollection of certain of his early acquaintance and possible kinship, being in a distant land and they having arrived at a high state of cultivation, resolved to enter upon a more intimate acquaintance and a closer relationship with his aforesaid kin.

This happy event saved the impending disaster, averted the return and ultimate surrender of the prodigal and has enabled the junior member of America's swine family to perpetuate his existence in the land of his adoption with a fair degree of satisfactory results and sharing with his elder brother, *whose* dignity of demeanor forbid congenial relations outside the family, in the admiration of his especial devotees.

It is the unexpected that transpires; hence it is that the minutely accurate record of the incipency of any breed or family of domestic animals proving of great value or merit is enshrouded more or less of mystery and is usually attainable only by tradition. Fortunately for the Chester, we have much statistical information of undoubted authority relative to their origin, which taken in connection with the established and noble characteristics of the citizenship of Chester and Delaware counties, Pennsylvania, goes to prove quite conclusively that they are and have been a distinct as well a meritorious breed.

In the year 1813, an English ship landed at New Castle, Delaware, and unloaded some white hogs, which were greatly sought after on account of their size, and they were rapidly distributed over the country. They were what were then known in England as the Cheshire hog, and are described as being remarkably lengthy,



"long bony legs, head large, ears long and hanging, back much curved and narrow, sides flat and deep, color white."

We have an account of one that weighed 1410 lbs. gross and 1215 lbs. net. We also have an account of a brood sow bred in Delaware county, Pennsylvania, that reached 1300 lbs., and afterward raised a litter of four pigs. This infusion of blood made a marked improvement in the size and appearance of the hogs, especially in these two counties in Pennsylvania.

Following this, in the year 1818, was the importation of that celebrated pair of very fine white pigs from England, with the record of which we are all familiar, which at the time were called Bedfordshires from the fact that they had been bred by the Duke of Bedford—but they were known in England as the Woburn breed and described as follows: They were first brought to public notice by being exhibited at Lord Somerville's cattle show in 1806, by the Duke of Bedford. They were principally white, well formed, hardy, very prolific, kindly disposed to fatten, and have been known to give twice the weight of other hogs in a given period of time. The introduction of these fine pigs gave a new impulse to the improvement of swine in Chester county.

These pigs were bred together and upon the best and largest white sows of the country. Enterprising farmers, pleased with the result of this cross, bought them up and crossed again upon the best selections, obtaining still further satisfactory and profitable results.

We have no authentic information of any additional infusion of blood foreign to the now established breed, and hence the conclusion is legitimate that the improvement of the breed in style, form, quickness of maturity, etc., has been produced from that time to this by judicious selections and proper meetings of the most desirable and best adapted individuals.

From the massive framed, heavy boned, slowly developed hog of thirty years ago, we find him taking kindly to his environments and to-day is the equal of any of the improved breeds in early maturity, while he leads all in profit when asked to marked bountiful crops in protracted feeding, producing heavy weights. As to the purity of the breed it is only necessary to call attention to their prepotency or the power to leave their impress on the produce when crossed upon any other distinct breed.

One dip only of Chester blood infused into a herd of black swine will require several generations to entirely eradicate. The direct cross of the Chester and one of the black family—mating them either way—will produce a result in color markings and individual characteristics ten to one in favor of the Chester.

All is not gold that glitters—all Chesters are white and strictly white, but all white hogs are not Chesters. When we consider the temptation to fraud and imposition brought about by the excessive demand for this breed a few years ago, the only surprise is that they had not fallen into final disrepute. But the inherent power of the breed is such, that perpetuated in its purity by a few breeders, it has overcome all obstacles and for several years past has been in good demand throughout the west while in the east and north it is the prevailing breed. As to characteristics, he is in his modern or present estate as nearly the ideal hog as is known in America.

In many particulars he partakes in common with other breeds of the swine family—but in certain features his excellence is undisputed and is justly the pride of his admirers. Docility of disposition is a crowning feature of the breed, and as a result we find them superior grazers, easy feeders and the kindest matrons.

Every one appreciates the importance of this quality at farrowing time, when the necessities of the occasion require many kindly attentions from the attendant.

The Chester is noted "as a prolific breeder, a kind mother and a generous suckler—a happier trio of profitable graces is hard to discover."

Touching their capacity as breeders. I wish to call special attention to the ability possessed by the sows at farrowing time to perform the act of pasturation successfully and without assistance.

This statement may seem marvelous to those who are under the necessity of resorting to the use of instruments to assist the sow in labor, but in all the years of my experience as a breeder I have had but one case where the death of the sow could be attributed to trouble of this kind.

It is the uniform experience and testimony of those handling this breed of swine that no account whatever is taken of fatality at farrowing time. Again, the Chester claims superiority as a breed in heart, girth, depth, back of the shoulders, which means vital force, power to resist disease and an ability to contend successfully with all the changing elements and conditions of our climate. It has been claimed that he was proof against all the fevers and distempers to which swine flesh is heir, but that is unwarrantable in its broadest sense.

Many instances of competitive tests have been made between the Chester and other breeds, where all have been subject to disease in common, the Chester coming out unscathed while others lay strewn in many a field, yet this only argues superiority of vital force and is so far possessed of a certain immunity from disease.

The matter of unfounded prejudice against the white hog deserves a moment's attention. The Chester will indulge in and enjoy as much mud and water, also endure as much exposure to inclement weather and with as little detriment as any other breed. Uniformly of cleanly habits he will even seek the most favorable location in his department for sleeping purposes.

Not subject to skin disease, but if under very adverse sanitary conditions the test be made between the white and the black both being subject to the scalding tub to determine the result will prove favorable to the white by a large majority, and why—because a dark spot on a white dress is more apparent than on a black coat.

This is the secret to that false impression which sometimes prevails in exclusive dark-hog regions but which is happily expelled by the introduction and handling of a few of "America's first love" in connection with the other improved breeds.

Thus, with charity for all, I solicit from the enlightened intelligence of this body that kindly consideration of the merits and excellencies of this especial breed which the dignity of the occasion and the common interests of a common cause demand.

Hon. J. B. Grinnell: Mr. President and Gentlemen—I wish to place what I will call an addenda to what I have already said. My wife seemed to think it was rash in me to undertake to attend this convention, but I told her this was a rash kind of a world. This is the last opportunity I will ever have to be among the agriculturists of our State to drop a tear with them over the great loss that we have met with in the decease of Father Clarkson. I forgot to say when I was up the Hon. C. F. Clarkson—I believe he has not been mentioned before, but he will be before you adjourn. He was the leading agricultural writer in the northwest in my judgment; he was a practical



farmer. I know as I have been over his acres. He was a gentleman; his habits were upright, his prejudices strong—that was Father Clarkson, my friend and yours; the friend of agriculture in Iowa; he was a man with no stains upon his character.

And while I am speaking, as I have spoken of President Welch, of the Agricultural College, I wish also to speak of President Chamberlain. He is a gentleman; he has my supremest commendation; he is a speaker, a literary character and a man who does his duty fully. I regret his departure from the State. I think he has done well. I do not say he is the man for the place, but he is a man of whom I will say I wish we had thousands and tens of thousands more like him to grace our farms and platforms. I bid him godspeed and as he goes from our midst to future fields of usefulness, may he go with our benedictions.

I thank you, gentlemen, for your attention.

Mr. Brown, of Marshall: Mr. Chairman—I think some attention should be given to the able paper which has just been read in our hearing. I do not wish to take up the subject and discuss it myself, but I do not want it to pass away without any discussion. Is it possible that under the present prices of the hog product our people have lost their courage? I think the raising of hogs is more profitable than that of cattle. Now, while I think the paper was intended to be unbiased, and one which is calculated to do very much good in an association like ours, yet it is one, the scope of which will draw out criticisms as to the breed. I am not going to enter into any controversy with any one upon that subject. Some are more successful in raising one breed and others are more successful in raising another breed, and I believe in every man having full liberty and opportunity to display his powers and work to the best advantage. I will say this much, that I raised the Chester White hog once and that I was more successful with other breeds. That, however, is not the question. The only question I will raise is the question of disease. I have raised the Chester White hog and the black hogs and let them run together, and I know certainly that the black hogs were more healthy—all in the same conditions, and I know that some of you have had different experience from mine, and I am very free to say that I know the Chester White is a good hog, but there is no hog with proper treatment that will yield more for the feed to their masters than that hog will, but under many conditions they are not and will not be successful as compared with the black hog.

Mr. Matthews: Mr. Chairman—About 1852 I hauled a pair of Chester White pigs about two hundred miles from Illinois and I never raised a litter. It disheartened me; but in the course of time a man

moved into the neighborhood who had some Chester White hogs and I thought I would experiment again, and tried again, and again failed to get good breeders, and, therefore, I am not much of a Chester White man.

Capt. Jordan: Mr. Chairman and gentlemen—I do not suppose that many of you know that I am a hog man, but I am, and I am a sheep man and a horse man, and I want to say a few words on the hog question, and I want to take a little honor for bringing into Iowa the first pure bred berkshire hogs that ever came into Iowa, and it was in 1869—before my friend McClung was born; he may have been born but was not in Iowa at that time; at that time northern Iowa was filled with what were called "rail splitters" and "prairie grubbers"—you had to tie knots in their tails to keep them in the pen. I bought three little pigs for which I paid \$25 apiece, any one of which you could put in your pocket, and was rewarded for my trouble by the jeers of my neighbors for my extravagance. I went on, however, and paid out the money in dollars that looked as big as cart wheels. In due course of time I made money on the improved breed of berkshires and had calls for my hogs from Minnesota and northern Iowa, and from Missouri, and some of my herd even went back to Illinois. I had been raising the white hog in Michigan before I came out here, and while I should regard it dangerous to antagonize my friend Mr. Vale with his strong preference for the Chester White, I will say I have found that hog could not stand the Iowa climate. The white hog in certain seasons of the year I found his skin would crack open on all sides. He did not grow well, and I often had to warm him up and patch him and wash him with soap suds and butter milk, but still he did not do well, and I abandoned him entirely for the black hog, with which I have never had any trouble in regard to skin diseases. I think that is the hog for this country; the trouble with the white hog is they cannot stand the climate. In England, where we first procured our improved breeds—when I went there I found those men from whom we obtained had been buying our best berkshires had abandoned them nearly altogether, and were raising a white hog which they called the large medium and the small white. The large medium was very much like our Chester White, and I think they are identical with the Chester White.

The English people have gone back to the white hog and nearly abandoned the berkshire; and not only in England, but to a large extent in this country. I found the berkshire had not sufficient bone to carry a good side the best we can do with them. They seem to be made that way. They have a small nose and a little tail like a mouse's tail and little bone, and they seem to go back again rather than increase



in that respect. With experience I became disgusted with the hog and that is why I went into the horse business. (Applause.)

Mr. Sheehan. I do not wish to take sides in any controversy between the Chester White, the Berkshire or the Poland China, but when you speak of northern Iowa I am ready to get up, because I live but a short distance from the Northern State line. Brother Barclay here would tell me that I lived in Minnesota, but you need not believe him.

What Capt. Jordan has told you, however, is a fact. I know where he placed some of those hogs. One of the best farmers in Mitchell county fed them for a year, but I do not believe there is one of them in the county to-day, and other people have been downed by the Chester White and the Poland China. I do not care to discuss the question, but if I should have an objection or criticism on the paper it would be that I would not like to think an honorable senator of the State of Iowa would steal the title "America's first love," because I have heard that a venerable brother who has spoken in our audience time and again, holds and has claimed that "America's first love is the Plymouth Rock."

Mr. Cook: I do not wish to provoke a discussion as to breeds, but will say that I am on the side of the Chester White. I was raised within fifteen miles of the place where the Chester hog originated. I have known the Chester White ever since I was a lad. I have just one experience that I wish to tell you about.

My father, when I was thirteen years old, traveled that fifteen miles and bought from a man by the name of Keffer a Chester White pig, which like the Berkshire pigs our friend spoke of, was not much larger than he could put in his pocket. Pigs from four to eight weeks old at that time were selling at fifty cents apiece, and my father bought this pig and paid four dollars for it, and the neighbors all round predicted that father would soon break up; that he was a fool for paying \$4 for a pig when he could get as good a one anywhere in the neighborhood for fifty cents.

The pig came home and I who was a small boy, had to feed it and as I fed it quite a great deal it developed into a fine hog and the neighbors around wanted the use of it. I think that he increased the value of hogs in that section fully fifty per cent.

At the time he was killed they were worth about fifty per cent more than when he was brought into the neighborhood. I recollect that after the hog was castrated I still had the feeding of him. He was over two years old and I fed him eight ears of old corn twice a day and gave him all the clear water he could drink, and he traveled around the field in which he was kept taking his daily exercises. He was fin-

ally sold to the Philadelphia market for the season the 22nd of February. He was hauled there in a wagon and was taken there for the feast that was usual on that occasion.

That was in the days before we got to importing. While I was feeding that hog we lived within a mile of a hay scale, which was a scarce article in those days too, and I drove him there every month for three months and weighed him. On sixteen ears of corn and on clear water he made an increase of three pounds a day right along for three months and we weighed him each month. He had bone enough and muscle enough to carry himself to the hay scales to be weighed and back again. When he was sold to go to Philadelphia I took him over to the hay scales to weigh him and he was sold for 8 cents per pound; he weighed 730 pounds and was a little over three years old. Now, in confirmation of what several have said in regard to the Chester White being prolific I will say that I still love the Chester White, but when I came to Iowa I could not get anything but the black or the blue hogs, or the kind that run in the woods, but as soon as I could I got the Chester White. I keep only a small herd of hogs. I keep from four to five sows as breeders. Last spring I had five young sows that raised me forty-five living, nice, straight pigs, through the first litter. Forty-five pigs from five sows that lived and grew to be hogs.

Mr. Grinnell: Have you forgotten our friend who sometime ago told such a big hog story that he finally committed suicide?

Mr. Cook: Mr. Grinnell and I think too much of each other to quarrel on the hog question. We do not claim for the Chester White sows that they have two litters of pigs on the same day.

Mr. Grinnell: I would like to know whether you reserved from this eight hundred pound stag that you sold to the City of Brotherly Love—whether you reserved some of him for your own special use?

Mr. Cook. No, sir. I sold to the people of that City of Brotherly Love to eat at the celebration of Washington's Birthday.

Mr. Grinnell: Well, if you get a smell of him that is enough.

Mr. Cook: There is not a particle of question but that by proper treatment the Chester White hog is prolific. I have never had any difficulty with them in parturition. I never thought of losing a sow when she was pigging, or never thought of taking the pigs away from her in an unnatural way. They have four pigs and raise them, and they grow and make pork.



## THE MORTGAGE LIFTER.

BY W. W. M'CLUNG.

This being a stock breeders' convention, we think it proper to discuss this question from a live stock or farmers' standpoint, and believing it will apply to a large section of farming country outside of Iowa, yet it must not be supposed to suit every section of the United States any more than the "McKinley bill" did.

Some one has said that "horses are the big money, cattle the sure money, and hogs the quick money."

Then which of these can we properly call the "mortgage lifter." At first thought it would seem to be the horse, because he is represented as the *big* money. But not so gentlemen. If we admit that they are the big money, we must also admit that it takes big money to buy foundation breeding stock, and I think I am safe in saying that nine-tenths of the farms that are well stocked with a good class of breeding mares had the mortgage lifted before these horses became a prominent feature of the live stock.

I affirm without fear of contradiction that a large majority of the mortgages on farms were placed there something after this wise: A man by industry and economy has been able to "lay by" a few hundreds of dollars, with which he wishes to purchase a farm, but not having enough to pay all cash for the farm he has selected for his *home*, he pays a portion of the purchase price and gives a mortgage to secure the payment of the balance, and he saves only a small amount of cash with which to equip and stock the farm. Now, he wishes to invest that money in stock that will best enable him to lift the mortgage. If he thinks of horses, he knows he has not money enough to buy but little of that kind of stock, and he also is aware of the fact that he would have to wait five or six years before the produce from horse stock would be developed so as to bring the big money, and not only this, but there is no certainty that he can sell the horse just when he wants to raise some money, unless sold for much less than he is worth, or what he could get if he could only hold him until the right man came along, but the interest on the mortgage is due annually, and if not paid, will compound and soon equal the principal; hence he sees that he must select some other kind of stock. Then if he thinks of cattle as being the sure money and reasons in his mind that perhaps it would be best to make a sure thing, he investigates the possibilities of cattle as mortgage lifters. But here the same obstacle presents itself. Yet perhaps in a lesser degree, for while the ratio of increase is about the same in cattle as in horses, they (cattle) will give a return from the produce a little sooner. But it will be at least

three years before the beef steer is ready for the market, or the dairy heifer ready for the pail; then it is evident that as "mortgage lifters" horses or cattle are too slow.

Well, how about the hog? Yes, my friends, "its the pig that pays the rent," and if he is the first to pay the rent he will be first to pay the interest, and if first to pay the interest, then he will be the first to reduce the principal and the first to lift the mortgage.

But you say that is only an assertion? Can you produce any sound logic that will warrant the assertion? We think we can, for with only \$200 we could purchase say nine (9) good sows and a first-class male, all of the best blood of any of the pure breeds, and in four or five months it would not only be possible, but probable, that the herd would be increased to 50 to 60 head, and in three months more the pigs would be weaned, the dams in the fattening pen eating the corn or other grain that had been grown on the farm, and making more pounds of meat to the square inch than any other domestic animal; or better yet, more pounds of meat to the bushel of grain, and before the interest is due on the mortgage they would be ready for market and could be sold and the interest paid, and in two or three months more one-half of the pigs could be sent to market and still retain for breeding purposes at least double the number of the original stock.

But still further in the support of the assertion gentlemen, I will ask you to go into any business house in this city or any other Iowa town and hear the reply of the farmer to the questioner, when can you pay this account or note? It is not when I sell my horse or when I sell my cow, but it is (nine times out of ten) when I sell my hogs.

Hence we claim (that so far as live stock is concerned) it is plain to any unprejudiced mind that as mortgage lifters (from an Iowa farm at least) the hog stands preeminent.

Gentlemen, I do not wish to be understood as claiming that simply getting a bunch of breeding hogs and feeding them corn is all that will be required of the man that handles them to secure a profit.

Something like a quarter of a century ago, when hogs were worth ten to fifteen dollars per hundred, almost any "slipshod" management would result in profit from corn and hogs, but in these days of depression it requires *brains* in the management of any class of live stock, brains to buy, brains to select and mate properly by the study of the blood lines to make the proper combination, and brains to feed and care for the stock in such a manner as to secure the best results, for to-day this is necessary to obtain even a moderate profit and is just as essential in the management of a herd of hogs as any other class of live stock and should be considered as an important factor in making the hog the mortgage lifter, for

"Mind is monarch over matter,

Brain conserves the skill of hand,

And the throb of giant-thinking spreads soul azone through the land."

Mr. Van Auken: On behalf of myself and forty or fifty thousand farmers that are feeding corn worth 40 cents or thereabouts, I would like to ask the gentleman that furnished the sweet smelling meat for our friends in the city of Brotherly Love, what kind of corn he fed to that hog? Was it some mammoth corn that we know nothing about?

Mr. Cook: It was common yellow corn such as we raised in Pennsylvania.



Mr. Van Auken: If you can find such hogs now we had better adopt them.

Mr. Cook: Get the Chester White and you have it.

Mr. Vale: I want to say that you will all appreciate the fact that that was a sectarian paper. I was not asked to get up there with a paper on the Chester White hog; and then to go and dilate upon the Poland China or the Berkshire. A paper on a certain breed of hogs must necessarily go into detail more extensively. I was not endeavoring to go into the details of swine growing generally. It was a scattering paper and should be treated as such. But the only open criticism taken and well taken under the conditions and circumstances and the time appears as with reference to the skin disease. I can only speak with reference to my own personal experience, and you may send as many spies as you desire to watch and test results on my premises, where they have access to as much muddy water as the black mucky soil of Southern Iowa can furnish, and I will take it upon myself to say without fear of contradiction of any of my neighbors and friends that I have absolutely, invariably never under any circumstances had swine disease among any of my hogs. I want to state further if there are any specific questions any one desires to ask from the standpoint of my paper I shall be glad to answer them.

Mr. Smith: As this is a sectarian paper I would like to ask the gentleman to what sect these hogs belong.

Mr. Vale: They belong preeminently to the Chester White.

Mr. Gove: The first gentleman that read a paper on the hog question spoke of the Chester White, in one particular, that was that in farrowing there is less loss. I think if the people, without regard to numbers, will be a little more careful of feed during gestation they will have better luck. Last spring I had been feeding corn exclusively and I lost eight sows that were unable to farrow. In the August following that I was out through Kansas and I had previously read, perhaps from the July number of the Chicago National Live Stock Journal, an article published by a man living near Wichita, Kansas, entitled what he knew about hog raising, and in my rounds I went there and saw his method of feeding. He raised seven or eight hundred hogs a year—two litters every year, and perhaps I might state his method of feeding. His method of feeding was to have a raised platform. He laid a plank about eight inches high above the natural ground. He was located within two miles of the Arkansas river, and in that part of the country they had drive-wells, as they could drive down to the quick sand about six feet below the surface and get a good supply of water. He had a wind mill in his yards, for his hogs were so arranged that he could run the water from the wind mill into the

barrels. He had troughs running lengthwise from the platform. He set a common oil barrel right on the trough and he had made a hole perhaps four inches in diameter in the barrel with a plug in it, which he could knock out when he wished. He set that barrel upon the trough and filled it nearly full of water and put in about two bushels and a half of clean oil meal, and as soon as it would settle itself he knocked the plug out and let it run out in the trough where the hogs could come up on both sides to eat. That was his feed for growing pigs. For the other hogs he shelled corn and soaked it twelve hours in barrels and fed it the same day. He changed, however, and fed shorts once a day. The result of that observation was I went to buying shorts and feeding my hogs, and I never had any trouble with my sows farrowing. I have lost none since that time.

In relation to the skin disease I would make this remark: That I think the place they lie has much to do with it. They are not a filthy hog if they have a chance to get clean. If they get muddy they will get dry by rubbing against something and scratching it off. I have what I built two years ago and what I call my winter hog pen. I built the pen twenty-four feet by twenty-six, lined with paper and the whole front of it is furnished with six by twelve windows. There I have a wind-break, where in the coldest weather, if the sun shines at all, they get the benefit of the sunshine. I think it is very important that they have a place they can lie without piling up. If they have such a place they will lie without piling up and without getting the diseases which are common by reason of that.

Mr. Cook: Have you a floor in your pen?

Mr. Gove: No, sir; I have a dirt floor.

Mr. Van Auken: I just had an idea to strike me. I asked the gentleman on the right how many ears of corn it would take for a bushel of corn and he said 100 and the gentleman on the left said about 120. I made a little calculation and thought I would split the difference between the two guesses and call it 112 ears to the bushel.

Our friend, Mr. Cook, fed sixteen ears of corn a day to his hog he was telling us about. That will give us seven days that his hog lived on one bushel of corn. He made him gain for three months three pounds a day, which was ninety pounds a month. He did that by feeding him a bushel of corn in seven days, making a little over four bushels of corn a month. If his hog gained three pounds a day, in seven days he would gain twenty-one pounds, which would be \$1.68 for a bushel of corn. I take the Breeder's Gazette and I have watched the cattle interests, and I have watched Prof. Sanborn's experiments in Missouri and Prof. Henry's in Wisconsin, and I have seen papers



from every experimental station in the United States, but I never found anything yet where three pounds of pork can be produced with that amount of feed.

There has been something said about re-organizing our college at Ames, and our experimental station and doing whatever we may be able to throw more light on our business. Is it possible that we have been entertaining angels unawares? Have we a man among us that has been unheard of in the United States, but who yet can beat the record of our eminent professors who have a world-wide reputation? If that is true, why not appoint him to take charge of the experimental station at Ames? It would be worth millions to the State of Iowa if we could get that amount of money for a bushel of corn in Iowa.

Mr. Brown: I want to emphasize one thing in regard to nesting. I think that is the secret of hog-raising. I have never been guilty for ten or fifteen years of ever giving a hog a straw or anything but dust for a nest and never will. A small building well protected from the wind and a dust nest. I do not care whether it is two or six feet deep with dust. It is no injury to the hog to have a dust nest and it is not possible to find anything that will do as well for a hog's nest as dust.

Mr. Cook: Mr. Chairman—I wish to state in regard to the criticism of the gentleman in regard to my statement that I am just like the fellow who said his horse was eighteen feet high and he was going to stick to it.

Mr. Vale: The gentleman who has been criticising Mr. Cook overlooked the fact that his was a Chester White hog and I speak of the fact that it was a matured and fully developed hog; that he had come to himself full and developed all the bone and muscle necessary, and the further fact that the hog had access to grass.

Resolution was here offered by Hon. James Wilson, of Tama.

I move the adoption of that resolution by a standing vote of the society.

WHEREAS, since our last meeting Coker F. Clarkson, a member and ex-president of this association, has gone to the better land, leaving us the example of a life spent well and usefully in the interest of his fellowmen in all laudable relations but especially as a wise and safe counsellor of the Iowa and American farmers;

Resolved, That while we deplore his loss to his family and friends, and to our association, we value as a great heritage the example he has left us of a high-minded, self-reliant Christian gentleman and disinterested citizen patriot, and progressive farmer, whose memory we will cherish as a precious remembrance.

Resolved, That a copy of these resolutions be sent to his family and to the agricultural department of the *State Register*, so long and ably conducted by him.

Unanimously adopted by a rising vote.

The paper by Prof. Budd, on "Beet Sugar," was read by Henry Wallace.

## BEET SUGAR AND ITS REFUSE PULP.

BY PROF. J. L. BUDD, AMES, IOWA.

*Mr. President:*—Knowing that I have had a fine opportunity for studying the beet sugar industry in various parts of Europe, I have been kindly invited to give a few notes on the subject. As recently we have had much practical information relative to this important interest in the public journals I will briefly direct attention to some portions of the subject which have as yet received little consideration.

### RAPID DEVELOPMENT.

Beet sugar was first made in a chemical laboratory in Berlin in 1747. The first factory for its manufacture was erected in a primitive way in North Silesia in 1801.

In 1830 the new industry had established a firm footing in France and parts of Spain and Germany, and since 1840 it has advanced with giant strides in all parts of Europe where the beet can be grown with a profitable per cent of sugar. This extreme rapidity of development can be readily understood in connection with the fact that at this time fully sixty per cent of all the sugar used in the world is made from the sugar beet. In 1889 the beet sugar crop reported reached eight and one-half billion pounds while that from the cane, the sugar maple and the palm, reached only five billion pounds.

When it is considered that cane sugar was made and used in India and other points in the east in the seventh century, and that as early as 1319 the records show that as high as 100,000 pounds of cane sugar was received in one consignment in London, it at first seems surprising that in the brief period extending from 1840 to 1880 the new sugar-producing plant should take the lead of all others.

But we must keep in mind the fact that the sugar cane is a tropical plant and that its best growth is confined to low hot tropical or semi-tropical bottom lands or valleys where only sluggish negro, Indian or cooley labor can be used. On the other hand the equally rich, sugar-producing beet attains its most perfect development in a temperate climate where the summer heat during its growing period averages near 70 degrees Fahrenheit. This permits the use of muscular northern labor and the modes, methods and appliances of a high temperate zone of civilization.

Again, the beet sugar interest has been developed in stock growing regions where the leaves and beet pulp have sufficient value to pay for the handling of the crop after it is grown, while the refuse of the cane is only a poor substitute for fuel in boiling down the juice.



## BEST SOIL AND CLIMATE.

In Europe the most profitable growing of the sugar beet has been reached on easily worked friable mountain drift soils such as are found in parts of California, Utah, Colorado, Kansas and Nebraska, or on glacial drift with quite a large percentage of lime such as is found in our country over large parts of the prairie States east of the Missouri to Lake Michigan. I was assured by Sir Henry Vilmorin, of France, who has a world wide reputation as an improver of the sugar beet, that with given varieties, richest in sugar, the highest per cent one year with another has been reached on the glacial drift soils of South Russia, north of the Carpathian and Caucasus ranges of mountains. In character of drift and underlying limestone these prairies are almost a perfect counterpart of large parts of Iowa, and if we trace isothermal lines around the earth we will find that the line of July, August and the first half of September heat of the part of Iowa lying between the 41st and 43d parallels passes through the Province of Kiev in Russia which has about 150 beet sugar factories supplied with a richer grade of beets than can be grown in West Europe. With our young experience we can profitably study the interest as developed in the old world. This would lead us to suspect that the mountain drift west of the Missouri will not produce beets as rich in sugar as large areas of our glacial drift, and the analysis of Vilmorin's best varieties at Ames as compared with the test of the same varieties at Grand Island, Nebraska, appears to confirm this view. While it may be that we will have now and then too wet a season for the highest per cent of sugar, we have the best reason for believing that during a period of ten years we will be able to grow more tons to the acre on an average, and that they will grade at least two per cent richer in sugar for a like period as an average.

Judging also by European results we can say that the expectations of beet sugar enthusiasts of south Iowa and the parts of the west where the heat during the growing period reaches an average of  $74^{\circ}$  will not be realized. In France, Spain and Italy, so far as I could learn, the beet sugar interest has not proven remunerative or satisfactory at any point where the summer heat of the last half of the growing period reached an average of  $74^{\circ}$ .

## LARGE AND SMALL FACTORIES.

The impression is yet common here that only large and expensive plants like that at Grand Island can be profitably established. Careful investigation will show three serious drawbacks connected with such establishments:

(1) The transportation of the beets is expensive. The grower within three miles of the factory has an immense advantage over the one who hauls his roots a distance of from six to ten miles, and the grower who ships by rail even a distance of twenty miles loses mainly or wholly his margin of profit. This becomes a serious matter when it is understood that the Grand Island plant consumes in one week all the roots which can be grown on suitable land in its near vicinity.

(2) The feeding value of the tops and the factory pulp is an important neighborhood consideration. As a nutritious and healthful feed the pulp is far more valuable than is usually suspected in this country, and one that can be fed for months after it is stored. I saw mounds of it in perfect condition six months after its removal from the factory. It is put up in conical mounds and covered with straw and earth as we cover potato mounds, or it can be stored in bins and pits more cheaply constructed than those used for ensilage.

Mr. John Wilson, who has given much attention to this industry in all parts of Europe, states:

"A most important fact connected with this rapidly extending industry is, that the erection of a sugar factory is immediately accompanied by an improvement in agriculture, and an increase in the value of the land of the adjoining district. In many places farmers gladly contract to supply beet root at eighteen shillings per ton for ten years, on condition that they receive back pulp in fair proportion to the quantity of root supplied them."

As to the value of the pulp for feeding, a large cattle breeder and feeder in South Russia assured me that in reality three tons of pulp were only equal in nutrient value to one ton of the best hay; yet he had found when fed in connection with coarse provender, it possessed a value in the way of keeping animals in a sleek, growthy condition not indicated by its chemical analysis.

The opinion was also expressed by experienced growers that the sugar beet could be grown continuously on the same land for many years if the manure made from the pulp of the roots grown on it, combined with the needed dry feed, was returned to it. But if manured with ordinary barn yard manure it could only be kept up by a system of rotation of crops.

(3) With our present restricted experience it is risky to invest so large a sum as \$250,000 near a large city with surroundings such as those of Des Moines, Omaha or Kansas City, where the land is exceedingly variable and only in small part adapted to the growing of high grade roots.

As the years go on I do not doubt that scattered plants in specially favored localities as to character and uniformity of soil will be found more profitable to the manufacturer and farmer that will not cost to exceed \$10,000. Such plants are found by the hundred on the rich, uniform drift soils of Kiev and other provinces in central Russia. In many cases these small factories are owned and managed by a little syndicate of farmers who grow the beets and make the best possible use of the tops and pulp for stock feeding and keeping up the fertility of their lands. I visited one of these farmer plants near the city of Kiev, with a capacity of turning out twenty barrels of brown sugar per day during the fall and early winter months, the cost of which would not here exceed \$5,000, including building, machinery and fixtures. The diffusion cells were of wood. The one large boiler furnished steam for the heating chests through which the cell connecting pipes passed, for pulping the roots, for pumping, and the successive stages of evaporation. The plan of boiling down did not vary materially from that used in the best sorghum factories of the prairie States, except that the skimming, liming, filtering, etc., were more perfectly systemized, and the pan in which the final boiling was done was covered, and combined in a simple way the main essentials of the vacuum pan. Each one of the small squad of hands employed worked continually at his allotted post, and everything went on with the clock-like regularity of the big factories. The only drawback that I could discover was that of sending the brown sugar not used in the neighborhood, to the large city refineries for purification. With the present provisions our sugar refineries would be eager to secure such brown sugars at a price at least one cent per pound above their commercial value, as one-half of the present bounty would give a profit of fully one hundred per cent on the money invested in the refinery securing an ample supply of this home-made sugar. Careful consideration cannot fail to convince doubters that the refineries would prefer to run on home sugars at a clear profit of one cent or even one-half cent per pound, and that



the duty free brown sugars from Europe and Cuba would find a poor market if the home supply was ample, so long as the bounty was offered by our government.

With the present outlook I would much prefer taking stock in ten factories costing \$10,000 each, properly located among beet producing fields, than in one big concern located near one of our great cities. The dividends would certainly be larger, and it is equally certain that the profits of the beet producers would be nearly doubled during a period of ten years when the stock, interest and enhanced value of the lands are added in. To impress still farther this idea of neighborhood factories I will add that on the rich, loose soils of the Volga in Russia may be found many beet factories still more primitive in structure of building and fixtures.

The building is a great thatched shed. The outer walls are made with a double row of large poles, three feet apart, set in the ground, boarded up on the outer and inner rows, and filled in tightly with straw. The roof is made double in the same way for warmth during the late fall and early winter months when the sugar making is going on. The pulping and pressing is done by horse power and the expressed juice is boiled down with fire heat. But even in these cheap primitive factories the skimming, liming and filtering of the juice are so perfectly understood that a very fair article of brown sugar is produced in great quantity, the surplus of which is taken at the refinery at Saratov at about the price paid at the city of Kief for the brown sugars made from more perfect and speedy factories.

#### SMALL SIZED BEETS.

The western papers are now discussing the pros and cons of beet production as a source of farm profit. A main point made by Orange Judd and others is, that two plants usually come up from one seed, and the work of thinning is an important element of cost.

In the summer of 1882 I examined tens of thousands of acres of beets in sections of Europe where the sugar industry had been long established, and I failed to find a single acre where beets as large as those grown in our gardens or in our fields for stock feeding were grown. Mr. John Wilson says: "The united experience of European manufacturers favors the use of beets ranging in weight from one and one-half to two and one-half pounds. As the part of the beet above the earth contains little sugar the whole root is kept covered. The required weight and proper covering are reached by placing the rows only eighteen inches apart and growing the plants quite thickly in the rows. With systematic management on suitable soil the crop should reach from fifteen to twenty tons per acre." Dr. G. E. Kimball of Hastings, Neb., is with us at this time. He has given much attention to the industry as managed by Mr. Oxnard, at Grand Island, and says that the growers are urgently requested to grow the plants close together, to keep them well earthed up, and in all ways to avoid the production of roots exceeding two and one-half pounds in weight.

#### SCARCITY OF EXPERTS.

I wish to draw special attention to the fact that real experts are not as numerous in Europe as many suppose. The common laborer who has worked all his life, and his father before him, in the beet sugar factory, absolutely knows nothing about the machinery as a whole, or the general details of the work. He is an expert in his special division precisely like the skilled workman in our piece work machine shops. If you talk with one of these men of superior mental activity he

will assure you he is acquainted with all parts of the work. Yet in practice such a man will bring disaster to any factory as manager in chief. The European manager in Europe of even a small factory, must have the same training which Mr. Oxnard, of Grand Island, received. He must become familiar with all the underlying principles in chemistry, physics, etc., in the gymnasium and technical school, to which must be added an extended apprenticeship as head foreman under a skillful factory manager. At some of the technical schools in Silesia and south Russia the special student has his lessons in applied science supplemented by daily practice in a small, model beet sugar factory connected with the school. The point I wish to make is, that no man should be trusted to superintend the erection and managing of a sugar plant who has not come up in the regulation way, as did Mr. Oxnard, and all other successful managers. The failure at Freeport, Ill., and at other points, has come from the employment of men who had only been skillful in a single division of the work.

The Association now adjourned until 1:30, to meet at the G. A. R. hall.

#### AFTERNOON SESSION, THURSDAY.

Association met in the G. A. R. Hall and the session was opened by a paper.

Captain R. P. Speer: I will not detain you but a little while. I do not wish to tell you about the difference between red clover and timothy and such things, but I have tried to tell you as much as I could in a short paper.

Paper of Capt. Speer here read to the association.



## GRASSES FOR IOWA.

BY R. P. SPEER.

There are more than 700 species of American grasses and the grasses of the world run up to thousands. Some of them are found only at high altitudes of 7,000 or 8,000 feet, while others thrive best but little above the level of the oceans.

Certain species of grasses are adapted to very moist climates, like that of England, which are comparatively worthless where it is dry, and some of the native grasses of Utah and the dry plains east of the Rocky mountains have failed on our experiment station grounds in Iowa, where the climate is only moderately dry. On account of their various characteristics they may be divided into the following classes, viz.: annuals, biennials and perennials, hardy and tender, dark green, thin bladed grasses for moist climates and light or grayish green thick bladed grasses for very dry climates; deep and shallow rooters, grasses that are reproduced exclusively by seeds, and by underground roots and seeds, grasses that are palatable and unpalatable, productive and unproductive, nutritious and not nutritious, etc.

As they differ from each other in many respects it would be unreasonable to suppose that all of them would be equally hardy or equally valuable in Iowa. In very mild moist climates good pasture grasses are needed most, but when the winters are long and cold, large nutritious hay grasses are equally desirable. And as we cannot afford to use commercial fertilizers in Iowa on account of the cost of transportation, we will have to depend on the natural grasses, leguminous plants (clovers, etc.) to keep up and improve the fertility of our soils.

Then, what grasses have the most desirable qualities for the purposes which I have named is the question to be considered. As we have cold winters, hot summers, severe drouths and atmospheric conditions which are favorable to fungous diseases, it would be useless to sow seeds of tender grasses, or those that are adapted to cool and moist summers, or grasses that are liable to attacks of rust or other fungous diseases. We want grasses that will start early in the spring and grow continuously and rapidly until late in the fall. They should also be nutritious, bear close pasturing well and produce seeds plentifully.

In the spring of 1888 we sowed seeds of many kinds of English and American grasses on eight acre plats. Some of the seeds came up well, while others did not, but I sowed seeds of the varieties which failed to grow again in the spring of 1889. In August and September of 1888 we collected seeds of many wild varieties of grasses in Iowa, Minnesota, Dakota, Montana, Idaho, Utah and Colorado, and planted them in rows on our experiment station grounds in the spring of 1889.

Last spring we procured ten varieties of grass seeds from India and sixteen varie-

ties from the northern part of Germany, and planted them in rows also. We can determine by field trials whether grasses are adapted to our climate, or whether they are productive or not, but some of them are much more nutritious than others, and we cannot tell how much benefit the domestic animals would derive from a given quantity of any particular kind of grass without referring to the results of feeding experiments, therefore, I will repeat a few paragraphs from our bulletin No. 9. A nutrient is a chemical compound which can be used for the nourishment of animals, or to replace the waste which is going on in living animal bodies constantly. The principal nutrients are albumen, casein, starch, sugar, fat, ash, etc. They are divided into three groups, viz: albuminoids, carbohydrates and ash. The albuminoids are the nitrogenous parts of plants, which are very similar to the white of eggs, the casein of milk and the gluten of wheat. The muscles or lean meat of animals and their sinews, hair, wool, etc., are composed exclusively of albuminoids. The carbohydrates are the carbonaceous or woody parts of plants of which charcoal is made.

When the carbohydrates of food are decomposed or burned in the cells or capillary veins of living animal bodies by the oxygen of the air which is taken in by their lungs, they cause animal heat and force or energy. Their oxidation or decomposition furnishes the power to move living animal bodies, as locomotives are moved by steam.

Fat is a carbohydrate which is found in all fodder plants. A large share of it is used in the stomachs and intestines of animals to aid in the digestion of their food. It has the same composition as ordinary carbohydrates, but when it is burned it gives off about two and one-half times as much heat as starch, and therefore, as a nutrient, it is worth two and one-half times as much as starch. The bones of animals consist of gelatine (a substance which is rich in nitrogen) and phosphates of magnesia, potash and common salt.

We can see then, that all parts of the bodies of animals are made of the albuminoids of the grasses and other forage plants, except their bones and fat. It should be remembered also, that carbohydrates (when oxidized in the lungs) produce animal heat and furnish the power which enables animals to move.

The three groups of nutrients which I have described, are found in the various kinds of fodder plants in different proportions, thus—oats, peas, beans, and the clovers contain much more albuminous matter than corn, timothy hay or oat straw. Only about 55 to 60 per cent of the nutrients in the different kinds of hay is digested by animals, and the undigested portion pass through them in their dung.

Therefore, it is not remarkable that the dung of animals which are fed on clover hay and oil meal, is richer and better as a fertilizer, than that of animals which live upon oat-straw and turnips. The average value of the digestible albuminoids and fats of the grasses, grains and other feed-stuffs in Iowa during the last ten years, has been about 3½ cents per lb., and the value of the digestible carbohydrates has been about 6-10 cents per lb.

We will not consider or compare the ash of different kinds of grasses, as all of them contain more than enough to supply the wants of the domestic animals. We will give the names and chemical analysis in the following table of many tame and wild grasses which we have tested for two or three years on the grounds of the Iowa Experiment Station. All of the grasses named in the table were cut when in blossom.

The figures show the per cents of fat, carbohydrates, etc., of the dry matter of each grass which was analyzed:



PER CENT OF DRY MATTER.

	Crude fat.	Crude carbohydrates.	Crude protein.	Free albuminoides.
1. (Phleum pratense) Timothy	2.80	51.87	7.23	6.36
2. (Arrhenatherum avenaceum) Tall meadow oat grass	1.90	44.81	7.98	6.57
3. (Festuca elatior) Meadow fescue	2.57	40.00	13.30	9.27
4. (Festuca elatior, var. pratensis) variety of the above	2.94	41.87	10.12	8.10
5. (Dactylis glomerata) Orchard grass	2.36	46.01	7.71	6.87
6. (Dactylis glomerata) Kentucky blue grass	2.50	37.15	8.78	7.54
7. (Poa pratensis) English blue grass	2.43	36.40	6.27	5.37
8. (Poa compressa) Sheep fescue	3.65	72.14	6.53	5.60
9. (Festuca ovina) Meadow foxtail	3.10	50.12	9.98	8.22
10. (Alopecurus pratensis) Meadow foxtail	2.67	49.60	10.68	9.24
11. (Lolium italicum) Italian rye grass	2.30	40.10	13.98	10.90
12. (Agrostis vulgaris) Wild red top (Idaho)	1.85	43.73	12.15	10.07
13. (Phleum pratense) Wild timothy from Idaho	1.35	53.19	5.53	4.89
14. (Spartina cynosuroides) Cord grass	3.30	40.51	16.88	13.06
15. (Phalaris arundinacea) Var. ribbon grass	2.14	53.87	6.09	5.49
16. (Andropogon provincialis) Large blue joint	1.32	53.81	5.83	4.68
17. (Andropogon scoparius) Little blue joint	2.13	52.85	6.14	4.99
18. (Chrysopogon nutans) Panicle blue joint	2.44	41.00	12.63	10.09
19. (Poa serotina) False red top	2.87	43.25	12.05	9.30
20. (Agropyrum planicum) Colorado blue stem	2.12	42.53	13.88	10.90
21. (Bromus breviflorus) Short-awned brome	1.60	41.77	11.02	8.96
22. (Bromus inermis) Awnless brome	2.74	45.22	14.83	12.86
23. Common red clover	2.55	42.47	21.51	16.13
24. (Trifolium hybridum) Alsike clover	2.70	41.02	10.76	12.55
25. Prolife tree bean	14.06	34.10	13.30	11.93
26. Russian flax (first seeds in dough)	5.88	40.02	15.31	13.06
27. Asparagus (seeds in dough)	2.01	38.21	21.48	16.66
28. Prickly Comfrey (seeds in dough)				

On a fair average, about 57 per cent of the crude fat, crude carbohydrates and crude protein of the dry matter of different kinds of hay and other fodder plants which I have named in the above table is digestible.

Therefore, if we should multiply the per cent of crude fat, crude carbohydrates, etc., by 57 and the several products by 2,000, we would have the number of pounds of digestible fat, digestible carbohydrates, and digestible protein (albumenoids) in a ton. Then, as we have the means for determining the value of a given weight of the dry matter of the different grasses—the next step to be taken is, to find whether they are productive, and well adapted to our climate and soils, or not. I have found by careful trials, that most of the grasses which are valued highly in England and near the Atlantic coast in the New England States, are not well adapted to our dry hot summers in Iowa. Many of them require several years to become thick and well established, and they do best in permanent, mixed pastures. But few of them are sufficiently productive in our dry climate and as most of them have other faults, I am of the opinion that we will find better grasses in other quarters. I would mark orchard grass much higher than timothy, as the latter is not productive in dry seasons, it produces a poor aftermath and is injured frequently by rust, while the former is an early, healthy and continuously good grower through the greater part of the summer. Its worst faults are, that it does not come to its best, quick enough to pay well in short rotations of crops, and its blades are killed more or less by the sun during periods of drouth. When it is intended to let land lie in grass for several years, I would sow orchard grass and clover together, as they ripen about the same time. Tall meadow oat grass is a hardy, healthy, early and exceedingly rapid growing bunch grass, which is as good, if not better than orchard grass. I cannot recommend any of the other old grasses without further trials, ex-

cept blue grass for pastures and red top for very wet ground. The latter produces fair quantities of nutritious hay, but its aftermath is worth but very little. Texas blue grass appears to be as good as Kentucky blue grass in every respect, except that it does not produce many seeds. This is a serious fault, which will prevent it and many other good grasses from being brought into general use. The principal faults of most of our wild western grasses are as follows: they start late in the spring; they do not produce many seeds, and do not bear pasturing, and many of them from the dry plains east of the Rocky mountains, rust badly, but some of them are very promising. The large panicle blue joint (*Chrysopogon nutans*) appears to run into varieties, and as some of them bear many seeds, they may prove valuable. *Phalaris arundinacea*, which is closely related to the ribbon grass of our gardens, contains 13.96 per cent of albumenoids, while timothy contains only 6.36 per cent. As it is hardy and healthy, I believe it will pay to grow it. But I will place the two grasses, (*Bromus breviflorus*) short awned brome and (*Bromus inermis*) awnless brome at the head of the list of tame and wild grasses which we have tested. We found the latter near Boise City in Idaho, and I am confident that the latter is a Rocky mountain grass, but I do not know its history. Seeds of *Bromus inermis* can be procured from Peter Henderson & Co., or from J. M. Thorburn & Co., of New York. I have not had an opportunity to determine whether these grasses will bear the tramping of cattle or not, but I cut them close to the ground several times last summer, and they grew from one and one-half to two inches in a week after each cutting. The short awned brome is larger and more vigorous than the awnless brome. It starts early in the spring, grows vigorously during the severest mid-summer drouths, and it is hardy, healthy and nearly twice as nutritious as timothy. We have tested the Mammoth, Rawdon, Common red, Alsike, Crimson and White, or Dutch clovers. The Mammoth and Rawdon clovers are much larger than the common red, but the latter makes much the best second growth in very dry seasons, and is best for all purposes, except when the first crop is to be plowed under as a fertilizer. On deep, moist, porous soils, white clover and blue grass are valuable pasture plants, but we should not depend on them in mid-summer. I am confident that the new short awned and awnless bromes will take their places for summer pastures.

None of the different kinds of betches can endure our hot, dry summers, and it is unsafe to sow Alfalfa, except on moist and sandy creek or river bottoms. I am favorably impressed with the results of our experiments in growing beans for fodder. Next spring I will plant several acres of best pole beans in the corn field and let them climb on the corn hills.

Our chemist says that asparagus and prickly sunfry are remarkably nutritious. The latter is very productive, although not very palatable, but I believe our cattle can be made to eat it, by cutting and mixing it with sweeter crops, like corn and sorghum when our pastures are bare in July and August. I have failed to grow good crops of field peas for three years in succession on account of rust. What we need most is good grasses which will furnish an abundance of food during summer drouths, when blue grass and white clover are resting.

For the purpose of determining the comparative values of the best tame and wild grasses for late summer and fall pastures, on September 17 I measured a part of a row of each of a considerable number of grasses, and cut the aftermath of each variety with a knife as low as it was possible to cut it with a scythe. Each of the measured parts of average rows from which samples were taken, was two feet in length by six inches in width. The weights of the different samples were as fol-



lows: blue grass 21-10 ounces, timothy 24-10 ounces, tall fescue 14-5 ounces, orchard grass 2½ ounces, mammoth clover 47-10 ounces, awnless brome 71-5 ounces, and short awned brome 111-5 ounces.

We did not compare the aftermath of common red clover with the other grasses, because it was nearly ripe and completely dry, but it was much heavier than the aftermath of our mammoth clover which was severely injured by drouth. For profit in Iowa I would place the best of the grasses and clovers which we have tested in the following order, viz: common red clover, short awned brome, awnless brome, tall meadow oat grass, orchard grass, blue grass, white clover, wild Idaho timothy and phalaris arundinacea or ribbon grass.

It is a mistake to sow grass seeds with oats or wheat, as manshury barley is more profitable than any variety of either of them, and it ripens so early that there is but little danger of its smothering the young grass.

Ground which is intended for grass should be plowed in the fall, and the barley should be sown the following spring early in March if possible. After harrowing the barley well, I would sow the grass seeds plentifully, harrow the ground with a Thomas smoothing harrow and roll it with a heavy roller. In our climate it is not safe to depend upon the rains to cover the grass seeds, as we cannot rely on their coming at the proper time. The rolling is necessary to firm the ground and prevent loss of moisture, without which the barley and grass seed could not germinate.

During the latter part of August I would cut the young grass and barley stubble about four inches high and let them remain on the ground for winter protection. To make farming profitable we must have short rotations of crops, and clover must be one of the principal crops, not only because it is our best fertilizer, but because it is the best crop to make growth, wool, milk, etc.

The little nodules or tubercles which are found on the roots of clover, peas, beans and other leguminous plants are caused by certain species of microbes, which are similar in most respects to the microscopic bacteria which cause club-root in cabbage, turnips and mustard. By many experiments in Europe and this country it has been proved that such microbes have the power of using or appropriating the free nitrogen of air. The true grasses and other non-leguminous crops do not have such tubercles and cannot use the free nitrogen of the air, but they are entirely dependent upon the available nitrogenous compounds which they find in the soil. The very long roots of clover enables it to take up and bring to the surface soil, large quantities of available nitrogen from the sub-soil. Most of the rich vegetable mould which caused our fields to produce large crops 25 years ago is gone.

To grow large crops in the future, we must grow clover often, not only to increase the stores of nitrates or nitric acid in the soil, but to improve its mechanical conditions, so that air and moisture would circulate freely. From the results of many experiments with grasses, I know that it is unwise to pasture meadows which are kept for hay. For eight years I had a seven acre meadow lot which I could not pasture in the fall, as large numbers of fruit trees and evergreens stood in the same enclosure, which would have been injured by my cattle. From this lot I cut annually from two and one-half to three tons of clover and timothy hay per acre which was twice as much as I cut from other meadows which were pastured in the fall. Generally, we lose much by over stocking our pastures. If farmers would study the plants in their corn fields, from the time that the seeds germinate until the stalk begin to tassel, and learn some of the principles of plant growth, they would dispose of part of their domestic animals and make

money by doing so. For a few days after germination takes place, young corn plants are dependent on the reserve food materials which were stored up in the seeds. When such reserve materials are exhausted, the young corn plants are small and yellow, or of a yellowish green color, and if the weather is wet or cloudy they can make but little growth. But when there is plenty of sunshine and other favorable conditions, the color of their blades will change to dark green and they will make fair growth. If the surrounding conditions should remain favorable, the rate of growth will increase steadily until earing time. Why the rate of growth increases from day to day is very evident, as all of the crude food materials from the soil and air must be assimilated by the green chlorophyll of the blades before they can be used to build up the corn plant. As the stocks increase in size and their blades spread out wider and wider, the quantity of chlorophyll is necessarily increased to assimilate larger quantities of plant food.

Now let us turn to our bare over-stocked pastures, and we will find that the grass has no blades to assimilate plant food and there can be but little or no growth. When we turn again to pastures that are not over-stocked, we will find the grass good and the animals fat, because there is an abundance of blades to assimilate plant food. Plentiful supplies of nutritious grasses, should be our motto. In order to have them we must have smaller pastures and change our animals from one to another oftener.

Chairman: Gentleman, the paper is now ready for discussion.

C. L. Gabrilson: Mr. Chairman, while I think we should be looking out for more and better forage plants to supply our farms, I cannot help but think of a remark Prof. Henry made to me while walking through the experimental grounds of the station at Madison, Wisconsin, a year ago. He said we were always running after false gods. He showed me the different plants in the list and told me that so long as we had clover, timothy and corn there was very little use to try to find anything to take their place in a good while. And I have often thought of that since when looking at these matters. How easily our corn is grown and how useful it is for food at any time in the season, either for grain or for rough food; how easily the clover is grown and what value it is as manure after we have taken off the hay, for the root of the plant always equals the top. And it makes the best grass for a crop of corn or other plants to follow. Captain Speer has spoken of orchard grass, which he says should be used in connection with clover in rotation. The truth is, as he admits, that the orchard grass requires longer time so that by the time the orchard grass is ready to take up you would want to turn the clover under except in special cases where the clover is what is called a biennial plant, which grows this year, the next year produces seed and dies; although I find that clover is coming to be, in a measure, berennial. The best way with clover is to take off one crop and then turn it under, and not take the second crop which is only about two-thirds of the first crop. But, as I said, while we were



looking for the other forage plants let us not forget the ample fields we may have before us of blue grass and clovers.

Mr. Speer: I wish to say that I am perfectly surprised at the results of a couple of experiments I made last week, and which I got mostly through with this morning. I have always contended that blue grass after it was frozen is not valuable. Some of my friends believe in blue grass pasture and have been bragging about it as wonderful feed. I was of the opinion that they were mistaken, and that blue grass must be green in order to be of use to the stock. I went out last week and took the crops that were frozen—took enough of them to make an analysis and then went and took the green blades that were not apparently affected or frozen at all. Prof. Patrick has analyzed them, and here is the result. I will only refer to the crude protein, so you can see how it stands. In the green grass protein stands 14.89 per cent on the dry matter. The dead blue grass, that was apparently dead and worthless, turned out 8.39. What does it mean? Take the blue grass that was analyzed about the time it was going in blossom and the protein is only 7.54, and we find this frozen apparently lifeless blue grass is now richer than the blue joint when we cut it in the summer time. What does this mean? When we come to this green blue grass that was cut last Friday—the Kentucky blue grass—in his experiment was 7.57, and the blue grass cut last Friday was 14.89 protein. I must say that I am perfectly surprised. Here is an important fact. It will not do to depend upon your blue grass pastures pasturing them until the snow flies, because if you have fall rains it will freeze the blades, as they get too wet, and this analysis shows that they have lost protein or albumin. But where you have a patch of blue grass you turn the animal on the blue grass and let them pasture until the other grass crops are harvested and you have your field pastures. Then keep your cattle off the blue grass pasture until winter comes again, and you will have one of the best pastures you can possibly get. I must say that the analysis I have just referred to is a perfect surprise to me.

C. L. Gabrilson: This analysis of the blue grass proves just what we have been speaking of. We have seen how well cattle do on what is apparently dead blue grass. The blue grass here does for this country what the buffalo does for the plains.

Mr. Norton: I am surprised that our friends in the agricultural college have only just awakened to this question. On my home farm we have depended upon blue grass pasture for several years. We did not turn upon the pasture we have since last March. All do well there once in the season. The colts do well there as well as sheep.

We are glad to understand the analysis. We have reasoned like this: That the animals will eat the drier or poorer portion of the grass in order to get the lower portion that is always green. I suppose that the dead part of the grass is of but little use, but we are glad to know that there is strength in it—more than we find in the grass that is cut green in the summer time. Cut it in June and there is not much heft to it, but let it grow from June until this time, and let it remain there and keep lodging down and covering over the roots of the green young blades, and there seems to be a food there that answers for hay, corn, oats and bran. There is everything in it to make good stock, and I want to say that our stock will come out—especially the horses and colts—in better shape the first of April, without anything under the sun but the blue grass pasture, than they will in the barn with plenty of hay and the other rations.

Capt. Speer: But what surprises me is to find this frozen blue grass twice as rich as the blue grass that is cut in the summer time.

Mr. Barclay: Take the same pasture and covering it with manure and allow it to grow, and I would like to know whether you ever made an analysis of the different grasses under such conditions?

Capt. Speer: I have not.

Mr. Barclay: If you would you will find that it will give you a still greater surprise.

Capt. Speer: I wish to say that our Bulletin No. 11 is ready to send out, and that it will show that a stock of blue grass when it was two inches high I analyzed it and in ten days more I took a blue joint opposite it and analyzed it, and in ten days more I took another blade opposite it, and so on until it was ripe.

Mr. Barclay: The point I make is analyzing grasses from one patch of ground that is manured and then grasses from a patch that is not manured.

Capt. Speer: Of course it will make a great difference.

W. R. Mathews: One thing that surprises me is that red top seems to be valued so highly in the analysis when stock will not eat it, if they can get any other grass. I have handled it more or less ever since I have been in Iowa, and it is the meanest hay that was ever given to a brute. You can put it up into bales and send it to market, but you cannot sell it to parties for anything except for bedding.

Mr. Speer: Red top is better hay than timothy and many other grasses if you can get your animals to eat it. Here is where we should make the distinction. I know that beans is better for food than apples. I know many kinds of food that is rich in albumen, that children as well as grown people do not care to eat. Take oat meal mush and many of them do not like oat meal mush as well as they



do candy. It is just the same with all animals. The domestic animals like palatable food as well as people. Red top is not a palatable food, but if you will cut it not later than when it is just coming into bloom the cattle eat it and it makes a good rich feed. When you come to the practical use of the red top I will say that it is not only practical, but is three times as rich in material that makes flesh as the other grasses, and the only question in my mind is how can we make the animals eat it? I think as good a way as any is to cut it and mix it with the meal and other materials so that they will eat for the relish of the meal, rather than for itself, and you will find that it will in that way make a good food.

James Wilson: I have watched cattle eating the different grasses, and I will say that I like to have the different grasses growing together. I notice that the cattle eat the red top as readily as the clover or timothy, or anything else when it is young and tender. If you wish abundant pasture when you are making provision for the hot weather that it is likely to come in July or August, you permit the grass to get ripe—it grows up and gets ripe, and when you come to cut it you will see where the cattle have cropped the tops off when it was young. It is unpalatable, and when it gets older the cattle will reject it altogether. I think the red top would make good hay if it is cut green enough—just when it comes into blossom. I recollect when I was a boy in Kentucky of seeing those eastern cattle fitted for the butcher on nothing but red top, but it looked almost as pretty when it was cut, being cut when it was quite green, and the cattle would get fat upon it. I think in our harvesting we are pushed too much and try to do too much with too few men, and our red top is left to be cut till it is too ripe and it will not do. The blacksmith's mare is far better judge of what she wants to eat than we are, but the cow eats what she wants and you cannot make her eat what she don't want, and I do not want to sow any more red top for that reason. But there are a great many pastures in Iowa where the seed is packed into the earth and the red top will grow as long as the cattle will eat it when it is fresh.

Mr. Speer: I would only recommend the sowing of red top where the ground is so wet that no other grass will grow.

Mr. Wilson: Blue grass will grow *where anything will*. Capt. Speer spoke of short rotations for the purpose of sowing clover. I do not suppose the necessity of the rotation of crops need be urged. I think that is conceded. I would like to have a dozen tell us what their rotation is. What do you grow this year and the next year? What do you sow in your field between the breaking up of the sod and getting it back into sod again? That is what I would like to know.

J. G. Brown: There is a question about our clovers as to how

often to rotate. We have difficulty in seeding our crops and to know how to seed with other crops. Mr. Speer recommends barley and I know where it is the only crop with which we successfully seed our lands. That places the Iowa farmer in an embarrassing position and we must consider the whole thought. In my experience I have seeded ground in barley and flax and then seeded with clover and timothy and have universally got a good stand.

With clover and oats, by raising the early variety, I have been successful. With that variety of oats the straw seldom lays down. As to the rotation of clover I generally cut four crops of clover for this reason: The first crop will grow from six to seven feet long and run all over the ground and I often cut the second crop and get fine pasture after that, and the next year comes the first crop of hay. The difficulty is—particularly with Iowa lands—to get clover small enough to take care of it and after that it is not so much trouble to pasture, but I do not think there is as much loss to the pasture clover the first season, and after the clover I put in grain.

Mr. Wilson: Don't the red worm trouble you in the first crop?

Mr. Brown: Very seldom. I don't think I ever had damage of but two or three acres of ground by the red worm.

Mr. Wilson: How long do you usually allow land to stay in grass?

Mr. Brown: Usually about four years.

Mr. Wilson: Then you have a rotation system of about eight years.

Mr. Brown: Seven or eight years. Sometimes I pasture more than at other times.

Capt. Speer: Have you ever fed barley on the ground?

Mr. Brown: No, sir.

Mr. Wilson: Have you ever fed Scotch Broth? (Laughter.)

Capt. Speer: Barley is not as rich as oats, but I know it is more profitable than oats because they rust unless they are extremely late. I can get more nutriment out of barley than I can out of oats, but I would grind it.

Mr. Brown: As I said I seeded this year with clover and timothy and I got a good standing excepting some places where the oats fell down and smothered the clover. I raised oats thirty bushels to the acre weighing thirty-five pounds, but I cut it very green when it was not much more than in good condition for hay. My experience in raising oats is if you cannot cut it when green and cure it without moulding you have a good yield and heavy weight.

C. L. Gabrielson: I would like to give my own rotation. If, for instance, I plow this fall and clover seed for corn next year, we plant corn next year and sow oats in the corn stubbs. If we can get to it







matter has been no fault of mine. I wrote the several cattle men requesting them to prepare a paper or to suggest some one to prepare a paper on cattle—D. M. Moninger, Mr. Barclay; Mr. Sheehan is the only one who has responded and sent in his copy. Mr. Sheehan and Moninger are here. I do not think I should be blamed for a failure upon the part of these gentlemen to furnish papers when they were asked to do so.

F. C. Curtis: Mr. President and Members of the Iowa Stock Breeders' Association. I have always made it a rule not to undertake anything of this kind without some preparation, but since I came here I have been urged to take a place on the program and I rather unwisely gave my consent. When I arrived here I was shown a program on which I saw the horse standing out in rather a conspicuous place, and no name following. I was immediately informed that I would be the victim. Now, this horse on your program seems to be an indefinite kind of horse. That is, he is no particular breed of horse and has no name, so I will call him the American Horse and I will consider the American Horse as he is, what he should be, and how he can be if we improve him.

### THE HORSE.

BY C. F. CURTIS.

As this horse, on your program, seems to be an indefinite kind of a horse, that no particular horse or breed of horses is named, I will call him the American horse, and I will consider the American horse as he is, what should he be, and how can we improve him. I do not want to be understood that we should have or can have one breed or type of horses that is adapted to all of our wants because we cannot. This is an age of specialties, an age of centralization. The man who endeavors to qualify himself for two or more professions or different lines of business at the same time is usually as great a failure as a combined trotting and draft horse would be in either place. The American horse then should be the American draft horse, the American coach horse and the American trotting horse in distinct and well defined types. The latter we have already and specimens reared on Iowa soil that are unsurpassed anywhere in the world. We are the originator of this horse. He is purely an American product, and a magnificent success. May the time not come when our draft horses and our coach horses will also rank highest in the markets

of the world? and must it not come if we would continue to raise horses at the present rate with profit.

We have no American draft horse and no American coach horse. Fifteen years ago the horses of this country aside from a few trotting bred stallions and mares consisted of the native horses, or what our short-horn friends would call "scrubs." To be sure there were some good ones, but on the whole they were vastly inferior to the horses of Europe and Asia. About that time the importing business began. For the last ten years the average importation of stallions has been about 800 head annually from France, England, Scotland, Belgium, Germany and Arabia, comprising as many different breeds and two or three additional. A goodly number of mares from these countries have also been imported. Our native mares constituted the original stock and were bred to the imported stallions, and the offspring to other imported stock and so on. This is what the American horse is today. If there is any virtue in outbreeding or in crossing, and I believe there is, we certainly have the benefit of it. I believe we have a horse of good vitality for a foundation. We have in this respect a good foundation. Now what should the American horse be, and how can we improve him? He should be as good as we can possibly make him. We frequently hear it stated that the time for intrusified farming has come. It is equally true that the time for intensified horse raising has come. We have everything that is necessary to the production of a superior quality of horses. The best blood lines of Europe are represented in our stables. We have a climate, a soil and an atmosphere peculiarly adapted to all the needs in this line and an abundance and variety of nutritious feed. What we need is not more horses, but better horses. If we want a ready market and remunerative prices we must turn our attention to a higher degree of excellence. We must breed and develop more of what is termed *quality* in our horses. In short the American horse to meet the demands of the American market must attain the highest possible degree of excellency. In order to do this we must begin right. Begin by judicious selection. The beefy, thick legged, flat ribbed, loose coupled, logy horse, must go, no matter what his pedigree or service fee. True it will cost something to breed to the best sires. Many of the horses of Great Britain stand for £10 or nearly \$50 for the season, payable in advance. The tendency in this country is all of the time toward lower prices. If we insist upon keeping the prices down we will be obliged to use inferior sires. The breeder can better afford to pay \$25 or \$50 for a service that is worth it than to pay \$10 for a service that isn't worth anything. But the horse to command these prices must not only possess the highest individual merit in everything that goes to make up a grand horse, but he must above all have *prepotency*. By prepotency we mean the power in a breeding animal to reproduce himself, or his like; to stamp his characteristics upon everything that he is coupled with. We frequently hear the expression, "the sire made that colt," or "the dam made that calf,"—there was the principal *that* we call *prepotency*. When we get an animal that is sure to do this with unfailing certainty, then we have a prepotent sire or dam, as the case may be.

Owing to the fact previously referred to, that during the past ten years there has been about 10,000 breeding animals of the horse kind introduced into the United States from at least a half dozen different countries under all of the varying conditions of environment and largely intermingled, and crossed upon the native horse of this country our horses are, as a rule, deficient in prepotency. It is recorded in history that the Jews are the most prepotent people on the face of the globe, and that when a Jew united in marriage with a gentile the result was always a Jew



child. A good breeding horse should be as prepotent as the Jew; and without prepotency a well bred animal isn't much better than a "scrub."

Another quality that our horses need is *constitution*. Gov. Hoard defines constitution as that something that a mother gives to the offspring that cannot be obtained from any other source. It does not mean size or weight or muscular force, but that peculiar power which enables the animal to withstand exertion. That something that we sometimes see in the small or common looking horse that enables him to hold out under tests that prove to serve for the horse that hasn't got it. We see it in men too. It was this that enabled frail looking men to withstand the hardships incident to military service, when strong men were obliged to succumb.

There are numerous other qualities to be obtained, and when we succeed in getting all of them and breeding the proper type, we must know how to grow the animal to the best advantage. We should follow in the progressive footsteps of the swine breeders and *feed for lean*. We should do more than that. We should feed for *bone* and *sinew* as well. Horses of superior draft qualities can be developed from any of the best draft breeds, and in fact the different breeds contain many of this class already. The work yet to be done is to bring them all up to this high standard, and our draft horses will be eagerly sought by both home and foreign buyers.

The development of the coach horse is a more difficult problem, because there we encounter more of the irregular breeding than in most any other distinct breed. It is claimed however that the Oldenburg coacher is a strong blooded prepotent breeder. We also have good coach blood in some of our best trotting horses. If we select the large 1300 or 1400 pound horses that have bred in them the vim and the constitution of the thoroughbred, and the fine style and action of our present coachers, we will have an excellent foundation.

Capt. Jordan: I see a friend of mine over yonder that is shaking his finger at me. I do not know whether he means I shall sit still or whether he means I shall speak on the horse subject. It is well known to the older members of the Association that in the past I have had something to do with the horse, but in the last year or so I have become so thoroughly mixed up with the hog and sheep men that I scarcely know whether I am a horse man, hog man, or sheep man, and hence I thought I would not say anything on the subject, but I happen to remember that I was asked a question since I have been here that seems to me of great importance and one that is, perhaps, more familiar to you than me. It is whether this great draft horse we have been bringing to America is to retain its present status in size, growth and characteristics, particularly in the diversified soil and climate of America. This is an important question and if we can get at the proper solution it may do us a great deal of good in increasing the value of our draft horse stock. My experience and knowledge, what little I have been able to obtain, goes to satisfy me that the draft horse of England—the draft horse of the countries in England and also the countries of Germany and of Scotland, and

perhaps France, is bound to be adopted by the breeding in this country. We want a horse more compact and closer together, and as has been said, we are going to produce less quantity and more quality. I have come to this conclusion from what I have already seen of the early importations. I came to this conclusion from what I have seen in England and in France. Now, you all know probably, that in England, the home of the draft horse, is what is called the aren country, that a few years ago was covered with a sea, but which has been re-claimed and has a rich soil, producing the best grass in England. This is the home of the draft horse and there and there alone is he produced with what the English people call "the father on his leg to perfection." Take him to the hilly countries of Yorkshire and you produce a horse that is less in size and increased in quality. He becomes destitute to a degree of the hair on his legs, reduces his leg bone in size and weight after a long term of years, and some of them have been brought over, but they lose their distinctive character of the draft horse and they call them the agricultural horse because they have been lessened in weight. You all know very well that the origin of this great horse is in the lower quarters of France where they grow in their natural condition covered with long hair, swashy in their characters and constitutions, and they have been modified by claiming where the country was hilly and where the seasons are dry at all they become the horse of the sea. Now, in this country we have sufficient evidence that they are going to be reduced in size and increased in quality, the muscle and constitution, but not in the size of the bone.

Again the question came up as to the best way of weaning colts. I might just make a few practical remarks on this subject without regard to specie. I visited one of the largest producers in Iowa, who took me with pride to his barn to show me his colts. He showed me several beautiful specimens and they were all piled up on the floor in the stable without bedding. I expressed surprise that he should have his colts there in that way and I learned from him that that was his custom in raising colts; to wean them in the stable with the dam about the first of October; to tie them up on the floor in this way and keep them there until grass came enough to turn them out. I protested, but he was a bigger man than I was and I do not know what might have happened. Well, we did not have anything except some words, but I was astonished and I protested against raising colts in that way, but I was perfectly confirmed in his manner of raising them. He said if he turned them out they would run all the fat off. They did splendidly where they were, but I want you all to protest against that manner of raising colts. If you have any one in your neighborhood



doing that way, try to convince them not to do it, but if he is anything like I am, perhaps you will find him hard to convince.

Mr. Gove: There is one point about weaning colts I might speak of. My habit is to tie the colt by the side of the mare in such a way that the colt cannot reach her. I put them in some stall for about four days in that way and then I can take the colt away and put it in another stall, or lot, and the colt will not fret after the mare.

Mr. Brown: Mark Twain once said that he spoke the best on the subject that he knew the least about. If that was the rule with me, I should be fluent on the subject of the horse. I have been somewhat observant and know something of the condition of horses in the past and present, but cannot see that there is much of a departure in the manner of breeding horses. Breeding heavy horses is, at present, overdone, and the demand is more for stylish horses. There is a ready market for the good styled horse and farmers and breeders are making note of it. There is no question in my mind but what the heavy horse is overdone. Electricity and other motor power is taking the place of the horse on the streets of our cities and elsewhere, but you will never find anything that will take the place of a fine driving horse.

Mr. Willard: Mr. President, I can hardly endorse what the gentleman has just stated about the fine draft horse. I hardly think the draft horse has been overdone. The key-note has been touched in the difficulty. I met a prominent horse buyer the other day and asked him the question as to what kind of horses he was buying, and he said heavy horses altogether. He said the demand was for heavy horses. What he says is true in regard to the market for the fancy horse, and the man who has it will always get a good price for it as he ought to. Notwithstanding that there is still a larger demand for the draft horse and you will always find plenty of buyers for him that are willing to pay a good price.

Mr. Geo. Hill: I should like to say, for the benefit of some of the people here, that I have a friend in Chicago, W. P. Rand, that is the proprietor of an extensive teaming business. He told me within the last ten days that the foreman of his stable had issued an order to buy at any price any team he considered all right to put on his heavy wagons. Whenever he found the right horse he was to buy him. There is no end to the demand for that style of horses in Chicago.

Mr. Dick Gilmore: Mr. Chairman, a few years ago they kept telling me that this horse breeding would be overdone, but I have been more or less raising horses ever since and keeping 25 or 30 head, but within the last ten days there has been made up in our neighborhood a heavy class of good three year olds, and two year olds past, just raw, green, colts, and I have about nine that are coming three and out of

them I sold four. One was a two year old and weighed 1330 pounds, and they went off quick. The horses bought were horses weighing about 1340. They were bulky and a fair class of horses. I only got \$125.00 for my two year old past. I offered to sell the others, but could not sell them. The fancy driving horse will always pay. In regard to the matter of raising horses, it is pretty safe to conclude that there is a place for all sizes and kinds from the Texan Broncho up to the heavy draft horse.

I want to say one word on another question that has been up. And that is in regard to grasses. I have an inveterate hatred for the Red Top grass, and if you haven't any on your place never bring it there, for if you are not poor before, you will very soon become so after that.

Mr. ————: How do you get rid of it?

Mr. Gilmore: That is the trouble. To raise profitable grasses, my notion is—and I have been raising it that way—to never break the ground up at all. Let it lay, if you can, for 20 years and the last five years will produce more grass than the first fifteen—more solid blue grass and white clover.

If it had been anybody else than Mr. Wilson who said that you could fatten cattle on Red Top I should think that he was off. I don't believe in using it, even for the wet land. In wet seasons where it grows on the spouty ground you will find the Red Top green and growing while the other grasses are eat off. I think it very poor pasture; poor stuff, and if you sow it it will make a poor man of you.

Mr. Van Houten: Mr. President—Mr. Gilmore speaks of there being demand for all kinds of horses. There is a demand for all kind of horses. Recently there was some of those Texas horses brought into our county and I bought five of them for \$57. There were some Oregon horses brought into our county that sold for about \$30 apiece and some Montana horses that sold for \$40 apiece. So you can see that there is demand for all kind of horses, but there is a good deal of difference in the price that they bring. Take the high-stepping horse and you will always find a great demand, but the common, average man could not afford to keep such a horse. If we all produce that kind of a horse the supply in a short time will be filled. But there is a demand for horses that we may produce and always get a good price for and that is the heavy draft horse.

Mr. Wilson: Yes, if the time ever comes when the entire United States is filled with draft horses there is one advantage we have; everybody else will have to stop raising them before Iowa will, because we have the cheapest grain and the cheapest grasses.

Mr. D. P. Stubbs: Mr. Chairman—I find this question quite entertaining. I thought it would pass with just a few remarks, but I see



that the subject is intensifying. In the language of the "Old Hoosier" I am getting chuck full myself. But the first thing that was told me when I arrived here, was that I was booked for a speech on the horse at the banquet to-night, and I cannot speak on this subject this afternoon, because in what I say to-night there may be something that will conflict and I might not get through with it.

There are some other matters, so far as I am concerned, that I wish to speak of, but in rising now I do so principally to announce that you gentlemen can hear what I have to say on the horse by attending the banquet, and I think the banquet is the most interesting subject.

While there are some errors, it seems to me, in the ideas advanced to-day, there are many that are on the right road. While we have been improving imperfect horses we have not ruffled a hair on the race in this county. My friend who has just spoken, has struck the key-note. Whenever big horses will not sell in this country it will be time enough then to call a halt.

#### SHEEP—THE DOWNS.

BY C. L. GABRIELSON.

Naturalists tell us that sheep have been domesticated from a very ancient period. Darwin says: "Ritinger found in the Swiss lake dwellings the remains of a small breed, with thin, small legs, and horns like those of a goat, thus differing somewhat from any kind now known." Almost every country has its own peculiar breed, and many countries have several breeds differing greatly from each other. Youatt, the eminent English veterinary surgeon, and author of complete works on our most important domestic animals says: "In all the different districts of Great Britain we find various breeds of sheep beautifully adapted to the locality they occupy. No one knows their origin; they are indigenous to the soil, climate, pasturage and the locality on which they graze; they seem to have been formed for it and by it." In proof of these peculiarities he relates this instance: "That a flock of heavy Lincolnshire and light Norfolk sheep which had been bred together in a large sheep walk, part of which was low, rich and moist, and another part high and dry, with bent grass, when turned out regularly separated from each other; the heavy sheep drawing off to the rich soil, and the lighter sheep to their own soil, so that whilst there was plenty of grass the two breeds kept themselves as distinct as rooks and pigeons."

The period of gestation was formerly thought to be of so unalterable a character, that as supposed difference of this kind between the wolf and the dog was esteemed a sure sign of specific distinction; but we have seen that the period is

shorter in the improved breeds of the pig, and in the larger breeds of the ox, than in other breeds of these two animals. The following table, where Merino and Southdown sheep were long kept under exactly the same conditions show that they differ in their average period of gestation.

Merinos.....	150.3 days.
Southdowns.....	144.2 "
Half-bred Merinos and Southdowns.....	146.3 "
Three-fourths blood Southdowns.....	145.5 "
Seven-eighths blood Southdowns.....	144.2 "

The author of this remarks: "That as Southdowns grow with remarkable rapidity after birth, it is not surprising that their fetal development should have been shortened." In this connection the fecundity of different breeds varies greatly, for instance, the Merinos cannot be relied on to produce more than seventy-five per cent of lambs from the ewes coupled while others like the Shropshires or Downs frequently produce twins or triplets. In this line a bit of personal experience as to the result from using different breeds of rams on the same flock of sheep, may not be without interest: Our first venture in sheep was a flock of common ewes with Cotswold characteristics. A yearling Merino ram, yielding a fleece weighing twelve pounds, with the fibre measuring four inches in length, was put with them. I selected this ram because he was the nearest to the desired type of sheep which was aimed at. Every ewe conceived, but there was not a twin lamb in the lot. The next ram was a Southdown, known to one of twins, selected by Mr. Buel Sherman, then trustee of the Iowa Agricultural College, from the former flock. Coupled with the same ewes half of them gave birth to twins.

America has no native domestic sheep, and but one recognized wild sort, the Rocky mountain sheep (*Ovis Montana*), called big horn from the size of the horns; so that we owe to Europe our stock of sheep. Efforts have been made in the United States to establish breeds by the use of rams of the different well known sorts. But there appears to be a lack of steadfastness of purpose present in American character to do this with sheep, and even to keeping up the progeny of imported parents to the standard of foreign excellence.

Of the European breeds which have become popular in this country may be mentioned the Spanish Merino, Cotswold, Shropshire and Southdown as the leading ones. The Oxforddowns are also coming to the front as a desirable variety.

After one has studied the characteristics of the different breeds one can safely choose the class of sheep which seem best to his location, and duly consulting his fancy, with the assurances that they will do for him if he studies and learns their needs and sets himself about it to supply these wants.

The Shropshire breed traces its origin to the "Morfe Common" sheep, a black-faced breed upon which first the Cotswold was crossed and afterward the Southdown, which, during the present century, has brought the Shropshire into such prominence as to be the most popular and numerous sheep in Great Britain, where they occupy the position as a rent payer.

The Shropshires possess a refined appearance, symmetrical forms, deep chests, compact bodies upon short legs. Their pleasant countenances, larger eyes, and sharp, erect ears, make them objects of admiration. They resemble the Southdown in general make-up, but larger, with darker faces and legs, yielding about two pounds more of wool per head. They are quiet, easy keepers, good mothers, and will produce on an average one hundred and fifty per cent of lambs from a given number of ewes.



The man who can select a good sow or a good cow, and by that we mean a sow or a cow, which will be a good mother in all those things which that word implies, is well qualified to select a flock of ewes which will give satisfaction as breeders. But anyone who is starting out in the sheep business will do well to get the aid of one accustomed to sheep in selecting his stock.

After the ewes are secured the next important thing is to find a suitable ram, and this must be a pure bred of his kind. Breeders who are in the business as an occupation can be depended on to supply that which they offer.

The ram should be brought to his new home at least a month before his services are called for. We have had two instances of delayed fruitfulness on the part of purchased rams; one a lamb, being barren for three months, except with one ewe, and the other, a yearling, for the entire season, which represented a considerable loss, by the way.

If a lamb is bought he should not be allowed to run promiscuously with the flock, be it large or small; but should be kept in a place by himself with a moderate allowance of oats, as the grain feeds together with good hay, pure water, and some food of a laxative nature to keep the system correct; a few potatoes will answer. It will be well for a purchaser to learn from the breeder how the ram was kept in his old home and aim to continue the same care. By so doing good health will be promoted and better service assured.

When the time of service comes let him among the flock, confined in moderately close quarters, for an hour's time, morning and evening, under the oversight of an attendant. When a ewe has been served once pick her up and put her away from the flock. Do this for a week and nearly all the ewes will have been served so that the ram may then run with the flock. The ewe's season comes around once in seventeen or eighteen days, but, ordinarily, if both parties are in proper trim a second service is seldom called for.

There is a certain amount of precaution necessary to proper copulation. If much wool covers the ram's belly, or there is a strong growth on the ewe, so that the ram serves unwillingly or not at all, trimming the parts will correct this trouble.

#### CARE OF THE FLOCK.

Sheep require as little care as any farm stock, but this care must be timely. If the flock is allowed to go into winter quarters reduced in flesh, getting them in condition again will be up-hill work; and this check in growth also means less a weaker wool. A cessation of growth in the wool from ill feedings shows in the fiber which the expert buyer is sure to find if it exists. Therefore the wise shepherd, like the experienced feeder of all kinds of stock, begins early to get his flock in order to withstand the winter. The aphorism in regard to sheep: "Well Novembered, half wintered," has deep significance, and should not be lost sight of.

But while sheep should be in good, plump condition there is danger of mutton sheep getting too fat, unless they are compelled to take considerable exercise. When sheep can have the run of fields they will find stray bits of grass, even if snow covers the ground, by the use of their hoofs in pawing. The exercise and food obtained in this way will keep them in health and save considerable hay.

The lambs will be better if extra care is given to the ewes. Either before or after the lamb is born, the wool should be shorn off in neighborhood of the udder so that it can get nourishment without looking for it among filthy locks of wool. Unless lambing is delayed until the warm weather of May, there should be provision made to give each ewe a separate pen until the mother and offspring get wonted to each other.

And then the ewes and lambs should be allowed by themselves so that additional food can be supplied. Extra food for the ewes at this time is equivalent to feeding lambs. It is also well to fix a place where the lambs can squeeze in and find a bit of oats, or oats and bran. Give but little at first and renew it daily, in order to have it fresh and sweet. It is advisable to keep the suckling ewes separate from other members of the flock in the early part of the season, so that grain may be given until there is abundant grass. A long-shaped trough made high enough to exclude feet, but low enough to allow the lambs to eat also, should be provided in the pasture for this benefit.

#### SHEARING TIME

varies to suit the convenience and ideas of sheep owners. Twenty-five years ago it was the general practice to wash the fleece on the sheep's back, by driving the flock to the banks of a stream where an attendant took the sheep into the water for the purpose of cleansing the wool. This abhorrent method has been superseded by the more humane treatment, of man and beast by selling the wool in its natural condition as it comes from the sheep.

The rule is to wait till settled warm weather, say, after the middle of May to shear; while a few recommend early shearing—in April. We were led to adopt the practice of early shearing by observing that sheep with a heavy fleece would not seek shelter during spring rains until its fleece was saturated. The evaporation of so much water must naturally require vital force to supply the necessary heat. This question of injury to stock generally from exposure to cold rains, as in fall or spring, may be realized by a short study of the laws of physics.

We are told that it requires 142 degrees of heat to melt one pound of ice; or, that the heat required to melt one pound of ice would raise the temperature of 142 pounds of water one degree. And to reduce water to vapor, as it must before it can pass away from an animal, or object, calls for  $5\frac{1}{2}$  times as much heat as is needed to bring it to the boiling point. All this seems reasonable when we take into account the wretched appearance of stock after exposure to a severe storm.

Sheep which have been shorn early skip for shelter at once when rain begins to fall; and the habit becomes so fixed that in summer we have found it necessary to close the entrance of their quarters in order to get the dust washed off them. Then, too, it seems reasonable that early shearing tends to the production of more wool—because the body demands better covering.

Another advantage from shearing early in the season comes from avoiding the necessary "tagging" which is imperative to the sheep's comfort and proper care of the fleece; when the flock is on grass, unless this trimming of those parts which need it is attended to the fleece will become filthy so that that portion of it will be cast aside, as worthless, when it reaches the wool dealer's hands; after having been transported, at the former's expense to the distributing point, Chicago for instance.

Shearing is an art which cannot be intelligently enough described to enable any one to do this work properly, and can be learned only by seeing one accustomed to the work and trying to do likewise. The fleeces should be folded, inside out, much the same way that a beef's hide is rolled up, and tied with just enough string to hold it well together. Extra twine and filth will all be found and removed before the wool is finally paid for; even if the local buyer takes it from the wool grower without thorough inspection. In order to avoid impositions of this kind the home buyer fixes the price so much below the market values of properly cared



for wool, so that any one who knows that his lot of wool is in proper shape can usually do better to ship his clip to some reliable wool dealer in one of the great cities.

The toes of some sheep are apt to grow out of shape and become the seat of disease if paring and cleansing is neglected. This can readily be done at shearing time, and if there is a tendency to unusual growth then this duty should be attended to in the fall also.

#### CARE OF THE STOCK.

Sheep are a species of stock which are naturally as free from disease as any of our domestic animals, but when once attacked they give up easily and do not try to rally. In our own experience preventing disease by giving the flock common care—neither coddling nor neglecting—we have been fairly successful and consider sheep one of the best paying branches of farm economy.

A hog dies and we have nothing to repay us for the labor of burial; from a horse we have an inferior hide and, perhaps, his shoes; a cow's hide is usually worth taking off, but when a sheep goes the way of all flesh it never dies in debt—that is its fleece will always pay for what has been eaten since last shearing time. Keep sheep.

Hon. J. B. Grinnell: I am not so fortunate as to own any sheep at the present, but I know that they are all right. I was fortunate in bringing 20 head out in this State of Iowa when wheat was 40 cents and we were a great ways from the market or from the railway. I have had as many as forty thousand in Iowa, but I went out of the wool business when wool went down. There was no longer any great demand for wool for army purposes, and there was another reason why I went out of it: Because the sheep were diseased with the foot rot, and because pork went up to seven and eight cents and our attention was turned in that direction instead of to wool. We have, I think, one hundred thousand sheep in Iowa.

Mr. Franklin: Over five hundred thousand.

Mr. Grinnell: Bless the Lord for that. I see that I am behind the times. We have fifty million acres of land in Iowa, some of it rough land, adapted to sheep, and I think we ought to have five million sheep in the State of Iowa and we would still find profitable agriculture. We are too apt to fall into the idea because a certain president said it was raw material and so fall into that delusion. If a lamb when it is born is raw material then the coat on his back is raw material. It is not raw material. Raw material is what God has put into the mountains and into the earth. It has to be dug up and afterwards worked into a condition to be used. Wool is not raw material; it is cultivated material.

Now, Mr. Chairman, I would give five dollars to be here to-night to hear my friend Stubbs and the rest of you, but I cannot. I wonder

if brother Blakely is here. I think not. His qualities suited me in that he has a large sheep, but he has crossed the Merino of the best shearing sheep he could get with the long wool sheep. I believe in what friend Wilson says, that it is not so good mutton, but he has examined the cross with the Merino and by this cross you may be able to get a great deal more wool. If you feed grain to your sheep as you do to your cattle you will have the sweetest mutton. We try to have a leg of mutton once a week—we have to have it and the mutton I prefer is the cross between the Shopshire and the Merino or the Leicester. Mr. Blakely will tell you, if he were here to-day that his crop of four fetched him about twelve pounds to the head and he will get about 25 cents a pound for his wool. If I were a young man and a farmer I should have some sheep. I should hate to make war upon dogs, but I would do as John Norp, or I would take care of the sheep, no matter what became of the dogs. When some one suggested to him that it would give him trouble if he set out poison for dogs, and he says, but just let the dogs alone and put out your poison *for wolves* and the dog will soon learn that if he comes onto the place he forfeits his life. If the dog should happen to get the poison, of course, you would have to go out and bury him. Don't get as large flocks as I did. Don't get too greedy; I was too greedy, but I didn't lose money by it. I saw that I could make money on pork when it was seven or eight dollars per hundred and so let my sheep go, but I did reasonably well and I am out of the poor-house, but still enjoy good mutton. I hope you will ever live where you can get juicy mutton, and you need not be afraid if there happens to be some Merino in it. Feed grain and you will have sweet mutton and you will get 25 per cent on your investment.

Excuse me, I ought not to say as much as I have, but as this is my last word I shall ever say upon sheep, I give it to you as one who has not had good experience, but a large experience.

Mr. Sheehan: There was a suggestion made by our honorable friend who has just addressed us that I wanted to hear made. That was that this Association appoint a committee to confer with the trustees of the Agricultural College at Ames, to let the wants and wishes of this Association be known.

I move you, Mr. Chairman, that this Association, while Mr. Grinnell is here, appoint a committee of three—three of the grandest men I know in Iowa, the Hon. James Wilson, of Traer, O. T. Denison, of Mason City, and Martin Flynn, of Des Moines.

I make this motion that the Association appoint these as a committee of three to let them know how we would like to have them do with the agricultural department of the Agricultural College.



Mr. Grinnell: As I made the suggestion this morning, I would like to make another one in connection with it. Do not let us go there either in a suppliant or dictating manner. Let it rather be five than three and the committee can be divided around. I am not a civil service man. I believe in the determination that to the victors belong the spoils. I would make the suggestion that the president appoint the other two.

Mr. Sheehan: I accept the amendment.

Mr. Van Houton: As a member of the Agricultural College trustees I would make the suggestion that I think would confess the sentiment of the Board by saying that we shall welcome any suggestions this committee can give us. We are wrestling with the problem how to make the agricultural course more beneficial to the State. We know that it is not efficient, but it has not been abandoned. There are more courtesies in that course than any other course in the college. There is more time devoted to that course than many other places. Take the agricultural course as well as chemistry, botany, veterinary science and horticulture proper and there is a great deal of time devoted to it and yet not enough, and we are ready to have any assistance we can get to make it more effectual and beneficial, but we want it understood that there is no abandonment of that department, but we want to make it better. We have had a visit from the committee of the Farmers' Alliance. We have a committee from the Dairymen's Association, and I believe those gentlemen will say that they have received courteous treatment, and the suggestions that they have offered have been received in the same kind of spirit that they have been given. We are as much, yes, and more interested in the college than you can be. Of what you condemn we are ready to condemn and your suggestions have been good, and if you are able to help us out of the trouble we will thank you for it, and the people of Iowa will thank you for it, and you will find us ready and willing to co-operate with you in any way in our power to make this college what it should be. We meet in session at Des Moines, at the Savery house, the 8th of January next, and will welcome the committee at that time, and we will welcome you to the meeting in May next and shall be glad to have such suggestions as you may see fit to give the individual members of the Board and will give them proper attention. (Applause.)

Captain Jordan: I am somewhat mortified to think I made a mistake yesterday in speaking of the original Shropshire sheep, which my friend Gabrielson has corrected. In speaking of the original, I had the name of Dorset instead of Morse.

The chair here appointed Mr. Moninger and Captain Brown, of

Leon, as the other two members of the committee of five to confer with the Agricultural College trustees.

Mr. Don Donnan: I would like to have an amendment and to have it incorporated in this motion, that the committee be made permanent for a term of two years, which I think will be better than from meeting to meeting.

The motion was here put as amended that a committee consisting of James Wilson, O. T. Denison, Martin Flynn, Mr. Moninger and Capt. Brown, of Leon, compose that committee for a period of two years.

Motion carried.

Mr. Norton: When I was on the other side of the water two years ago I was told that the downs came from a cross of the Shropshire with the Leicester. I think Mr. Gabrielson said the Cotswold and the Shropshire. It is on this tract of land of some six thousand acres of marshy land that has been re-claimed and where they grow these animals that these sheep originally came from. They are a small class of black face sheep that yield annually about two pounds of wool. The Cotswold and Leicester were afterward introduced.

Mr. Norton: You make no distinction between the Cotswold and the Leicester.

Mr. Gabrielson: Very well, and I think Mr. Stewart says both. And the improvement has been made by careful selection as Capt. Jordan told us. My authority is Henry Stewart.

Capt. Jordan: I had a question or two that was asked me about sheep, but my friend has answered it nearly. One was how shall I feed lambs for the best weight for August or early market for mutton sheep? My friend has answered that, but possibly not carrying it on as far as I would. In the first place, I would take the lambs in the best possible condition and as soon as possible get them onto hard feed—oats. From that time on until I wanted to butcher I would feed him all that he could eat, taking his first ration from the mother, then his ration from the oil cake and if you have a Jersey cow a little milk will do no harm. You see the sheep is a machine for turning vegetable matter into meat—simply a machine, and if you can turn vegetable matter into meat you get an article that is worth four, five or six dollars a hundred for the meat and perhaps \$25.00 a hundred for the wool you can afford to put in all the feed possible in the quickest time that can be utilized by the machine. You see the point. This is where mutton sheep especially comes into value in Iowa. It is to turn our raw food rapidly into that material that brings this enhanced price.



I had another question which he has partly answered. The origin of the Oxford Down, or the Down sheep. This can be answered very briefly by saying Oxford Down like all our domestic animals is a cross bred sheep and was principally made up by a cross wool Leicesters and Cotswold which are all about the same character as the South Down. The Oxford Down is big and in England one of the most popular. There the Shropshire and the Leicesters and the Oxford Down comes in next. They are raised on those rich valued lands and are pushed through with all the feed they can consume from their birth. The Hampshire Down is a larger sheep that has come from a similar origin and pushed in another direction, being increased in size and larger than the Oxford and a Lincoln sheep is a similar sheep that has also been pushed to attain great size. All those sheep, you understand, are what may be called surf sheep. Sheep must be well cared for and can be used to great advantage in changing food into meat, but they must be well cared for, and remember, farmers, if you are not well prepared to feed those sheep and to care for them and give them an abundance of good feed, don't touch them. They will be a failure on your hands. But if you are prepared, there is no other kind of animal, perhaps, we are producing to-day that is so valuable. I go into the Des Moines market and get a surloin and steak and they charge me 12½c. If I want mutton they charge me 15c and so it goes. I say for the present push the mutton culture and push it with good judgment. If you are going to push mutton, push the mutton sheep. Be prepared to feed heavy, as thereupon depends your success.

Dr. Stalker: I have a little farm down east of this place on which I have some stock, and I have on that place a few sheep. They are not pure bred sheep. I started with a long wool sheep—I don't know what breed—but good large bodied sheep. I used good bred Shropshire rams and I found myself in possession of half a hundred sheep. I presume they are worth four dollars apiece, or something like that. I did not sell them. I found by the next fall after that that I sold from that flock within a few cents of seven dollars off of every sheep I had to start with and a little better flock than I started with—the same number and better individuals. I sold out the older class of sheep and kept a few of the choicer lambs. I was talking with a man a few moments ago, who is on my place, who told me if we had kept the flock down to the same number we had started with last spring we would have realized seven dollars off of every sheep we had at the beginning of the season. So it seems to me it is a fairly profitable business. They have not had a large amount of food, but have simply taken up what we are glad to get rid of. They run in the open timber pasture and on the grass lands, but aside from that have cost

us very little for keeping and I have sold from the flock a good deal more than its first value and have a better flock left.

Mr. Young: I believe I stated yesterday in the sheep meeting that the sheep would pay one hundred cents on the dollar. I will not take this back this afternoon. I aim to keep about one hundred sheep. Last year I sold \$600 worth from that flock. I have about the same number of mutton sheep that gives me better return than any other stock on the farm. I used graded sheep. I have had my flock well bred up in Cotswold, but I found the wool too coarse for market so I changed to the South Down. I run a South Down buck for three years in my flock and since then I have used Shropshire lambs. I am using the Shropshire lamb now. I like the South Down sheep for mutton, but they are too light wool. I think we can get more wool from the Shropshire, because they are a larger size. I do not know that they are better really, but they are a larger sized sheep. I get from seven and one-half to nine pounds of wool to the fleece on an average. I used to when I had Cotswold make an average of about ten pounds, but in getting finer and lighter wool it decreases the weight of wool and increases the value.

Mr. Jordan: I find one more question I cannot answer: What weight should a Shropshire sheep attain at maturity? My opinion dates upon my observation in England while I was buying horses there; during the last ten years I always have to see the fine flocks of sheep they have there, and my opinion would be that a Shropshire sheep—a Shropshire ram should not exceed 325 pounds. I don't mean that the wether or ewes should not exceed that, but the ram should not exceed 325 pounds. When he exceeds that in weight, I should be suspicious that he had been tampered with Shropshire Down or Lincolnshire, a kind of sheep that I never would use, or what we call the Holstein sheep, which is said to be as big as a Holstein cow. I think the Shropshire sheep or wethers should not exceed 250 pounds at most. I shipped two rams this week to Minnesota, yearling rams, Shropshires, that weighed in the crates, in the express office in the morning, after having been fed and watered in the morning, 568 pounds in the crates. That included the crates and the two sheep.

Now, just one word in regard to wool which may interest you. The great pressure in England to-day is how to attain sheep valued for the wool. When we first went there for horses there was no horse register in Europe. Our pressure led them at once to look after it and their stables are now supplied with stud books by which they can place the pedigree.

You know they formerly ran entirely after the fine wool sheep, and



now the pressure has caused them to produce those great mutton sheep and the wool most valuable. The moment you strike one of those improved mutton sheep in England the prices enhance greatly. One of the sheep raisers there paid 210 guineas or \$250 in round numbers for the use of that sheep in his flock. That sheep is said to have sheared thirteen pounds of wool, and they claim they are now going to produce a mutton sheep, not produced in size or character, but one which will produce a fleece to average twenty pounds, and when that comes we shall have the grandest sheep in Iowa, and I believe we can produce it.

Mr. Norton: I would like to say that when on the other side of the water I met Mr. Beatty, who we all know is one of the leading men and who has imported more cattle, sheep, horses and swine, not excepting the little England sparrow, than any other man. I spent a day with him at Penry. While there, of course, I had an opportunity of seeing all the breeds, and I think I saw all the breeds that we have in this country. Cotswold, Shropshire with many others, not excepting this mutton sheep. He was the worse scrub you ever saw as compared with our common sheep. I said, "What does this mean?" He replied, "That is the mutton sheep."

It had wool seven or eight inches long—no, not wool, not hair, dog hair, worse than dog hair, long coarse hair. What is that for? On account of the meat. The best kind of sheep. We have a good meat in the Shropshire, or a sheep that is crossed upon a Cotswold.

I told them that we had had a little experience with them. I think the sheep to cross upon the Merino is the Shropshire. Father Grinnell, I want to say that this cross upon the Shropshire and the long wool upon the Merino is good. In my judgment there is nothing equal to the pressure they had, unless it was mutton sheep.

Mr. Norton: In regard to the shears that are used for sheep. The clipping is all right as far as it goes, but we should continue clipping right along up the legs so the wool is good and clean. Let it be done while you have the sheep ———.

If you want to keep your sheep away from the wolves use plenty of bells. We happen to be so unfortunate as to live about ten miles from the Mississippi, and some of our pasture is timber land where the wolves bark by night, but we hear the tinkling of the sheep bell and know that they have come home, and we have not had a sheep caught by dogs or wolves. We have a pasture fence. My neighbor put on three rails and I put on two, and the balance of our fence is hedge. We have hedge and rail and board and wire.

Mr. Chairman: We will have to drop the discussion now, as we have three papers yet.

## HOW CAN THE COMMON FARMER IMPROVE HIS HERD?

BY GEORGE VAN HOUTEN, LENOX.

This is probably the most important question that confronts the Iowa farmer to-day, and upon the proper solution of this question depends, in a large measure, the future welfare of the agricultural interests of Iowa.

The great range in prices of cattle on the markets mean a great deal, and, while not all of the difference can be attributed to breed, yet a very large part of it is directly attributable to breed. It is true that breed has much to do with prices, yet it requires a good deal of nerve and some risk and generally some loss to feed high priced feed to low grade stock, while high grade good feeding stock can be fed at a profit. The present wide range in prices emphasize this, and it is a strong argument in favor of grading up.

Considering the present fair prices for good stock, the very low prices for poor stock, and the scarcity and consequent high price of all kinds of feed, I do not think it necessary to enter into a discussion of the necessity of improvement, but will offer a few thoughts on the methods to be adopted.

There are many breeds of cattle, each breed with characteristics peculiar to itself, and either one of several of the leading breeds will meet the needs of the common farmer. It is not necessary in discussing the question of "How Shall the Common Farmer Improve His Stock?" to enter into a comparison of the relative merits of the different breeds. The rivalry of the breeders of different kinds of cattle furnish plenty of discussion of this kind; besides the "common farmer," even if he has a particular choice as to breed, generally has foundation stock, that, with judicious selection of males will rapidly improve, and as this method of "breeding-up" requires only a small outlay of money, it will probably meet the requirements of the farming community better than any other system that can be adopted.

I want to disclaim any intention of discouraging the breeding of pure blood stock, for I would most assuredly urge all who can do so to get and keep only the best, but I am not speaking for this select class, few in numbers, rich in experience and with means to gratify a fancy and to carry out plans; but am speaking for a large class, who, like myself, have been seeking the better way by the dim light of experience and the slow process of development. In other words the class known as the "common farmer."

At farmers' institutes and elsewhere, I have often been met with the statement that scrub cattle would rustle better, and would stand the storms better than cattle of better blood; but in this era of cheap lumber and high priced feed only scrub farmers will advance such an argument, and I do not propose to address myself to that class; but rather to the great mass of Iowa farmers who have already made some advancement, and are agreed as to the necessity of taking no steps back-



ward. It has been my privilege to visit most of the counties of Iowa within the last few years, and I know that considerable has already been done, and most farmers already have cows with more or less of good blood and individual merit.

While acknowledging that much has been done in the way of grading up, the progress has not been rapid enough and the proper method of improvement has not been pursued as persistently as should have been done.

The too common practice has been — when improvement was determined upon, to start without any well defined views, or if with well defined views, of not following them persistently, or possibly changing, not only the ideal to be reached, but the change was so great as to involve a change of breed. Of course it is all right to change to a better breed, but if the better breed should be chosen at first, better results could be sooner reached.

To illustrate more fully my meaning, suppose that a male of some of the improved breeds be used, the impress is very noticeable in the first cross. In fact the impress is so great with prepotent sires of some of the leading breeds as to practically obliterate the characteristics of the foundation stock, and the grades, in color, appearance, and sometimes in individual excellence, equal the average of the breed of the sire. This of course is rapid progress, but suppose the owner now takes these grades, and instead of continuing the grading up process, breeds to a sire of another breed — possibly of different color and of dissimilar qualities. In this case, while there is a rapid increase of improved blood, the approach to an ideal is not rapid. In fact the mongrel stock resulting from such a system, or rather lack of system, will prevent ideal results, as the progeny cannot be depended upon to reproduce the good qualities of any of the original breeds, as there will be warring for mastery — with results now in favor of one breed, and again in favor of the other, and even into the third and fourth generation out-croppings of some undesirable color or characteristics will be produced. Several examples from my own experience could be given, as well as the result of extended observation, to prove this theory. But it is believed that the experience of others has brought all observing stock breeders to the same conclusion, so that argument and proof are not required to establish this theory, or what might be termed a law of transmission or heredity.

Then if this be conceded, the first thing for the breeder to determine is the breed that comes nearest to his ideas of perfection, or perhaps more properly speaking the breed that will be best for him to raise. The scrub farmer, with wild grass or brush pasture, with such protection as nature gives, with such added protection as barb wire gives, will be content with scrub cattle; but I am glad to believe that in this age of progress and development, better stock will be grown and better conditions will be provided. In fact the rapid increase in the price of land makes it important that better stock shall be raised, for scrub stock can no longer be pastured profitably on Iowa lands, saying nothing about finishing with grain which at present prices can only be fed to improve stock with a hope of profitable returns.

But I did not intend to say so much about the necessity but rather to discuss the means.

In my boyhood days I heard the saying that "the bull is half the herd," but I did not believe it, as my experience and observation did not corroborate it, and considering the rough condition of pioneer days, the statement was misleading, as, not only the scrub was the rule, but the few attempts to introduce improved sires resulted in failure, as not only they, but their get could not endure the rough usage incident to those times, and so the "Durham" cattle were voted a failure, and so

would the grand Short-Horns of the present day fail under the same conditions that proved disastrous to the progenitors of the breed.

But the wild grass pasture and the prairie hay era in Iowa has gone never to return, and different conditions confront us — no more free pasture and hay, or even cheap land. It is strange that after the combination of circumstances, which must exist to make the raising of scrub stock pay have passed away, that so much of the scrub stock still remains.

The vast number of breeding animals being forced upon the market for beef at a very low price, indicates a determination, denotes an awakening and my recommendation is to SELL, at the best present price obtainable, all scrub or defective stock. This, with rare exceptions, would not require a sacrifice of the whole herd, but it does mean a thinning out, a getting rid of the culls. Too many farmers sell from the top of the herd instead of from the bottom. The temptation of high prices should not induce such a course. It often happens that one good cow will make more profit than three medium or indifferent ones, while the balance from the poor cow, is generally on the wrong side of the ledger. Many farmers realize this, but wait until next year to make a change when the change could be made this year with less loss.

In nearly every herd there are cows that are kept with more or less profit. The owner generally knows which ones they are, but if he does not he should proceed to find out by strict tests and careful calculation, and resolutely thin out the herd until only those remain that show a balance on the right side of the ledger.

After this is done — that is, only the profitable cows remaining, the profits will be greater, because it is a notorious fact that many of the cows of Iowa are kept at a loss, and in some herds it takes all the profit of the good cows to pay the loss of the keeping of the poor ones.

The next thing is to determine what particular breed shall be selected from to improve the remainder of the herd. If means will permit, by all means buy enough pure bloods for starting a herd, but at all events get a good sire if no females can be bought. As a means of determining the breed determine what you want to breed for. If for milk alone or milk and cheese the Holsteins will fill the bill. If for butter, especially fancy butter, the Jersey can be relied on. If beef cattle are desired, it may not be so easy to determine what to get, but the Short-horns offer great inducements, because of general good qualities and cheapness; while the Angus and Galloway are good and to those seeking to get rid of horns without using the saw, they offer inducements. The Herefords are also strong competitors for public favor as a beef breed.

For a general purpose cattle several of the breeds offer inducements for trial. Some assert that there is no such a thing as a general purpose cow, and ridicule the idea that there is, and yet many "common farmers" think they have individual cows that fill the bill, and so they have; and try to fix that quality in the offspring by breeding, some to one breed, and some to another, and here the friends of each breed make a broad claim for their favorites.

It may be asked, by some one who counts the idea of a general purpose cow, what is she, what are her characteristics and where can we find her?

If I should give my idea of a general purpose cow, should say a cow weighing 1,200 to 1,500 pounds, giving a good flow of milk for say nine or more months in the year, and will produce calves, that if steers will feed out at an early age and make good weight; let men breed be what it will she would pay. Not a very high ideal perhaps the dairyman may say, who would want a cow to give milk ten and



one-half or eleven months in the year and an abundant flow; but if she will suckle two calves five months and after weaning them another one four or five months and raise all of them well she will meet the needs of the common farmer.

How can we keep the beef form and retain the milking qualities necessary to a general purpose or "common farmer" cow? I should say by breeding to a bull of the milking strains of the Short-horns or a Red Poll, but the high price of the last breed, and their scarcity, will prevent their general use, but I most certainly believe a general purpose or common farmer cow can be bred in the manner indicated.

This is not expressing a preference for breeds except for the purpose indicated, as there are other milk breeds besides the Holstein and Jersey—in fact all the Channel Island cows are noted milkers, besides other breeds are good for milk, but I have named those that are common, obtainable, and at prices within the means of the common farmer, who desires milk, cheese and butter. As to beef breeds there are others besides the Short-horns, Angus, Galloway and Herefords, but these are good and cheap enough to be within the reach of any one desiring to improve his herd, and for the man who wants to turn grass, straw, hay and grain into beef at a profit one of these breeds will meet his requirements.

And the man who wants, what some assert there is not, and cannot be, "a general purpose cattle." I have indicated how I think they may be had, and as I speak from the standpoint of experience, having tried the different strains mentioned and recommended for that purpose can say that it has passed beyond the line of possibility and favorable results may be expected with reasonable certainty.

I have made mention of the fact that in my younger days my experience did not corroborate the idea that the bull was half the herd, but now I would not dispute the statement should such be made. It is not only possible, but quite common that a calf at weaning time is worth more than its mother; due to the great excellency of the sire; and this forms the necessity of exercising great care in the selection of the male. The females the farmer has, and it may not be profitable or desirable to make a change, but great care should be exercised in buying a male. Pedigree alone should not be relied upon. Some purchasers are satisfied if the animal bought is a full blood, paying no attention at all to pedigree, only so far as to know that the animal is what they denominate a "thoroughbred!"

We have plenty of scrub Short-Horns now and will have plenty of scrubs of all the other breeds as they increase in numbers and become common. In fact the free use of the knife is even now checking the number of animals eligible to record, and in fact this is necessary for the credit of each breed. Those who have had experience in selling male animals know that animals only fit for steers can be sold for breeding purposes, at or above steer prices. I, like others, have been guilty of selling some of these in the past, but if my judgment does not betray me will sin no more in this way.

Most buyers are too easily satisfied and make cheapness one of the principal determining factors of a purchase. This should not be so, as a few dollars, or even a few hundred dollars might be profitably added, if by that means a superior animal could be had, rather than buy an inferior animal at a low price. If superior excellency is aimed at, especially if breeding up only on the male side, it will be slow work if inferior or only medium quality sires are used, and the breeder should not hesitate to pay a good price for a superior animal, and indeed he should be satisfied with nothing else, even if it requires a round price to buy a superior sire.

It often happens that a superior animal that some breeder has used two or more

years is offered low, and will render as good or better service than a younger animal; and yet there is a prejudice against an old animal. It is true they are more expensive to ship and require a little more care, but the purchaser has the advantage of being able to see some of his calves, and the cheaper price will generally overbalance all disadvantages. In other words I would regard pedigree—that is the line breeding and individual merits of the animal, more than the age or low price, and would not hesitate to pay a good price for a good animal.

Other requisites to success are good shelter, good feed and good care.

It is said that "blood will tell" and yet with poor feed and neglect good blood tells but a sorry tale, and like the scrub stock business the balance will be on the wrong side of the ledger. Scrub stock only holds out prospect of loss, as, with the best of care it cannot be profitable, while good stock well cared for is bringing profits to the owner and prosperity to the proud State of Iowa, and the rapid advancement, not only of the improvement of cattle, but of all other farm stock, is a harbinger of better times for the farmers of our State.

This society is doing much for the advancement of the stock interests of the State, and speed the day when the scrub cow shall have become a recollection and a matter of (ancient) history along side of the "razor back hog."

Mr. Brown: Mr. Chairman—The question is "How can the common farmer improve his herd?" That is not as difficult a question in my mind as it is to get the common farmer to adopt the better methods. A great many of us persist in breeding the common stock. I could name a farmer, if I was so disposed, who I do not think ever paid twenty dollars for a certificate in his life, yet the balance would be against him if a statement of his work could be shown. It seems to me that the prices of stock to-day will certainly bring them to their senses and show them the necessity of improving their stock. I have more confidence in that than anything else.

Mr. Sheehan: When I received letter or notice from the Secretary of the Association requesting me to read a paper before this audience I was reminded of my boyhood days. In my father's family there were four brothers of us and there was a cousin whose name was Dan as well as my own. They were all strapping big fellows and I was a little runt. They thought I would never amount to anything and I can tell you they were pretty near right. When the old folks asked any of them to do anything they would say, "Well, little Dan would do it." And that is the way with the Secretary. He had run around and could not find any one else and had to call on little Dan. When I got the notice I paid no attention to the paper until I received a program, and when I looked the program over I saw I was down for the subject "The Farm and Factory," coming in the last thing in the afternoon, just about the time everybody was going home, and I made up my mind then and there that the subject of Short Horns would go. I will say that when I received on yesterday, from that thorough-



bred, as he is called, the editor of the Oskaloosa Herald, as a present, a little box of beet sugar to take home to show my people, I never felt so proud in my life as I did in its possession.

## THE FARM AND FACTORY.

BY DANIEL SHEEHAN.

The topic that has been assigned to me "The Farm and Factory" is one in which the whole people of the great State of Iowa should feel a deep interest. Probably there is no State in our entire Union in which the farmer is better able to take care of himself, and make his farm productive and profitable than right here in this great State of ours.

The farms of Iowa have never yet failed to nobly respond to the labor of the husbandman when his labor has been performed to insure the best results. Yet with all the natural advantages which the State of Iowa possesses, with all her railroad facilities, with all her fine streams of water, with an abundance of timber along those streams in the eastern part of the State, with plenty of the best of building stone, and lime and sand in abundance, with nearly 2,000,000 of intelligent and progressive people, and a soil and climate that has never yet failed to produce a great surplus of the cereals, she annually sends that surplus to be transported thousands of miles to enrich the great transportation companies and factory owners of New England; and what is still worse, in my estimation, the factory owners of old England and other parts of the old world. Probably she pays more freight than any other State in the Union with the same number of people. All this is owing to the simple reason that she has not one first-class city or factory within her borders. The first-class city never comes without the first-class factory, and never has any nation, State or individual that has always sold the raw material been prosperous for any great length of time. They are like the Irishman who sold the green hide of his two year old steer for half a dollar and bought back the tail to use as a switch to keep the flies off his cows, and paid a dollar.

Mr. President, it is not long since the best agricultural writers of the State were writing long articles telling how to keep the boys on the farm. They seemed to forget that with the improved machinery of the present day, less than half the number of men that was required forty years ago is now needed for the cultivation of a large farm; yet it seems that the boys have stayed on the farm, for any person who has watched the market reports will see that we have raised too much grain, too many cattle and hogs, too much of everything that is grown here in Iowa and for which we have to depend on Chicago and the eastern cities for our markets. While the shortage in certain crops the present year has stimulated prices, still it is an undeniable fact that over production coupled with the fact that the great dealers and combines of the eastern cities have had full control and regulation of

prices for our farm products, has made the last few years years of disaster and hard times to the farmer and stock raiser of the west.

Mr. President, I have given these few hints to this convention of stock breeders of Iowa in the hope that some of their number would suggest a plan for placing the factories between the Mississippi and Missouri rivers, side by side with the farms of Iowa. I believe that the time has come for the people of Iowa to take hold of the matter in earnest. When we hear of the factories in some parts of the old world being about to move to America, it looks to the writer of this article as though Iowa should make an effort to secure her share of the manufacturing establishments of the future. With the factories will come the operatives to consume the products of our farms, thereby saving transportation charges for thousands of miles and the profits of tens of thousands of eastern middle-men who are at present living off the products of the west. When we have factories and factory operatives to consume all our farm products here at home the railroad problem will be solved for the farmer of Iowa.

Mr. President, there are several ways in which the people of Iowa might aid in getting the factories into the State. When that great soldier and statesman, Napoleon, found his country out of the supply of sugar he offered a bounty on every pound made in France. When the State of Michigan, some years ago, found that her salt wells must be stopped on account of foreign competition, she, in her wisdom, gave a bounty on every bushel of salt manufactured in the State. And what is the result? Those salt mines have added millions to the wealth of the State.

Then again other States have exempted manufacturing establishments from taxation for a number of years. And as surely as the sun shall continue to rise and set so surely must the State of Iowa use her best endeavors to obtain manufacturing establishments, if she would obtain them in time for any of the "Old Guard," as friend Wilson calls them, to see the surplus products of Iowa consumed within her borders. I presume that some will say that the exemption of such establishments from taxation and that the giving of bounties would be class-legislation. Well, what if it would, if it helps to make the State better and richer.

We have had class-legislation ever since Iowa became a State. We have class-legislation that has exempted foreign capital in the form of mortgage from taxation, and that form of capital has never benefited the State as much as the factory would. The exemption of factories from taxation would bring no loss to the State or city in which it is situated. Suppose a person or company invest \$100,000 in a factory here in Iowa, it might look hard to the taxpayers to see that amount of property exempt from taxation, still it has been estimated that every dollar invested in the factory itself will bring two dollars worth of improvement in some other form, so that the taxpayer is really the gainer although the factory may never pay a dollar in taxes. We have often heard it stated that the man who makes two blades of grass grow where one grew before is a benefactor to mankind. It is my belief that the person who places the factory beside of the farm is a still greater benefactor, and if such men as Wilson, Wallace, Bennett, Donnan, Funk and a host of other agricultural writers will advocate and encourage the establishment of the factory here in Iowa, with the aid of the political papers and writers, the State will be able to accomplish something in this line and the factory and farm side by side in Iowa will be an accomplished fact; and when the census enumerator shall have made the returns of the census of 1900 it will be found that Iowa has at least



one first-class city and a few first-class factories, and the State will prosper as she never has prospered before.

James Wilson: I cannot permit so valuable a paper as Mr. Sheehan's to pass without comment. He suggests the future of the State in that paper. The rural districts of Iowa have nearly all the population of Spain, and yet Iowa is growing and will grow and the ratio of growth will be exhilarated. Its towns are growing. That is the only part of Iowa that can grow, as all the farming lands are taken up. The factories should be increased, but they require capital, skill and labor—those three forces. The rural districts of Iowa are nearly as well furnished as they need be. People have good houses and good barns. Fences are built and the farmers are pretty well stocked. It is true the stock wants to be improved, because our people have experimented, and while they have been experimenting and improving the stock and while the farm has never produced as much money as now, yet they have not the capital to expend in these factories. Eastern capital has been running in here and the local capital has to compete in the market with that. The rich fields of Iowa will produce capital and rapidly in proportion as farming is extended and improved every year. The fact is inevitable. In those growing towns people live and need work and must have something to do. Two factors are necessary to produce factories: Capital for the product and to purchase lands and population both by emigration and natural increase. Another point is skill. We are on the eve of the beet factory enterprise and one of the strongest points in the paper is that expert skill is needed in Iowa. I would not have a word to say against the agricultural college if they would turn out mechanics who were skilled to run a factory. That is getting to be a great want in Iowa in regard to her factories. There is the most successful cotton factory running in Des Moines and has been for some time. They are going to do well and are going to enlarge it. There is no reason why we should not compete for the money that is going abroad now for things that can be produced in Iowa. We can grow flax in Iowa that would make the finest linen, but we have to have factories and people to grow and work it and take care of it. I am satisfied, as has been stated, that we are on the eve of factory industry in the State of Iowa. That the factories are ready to be used and all that is lacking is capital and skill. If anyone has a boy or girl they do not know what to do with, if they will make of them first-class mechanics I will warrant there will be plenty to do in the coming factories of Iowa.

Mr. Van Houten: At Grand Island, Nebraska, they wanted one hundred thousand dollars to start a sugar factory, but now such towns

as Des Moines can get sugar factories for nothing. Grand Island paid over their one hundred thousand dollars and now the factories are willing to come without compensation. When we look at these things we see the factories are on the increase.

Mr. Wallace: Every country goes through about three periods of development. First, occupation of the land. When that is paid for generally the next thing is to send their money off where it will command a high rate of interest, and when they get through with that, which they are now in this State, the next thing is to find profitable investment for the money in building up towns. That is the history of our towns, Davenport, Dubuque, Ottumwa and other places in the State. It is the history of all the towns and the thing that is now the most profitable investment for capital is the building of factories which employ labor, and the employment of labor by these factories adds to the population of the towns and it awakens business in every department. And when the people of the town have come to the conclusion that they need the factories and go to work for them that town will grow. Back east the people have a pride in building up their own town and they loan money at one-third less rate to build up their own town than to go west. The money here should be loaned to people to build up industries at four or five per cent when they charge seven to eight to put it on the best of farms. We must find employment for the surplus population. Iowa is prolific. There is more or less emigration here and factories must be built up as well as other Iowa industries by the Iowa men. Whenever we learn to take care of our own interests they will be taken care of. We have to give too much bonus for factories and my experience has been when we give a bonus to get what we ought to do ourselves we get more experience than profit. I am very much pleased with the paper. The factory and the farm must go together and the nearer you get the farm to the factory the more the farm will sell for and the better will be the conditions of life and the higher the civilization. But we must go at it wisely, prudently, intelligently and honestly and in time we will succeed. I am not ready to say that we can manufacture almost anything. There are certain things we cannot do. We have enough developed agricultural manufacture to keep us in the next twenty-five years. I hear people complain that farmers own less comparative wealth than they did twenty-five or thirty years ago. I am surprised to hear that kind of talk. If that is true it seems as if farming is going into innoxious disuetude. There has been a remarkable growth in the use of machinery. A man will go into a field with a binder and do the work of ten men by the old method. Do you wish to do away with this machinery with the advance that has been made? If so, the people must do



the work. We are coming to the time when America will closely approximate England in moulding and shaping the destinies of the world. We have in our border everything to make a complete State and not only supply our own wants, but to dictate the policies, not of one continent, but of several continents. (Applause.)

Mr. Stockdale: One of our own citizens was an editor of a paper down here at Mt. Pleasant. Some eight or ten of our people associated themselves together in a company for the manufacture of road scrapers and they were very successful. They added a wagon shop to their business and were successful. One by one they sold out until three of these people owned all the factory and became wealthy upon it. These were Iowa men who had charge of this institution, but they sold out this last fall as they were induced to go to other parts in order to get railroad facilities. The taking away of such a factory reduces the population of such a town. There were six hundred laborers employed there. Now, what are we to do about it? They allege that the matter of transportation was the cause of their going away. With this experience our people would not be willing to put much money again into any such scheme. It takes a great deal of money to build up a factory, such a one as they have had there for ten or fifteen years, and now they are left worse off than if they had not been there. If we had outbid the parties who were inducing them to go to other localities possibly some other locality would have outbitten us. When a factory leaves a town it affects the citizenship.

Mr. McClung: There is a matter in regard to the convention in Chicago last May that I wish to speak about that may be of interest here. Last May there was a convention called to meet in Chicago. There was one hundred or more live stock men in the convention and that convention elected a committee of eighteen who should look after the collection of live stock for the coming exposition to be held at Chicago. They had two or three meetings and passed resolutions. We have had two or three meetings. We have asked the Association to give us cash premiums for live stock. That has been brought before it and also before the National Association. It was sent to them in the form of a resolution. We also learned at the last meeting, indirectly, that they had decided not to award any cash premiums. The committee of eighteen passed resolutions to the effect that if they did not give any cash premiums for live stock they would hold a live stock exposition of their own and not have anything to do with the World's Exposition. They want to know whether the breeders endorse this action. (Yes, yes). The matter was presented by the committee of eighteen who put it strongly that if they did not give some cash prem-

iums for live stock we would not exhibit live stock, but have a grand exhibition of our own.

Here the report of the committee on location and nomination of officers was announced as ready to report and the report read by the Secretary.

Report of the committee on place of next meeting and also on officers, viz:

Place—Waterloo.

President—B. R. Vale, Bonaparte.

Vice Presidents—Capt. W. H. Jordan, C. W. Norton, W. W. McClung, Hon. D. P. Stubbs, C. L. Gabrielson, J. W. Dunn, A. J. Lytle, B. H. Smith, Hon. Phil Schaller, Hon. S. P. McNeal, Hon. C. C. Platter.

Secretary and Treasurer—Geo. W. Franklin, Atlantic.

Respectfully submitted.

W. H. JORDAN,  
President of Committee.

VALE, Secretary.

By motion, the report of the committee was adopted and carried.

Motion by Mr. Van Houton that a committee be appointed to examine the accounts of Secretary and Treasurer was carried.

The chair appointed a committee consisting of Mr. Van Houton, Mr. Norton and Mr. McClung.

## TREASURER'S REPORT.

*Iowa Improved Stock Breeders' Association in account with their Treasurer for the year ending November 30, 1890:*

### RECEIPTS.

1889.		
Dec. 6.	Balance per last report.....	\$ 1.85
	188 members enrolled.....	188.00
	11 members up to date.....	11.00
	For reports.....	1.75

\$202.60



## EXPENDITURES.

Dec.	6.	Paid stenographer in part.....	\$ 50.00
	13.	Cass County Democrat, printing.....	5.75
	28.	Telegraph, printing.....	14.50
Jan.	16.	Secretary's expenses to Hampton.....	13.94
		Secretary's expenses to Des Moines.....	12.96
		Postage on 350 notices.....	3.50
		Postage on 200 notices.....	2.00
		Postage for December and January.....	2.28
Feb.	15.	C. L. Dahlberg balance.....	30.00
		Postage for February and March.....	.68
April	19.	L. Young, binding fifty reports.....	9.00
		Postage on 199 reports to members.....	15.92
		Express on 150 volumes from Des Moines.....	.90
July	31.	Postage, May, June and July.....	.68
Aug.	31.	Postage, August.....	.43
Nov.	30.	Postage, September, October and November.....	3.34
		Postage on 300 programs.....	3.00
		Secretary's salary for the year.....	25.00
			\$ 198.88

GEO. W. FRANKLIN,  
Secretary and Treasurer.

Mr. Van Houten: The committee is ready to report on the accounts of the Secretary and Treasurer. We have examined the report of the books and accounts presented to us, and at the beginning of the year the Secretary and Treasurer had \$1.85. We find that he has presented vouchers for everything and the items are carefully itemized and are undoubtedly correct, and we recommend approval of the accounts presented.

Motion to approve carried.

Motion of Mr. Brooks that the action of the committee of eighteen of Chicago be approved was seconded and carried.

Mr. Gove: I would like to make some suggestions as to the prevention of bloat in cattle. It is simple hay, straw, or oats, or something placed in a dry place where the cattle can get to it and if you do that I would not be afraid to turn one hundred of the best feeding steers into white clover. I had four car loads of the finest cattle and I took the precaution to take a small load of mowed oats into the field, and I watched them a few moments and the cattle went into the field and ate lively of the straw for awhile and then went up to the load of straw and took a few mouthfuls and ate it and then went to eating grass again. I would not say it would be a sure remedy, but I would not be afraid to risk one hundred steers in that way. In con-

nection with this I will say that I think it is the best way to change from hay to grass or from grass to hay, but it should be done gradually. If you have a barn with a rack in it where cattle can have access to it, mix hay with new grass.

Mr. Wheeler: I have had a great deal of experience with cattle bloat. I have had them in clover and one season I kept them on clover steadily and didn't lose any, but the last season I lost thirty-five in an hour. I have experimented by putting them on the field an hour or two at first, but I do not think there is any difference. I must say I do not know anything about it. I have been unable to form an opinion as to what is the direct cause.

Mr. Brown: I want to endorse what Mr. Gove has said about dry feed. Really you can get a little dry feed the year round. I feed cattle during the summer. They always have all the hay they can eat. I do it because I think it is beneficial.

Mr. Wheeler: There is something about this bloat that people do not understand. I have talked with a great many people and tried to find out all I could about it. I have old stacks in most every part of my farm they can go to, but when you get a certain percentage of the stock down say what you can for the use of the knife. I will say that the cattle I lost had been running on clover almost two months, and when they took down it was in the evening between seven and eight o'clock, and the weather was dry and nice. I keep rock salt usually where my cattle can reach it all the time.

## PRACTICAL HINTS ON STOCK RAISING.

Mr. President, Gentlemen of the Improved Stock Breeders' Association:

The subject to which I call your attention to-day, is, it seems to me, one of the greatest importance to every member of the Association, for, to its practical application, or its neglect, depends the final result, be it success or failure of the enterprise for which you gather here to exchange ideas and obtain mutual benefits.

You search through the stud and herd books to determine, or try to, the line of breeding, which followed, will produce the combination of valuable points such as you desire to obtain, but unless due consideration be given the feeding and nourishing of the product thus obtained, the result will be unsatisfactory—the colts, calves or pigs will be stunted, unthrifty, and fail to develop into those full, rounded animal structures so pleasing to the stockman's eye.

I will abbreviate my remarks as much as possible, that I may not take up time



that should be otherwise used in the interests of the meeting, but that I may be better understood I desire to take a hurried glance at the anatomical structure and physiological action of a portion at least of the digestive apparatus.

The organs which comprise this system are divided into two classes—the preparatory and the essential. To the first class belong the mouth, pharynx, oesophagus, and the first portion of the stomach and the intestines, with their annexes, liver, pancreas and spleen. While to the second class, being the true organs of digestion, are given the left portion of the stomach. We will notice these organs in the horse and only refer to the differences as they appear in the other species of our domesticated animals. The mouth in which the major part of the preparatory process takes place, is provided with thirty-six teeth which are brought into actual use, as follows. Twelve incisors, or front teeth—six above and six below—are used in grazing or preparing the bolus of food for the grinding process which is accomplished by the twenty-four molars or back teeth. In the ox the only difference to note is the absence of front teeth above and having instead a dense cartilaginous pad in that region against which closes the eight, instead of six, as in the horse, incisors of the lower jaw. The molars, being the same in number, but much larger and stronger than those of the horse. In the pig are twelve incisors, four tusks and four extras, making twenty-six molars. Taking into consideration the shape of the teeth and the movement given them through the muscles of the jaw, in the different species of animals, we get some very suggestive points as to the class of food that particular animal was intended by nature to subsist on.

For instance, in the ox and all ruminants, the jaws have, as well as the up and down motion, a more extensive lateral movement than is seen in any other species, and this with the structure of the teeth would indicate powerful grinding ability by which the roughest of animal food stuffs might be made fit for its digestion.

In the horse we notice a lesser amount of the lateral movement, hence less ability to masticate such rough food. In the pig, almost no lateral motion, but great strength in the jaws and four extra molars to crack nuts and grain and chew green roots which nature has again well provided them with a means of obtaining from the ground.

While on this subject I want to impress upon the minds of all stockmen the great importance of paying more attention to the teeth of their growing animals. Many diseases as well as vices, very annoying in their character, have in the past few years as the science of veterinary surgery progresses, been found due to some abnormal condition of the teeth. The successive changes which take place intervening birth and maturity are attended with many untoward results. The temporary teeth may not give place to the permanent ones at the proper time from being wedged between its fellow in front and back, and the permanent tooth is forced entirely out of its natural position by its own growth, while long, uneven or sharp projecting corners are productive of indigestion from inability to properly masticate the food, though it be of the highest quality.

During the triturating process of the food between the teeth the movement of the jaws and mouth excites an increased secretion from the salivary glands and the liquids thus formed being abundantly poured forth upon the mass, softens and renders it fit for passage to the stomach through the pharynx and oesophagus.

The pharynx is a membranous vestibule, common to both digestive and respiratory passages, serves as a connection between the mouth and oesophagus, but otherwise playing no special part in digestion. The oesophagus or hollow muscular

membranous tube, conducting the food down and into the stomach, is lined throughout its inside surface with small glands which secrete and discharge into the canal a fluid resembling saliva, and which acts as a lubricant to the parts, assisting the passage of the food as well as its further emulsification. It is from the obstruction of the food in this organ, that we have the wrenching, agonizing symptoms of choking. These obstructions are the result of an attempt to swallow the food too hastily, being neither properly chewed nor time given for a sufficient salivary secretion to soften the mass, it becomes lodged in the tube, its presence irritates and provokes muscular contractions of the walls upon the offending agent holding it firmly in its lodgment, understanding then the cause, the necessity becomes at once apparent of feeding in a manner to so far as possible avoid such a consequence, and this is most successfully accomplished by dampening all food that is capable of absorbing a great amount of moisture and likely to be taken up and swallowed rapidly.

While the horse has what is termed a simple stomach, it is both a preparatory and essential organ of digestion, and hence physiologically divided into two portions. In the first portion, or when the food enters the lining membrane is continuous with and similar to that of the oesophagus, except that it is much more abundant in quantity, laying in folds which open to admit the food, but immediately closing, effectually preventing any return whatever. It would seem in this instance that nature had made a great mistake, shutting off as it has the possibility of ridding the stomach of any offending matter or gasses by vomiting. Hence, it is that in acute indigestion when the gasses arising from the fermentation of the food being unable to make their escape through the natural openings, rupture the walls and prove so rapidly fatal.

The kinds of food most likely to produce such disease, are green or unmaturing roots, grain or grasses which rapidly undergo fermentative changes, but being especially agreeable to the tastes of the animal, are taken into the stomach rapidly and in great quantity, or as I spoke of before, any food capable of absorbing a great amount of moisture, and likely to be taken up and swallowed rapidly enters the stomach in a semi-dry state and accumulates there faster than the secretions can form to emulsify and prepare it for passage into the true digestive organs. Again we see the advisability of dampening such food before turning the animals to it.

From a strictly theoretical standpoint we are taught that these foods should be given dry, that the animal will eat it slowly, giving ample time for the salivary secretions to form, as does man when eating crackers, etc. But is this true? My experience says no. Our horses and cattle are a little lower down in the animal scale than man, and their animal natures are not controlled by mental faculty as that of man is or should be. Place food in reach of the hungry animal and the one object is to swallow it as quickly as possible. Again, let a man attempt to make a meal from strictly dry food and he finds a glass of water a very satisfactory accompaniment. Probably it suits our tastes better in this way than to have it ground and made into a mush, but the animal does not object to it so, and the fluids thus taken answers the same purpose. Furthermore the salivary secretions in both horse and ox have been found by chemical analysis to contain little or nothing of a digestive nature farther than emulsification. In the second portion of the stomach of the horse begins the true digestive process. There the food comes in contact with the gastric juices by which action its principle elements becomes soluble and absorbable. This also is the function of the fourth compartment or fourth stomach of the ox. The



first stomach or rumen, being a sort of a receptacle for rough food stored away during feeding time to be carried back to the mouth during rumination after having become more or less softened, is again swallowed passing this time to the second and third compartments, participating more or less in the functions of the first and particularly with regard to the liquids taken into the stomach does the second represent an important part.

The alimentary canal is continued from the stomach by the intestines, whose walls have the power of absorbing through their glands from the alimentary mass whose elements required by the animal system to maintain life and promote growth.

These elements are carried from the glands which secrete them by their vessels, and emptied into and become a part of the life blood passing to all parts of the body through the vessels of circulation, and dropping off, so to speak, all along the line that particular product required by the tissues for their nutrition.

With these hurried glances at the structure and function of the organs of digestion, we are provided with something of a basis on which to found our theory for the proper administration of food stuffs, to be confirmed or improved by practical tests.

While our knowledge of chemistry and physiology is not sufficiently complete for us to understand just how each element is taken up from the food while in the body, and appropriated to the development of certain tissues, we do not know that certain classes of food are producers of fat, others of heat, others of bone and muscle, and so on until every tissue is satisfied, providing the food be sufficiently varied.

We cannot call upon any one article of food to fill all the requirements, for what is food for one animal is not for another, although it contain all the known requisites. For instance, bones which contain all the elements of the body in a greater or less degree, are eaten by the carnivorous animals and readily digested, while to the horse or ox such food would be entirely foreign, and even food that is relished and easily digested by one man is scarcely digestible at all by another, and the same may be said of different animals of the same species or down. A food upon which one horse may thrive, another though forced to partake of through hunger, derives comparatively little benefit from. For this reason a discussion on particular food stuffs is unnecessary, for, by actual experience we are fairly well acquainted with the class of food on which our animals thrive best and we will consider their manner of application.

No definite rule can be laid down as to the quantity of food required—disposition, conformation and habits must be taken into consideration, and I believe so far as is possible in individual care—individual treatment and individual feeding. Ascertain as nearly as possible the amount required under ordinary circumstances to keep individual animal in a healthy condition, and administer accordingly, varying the amount from time to time as circumstances may require. For example we will suppose two horses kept in the same stable—one is low, heavy set, round bodied and compact in form, with a quiet, even tempered disposition, the other tall, rough and nervous, using up his vitality as fast as it accumulates, and yet the groom makes no distinction, but mechanically throws in the six, eight or ten ears of corn to each of them three times daily, stuffs the mangers full of hay and considers his work well done. This at a moment's thought is seen to be entirely irrational, but irrational as it is, it is of very common occurrence.

An animal at exercise or hard work, when all the tissues of the body are in a state

of activity, must necessarily require a much larger amount of nutrition to feed those tissues than while quietly standing in the stable. An error very common in the feeding of farm horses may be noticed from time to time, but particularly in the spring of the year. As a few nice days come on and the horses put to work and the feed of the already fat animal is increased one-half or double the amount they have been receiving; a few days later on account of bad weather they are left standing in the stable again, and instead of the food being restricted in quantity is continued full, with the view of having the teams up in good condition to return to work as soon as the weather permits. But the result is not as satisfactory as expected. The blood becomes excessively laden with the elements of nutrition which the tissues cannot use, chemical changes take place by which uric and hippuric acid is formed, and as the animals resume their active life are stricken down suddenly, with loss of muscular power, and unless speedily relieved, die from the absorption of the poisonous materials into the system, producing their toxic effects. You will remember that just after the great blizzard in New York, when the horses were put to work again after having a few days of complete rest, that they were stricken down by the hundreds—the newspapers came out saying some strange disease had broken out by which the horses were suddenly seized, and died before they could be removed from the streets. It was no new or strange disease to the veterinarian—it was simply that which I have described to you and known in the profession as Azoturea.

Food should never be permitted to remain in the feed box. That which is not readily eaten should be immediately removed. Laying there as it otherwise would is nozed over and minced at, and the animal rapidly acquires a dislike for the food, which, if properly administered would prove a useful article of diet.

Many kinds of food, unwholesome in themselves, and theoretically calculated to be proper for horses or cattle, if used injudiciously, are productive of much harm. Bran for instance, so useful when combined with other food or as an occasional mash, if given in large quantities alone is apt to be retained in the stomach undigested, while green foods—grasses, etc.—particularly when animals are first put upon them, or if given over abundantly, induce engorgements and undergo fermentation in the stomach.

While sudden or abrupt changes from one kind of food to another are apt to derange the stomach and intestines, there can be no doubt as to the advisability of using a mixed diet, since one kind may be laden with one element and lacking in another.

In using ground feed we are in one sense aiding nature, and in another abusing it. When grain is taken into the mouth in a finely divided state the process of mastication is far progressed artificially and is swallowed more rapidly than it can be digested. Yet there are advantages in using ground feed. It is more finely divided and its nutritive principles more readily and thoroughly absorbed, and to overcome the disadvantages I think is best accomplished by mixing with a sufficient quantity of lighter but more bulky substance.

Professor Williams, of the Edinburgh Veterinary College, in his Principles and Practice of Veterinary Medicine, says: "Horses are best kept in health and working condition when fed on an admixture of food requiring thorough mastication, and that horned cattle are best kept in health when in addition to the more nutritious aliments, they are freely supplied with food requiring remastication." Also, "It is a fact worthy of notice that if the food be given artificially prepared it is retained in the stomach itself, and if given over abundantly causes distentions, inflammation, paralysis, and even rupture."



I fully coincide with Prof. Williams in regard to the first paragraph, but as far as the artificially prepared food is concerned, if ground food be classed under that head, I beg leave to differ, providing we overcome two difficulties. These are, first, excessive quantities, and second, the rapidity with which such nutritious aliment is taken into the stomach, and either of these can be overcome as I have before described.

From a financial point of view, to the feeder, although I have not had an opportunity of testing it practically, I am quite sure there must be a considerable saving by using ground feed, inasmuch as being in finely divided particles, there is a greater amount of nutrition absorbed than would be from a larger amount which might be passed through the system in a coarser condition.

We frequently see in the excrement from horses, cattle and hogs, whole or half grains of corn or other particles of food unmasticated. These from their rapid passage through the system, have been, if at all, only feebly acted upon by the gastric and intestinal juices, and hence that much nutrition is wasted.

As regards the further artificial preparation, that of cooking food, I cannot speak with so much assurance. Practical tests, I think, as a rule, have failed to confirm the high expectation of improved results. The heat of cooking doubtless produces chemical changes which materially lessens the nutritive value. This may only be true, however, with certain kinds of foods and nothing short of careful practical tests can satisfactorily demonstrate the facts.

As I have already consumed considerable time, I will only add one more suggestion. Let the food be of the cleanest, purest and healthiest quality possible to obtain, then by careful attention to the conditions and demands brought about by the successive changes in stock life, we may be guided to its administration in a very superior manner. Let the old foggy notion of mechanically feeding eight ears of corn and a manger full of hay three times a day—even with salt and water—be buried as deeply and rapidly as possible, substituting in its stead, cautious thought and scientific, practical care and judgment.

The State of Iowa stands absolutely first in this country in Agriculture. Its live stock interests are far in advance of those of any other State.

This body is one representative of the Agricultural and Live Stock interests. Its comparisons are odious—but they are useful, they serve us and serve us well.

Let us inspect for one moment on the work that has been done in the great dairy State of Wisconsin, by Supt. Morrison and his able corps of institute lecturers. No comment is necessary. You all know what good work has been done. Again let us look for a moment at sister State Minnesota—still, almost in her infancy—look at the work done within her borders by Supt. Gregg. Remember, for a moment, that Mr. Gregg even came to this State to borrow our brains for the benefit of the Minnesota farmer. I refer to the employment of our present and earnest worker, Mr. C. L. Gabrielson. Now let us look at Iowa and her Institutes. Where are our institutes? Echo answers "where?" Now Mr. President we have passed a resolution in which we express our desire for Institutes—but we have done that before—and what did it accomplish? Absolutely nothing that has amounted to anything. No, Mr. President, nor will it; when we want a thing in this country and "*want it bad*," we rustle for it and we must *rustle* for Institutes, if we want them. I would therefore suggest that we, not only each and every one of us *rustle* individually, but that we go farther and appoint a committee to rustle, and rustle like thunder, for this most desired end.

It must not be forgotten that agitation is a prominent factor in bringing before the people this question and its urgency.

I would therefore respectfully move the appointment of a committee consisting of Hon. B. R. Vale, Hon. James Wilson and Prof. C. L. Gabrielson, to agitate this subject and do all in their power to bring about this desired end, in their best judgment and let their motto be, "*Rustle and Rustle*."



## LIST OF MEMBERS.

William Avery.....	Oskaloosa.
Richard Baker, Jr., Short-Horns.....	Farley.
J. T. Brooks.....	Hedrick.
C. S. Barclay, Short-Horns and Poland-China.....	West Liberty.
W. A. Bryan, Short-Horns.....	New Sharon.
E. C. Bennett.....	Tripoli.
A. J. Blakely, Short-Horns and Merino sheep.....	Grinnell.
A. Baker.....	Eddyville.
A. A. Bryan, Galoways, Buff Cochins.....	Montezuma.
Hon. J. D. Brown, Vice-president State Agricultural Society.....	Leon.
Hon. J. G. Brown, beef and pork producer.....	Marshalltown.
J. W. Blackford, Herefords and Poland-China hogs.....	Bonaparte.
J. C. Barringer.....	Oskaloosa.
M. E. Bennett.....	Oskaloosa.
Wm. Bartlett.....	Oskaloosa.
J. E. Brown, Veterinarian.....	Oskaloosa.
Hon. C. H. Boardman, Creamery.....	Odebolt.
George W. Brett, Short-Horns and Poland-China hogs.....	Mason City.
L. M. Bearce.....	Waukon.
B. S. Brown.....	Hampton.
Bowdish Bros.....	Waubee.
J. G. Brown, Clyde, Poland-China hogs and Short-Horns.....	Solon.
O. B. Crumpacker, Short-Horns.....	Washington.
P. H. Bendixen, Holsteins.....	Gilmore City.
N. C. Brown.....	Dumont.
S. L. Benedict.....	Mitchell.
Thomas J. Beals, Short-Horns.....	Newton.
C. Chambers.....	Zero.
C. F. Curtis, Importer of horses.....	Nevada.
Wm. Cook & Son, Short-Horns, Cotswolds.....	Marion.
T. J. Conover.....	Sully.
Samuel A. Clark.....	Winfield.
J. A. L. Crookham.....	Oskaloosa.
C. M. Chick.....	Oskaloosa.
Wm. E. Crumb, Short-Horns.....	Bedford.
M. Creswell & Sons, Short-Horns, Poland China hogs.....	Bonaparte.
G. W. Dickens.....	Hedrick.
H. Draper, Short-Horns.....	Washington.
O. T. Denison, Creamery.....	Mason City.

D. D. Donnan, Editor Farmer and Breeder.....	Cedar Rapids.
S. J. Dutton.....	Oskaloosa.
C. L. Dahlberg, Stenographer.....	Des Moines.
Hon. C. M. Dunbar, Trustee Agricultural College.....	Maquoketa.
A. K. Emerson, Short-Horns, Poland China hogs and Carp.....	Newton.
Hon. John A. Evans, Short-Horns and Roadsters.....	West Liberty.
J. F. Everett.....	Oskaloosa.
A. Failor, Short-Horns, Poultry.....	Newton.
F. F. Failor.....	Newton.
Geo. W. Franklin, Short-Horns, Cotswolds and Poultry.....	Atlantic.
Martin Flynn, Short-Horns.....	Des Moines.
W. J. Francy.....	Lowell.
C. L. Gabrielson, Short-Horns, Shropshires.....	New Hampton.
H. B. Goodrich.....	Oskaloosa.
B. F. Gove, Roadsters, Short-Horns and Poland-China hogs.....	Oskaloosa.
C. Gilchrist, Short-Horns.....	Walker.
T. R. Gilmore.....	Kirkville.
A. Gardner, Standard bred horses.....	Atlantic.
R. H. Gurley.....	New Hampton.
J. N. Green, Polled Angus and Poland-China hogs.....	Cumberland.
John Gilmore, Poland-China hogs.....	Vinton.
Geo. G. Hill, publisher <i>American Farmer</i> .....	Chicago, Ill.
James Hook.....	Hedrick.
W. F. Hughes.....	Mt. Pleasant.
Harrington Bros., dairymen and Duroc hogs.....	Grinnell.
R. C. Hains.....	Oskaloosa.
Samuel Henry.....	Martinsburg.
C. Huber.....	Oskaloosa.
E. K. Hines.....	Oskaloosa.
D. A. Hoffman.....	Oskaloosa.
J. N. Hatfield.....	Oskaloosa.
J. R. Hoover.....	Oskaloosa.
Geo. Hamer, Poland-China hogs and fine poultry.....	Montezuma.
Chas. Henry.....	Oskaloosa.
E. L. Heald.....	Oskaloosa.
Samuel Hoover.....	Oskaloosa.
John Hayes, Short-Horns.....	Red Oak.
P. G. Henderson.....	Central City.
H. W. Hammond, Poland-China hogs and poultry.....	Waterloo.
Hon. J. B. Harsh.....	Creston.
Jordan & Dunn, Short-Horns and Poland-China hogs.....	Waubee.
W. H. Jordan, importer of Oxford and Shropshires.....	Des Moines.
Samuel W. Jones.....	Oskaloosa.
Samuel James.....	Oskaloosa.
J. H. Johnson.....	Oskaloosa.
J. W. Johnson, Secretary Dairy and Egg Association.....	Oskaloosa.
Orange Judd, editor <i>Orange Judd Farmer</i> .....	Chicago, Ill.
L. L. Klinefelter, publisher <i>Farmers Institute</i> .....	Mason City.
Julius Kaiser.....	Bromley.
M. S. Kisor.....	Union Mills.



J. S. King, Short-Horns	Fifteen Mile Grove.
A. G. Lucas, publisher	Des Moines.
H. W. Lunt	Peoria.
A. J. Lytle	Oskaloosa.
James Loughridge	Oskaloosa.
John G. Lytle	Rose Hill.
F. H. Loring	Oskaloosa.
W. R. Lacey	Oskaloosa.
F. C. Laughlin & Co.	Oskaloosa.
W. M. Lambing	Des Moines.
Hon. Wm. Larrabee	Clermont.
O. H. Lyons, Short-Horns and Poland-China hogs	Rockford.
Olbert Lufkin, Roadsters	Newton.
H. W. Lathrop, Short-Horns and nurseryman	Iowa City.
Major J. W. McMullen	Oskaloosa.
O. Moffett, dairyman, Grade Jerseys	Ottumwa.
W. M. McFadden, Poland-Chinas and Merinos	West Liberty.
F. L. McGrew	Douds.
W. R. Matthews & Sons, Roadsters and Short-Horns	Sully.
John Moore	Eveland.
W. W. McClung, Poland-Chinas	Waterloo.
W. R. Moninger	Galvin.
R. A. Matthews	Sully.
Hon. D. M. Moninger, Short-Horns	Galvin.
Mark McCoy	Oskaloosa.
Jno. Murphy	New Sharon.
Gid. B. McFall	Oskaloosa.
Hon. Oliver Mills	Lewis.
Hon. P. S. McNiel, Sheep Breeder	Garden Grove.
G. W. McKay, Holsteins and Chester Whites	Geneseo.
J. N. McKibben, Percherons, Short-Horn, Poland China hogs and Merinos	Albia.
C. W. Norton, Short Horns, Poland Chinas and Shopshires	Milton, Jr.
S. C. Norton	Milton, Jr.
S. Norris	Leighton.
M. K. Price & Son, Short-Horns, Poland Chinas, and Berkshire hogs	Oskaloosa.
D. J. Patton, Cheese	Hampton.
M. Picken, Sheep	Cedar.
N. D. Parsons, Short-Horns and Poland Chinas	Newton.
G. W. Pfoutz	New Sharon.
Joshua B. Price & Son, Short-Horns	Beacon.
Byron W. Preston	Oskaloosa.
G. W. Pease	Hampton.
August Post, Secretary National Farmers' Alliance	Moulton.
J. H. Page	Geneva.
Hon. S. B. Packard	Marshalltown.
D. W. Paine, Short-Horns	Atlantic.
N. D. Pratt, Short-Horns	Anita.
S. B. Portevin, Poland Chinas	Dow City.
N. M. Reasoner, Jerseys	Reasoner.
B. Redman, Draft and Red Polls	Leighton.

Joe Roberts, Poland Chinas	Mauch Chunk.
Geo. A. Ross	Oskaloosa.
Gen. L. F. Ross, Red Polled cattle	Iowa City.
Martin Rickard, Polled Angus and M. B. turkeys	Grinnell.
Chas. G. Rogers	Grundy Center.
J. R. Sage, Director Weather Service	Des Moines.
D. Sheehan & Sons, Short-Horns	Osage.
Hon. W. F. Smith	Oskaloosa.
R. Stockdale, Short-Horns	Mt. Pleasant.
S. S. Sessions	Algona.
Springer & Willard, Importers of Draft horses	Oskaloosa.
W. P. Simmonds, Short-Horns and Poland-China hogs	Competine.
C. M. Smith	Oskaloosa.
J. R. Shaffer, Secretary Agricultural Society	Des Moines.
Capt. R. P. Speer, Director Experimental Station	Ames.
C. F. Saylor	Des Moines.
M. Stalker, V. S., Prof. Veterinary at Ames	Ames.
D. P. Stubbs & Sons, Imp. Belgian and Coach horses	Fairfield.
Byron V. Seevers	Oskaloosa.
C. P. Searl	Oskaloosa.
J. A. Stevenson	Oskaloosa.
W. A. Stevenson, Jerseys	Oskaloosa.
Miss H. L. Searl	Oskaloosa.
H. I. Smith, Short-Horns	Mason City.
J. C. Stevenson & Sons, Short-Horns and Poland-China hogs	Littleton.
Eugene Secor	Forest City.
Horace Saunders, Short-Horns	Iowa City.
I. G. Schnittheis	New Haven.
Hon. B. F. Smith	Ramsey.
Dr. J. C. Schroder	Iowa City.
Hon. Phil Schaller	Sac City.
Col. John Scott, Short-Horns	Nevada.
Hon. H. D. Sherman	Monticello.
A. C. Tupper, Dairy Commissioner	Des Moines.
Hardin Tice	Oskaloosa.
Robt. Thomas, Merino sheep	New Sharon.
Geo. T. Underhill, Shropshires	Knoxville.
L. M. Van Auker, Poland-Chinas	Mason City.
Hon. B. R. Vale, Holsteins and Chester Whites	Bonaparte.
Geo. Van Houten, Red Polls	Lenox.
W. W. Vaughn, Short-Horns, Chester White hogs and Buff Cochins	Marion.
Hon. H. C. Wheeler, Imported Draft horses	Odebolt.
John Wragg, Grower of Evergreens for shelter	Wauke.
F. G. Welch	Cedar.
E. Watenpugh	Sumner.
J. Ward Wilson	Traer.
Western Resources	Lincoln, Neb.
R. E. and C. C. Whiteacre, Trotting horses	Leighton.
Hon. James Wilson, Short-Horns	Traer.
C. Winter	Oskaloosa.



J. H. Warner.....	Kirkville.
Chas. S. White.....	Oskaloosa.
Barnett Wilson, Short-Horns and Cotswolds.....	Earlham.
Theo. Wiegand.....	Belmond.
W. P. Young, Short-Horns, Poland-Chinas and Shropshires.....	Mt. Pleasant.
Henry Wallace, Editor Homestead.....	Des Moines.
C. M. Baxter, Short-Horns.....	Lewis.
B. R. Bohart, Red Polls.....	Elvira.
F. E. Bows.....	Newhall.
L. C. Baldwin.....	Council Bluffs.
I. J. Copeland.....	Portsmouth.
Hon. C. C. Carpenter, Short-Horns.....	Ft. Dodge.
L. Cornwell.....	Denison.
E. S. Fonda.....	Osage.
F. H. Gensicke.....	Watkins.
James Hamand.....	Schaller.
W. T. Hamman, Short-Horns and Poland-Chinas.....	Hampton.
C. A. Huston, dairy cows.....	Waubeek.
J. Lieberknecht.....	Letts.
F. A. Miller, Poland-Chinas.....	Shelby.
W. P. Miller, Poland-Chinas.....	Bristow.
Mall & Son, Short-Horns and Poland-China hogs.....	Belle Plaine.
Hon. John McHugh, Short-Horns.....	Cresco.
I. J. Sherman.....	Manning.
Robt. Whitehall & Sons, Short-Horns.....	Corning.
H. H. Withington, Holsteins and Poland-China hogs.....	Toledo.
H. C. Wallace, Short-Horns and Poland-China hogs.....	Orient.
F. F. Warner.....	Bloomfield.
J. M. Watkins, Draft Horses and Poland-China swine.....	Pleasantville.
John Wardrip, Poland-Chinas.....	Nassau.
D. F. Bryan, Short-Horns.....	Bell.
E. E. Coulton.....	Morse.
A. H. Clark, Poland-Chinas.....	Leighton.
S. A. Converse, Red Polls.....	Cresco.
H. T. Dildine.....	Kinross.
H. D. Hollister.....	Audubon.
W. K. Laughlin, M. B. turkeys and Light Brahmas.....	Ft. Dodge.
Wm. McCord, Berkshires and Light Brahmas.....	Keota.
Geo. Morse.....	Bradford.
R. Martin & Son, Short-Horns.....	Washington.
John Osborne, Short-Horns.....	La Porte.
Levi Robinson, Jerseys.....	Iowa City.
Wm. A. Tade, Herefords and Shropshires.....	Bonaparte.
Stanford Trueblood.....	Denova.
Thos. B. Wales.....	Iowa City.
Robt. W. Wales, Merino sheep.....	Iowa City.

---



---

## APPENDIX.

---



---



## APPENDIX.

---

### IOWA SHORT-HORN BREEDERS IN SESSION.

---

The tenth annual meeting of the Iowa Short-horn Breeders' Association was held at Oskaloosa beginning Tuesday, Dec. 2d, at 2 o'clock, and closing Wednesday noon. The room of the Farmers' Club in the court house was filled to its capacity at the opening session, the attendance being largely local, but quite a number of the regular attendants were on hand and more were present at succeeding sessions. President James Wilson, Traer, opened the proceedings with an address, the major portion of which follows:

The experiences of another year bring to us more pointedly the responsibility resting upon us as improvers of cattle. It becomes more evident every year that the farmers of the grass and corn belt require Short-horns for beef and for the dairy. We have seen a strip of land from 300 to 500 miles wide across the Republic tested for farming purposes and practically condemned. The people must look to the heavy, reliable soils like those of Iowa for food. Our lands are rising in value; they must pay in better returns. Poor cattle do not pay. Every year they pay less. It is our mission to furnish cattle that do pay.

The foreign markets took about \$40,000,000 worth of live and dressed beef during the last fiscal year, mostly Short-horns. Good cattle are selling in Chicago at from four to five and a half cents a pound, mostly Short-horns. Common stuff sells at from four cents down to one cent a pound, anything but Short-horns. A Short-horn takes the first honors at the Fat Stock Show. The steer Nonesuch also dressed more per cent of live weight than any competitor. We rejoice that Mr. Barclay brought back to Iowa three premiums and Mr. Frazier one from the same show, open to the world, where all the breeds competed. \* \* \*

Prices of Short-horns have sympathized with the depression in common cattle, but the breeder has the option of selling for breeding or feeding for prime beef. I advise all breeders to advertise the excellence of their cattle by making some steers every year and feeding them, and on these our State Agricultural Society should confer premiums to the State. It pays about as well as to sell at present prices. The owners of scrubs and low grades will learn of the excellence of our cattle faster that way than any other. If every herd had a few first rate steers they would show the possibilities of improvement. Then we must show that the pure Short-horn is better than the cross of other breeds by the Short-horn.



There is much being said against the Short-horn as a milker by the owners of other breeds. I drink nothing but Short-horn milk and eat nothing but Short-horn butter. \* \* \* We should take steps to be properly represented at the World's Fair in 1893. \* \* \* We should co-operate with the Short-horn breeders of other States with regard to this. We should make special efforts to have Iowa well represented in the fat stock feature of the World's Fair.

The dairymen are very active all over the land and wisely so, but the world wants good beef as well as good butter and cheese, and if everything goes as dairy specialists desire and preach good beef will vanish from the land. A world of mischief has been done already. Dairymen who live on light, gravelly soil cry down the cow that will not develop there. The coming Iowa cow is to be large. The abundant grasses and grains will have it so. It is the duty of Short-horn men to guide the development. Iowa people deserve juicy, tender, sweet, Short-horn beef, otherwise children must be born with canine teeth, and before it will be safe to attack the skim milk cheese we must have the alimentary canal insured.

We look ahead to the time when our people will, after wandering in the wilds of useless experiment with other breeds, be finally found clothed and in their right minds with the Short-horn. \* \* \*

I congratulate you upon progresses made during the year in practical directions. Our herds grade better. There are fewer poor things, fewer barren cattle, less dependence on pedigree, more attention to individual excellence. The best cattle in the country gravitate to the cheap grasses and grains of Iowa. Our State is to become the mecca of good animals of all kinds.

Discussion of this address was opened by Mr. C. S. Barclay, West Liberty, who spoke as follows: One thing in President Wilson's address I would like to emphasize, and that is his recommendation that the State Board confine its premiums on steers to Iowa exhibitors. I think this is a good idea. The trouble and expense of making an exhibit of steers at Chicago is no small item. In the first place there is no use in starting except with the best, and Short-horn men who raise good cattle know the value of a good bull calf. I have not sold a bull calf this year for less than \$150 from twelve to eighteen months old, and from that the price has run to \$400, with an average of over \$200. Now that is considerable to put into the making of a steer for show. You must take something that will make a good bull, something that is right and straight, in order to make a grand show steer, and in order to have these points he must be well bred. Then it is expensive and risky to feed him. One of any number of little things can happen to him to take off sufficient to send him to the rear as a first class show steer. There must be constant care expended on him from the day he is dropped to the day he wins the premium. Now the State Board ought to help Iowa men in this particular. A man may live in Maine or California and if he thinks he has steers good enough he can come here and Iowa men have to compete with the world. Instead of this it ought to be an Iowa ex-

hibit to encourage Iowa breeders to make an exhibit for themselves here and then go on to Chicago. I think it is the duty of the State Board to share the expenses of those who make these exhibits, for they are a benefit to every man who raises cattle.

In regard to the World's Fair I see that there is some question as to whether cash premiums will be paid on live stock. The Chicago daily papers, in reporting the recent conference on that subject spoke slightly of the request of the stockmen for cash prizes. I am in favor of this association taking a firm stand in demanding of the directory the offering of cash premiums for the stock exhibit, and if they will not concede this I think it ought to stand by the committee of eighteen appointed by the stockmen in its determination to make an exhibit independent of the World's Fair.

C. W. Norton, Durant: About twenty years ago I bought my first Short-horn cows—two of them—and I never have regretted the move, but have been adding to my herd from time to time. After ten years' breeding I closed out the produce of those two cows for \$6,000, and that is not a large amount, as you can readily figure. The great success of the Short-horn is in grading up. It will improve everything, and this we know by experience. But none of the other breeds will improve the Short-horn. If this is so, we who are breeding them should go along content in our chosen way. Short-horns have always taken care of themselves, and I am satisfied that the outlook is better to-day than for the past ten years. The inquiry is greater for Short-horn bulls, and it comes from men who have used Hereford and Angus bulls, and now return to the Short-horn. The scrub has had its day in Iowa.

Mr. J. C. Frazier of Bloomfield, who had won third in the three-year-old Short-horn class at the late Fat Stock Show with the roan Jerry, was called on to state how he fed the steer, and he replied thus: I can tell all I know about feeding steers for show in a short time. You have got to have a good one to commence with. I just fed ground corn and oats with some oil-meal and let him run on grass a good portion of the time, putting him up at night. He was the first steer I ever fed, and I think I could do better next time. I let him run with the cow until he was seven months old, and before weaning I put him up at nights and taught him to eat, at first with a little ground oats and ground corn, with dry cut hay and a very little oil-meal. The next summer he had very little grain, but in the fall I commenced to feed one-half oats and corn—the corn crushed, cob and all—and the same bulk of cut hay, with about two pounds oil-meal, all he would eat three times a day.



I kept him up in the day-time and let him run on grass at night, and he weighed 1,840 at Chicago. He was second at the State Fair, and would have been higher up at Chicago but for the fact that I shipped him home from Des Moines in a car with a Jersey bull which got loose and nearly used him up, so that I lost about six week's feed on him just when I wanted to ripen him. I fed him very little bran, but the last six weeks I increased the oil-meal to three pounds. He was a well-bred steer.

Mr. Barclay: My two-year-old third-premium roan ran with his dam until seven or eight months old without grain. In the winter I fed him hay, with a very little oats and corn, until he was a year old. I began feeding him on the first of July all the grain he would eat on pasture—corn and oats and cut clover hay. I took him to the State Fair and then to Chicago, where he weighed 1,620 lbs.

President Wilson: If you began with a herd of young steers would you give them grain while they were suckling?

Mr. Barclay: Yes. If I was starting a herd for the Fat Stock Show I would give them all the grain they wanted to eat while suckling—bran and oats and a little oil-meal and cut clover hay. If I wanted to carry them till they were three years old I would feed lightly on corn, but would give them something to grow on.

President Wilson: Would you give them an extra cow apiece to suck?

Mr. Barclay: If I wanted to make them show calves, yes; if show two-year-olds, no. Few steers can stand crowding for three years.

C. Chambers, Zero: What is the difference in feeding a show steer till two years old and in keeping a young bull in salable condition?

Mr. Barclay: I would rather feed two steers than one bull. No man can keep good bulls and sell them as yearlings for less than \$100 and make money. It takes more expensive feed for a bull than a steer. The latter has nothing else to do but eat and will take common and rough feed, while a bull has his mind on something else and has to be tempted with the choicest food.

Mr. Norton took up the discussion, referring at some length to British methods of feeding roots and "soup." The ration he would recommend for bulls and heifers is one-third corn, one-third oats, and one-third bran. President Wilson called attention to the fact that we have to import tons of flax to get oil for painting our houses and then export the oil-cake to the British feeder, who will feed a lot of bullocks without a penny's profit in order to get the manure. He ridiculed the idea of sending oil-meal and corn abroad to keep British farm lands in growing condition, and pointed out the folly of shipping train loads of cattle east to be fed and then sending train loads of corn and oil-

meal after them to be fed to them. He raised the question of the root-pulp, the by-product of the sugar factory, as a cattle food, and Mr. Albert Swalm, editor of the *Oskaloosa Herald*, who has recently visited the sugar factory at Grand Island, made the following statement upon invitation:

At this factory, which has just closed for the season, they had the crop of beets from 2,600 acres, which had been badly damaged by the drouth, but from this acreage they made 1,300,000 pounds of white sugar over 99 per cent pure. The question of the pulp was readily settled by feeders about Grand Island. At first they did not know whether their cattle and sheep would take it, but when the factory closed there was not fifty pounds of it left uncalled for. So soon as the experiment had been tried on a few bunches every feeder wanted some of it. I have talked with men who had fed it to cattle and sheep, and they report prodigious gains when fed with corn and oil-meal. The feeders of Nebraska will take all the pulp that the sugar factories can produce, as they believe it to be the most profitable thing to feed in connection with corn and oil-meal. They will contract to deliver the beets to the factory, but "take a mortgage" on the pulp. We will test the growing of beets for sugar-making in sixty different spots in this country, and I believe that this industry will work a revolution in our agriculture.

After some further discussion of a general nature the topic, "The Short-horn as a Dairy Cow," was taken up, and in the absence of Mr. John W. Jayne, Lone Tree, who had been asked to prepare a paper on the subject, Mr. C. L. Gabrielson, New Hampton, opened the discussion, which took rather a wide range before it was brought to a close. A synopsis of his talk is given:

I came to Iowa in 1869 and purchased a small herd of cattle, among which was a roan half-blood Short-horn cow, and these were the foundation of most of my present herd. The last four crosses on them are pure bred Short-horn bulls, but I have always regretted that I did not save the old roan cow's son as a sire for use in my herd. When I speak of the Short-horn as a dairy cow I speak from experience. The old cow and all her calves have uniformly been good milkers, and I have daughters and grand-daughters from her which give 40 lbs. of milk per day for four months. A year ago with two grade Guernseys in my herd of twenty cows they averaged 1 lb. of butter to 22 lbs. of milk. When you talk about a Short-horn cow as a dairy cow, she must be treated as a cow, as a mother, as Gov. Hoard puts it. You cannot expect a cow of any breed to winter at a straw pile, and give a large mess of milk. She should be fed to produce milk, and as nothing will equal grass as such food we should try to come as near supplying summer conditions all the year round as we can. If we raise corn we should cut it up for fodder. Some think that silage is a good feed, and while we are speaking of roots I want to testify that silage will take the place of roots at much less expense. We really can give some summer conditions with the use of silage, and this question of roots and "soup" is helped out by silage in the making of the winter milk. The Short-horns in our part of the State have done great good in improving the general stock of that section. There dairying is largely carried on and the Short-horn cow is the main reliance. She furnishes both milk and beef in the Northern part of this State.



The discussion, turned by Mr. Gabrielson in the direction of the silo, was entered into by Mr. C. F. Curtis, of Nevada, Iowa, briefly, who stated that the greatest amount of nutriment can be secured from both stalk and ear when the kernels of corn have begun to glaze. Mr. Gabrielson explained at some length the very satisfactory results in his experience from the use of silage, and his method of building and filling his silo. The pit is in a bay in the barn, and is made of boards to which a layer of tarred paper is nailed and covered with boards breaking joints with those on the outside. He cuts the corn into two-inch lengths when it begins to glaze and runs it into the pit as fast as hauled from the field, tramping the edges and covering with two feet of straw. There is very little waste—practically none—and his ration is twenty-five pounds of this silage twice a day, with three pounds of bran and plenty of clover hay, and on this feed his cows are producing on the average nearly one pound of butter per day. Until this year oats which had been run through the cutter have been his mainstay in feeding. This year his silage crop made seventeen tons to the acre, the corn used being the common white dent. The field which he had allowed to mature had husked out fifty bushels to the acre. The capacity of the silo cost about seventy-five cents per ton, and the tools for putting the silage into the pit cost about \$175. He would not advise the borrowing of money to build a silo, but with means at hand to put it up he was confident that a silo would prove of great value to the cattle feeder or dairyman.

The silo question was new to this convention, and much interest was manifested in the discussion. Mr. Barclay declared that in cold weather he could get his cows to clean up well-cured fodder with only about 5 per cent waste when run through a cutter and made into three-eighths-inch lengths, but in the fall so long as any pasture remains the cattle will eat only the leaves of the fodder, rejecting the stalks. He had become convinced that a man can make silage much more cheaply than he could cure and feed fodder, as he would have to handle the silage only once, and he is going to give it a trial with his cattle. Mr. R. Baker, Jr., did not lose 20 per cent of fodder in feeding, while Mr. Norton held that over half of the feeding value of the fodder was lost when it was allowed to stand in the fields, as in seasons of a heavy corn crop. He believed that it should be harvested every year. As regards the question of dairy Short-horns, the way to raise them is to select a bull from a milking strain and then keep the calf from the cow. Mr. Baker regularly cuts his corn while the stalk is still green and plows under the butts as soon as possible, thus greatly enriching the ground. For six successive years he had held up a

field to its full capacity of production without any other dressing than this.

After some further discussion, in which Mr. Baker argued his favorite idea of low-wheeled wagons, a recess was taken for the supper hour.

The evening session opened by the reading of the reports of the Secretary-Treasurer, William Cook, Marion. The cash balance is about \$40. The Secretary's report conveyed the information that 5,000 copies of the pamphlet report of the last meeting of the association had been distributed, and that permission had been obtained from the Iowa Agricultural Society for the association to erect a building upon its fair grounds at Des Moines which should be headquarters for Short-horn breeders during the State Fairs. In conclusion Secretary Cook declined to serve the association further in his office, and advised the selection of a younger man for the position.

After the appointment of committees and pending the appearance of persons on the programme, Mr. Gabrielson was requested to put the association in possession of a recently-acquired method of feeding calves so as to prevent scouring, which he did as follows:

I milk my cows for the butter that is in the milk, and I cannot afford to let the calves have it. I therefore feed skim-milk. The great trouble in feeding this way is scours, but I have learned that this difficulty can be entirely prevented by the use of rennet extract, to be given with the skim-milk as we get it from the deep-setting cans. We make a business of dairying, and the calves must take their chances with the skim-milk, and everyone knows the difficulty in feeding this bare skim-milk. If we increase the quantity a little or have it too cold the calf's digestion is upset and scours follow. I accidentally stumbled onto the use of rennet extract in liquid form, which can be bought at \$1.50 per gallon and is of such strength that one teaspoonful is enough for ten calves getting four quarts each of milk at a feed, to prevent any danger from scours. With this adjunct skim-milk can be fed with as great safety as new milk, and now I can put my calves on skim-milk in about five days. I feed the milk at a temperature of about 80 deg. at first, but after two months I reduce it to 65 or 70 deg. The rennet extract never fails to prevent scours.

President Wilson then freed his mind on the subject of the proper method of raising Short-horn calves in Iowa, to this effect:

The cow and calf are managed so differently in different sections of this State that the methods do not harmonize. The men who are breeding for beef let the calf suck, but unless they want to make a premium steer out of him they cannot afford to follow this course. The men in the North of the State take the other shoot. They make money out of butter to the total neglect of the calf. I have a small opinion of their methods, which do not raise decent calves. An exchange of ideas between the dairy and beef men may bring about a revolution in methods. The correct system of farming, as the strictest economy will some time require, will



have the cow milked and the steer fed on every farm, and the sooner the farmers of this State come to this the more money they will make. There is a question whether taking all of the fat out of the milk will give the calf a respectable start. I would have our friends in the northern part of the State use bulls which would get export steers and then feed the calves new milk for a while, and then turn to the meals to take the place of the butter-fat and carry them on by hand till they can make their own living. My observation has taught me that this is the way cows can be raised in the dairy and calves made into steers. I think the Northern Iowa farmer is stunting his calves and that he will find it will pay to feed them new milk for a while and then use meals until they are ready for the manger. On the other hand, the southern farmer puts far too much butter-fat down the throats of his calves. We have cheaper oils in Iowa than the butter-fat that makes twenty-five cent butter.

Mr. H. Draper and Mr. C. B. Crumpacker added their testimony in favor of the efficacy of rennet extract as a remedy for scours in calves, and Mr. Baker declared that the best cows he had to do with made beef and butter-fat at the same time if they had double rations of fodder. He thought that if a cow was thin she would use some of her butter-fat toward her support. In discussing the question of feeding calves to produce dairy heifers President Wilson stated that he would not feed them as he would a steer but would feed them to produce thrift and nothing more.

"The Short-horn Pre-eminently the Beef-producer of the World," was the topic assigned to a member of the association, but as he failed to undertake the preparation of a paper on that subject Mr. Norton was asked to open the discussion. He compared the Herefords, Aberdeen-Angus, and the Short-horns as the "good, better, best," of the breed of cattle, going over the breed characteristics point by point to make out his case. The effects of the all-improving Short-horn on the natives was cited as an argument, and the preponderance of the championships at fat-stock shows which has fallen to the Short-horn on both sides the water was also instanced in support of the proposition. Mr. Daniel Sheehan of Osage changed the subject to a consideration of the breed from the standpoint of the dairy, and related the victory of a Short-horn cow at the Mitchell county fair-ground test over a Jersey in quantity and quality of cream. He declared that the Short-horn is pre-eminently the dairy cow of that country, which shipped last year over 2,000,000 lbs. of butter.

After some scattering discussion the session of the evening came to a close.

At the concluding session on Wednesday morning the committee on nomination of officers reported the following names, which met with the approval of the association: President, Daniel Sheehan,

Osage; Vice-Presidents, Hon. C. C. Carpenter, Fort Dodge; Martin Flynn, Des Moines; Wiley Fall, Albia. Directors for two years, John McHugh, Cresco, and J. C. Frazier, Bloomfield; Secretary-Treasurer, C. W. Norton, Durant, Iowa.

The committee on resolutions made the following report, which was adopted:

*Resolved*, By the Iowa Short-horn Breeders' Association that we request the State Agricultural Society to offer liberal premiums for fat steers, confining the premiums to animals bred and owned in Iowa.

*Resolved*, That this association requests the State Agricultural Society to take measures to exclude from the breeding show ring any cow over three years of age that is not clearly a breeder.

*Resolved*, That this association favors more exclusive premiums for cattle bred and owned by Iowa breeders, and requests the State Agricultural Society to give this subject serious attention.

*Resolved*, That this association favors the proposition to provide special instruction in dairying at the Iowa Agricultural College.

*Resolved*, That this Association favors the idea of providing officers and instructors of the Iowa Agricultural College from the ranks of its graduates when this policy can be adopted in the interests of harmony and efficiency.

*Resolved*, That this association hereby expresses its high appreciation of the able services of its President, James Wilson, for the past two years, and regrets sincerely his desire to retire from the position.

*Resolved*, That a special vote of thanks is due the Secretary, Mr. Cook, for his gratuitous services to this association, and that it is the sense of this meeting that he should be allowed his hotel bills and railroad fare for the past year while in attendance at the State Fair and the annual meeting.

Secretary Cook declined to receive from the association the expense money voted him.

Last year it was proposed to erect a building on the fair grounds at Des Moines, but no effort was made to raise the necessary funds. At this time a subscription paper was started and pledges to the amount of \$140 were made. This insures the erection of permanent headquarters for the association during State Fair week.

The meeting was brought to a close with a discussion, participated in by a number of the leading members of the association, of the prospects of the Short-horn breeding industry, in which the strongest faith in the future of the business was freely expressed.



# MEETING OF THE IOWA WOOL-GROWERS' AND SHEEP BREEDERS' ASSOCIATION.

This association met at Oskaloosa, Wednesday, December 3, at 9 A. M., with an attendance larger than for many years. The President, G. W. Franklin, of Atlantic, spoke briefly of the advantages of attendance upon these meetings and the discussions upon breeding and the management of sheep, and of the necessity of union of effort to secure legislation to suppress the dogs and wolves. He advised that the annual election of officers be changed from the September to the December meeting. It was voted that the officers of the ensuing year be elected at this meeting, and hereafter at the December meetings. It was also agreed that the next December meeting be held on Wednesday morning, the first day of the next meeting of the Iowa Improved-Stock Breeders' Association.

Mr. Gabrielson of New Hampton spoke of the profits of keeping sheep, and said he had for a dozen years kept from forty to sixty head of sheep crossed with Merino and English rams, and that the annual receipts had been 100 per cent—that is, the wool and lambs each year were equal to the value of the mothers. Mr. W. P. Young of Mount Pleasant had found sheep profitable. He said they cleaned up the pastures, but he thought 100 head of English sheep a sufficiently large number to do well together. Mr. C. W. Norton of Durant agreed with Mr. Young as to sheep cleaning the pastures of weeds rejected by the cattle. The sheep took possession and took care of themselves. He had had his flock sometimes as low as forty head, and kept them apparently without cost—did not feed them anything. He had never lost any by dogs or wolves and felt entirely easy on that matter, and that they were as safe as his cattle. The dogs were half gone by reason of the dog tax. He kept bells on his sheep—a bell for every five or six sheep. Many years ago he brought a few Merino sheep on his farm and had since crossed them with English breeds, paying large prices for rams. He is now crossing with Shropshires. Cotswolds did not do well in even as large flocks

as 100 head. There was too much running at the nose. The Cotswolds, too, were not a first-class mutton sheep. Butchers complain of too much solid fat, sometimes two inches thick on the back. He found the Down cross was better, and he now got good medium wool. The Shropshires were originated by a cross of Leicester and Southdown; the Southdown quite hardy and noted for its quality of mutton. Mr. R. Baker said he had found the bells useful in scaring off the dogs. Another gentleman thought the bells sometimes wore off as much flesh from the sheep as they saved from the dogs. Any little scare of a belled sheep from any other animal or from any cause would jingle a bell and sometimes run the whole flock together.

Capt. W. H. Jordon took up the discussion, lauding the mutton breeds and disparaging the Merinos, and was replied to at some length and much force by Secretary A. J. Blakely, of Grinnell. Considerable time was devoted to a discussion of the respective breeds, in which a number of the members of the association joined.

J. H. Jenkins of Oskaloosa said there was a necessity for action of the association relative to obtaining through the next legislature a law providing for a good State bounty for wolf scalps. The county bounties are unequal and too small. Wolves, though numerous, are hard to catch. A few years ago a number of sheep-owners near Oskaloosa each agreed to pay a bounty for dead wolves. A good many were killed, but soon it was said the wolves were driven in and killed near Oskaloosa, as they have been driven from counties that pay little or no bounty to those counties that do pay. So some refused to pay the bounties promised, and the matter ended. He claimed a State bounty to be the fair and just way of paying for the destruction of these wild animals from our State. It is a stigma, he said, upon our civilization that these large, wild, and destructive animals are permitted to remain here. Mathew Pickins of Oskaloosa advocated a State bounty of \$20 for old wolf scalps. Cobert Thomas said Senator Jewel told him the time of the last legislature was so limited after organization that they did not get around to the passage of the wolf bounty bill.

The President, Secretary, and others advocated pressing the matter on the attention of the next legislature.

Mr. Jenkins presented the following:

*Resolved*, That it is the sentiment of the Iowa Wool-Growers and Sheep-Breeders' Association that the interests of the wool-growers and of all stock-breeders' and poultry-raisers of the State demand of the next legislature a bounty of \$20 for wolf scalps.

The resolution was unanimously adopted.



It was voted that the Secretary and Mr. Pickins be added to the committee to urge upon the next legislature the enactment of a law in accordance with the above resolution. A resolution was offered and carried that a request be made to the State Agricultural Society that the Leicester and Lincoln classes be merged in one and the money heretofore paid in premiums to one of these classes be retained in the sheep division and be added to the other sheep classes.

The following resolution was carried:

*Resolved*, That we request the proper officers of the State Agricultural Society that there be at the State fair a distinct and separate class for crosses of pure-bred sheep and a liberal premium offered.

Messrs. Franklin, Atchinson, and Blakely were elected a committee to present the matter of changes of premiums to the proper officers at the January meeting.

The Treasurer's report was read and approved, and \$18 additional membership fees were paid in.

Following were elected officers of the association for the ensuing year: President, G. W. Franklin of Atlantic; Vice-Presidents, S. P. McNeil, Garden Grove; Benjamin L. Bates, Nassau; Robt. Thomas, New Sharon; Secretary and Treasurer, A. J. Blakely, Grinnell.

It was then agreed that in order to give more time for discussion the December meeting be opened on Tuesday at half past 1 p. m. It was also voted that a meeting of the association be called by the Executive Committee to meet in Des Moines in January, 1891.

#### SHORT-HORN BREEDERS IN SESSION.

The annual meeting of the American Short-horn Breeder's Association was held at the Grand Pacific Hotel, Chicago, on Wednesday evening, Nov. 19, with Vice-President Chas. E. Leonard, Mt. Leonard, Mo., in the chair. Roll call and reading of the minutes were dispensed with and the vice-president and secretary began the following report:

We beg leave to make our annual report, as per by-law and custom, giving you a synopsis of the business transacted by the association for the year beginning Nov. 1, 1889, ending Oct. 31, 1890; also our present financial condition. We find the receipts to have been as follows:

From Nov. 1, 1889, to Nov. 1, 1890:	
Nov. 1, 1889, balance in treasurer's hands	\$22,258.26
Balance in secretary's hands	42.88
	<hr/>
	\$22,301.14
Pedigrees	\$16,307.24
Less pedigrees returned	1,845.00
	<hr/>
	14,462.24
Books	825.75
Certifying and copying	459.37
Less certifying and copying returned	19.75
	<hr/>
	436.62
Excess of fees	260.18
Postage and express	187.44
Interest	1,295.89
Blanks	103.66
	<hr/>
Total	\$39,872.92

#### Expenditures.

From Nov. 1, 1889 to Nov. 1, 1890:	
Salaries	\$6,121.28
Revision and blanks	1,972.02
Board meetings	364.75
Printing and binding Vol. XXXV	3,257.51
Printing annual circular	55.00
Petty expenses	143.69
Prizes Fat Stock Show, 1889	880.00
Balance on dairy prizes, 1889	225.00
Prize medals, J. J. Hill, 1889	65.00
Express	171.45
Excess of fees	261.18
Postage	394.98
Stationery	444.05
Rent for office	1,000.00
Janitor	95.96
Fat Stock Show funds refunded	2,650.00
Taxes for 1889	239.04
Insurance	245.90
Gas fixtures	5.90
Ice bill for 1889	11.85
Binding office books	12.50
Expert book-keeper	50.00
Dairy Prizes for 1890	1,150.00
Balance in treasurer's hands	\$19,969.03
	86.83—
	<hr/>
	20,055.86
	<hr/>
	\$39,872.92



In connection herewith we submit the table showing our assets and liabilities:

*Assets.*

Cash in treasurer's hands.....	\$19,969.03	
Cash in bank.....	5,000.00	
Cash in secretary's hands.....	86.83	
		25,055.86
Office fixtures.....		300.00
Due on open accounts.....		203.86
Stationery and blanks.....		30.00
Books on hand, Vols. XXV to XXXV inclusive (at cost price).....		16,947.50
Total.....		\$42,537.22

*Liabilities.*

Capital stock.....	\$20,000.00	
Due on open accounts.....	2,825.95	
Back volumes due out of print, thirteen volumes.....	39.00	
Cost of printing checked pedigrees for Vol. XXXVI (estimated).....	3,000.00	
Surplus.....	16,672.27	
Total.....		\$42,537.22

During the year Vol. XXXV was published. Blank pedigrees checked for same, 4,192. Blank pedigrees checked for Vol. XXXVI, 9,411. The office index for Vol. XXXV has been written and arranged. The annual circular was published early in the year, giving a fair synopsis of the entire business of the year, a copy of which was mailed to every member; consequently we will repeat as little as possible in this report. Nine thousand six hundred and sixty-four letters have been received and answered. We have shipped of the various volumes a total of 1,087. The other work of the office, such as book-keeping, copying and certifying to pedigrees, etc., has been kept up to date. In fact the current work of the office is in such shape that pedigrees coming one day can be checked and certified to the following day.

We are glad to report that we will be called upon to pay more than the usual amount of prizes at the present Fat-Stock Show, as the grand sweepstakes prize was won by a Short-horn.

You will notice that the amount reported last year in the hands of the secretary-treasurer, and special deposit was \$27,301.14, while this year it is \$25,055.86, making a difference against us of \$2,245.28. But you will observe that we refunded \$2,650 of subscriptions to the Fat Stock Show fund that had been paid in previous to the year; really making our receipts \$404.72 in excess of our expenditures, notwithstanding the sum of \$1,972.02 that we paid for the extra work of the revision. Considering the dullness of the times we think it is an excellent showing for the year.

Work on the revision has advanced as rapidly as the nature of the case would admit. We found it more practical to engage but few clerks, at a sacrifice of time rather than employing more at a greater expense in the end with less satis-

factory results. The work on the books is about completed as far as copying, arranging, numbering of cows, adding produce with numbers to females, etc., etc., is concerned. We hope to have it critically inspected by the editor by the time that the current volume (XXXVI) shall have been issued from the press, which will perhaps be in June next.

It will be noticed that last year we reported \$908.45 expended for blanks and clerk hire on the revision. This year it amounted to \$1,972.02, making a total of \$2,880.47. Our estimate for that part of the work being \$3,000.00, leaving a balance of \$119.53 to complete the work according to our estimate.

In round numbers there will be 2,200 cows, which include all that have recorded produce in the first thirteen volumes of the A. H. B., and the first three volumes of the Short-horn Record, where so many dams were recorded that were entered in the A. H. B., but whose produce had been entered several years previous to the commencement of the Short-horn Record; so that it was found not only expedient but economical to insert cows in those volumes as part of the original thirteen.

It will further be noticed that our estimate as given last year for the completion of the plates will be from \$7,000 to \$8,000. We have had no estimates made since, but presume the figures will vary but little from that in order to complete the work. We will state in connection herewith that we have been more fortunate in correcting errors, typographical and otherwise, that had crept into the earlier volumes than we had reason to expect on account of the death of many of the old breeders, and the discontinuance of the business and removal of others.

We have also noted in a large, well-bound book every conflict in date and error of pedigree that we have discovered in the volumes referred to, and have arranged the same both in alphabetical order of the names of the animals and of the names of the breeders, owners, and of those with whom we have had correspondence relating to the matters referred to. This book will give the reasons for all changes where corrections have been made, and will be kept on file in the office for the inspection of all breeders and parties interested.

We wish to call your attention to the following resolution which Col. Harris introduced at the board meeting to-day, with instructions that the same be presented to you for your action:

*Resolved,* That the Board of Directors be authorized to appropriate about \$6,000 for premiums for Short-horns at the Columbian Exposition, and have power to make it conditional that the management of the Exposition appropriate at least an equal amount.

As per your request the directors authorized the president and secretary to draw warrants on the treasurer to refund the amounts paid to the Association account of the Fat Stock Show prizes, and in accordance therewith you will notice the item of \$2,650 appears in our expenditures. The unpaid subscriptions amounting to \$375 were also canceled, making a total of \$3,025, amount heretofore reported as subscribed to that fund.

We are called upon to report the deaths of T. J. Megibben, Cynthia, Ky., Jan. 24, 1890; J. W. Marlatt, Milton, Ind., May 11, 1890, and Maj. William Gentry, of the firm of William Gentry & Son, May 22, 1890. Others may have died, but their names have not been reported to the office. We also call your attention to the fact that the Hon. Lewis F. Allen, founder of the American Short-horn Herd Book, died at his home in Buffalo, N. Y., on May 2, 1890, in the ninety-first year of his age; and while he was not a member of the Association, we think it well for his name to be entered in the obituary list.



We therefore suggest that a committee be appointed to draft suitable resolutions to their memory.

Upon motion Mr. A. M. Bowman was appointed a delegate to confer with the World's Fair Committee of eighteen on classification of cattle for the Columbian Exposition.

Mr. Bowman offered the following preamble and resolutions, which were unanimously adopted:

WHEREAS, In the address of the committee of eighteen, appointed to represent the various live stock interests before the Columbian Exposition, said commissioners were respectfully requested that large and liberal cash prizes should be paid as prizes for live stock.

*Resolved*, That we concur in the said recommendation and would urgently and respectfully ask said commissioners to grant request of said committee.

Mr. W. T. Harvey offered the following resolution, which was adopted:

WHEREAS, At the annual meetings of the various cattle associations which convene at Chicago during the Fat Stock Shows there is no opportunity to discuss common interests.

*Resolved*, That we invite all breeders of cattle to meet in general convention one night during the week of the Fat Stock Show to discuss interests common to all breeders of cattle.

*Resolved*, That the secretary of this Association be requested to notify all national cattle associations to participate in said deliberations; and that Secretary Pickrell be requested to fix the date and place of such meeting.

On motion Messrs. J. D. Porter, Alexis, Ill., A. H. Sanders, Chicago, Ill. and Benjamin W. Brown, Berlin, Ill., were appointed a committee to draft suitable resolutions in regard to the memory of the deceased members. Said committee reported the following, which was unanimously adopted by a raising vote:

WHEREAS, This association has been advised since its last annual meeting of the decease of the Hon. T. J. Megibben of Kentucky, Maj. William M. Gentry of Missouri, J. W. Marlatt of Indiana, all members of the association, and of the Hon. Lewis F. Allen of New York, founder of the American Short-horn Herd Book;

*Resolved*, That the association hereby expresses its respect for the character and memory of the deceased, and extends its sincerest sympathy to the bereaved families and friends. In the case of the Hon. Lewis F. Allen, who for so many years struggled to establish the present herd book of the association, we suggest for the consideration of our Executive Committee the propriety of incorporating in the next volume of the herd book a suitable engraving and biographical sketch as a permanent expression of our appreciation of his great services in behalf of American Short-horns.

Mr. Boyd introduced Col. J. T. Henderson of Arkansas, who proceeded to address the meeting in the interest of the dairy exhibit at the Columbian Exposition. At the conclusion of his remarks, upon motion of Judge Nourse the matter was referred to the Board of Directors to take such action as they might deem proper.

Mr. H. H. Hines of Michigan offered a series of resolutions protesting against a divided site for the Columbian Exposition, which were adopted.

The election of three directors to succeed Messrs. Jones, Nourse and Thomas being in order, Mr. Reardon put in nomination Judge C. C. Nourse of Des Moines, Iowa. The Judge declined upon the ground that he had disposed of his Short-horns and thought the business should be in the hands of those actually engaged in the business, and expressed his thanks for the courtesies he had received and his regrets at severing his pleasant relations with the directory.

Col. Harris in a neat speech expressed his regret at the decision of Judge Nourse and complimented him on his efficiency and faithfulness in the work of the board. Mr. Reardon who put him in nomination withdrew his name.

Mr. Ben F. Elbert nominated Henry Wallace of Des Moines, Iowa, and Mr. C. S. Barclay put in nomination Hon. John McHugh, Cresco, Iowa. Mr. McHugh had received 112 votes and Mr. Wallace 87, whereupon Mr. McHugh was declared elected. Mr. A. H. Jones of Ohio was elected his own successor, there being no other nominations.

Mr. Renick of Kentucky nominated Mr. E. K. Thomas as his own successor, and Mr. Gibson of Canada nominated Col. T. S. Moberley of Richmond, Ky. Upon ballot being taken Col. Moberley had received 99 votes, Mr. Thomas 85 votes, Mr. Renick 1 vote and Col. Moberley was declared elected.

Adjournment was then ordered.



## AMERICAN COTSWOLD ASSOCIATION.

The annual meeting of the American Cotswold Association was held at Sherman House, Chicago, Nov. 19. President R. C. Judson, Farmington, Minn., presiding. The secretary's report showing \$701.61 balance on hand was read and accepted. 550 pedigrees have been received since the publication of Vol. 4 last March.

A classification for Cotswolds at the World's Fair was agreed upon and presented to the committee.

Officers for the ensuing year were elected as follows: President, R. C. Judson; Vice-President, G. W. Franklin, Atlantic, Iowa; J. C. Small, Edmonton, Ont.; C. E. Carothers, Houstonville, Pa.; Secretary, and Treasurer, Geo. Harding, Waukesha, Wis.; Board of Directors R. C. Judson, J. O. Malley, Waunakee, Wis.; J. B. Herkless, Knights-town, Ind., and Geo. Harding.

## NATIONAL SWINE-BREEDERS' CONVENTION.

The ninth annual meeting of the National Swine-Breeders' Association was called to order in the Sherman House, Chicago, Ill., by the President, Hon. B. R. Vale, of Iowa, at 2 p. m. on the 18th inst. The roll was called by the Secretary, Phil. M. Springer. The attendance was much larger than usual. The minutes of the last annual meeting were approved, and a short recess taken for the reception of new members and the payment of dues. The following committees were chosen and instructed to report before the close of the meeting. Committee on nominations, H. M. Sisson, Thomas Bennett, A. J. Lovejoy; on resolutions, L. N. Bonham, A. C. Moore, John Gilmore; on finance, W. W. McClung, S. E. Morton, G. A. Hunt.

A discussion of the finance question was the first to occupy the time

of the convention. The importance of having a sufficient revenue to keep the association on a good working basis was felt by all, but just how to make the expense rest evenly and fairly on all receiving the benefits of the association was not so plain. There were plenty of members willing to contribute from three to ten times each the amount of their regular dues, if necessary, for the success of the association, but this did not seem to be the right principle on which funds should be secured for carrying on the work. The discussion resulted as shown below, the resolution asking the record associations to contribute being adopted without a dissenting vote.

WHEREAS, The work of the National Swine-Breeders' Association is one in which all the swine-breeders and feeders of the country are more or less interested, and

WHEREAS, Experience has shown that the revenue derived by the association from the payment of annual dues by the members is not sufficient to defray the necessary expenses of the association, and

WHEREAS, Still further expenditure will be required of the association in preparing for the coming Columbian Exhibition; therefore,

Resolved, That each of the record associations be requested to contribute \$25 annually to the treasurer of the National Swine-Breeders' Association.

Among the members taking part in the discussion and who contributed liberally to make up a deficit in the treasury, reported this year, were Thomas Bennett, Roseville, Ill.; H. M. Sisson, Galesburg, Ill.; A. J. Lovejoy, Roscoe, Ill.; J. A. Countryman, Lindenwood, Ill.; N. H. Gentry, Sedalia, Mo.; I. K. Alderman, Maryville, Mo.; L. N. Bonham, Oxford, O.; S. E. Morton, Camden, O., and W. W. McClung, Waterloo, Iowa.

In the absence of S. H. Todd, of Ohio, whose name was on the programme for a paper on "The Hog at the Coming World's Fair," his hour was given to Dr. D. E. Salmon of the Bureau of Animal Industry. Dr. Salmon was expected to speak on the subject of "American Products Abroad," but explained to the convention why he had concluded to speak rather on the "Conditions Governing the Price of Hogs." He gave a very instructive address on the subject. A hearty vote of thanks was tendered him by the convention.

Mr. Sam. A. Clark, of Chicago, then addressed the meeting on "Selecting and Breeding." No brief recital of the point made by the speaker could do him justice. His entire address, as also that of Dr. Salmon and all other speakers at this meeting, will soon be issued in pamphlet form for the use of the members and the press.

The committee on nominations reported recommending the re-election of the present officers as follows: President, B. R. Vale, Bonaparte, Iowa; Vice-President, N. H. Gentry, Sedalia, Mo.; Secretary,



Phil M. Springer, Springfield, Ill.; Treasurer, J. A. Countryman, Lindenwood, Ill.; executive Committee, C. W. Jones, Richland, Mich.; S. E. Morton, Camden, O.; D. L. Thomas, Rushville, Ind.; H. M. Sisson, Galesburg, Ill.

The report of the committee was received and adopted, and the gentlemen named declared duly elected.

An evening session was held, at which was read a history of the Duroc-Jersey hog by Mr. J. M. Stonebraker. This was followed by a general discussion by the members on various matters relating to the general management of swine, in the course of which L. L. Seiler, Topeka, Kan., and S. A. Clark, of Chicago, locked horns and gave the convention the most lively entertainment in the way of a war of words it has perhaps ever had. Good as it was for those who heard, it will also be good for the readers and will appear in *The Gazette* at the earliest date practicable. The papers prepared by S. H. Todd, H. M. Sisson, N. H. Gentry, and Park H. Hammond are also promised for publication in full.

The general feeling among the swine-breeders was that no better meeting of the association had ever been held.

Before adjournment H. M. Sisson, L. M. Bonham, and Phil M. Springer were appointed a committee to represent the association before the committee of eighteen on the 20th inst.

#### ANNUAL CONVENTION OF NATIONAL POLAND-CHINA SWINE-BREEDERS.

The breeders of Poland-China swine assembled in annual convention at the Sherman House, Chicago, on Wednesday, Nov. 19, the attendance being quite large. President W. W. McClung, Waterloo, Ia., presided, and in the absence of the secretary, Mr. Carl Freigau, the duties of that office was attended to by Mr. L. C. Nixon of Fort Ancient, O. The first business transacted was the appointment of the following committees: On nomination of officers, E. C. Rouse, Homer, Mich.; Park H. Hammond, Oneida, Ill.; L. C. Nixon, Fort Ancient, O. On resolutions, Hon. L. M. Bonham, Oxford, O.; H. M. Sisson, Galesburg, Ill.; John Gilmore, Vinton, Ia.

The treasurer's report showed a balance of \$19.42 on hand, with no liabilities.

Two new members were admitted into the association, after which the president informed the meeting that remarks relating to the care, management or feeding of hogs would be in order.

Mr. Joseph Grossman, Lanark, Ill., was asked to relate his experience as a feeder. He commenced by saying that he did not know of anything more profitable for the feeding of hogs than grass. He had good success with orchard grass and clover, but would prefer a mixed pasture. The question of exercise should not be overlooked; in fact it could not be too strongly advocated, for without it hogs were seldom if ever found to stand well upon their feet. He said he would recommend the feeding of oats or corn occasionally, especially to growing stock; but as the season advanced a cheap ration should be given so as to render the stock profitable. This year he had an abundance of pumpkins and he feed them freely to his hogs with good results. He recommended the feeding of roots in winter, especially mangolds, which he always found to be good appetizers, but gave it as his opinion that sugar beets were by no means as valuable as people had thought. He had tried cotton-seed on his pigs and calves, but would not recommend its steady use.

In reply to questions put by some members Mr. Grossman said he would not wish to be understood as saying he would feed hogs on grass alone; he would give some corn with it. Pumpkins should be fed sparingly, as otherwise they were certain to produce costiveness.

A discussion then ensued as to whether lice on hogs would keep the animals in poor condition. The prevailing opinion was that although lousy hogs were indicative of neglect on the part of the breeders they did not in any way retard the growth of the animals.

Mr. Ellsworth took exception to this conclusion of his fellow-breeders, remarking that so far he never shipped a lousy hog, and never would. When asked to explain how he succeeded in keeping the lice from his stock he replied that the very moment he noticed the presence of vermin he at once rubbed the affected hog all over with lard, after which he sprinkled coal-oil on him. This method he resorted to quite frequently, say once in every six days, and in a very short time his stock were free from lice.

The committee on resolutions then reported the following, which was adopted:

*Resolved*, That this association recommend the enactment by the several States of laws prohibiting the transmission of swine that have died of disease, for the reason that we consider that the disease is thereby communicated to healthy hogs.

The committee on nominations reported the names of the following gentlemen as officers of the association for the ensuing year: Presi-



dent, Jacob Grossman, Lanark, Ill.; Vice-President, J. Cunningham, Bunker Hill, Ind.; Secretary-Treasurer, E. C. Rouse, Homer, Mich.; Executive Committee, W. W. McClung, Waterloo, Ia.; L. C. Nixon, Fort Ancient, O.; Ira K. Alderman, Maryville, Mo.

The report was concurred in by the meeting, and the above-named gentlemen elected by acclamation, after which adjournment was taken.

### POLLED DURHAM BREEDERS IN SESSION.

The annual meeting of the Polled Durham Breeders' Association was held at the Grand Pacific Hotel on Tuesday, November 18, with President William W. Crane, Tippecanoe City, O., in the chair and Secretary A. E. Burleigh, Mazon, Ill., at the desk. After calling the meeting to order President Crane delivered the following address:

I have the pleasure to say to you that the little craft you put upon the waters one year ago has made the twelvemonth round and comes back to-day in good ship-shape; officers and men have done their duties well and no mishap has befallen her; there is no defective plank to report. Of course it will be your duty now to examine her well; if you find any weak spots you will strengthen them; if any worthy improvements are offered through reflection or suggested by experience you will add them before you weigh anchor for another annual cruise. Our little boat has sailed mainly in pleasant waters; some slight adverse winds have retarded her speed; some rude winds have tossed her slightly occasionally, but of these we have only had enough to fairly try of what timber she was built, and perhaps not enough for us to yet safely proclaim her seaworthy in all climes and under all circumstances. Wherever she has sailed kindly welcome has greeted her. In England and Ireland and in a hundred papers in America the most friendly notices have been printed. Everywhere our greeting has been most generous and hearty, and with this pleasant speech of reception have been coupled words of encouragement and expressed hopes for our fullest success in what we have announced as our aim; to which has been added a confident belief that we will reach the goal for which we started.

Each one of our crew can show a private correspondence covering every point of the compass and in the aggregate representing a majority of the States, in which are words of the strongest commendation and encouragement; for I know of no words more cheering to a cattle-breeder to read in the morning mail than such as follow:

"RICELAND, Tex., May 1, 1890.—Dear Sir: If you have two bull calves at the price you name, old enough to wean, please write me and I will send draft and shipping instructions. Yours, etc."

A. B.—

Or this:

"\* \* \* BEDFORD, MASS., July 22, 1890.—I have been breeding pure Short-horns but have made up my mind to dispense with the horns if I can do so and preserve the old type, which I believe I can do by using a Polled Durham bull on my present herd."

A farmer from Minnesota writes:

"What are your prices for young stock of Polled Durhams? I am a young man. Father says he is satisfied the Polled Durhams are bound to be the beef cattle of the future and wishes me to start right by starting with them."

And so it goes. The inquiries in our daily mails would make an average breeder of Short-horns or Holstein-Friesians happy. Within thirty days I have been offered two registered young Short-horn cows of beautiful outline, solid red, weighing nearly 1,600 lbs., guaranteed in calf, for exactly the same money that Polled Durham bull calves under one year have sold for as rapidly as produced. Only a day or two before I left home I bought two recorded Holstein-Friesian heifers, coming two years old, in calf, one of them tracing directly, on the dam's side, to the original Aegis cow of high renown in the breed, for less than two-thirds the price of Polled Durham calves. But we have not many for sale. I presume there is not one calf old enough to wean now for sale in the hands of his breeder.

I believe our work of a year ago has accomplished all that we then expected it would. I have no suggestions further than the matters already referred to at our executive session this morning except that for the purpose of strengthening our organization, to put it on a more enduring foundation, it will be wise at this stage to have it incorporated, and to this end I have prepared the necessary papers in outline, which are herewith submitted for your consideration.

Before I take my seat I will read a dispatch cut from a paper only four days ago. I regard it a strong argument in favor of the work we are doing.

"BATH, N. Y., Nov. 13.—Three farmers of this neighborhood, two living in Steuben county and one over the State line in Tioga county, Pa., were gored to death by bulls. George C. Wentworth was the first victim. He was leading a two-year-old Jersey bull to water when it suddenly rushed upon him and plunged its horns into his side. On Sunday Geo. Carter was attacked and gored to death by a young bull. On Saturday John Carroll was crossing a field when a three-year-old bull made a rush for him and threw him over the fence. Carroll fell on his head and his neck was broken."

Now, gentlemen, I am ready for business.

There was little business before the association. The secretary's report showed that the membership has increased over 100 per cent the past year. Officers for the ensuing year were chosen as follows: President, Wm. W. Crane, Tippecanoe City, O.; vice-president, John R. Shafar, Middletown, O.; secretary-treasurer, A. E. Burleigh, Mazon, Ill.; executive committee, S. R. Clawson, Clawson, O.; W. S. Miller, Elmore, O.; J. F. Burleigh, Mazon, Ill.

The association took the necessary steps for incorporating under the laws of Illinois.



## ANNUAL MEETING OF RED POLLED CATTLE BREEDERS.

The annual meeting of the Red Polled Cattle Breeders's Association (incorporated) was held at the Grand Pacific Hotel, Chicago, in the forenoon of Tuesday, the 18th inst., President L. F. Ross of Iowa City, Iowa, in the chair. The Secretary, Mr. J. McLain Smith of Dayton, O., proceeded to call the roll of members, but before the task was finished a long discussion ensued as to whether the applicants for admission to the association should be balloted for at the opening of the meeting or after the election of officers. While some were of opinion that applicants should be admitted at the beginning of the meeting others seemed to take a different view of the matter, alleging that it was a bad policy to have a number of men join an association in a body lest they might undertake to control the affairs of the association. It was finally agreed to admit to full membership all applicants having paid their initiation fee to the Secretary previous to the time of meeting.

A committee consisting of Messrs. Jackson, Hill and Keyes was then appointed to draft an amendment to that portion of the by-laws relating to the admission of members so as to avoid confusion and trouble in the future.

The Treasurer submitted a lengthy statement showing the receipts and expenditures of the association during the past year. Although the amount in the treasury was only \$58.02, this, he claimed, should not be regarded as representing an accurate statement of the association's financial standing. In addition to the sum of money on hand was a sufficient quantity of paper with which to complete the next volume of the herd book, the composition and binding on which had almost been completed, all of which had been paid for as the work progressed. He regarded the financial condition of the association as being on a solid basis, and called attention to the fact that during the past year thirty-five new members had joined the association, with quite a number of applications still in his possession.

An auditing committee was appointed to examine the report of the Treasurer, which committee subsequently reported it to be correct in every detail.

The President stated that a short time since two well-known breeders of Red Polled cattle—one residing in New York and the other in Iowa—thinking that the association was in need of funds, remitted money to him for the purpose of proceeding with the publication of their herd books. While he regarded this as being manly, kind and generous, the liberal donations was declined with thanks, the association not being in need of funds from any source whatever.

At this point of the proceedings business was somewhat interrupted by the action of J. C. Murray, formerly Secretary of the club, who caused to be served on the officers of the association notice of a suit commenced by him in the United States courts enjoining them from infringing on his copyright of the old herd book. His action at first created a ripple of astonishment, which soon gave way to amusement, some of the members inquiring whether Mr. Murray while Secretary of the old club was simply an employe of that body posing as an author "on his own book."

In reply to a question the President stated that this was the first official notification the association or any member of it had had that Murray claimed to control the copyright as an individual.

A brief conversation took place, in which almost every member present expressed a hope that Mr. Murray would proceed with the suit, as by this means certain facts would develop regarding his conduct while an officer of this club, facts which the association are desirous of having the public know as soon as possible.

A resolution was adopted appointing a committee to confer with the committee of eighteen appointed by the live stock convention with a view to securing proper classification and representation of live stock at the Columbian exhibition. A resolution was also adopted pledging the Red Polled Cattle Club to a representation of Red Polls in the Columbian Dairy Show.

The election of officers for the ensuing year resulted as follows: President, Gen. L. N. Ross, Iowa City, Iowa; Vice-President, V. T. Hills, Dayton, O.; Secretary, J. McLain Smith, Dayton, O.; Treasurer, S. A. Converse, Cresco, Ia.; Corresponding Secretary, S. D. L. Jackson, Youngstown, O.; Directors, V. T. Hills, J. M. Knapp, Bellevue Mich.; W. H. Seaman, Davenport, Ia.; Charles B. McCoy, Chicago; P. G. Henderson, Centerville, Ia.; J. W. Martin, Richmond City, Wis.; Gen. L. F. Ross.

Adjournment was then taken.



## MEETING OF JERSEY BREEDERS.

In response to an official call, emanating from the American Jersey Cattle Club, nearly fifty representative Jersey breeders from east, west and south, and others interested in Jersey cattle, assembled at the Wellington hotel at 2 p. m., on Tuesday, Nov. 18, for a general conference. Mr. G. W. Farlee of New Jersey, was made chairman of the meeting and Mr. D. H. Jenkins of Indianapolis, Ind., was called to the secretary's desk in the temporary absence of Secretary F. W. Wicks.

The entire afternoon was spent in a general discussion touching on the proposed exhibit of Jerseys at the coming World's Fair in connection with the working dairy. The discussion was participated in by Messrs. Burnett of Massachusetts, Fuller of Canada, Alvord and Austin of Maryland, Teal and Boyd of Chicago, Allen of Illinois, McKinney of Pennsylvania, Green of Tennessee, Henderson of Arkansas, and a number of others.

Maj. Alvord offered the following which received the endorsement of the convention:

*Resolved*, That this meeting of the breeders of Jersey cattle declares its approval of the general plan of a collective exhibit of dairy cattle, including a working creamery and a comparison of dairy breeds, as proposed by the officers of the Columbian Dairy Association; and that the director of the A. J. C. C. be requested to assist in selecting the men and the cattle necessary to carry out this plan and advance the interests of dairy cattle, provided that the directors receive satisfactory assurances that the conditions under which the tests shall be made will be satisfactory to the Jersey interests.

Mr. Burnett who has had considerable experience in the management of dairy exhibitions, expressed the opinion that the proposed plan of a competitive test of breeds and a working dairy, as outlined by Messrs. Gilbert, Boyd and Bass for the Columbian Exposition Dairy Association, was a larger and more difficult task to execute than its projectors imagined. His own experience had taught him that satisfactory results could not be realized from public tests of dairy cows of a highly nervous organization, and he feared that Jersey cattle would not be able to do themselves or the breed much credit under the conditions which would attend their exhibition at the Columbian Exhibition.

This point was discussed at length. Mr. Gilbert, Teal, McKinney and others differing from Mr. Burnett and insisting that the Jerseys would be able to render a good account of themselves after they had become accustomed to their surroundings.

The interchange of opinion was free and resulted in a clear understanding of the plans for the dairy exhibit in 1893. On motion of Mr. Teal it was agreed to hold another convention of Jersey breeders at the same time and place.

At a meeting of the board of directors of the Cattle Club held on the 19th inst., it was decided to consolidate the two volumes of butter tests compiled by Maj. Campbell Brown and others, with the volume issued by the Club, together with all butter tests received by the Club up to Jan. 1, 1891, making one volume of the whole.

The resignation of A. Pardee Jr., as a member of the board of directors was accepted. His term expiring in May, 1891, it was not considered necessary to fill the vacancy.

## ANNUAL MEETING OF THE ABERDEEN-ANGUS ASSOCIATION.

On Thursday evening, Nov. 20, the breeders of Aberdeen-Angus cattle met in annual convention at the Leland Hotel, Chicago, the attendance being both large and representative, many of the most prominent breeders in the country being present. The President, Mr. T. W. Harvey, Chicago, read the following address:

The Aberdeen-Angus breeders are to be congratulated on the general prosperity they have enjoyed during the past year. The sales of their pure-bred cattle have brought them the best prices current for breeding stock, and the report of sales of grade Angus steers fitted for the block always top the market and are eagerly sought by the best caterers. So long as this state of affairs continues the breeders of the "doddies" have every reason to be thankful. In the show-ring at the State fairs the Angus breed has taken the highest honors this year, and the females at least have taken the grand sweepstakes "at every State fair," so that our friend Leslie can sing his song:

"Hurrah! for the doddies, with glossy black bodies," etc.

Our association is in a most prosperous condition, and all its affairs, both financial and statistical, are in the most healthy state and ready to be inspected in every detail by any member of the association. Our worthy Secretary and Treasurer will give you the report in detail, which has been examined by the Auditing Committee (Mr. McHenry and Mr. Estill) and found correct in every particular. It is not nec-



essay to speak more fully of this to you who have had correspondence with the Secretary, as you all can bear testimony to the fidelity of the records, as evidenced by the transactions you had personal knowledge of. It gives us all satisfaction to know that every entry is properly scrutinized and we have every known protection against fraudulent entries.

Without raising fees, except that of membership, we have during the past two and a half years equipped an office of our own with first-class facilities for doing the work of a recording association, including fire-proof card index system. We have paid all special premiums earned by Aberdeen-Angus cattle at the Fat Stock Show and Ohio Centennial Exhibition; also bought steers for experimental station. We have published two editions of the herd book—Vols. II and III—the last named with tripple the amount of office work on account of extended pedigrees; also costing twice as much to print. We have introduced, in connection with transfers, an issue of ownership certificates, requiring much labor and for which no charge is made. We have dispensed with recording fees on transfers except when sent in after ninety days from date of sale. We have greatly extended the dissemination of information relating to the work of the association, thereby helping especially beginners. We have maintained reliable record and a prompt attention to the correspondence connected with the business. We have accumulated a fund to date that will warrant us in setting aside \$3,000 for premiums for the World's Fair and offering also the usual premiums for the next Fat Stock Show. We have reduced the price of herd books from \$3.25 and \$5.25 to \$2.00 and \$3.00. The number of entries put upon the record for three years is as follows: In 1888, 1,852; in 1889, 1,395, and in 1890, 1,896. As you see, only forty-four more in 1890 than in 1888; the many more in 1888 were ancestors entered without charge.

The plan adopted by the members of asking for proxies with instructions from those who are unable to attend gives every member, no matter how remote from the place of meeting, an opportunity to be represented; and, as was the case last year, we had the expressed sentiment of nearly the whole membership on that most important subject of "off colors" and "scurs," and have set a most wholesome example to our brethren in Scotland in barring them from record, which I understand they intend to follow. The report of our secretary will show that the rule adopted at that time was a very wise one. The correspondence attached to the proxies this year shows that the interest of the association in all its details is intelligently considered by a large majority of its members, and they do not propose to be denied a hearing in the interest of good business methods, although they are not able to be present.

I want to urge the membership to give more attention to the feeding and preparing steers for the fat-stock shows. I think we ought to offer premiums for grade steers "car-loads," such as some of our members have sold in the stock yards this fall. If we expect to keep to the front we must advertise in the show-ring, both at State and county fairs and at the fat-stock show. We suppose you are all preparing for the Columbian exhibition, but that is not enough; keep before the young farmer at the State and county fairs.

I want to say one more word about Vol. III of the Herd Book, just gotten out by our Secretary, Thomas McFarlane. I consider this volume the most satisfactory of any ever published by any of the breeders' associations of this or any other country. It is well printed on good paper, most substantially bound, and as free of errors as any book of the kind can be. It is an encyclopedia of Angus information. It gives the full pedigree, the name of breeder of sire and dam, and every transfer during the

past two years, nearly 3,000 in number. It tells who has sold and who has bought; gives a full list of the members of the association; in fact all the information we need in a neat, compact, and substantial form, and I, for one, am pleased with it.

The report of the Secretary-Treasurer was next received, as follows:

#### TREASURER'S REPORT TO THE EXECUTIVE COMMITTEE.

##### Receipts.

Cash in Treasurer's hands at last meeting.....	\$ 4,512.99
Cash received since last annual report:	
From entries in the record.....	\$4,474.55
From sale of herd books.....	308.00
From membership fees.....	591.00
From sundry accounts.....	397.08
Interest from money on deposit.....	159.82
Total cash received.....	\$ 5,730.45
Total cash charged to the Treasurer.....	\$10,243.44

##### Disbursements.

Duplicating awards at Chicago, 1889.....	\$ 215.00
Insurance.....	21.65
Postal, telegraph, freight and express charges.....	180.74
Books, stationery and printing.....	212.92
Cost of edition of Vol. III of the Herd Book.....	1,600.00
Office equipment.....	107.00
Office rent and incidental expenses.....	264.79
Secretary's salary.....	1,200.00
Clerk hire.....	750.00
Total disbursements.....	\$ 4,909.60
Total cash balance in Treasurer's hands.....	\$ 5,333.84

##### Assets of the Association.

Cash in Treasurer's hands.....	\$ 5,333.84
Due on account.....	16.02
Copies of the Herd Books: Vol. I, 497; Vol. II, 386; Vol. III, 582.	
Office equipments.....	

##### Liabilities of the Association.

Overpaid accounts.....	\$ 336.80
------------------------	-----------

#### REPORT OF THE EXECUTIVE COMMITTEE OF THE AMERICAN ABERDEEN-ANGUS BREEDERS' ASSOCIATION:

On behalf of the Executive Committee the Secretary respectfully submits the following report relative to the work of the association, having reference mainly to the year ending October 31, 1890:



During the year there have been entered upon the record the names of 1,896 animals. Of this number 1,456 were charged a fee of \$2.00 each, 260 \$3.00 each, 114 \$6.00 each; eight animals were entered as ancestors at \$1.00 each, and fifty-eight as ancestors in connection with unfinished business, and were recorded without charge under former rules. Fifteen hundred and sixty-seven transfers have been recorded. Of this number 1,239 were recorded and certificates of ownership issued free of charge. Three hundred and thirty-three transfers had a recording fee of \$1.00 each, three a fee of fifty cents, and one twenty-five cents—these last coming from unfinished business were subject to former rules as regards fees.

One hundred and ten steers and thirteen unrecorded bulls have been reported. During the previous years only forty-two steers were reported, showing that the color rule adopted one year ago has resulted in adding to the number of reported steers. Very few off-colored females have been offered for record. There has been an addition of twenty members to the association. During the year 2,206 letters have been received and 2,354 sent out. The attempt has been made, during the year to reduce the correspondence as much as was consistent with properly meeting the needs of the membership and the breeders. The matter of naming animals does not now require much correspondence. The conveyance of information by circulars, letter slips, and printed postals, together with the introduction of the cash system in connection with our accounts, have helped to curtail the work of correspondence. There have been mailed during the year 1,263 copies of the constitution and amended by-laws, 2,476 circulars and postals, twenty-nine copies of Vol. I of the herd book, forty-two copies of Vol. II, and 184 copies of Vol. III.

Five hundred and forty-eight pages of proof for Vol. III of the herd book were read and corrected in the Secretary's office, involving considerable labor and careful attention.

The card index system of record is now in constant use, and during the coming year will be completed so as to exhibit the immediate progeny of all sires, a very important feature of the record, and found only in one other recording association in this country. It will be of great value in quickly tracing the descendants of any sire entered upon the record. It may be noted here that the total number of deaths of pure-bred recorded animals reported to date is 227. One of the items of expense last year was \$175, the amount paid for two pure-bred steers furnished to the Missouri Experimental Station at Columbia, Mo. One of our members, Mr. A. B. Matthews, made an additional contribution of one steer for the same experimental purpose. The Secretary having occasion to visit Columbia, in connection with the matter of printing Vol. III of the herd book, at the request of our President visited the Experimental Station and gave some attention to the feeding experiment then in progress. The experiment of feeding animals selected from the various beef breeds was inaugurated by Prof. J. W. Sanborn before his connection with the station was severed. In the absence of Prof. Sanborn the general principles suggested by him were being applied in carrying on the experiment. The results of such operations seem to a practical man quite problematical. The destruction by fire of the barns of the institution in the early stages of the test, the different ages of the animals, and the lack of uniformity in the commencement of feeding operations, were unfavorable conditions. The turning out of all the animals for water and exercise into one inclosure regardless of age or whether they were polled or horned, was another unfavorable feature. In one or more cases, too, the disposition of the Angus animals seemed not adapted to produce the most satisfactory results. With the above named disadvantages it may still be possible that some important results may come from this experiment.

Your committee finds satisfaction in calling your attention to the healthy financial condition of our association. This is the second year of operations under the revised constitution and by-laws adopted in November, 1888. With increased fees—only in the case of membership resulting in about the usual yearly income from that source, and with the adoption practically of a free record of transfers—we have been able to fully equip a recording office of our own containing every requisite for the carrying on of our business in an accurate and economical manner, the same fully protected from the risks of fire. All special premiums offered by the association and earned by breeders at the Ohio Centennial and Chicago Fat-Stock Shows have been paid; the cost of an extended form of pedigree adopted for our herd book at considerable additional expenditure of labor and larger outlay for printing has been met; editions of Vols. II and III have been paid for during the last two years; the price also of the volumes of the herd book has been reduced to both members and non-members. The work and rules of the association have been widely advertised, our mailing list including over one thousand names. Should special premiums be earned at this year's Fat-Stock Show by Angus breeders we are ready to meet the same, and should the membership think proper to act in the direction of offering premiums for the World's Fair we shall have a very satisfactory balance for such use.

The time is not far distant when as an association we shall be able to reduce our entry fees, with a prospect that no future increase will be rendered necessary in order to creditably carry on the work we have in hand.

In closing this report it may be of interest to the membership to present for purpose of comparison the following figures illustrative of the work of the association during the three years just concluded:

	1888.	1889.	1890.
Receipts.....	\$4,687.09	\$5,301.47	\$5,730.45
Expenditures.....	3,824.04	4,420.88	4,000.60
Total cash balance each year.....	3,542.40	4,512.00	5,333.84
Number of animals recorded.....	1,852	1,306	1,806
Number of transfers recorded.....	1,050	1,427	1,567
Additions to membership.....	47	23	20

In comparing the expenditures of the last two years with those of 1888 it will be remembered that in each of these years—1889 and 1890—the cost of an edition of the herd book has been included; Vol. II in 1889 and Vol. III in 1890.

The report was accepted and the auditing committee directed to examine it. Subsequently this committee reported as having found it correct and thanked the Secretary-Treasurer for the very creditable manner in which the books and records of the association were kept by him.

It was announced that 126 proxy votes were held by the members present, but of that number three were thrown out, having been signed by estates, contrary to a clause inserted in the by-laws.

The president called attention to what other associations were doing in reference to the offering of liberal premiums at the Columbian Exposition, and suggested that steps be taken at this meeting looking to the duplication of liberal cash prizes.



Mr. McHenry said that as one of the directors he had spoken about this matter to other members of the directory, all of whom expressed themselves in favor of offering liberal premiums. He was opposed to having this association made a close corporation, and invited all present to give an expression of their views on the subject now before them, so that whatever conclusion they might come to there would be a sentiment of unanimity among them. In his opinion, however, an inducement should be offered so as to bring out the very best herds in the country.

Mr. Brooks remarked that the coming exposition would be the greatest event of a lifetime, and as to the amount of money to be offered by this association he thought its officers were the most competent to determine. He himself would be in favor of appropriating all the cash not needed for other purposes.

Dr. Rice said the first thing to consider was how much money it would require to fit up their herds for show purposes. He would favor a liberal expenditure, but not too much.

Mr. McHenry replied that the directors figured on a basis of \$3,000, believing that sum to be sufficient.

The President remarked that it had been intimated by some people that the managers of the Columbian Exposition intended to pay off the prizes won with medals and ribbons. This should not be so; cash premiums were what exhibitors needed most. To prepare cattle for such an exhibition would entail great expense, and some of the money thus expended should be given back to those fortunate enough to capture laurels. He said the Short-horn breeders thought it only a matter of justice to have the exposition management offer as much in cash premiums as their association.

Mr. Geary said the benefits to be derived from honors won at such an exposition, owing to the extensive advertisement that would be given the stock, would be considerable in consequence of which very large prizes might be dispensed with.

Mr. Binnie said he would be in favor of having premiums well distributed, so that all would not be captured by a few exhibitors. He would also like to encourage the distribution of prizes at State fairs.

The President reminded Mr. Binnie that four cash premiums would be given to the Columbian Exposition, in consequence of which a liberal distribution was assured.

Mr. Palmer moved that the recommendation of the Executive Committee appropriating \$3,000 be concurred in. Mr. Leslie said that if a good show of their favorite breed was not made in 1893 it would be a curse to the breed; if on the contrary a grand display was made it would be a great benefit to the whole breeding community. He would

be in favor of offering large premiums so as to bring out the best representatives of the breed. Mr. Keller said he agreed with Mr. Leslie in his remarks. He was in favor of appropriating a liberal sum, but hoped it would be so arranged as to make the distribution of prizes as liberal as possible. Mr. Palmer's motion was adopted.

The question of reducing the membership and registration fees was next taken up and discussed at great length.

Mr. Geary said he was decidedly in favor of reducing the admission fee to \$10, assigning as a cause that many good breeders declined to join the association owing to the high price charged for admission. Mr. Keller thought it would be well to allow the registration fee to remain as it was, but agreed with Mr. Geary that if the admission fee was reduced to \$10 quite a number of reputable breeders would at once place their names on the roll of membership.

The Secretary spoke at some length on this subject, and closed his remarks by saying that he could see no reason why the membership or registration fees should be reduced.

Mr. Leslie moved that both fees be allowed to remain as at present, but Mr. Geary offered an amendment reducing the admission fee to \$10. This amendment was lost, and the original motion of Mr. Leslie was adopted.

The meeting then proceeded with the election of a Board of Directors the following members being elected: H. W. Elliott, Estill, Mo.; E. S. Burwell, Cottage Grove, Wis.; I. I. Rogers, Abingdon, Ill.

Adjournment was then ordered.

#### MEETING OF THE BOARD OF DIRECTORS.

Soon after the association adjourned a meeting of the Board of Directors was convened and the following officers elected: President, W. A. McHenry, Denison, Iowa; Vice President, R. B. Hudson, Carrollton, Mo.; Secretary-Treasurer, Thomas McFarlane, Iowa City, Ia.; Executive Committee, T. W. Harvey, Chicago, Ill.; T. M. Andrew, West Point, Ind.; E. S. Burwell, Cottage Grove, Wis.; Auditing Committee, T. W. Harvey and T. M. Andrew.

On motion of Mr. T. W. Harvey the salary of the Secretary-Treasurer was increased from \$1,000 to \$1,500 per annum.

The Secretary-Treasurer asked permission to remove his office from Iowa City, Ia., to Harvey, Ill., stating that he had removed to the last named town with his family quite recently.

In reply to the question Mr. McFarlane said the expense of maintaining the office at Harvey would not be so great as at Iowa City. The permission asked was then granted.



The following resolution was adopted:

*Resolved*, That the Secretary-Treasurer be hereby authorized and instructed to change the deposit of the funds of this association, under the advice and instruction of the Executive Committee, as said committee may decide and recommend.

The meeting then adjourned.

## ANNUAL MEETING OF HEREFORD BREEDERS.

On Friday evening, November 14th, the annual meeting of the Hereford Breeders' Association was held at the Leland Hotel, Chicago, the President, Mr. Adams Earl of Lafayette, Ind., in the chair. The names of those holding proxies, together with the number held by each member, were announced by the Secretary, Mr. C. R. Thomas of Independence, Mo., after which the report of the Executive Committee, as also the Treasurer's report, was read by Mr. Gudgeon of Independence, Mo., as follows:

### REPORT OF EXECUTIVE COMMITTEE.

Your committee would respectfully report that since the last annual meeting there have been added some seventy names to the list of members, so that the role of members at this time contains 502 names of those who are in active membership, the names of all whose memberships are terminated under the provisions of the by-laws may be stricken from the role.

Vol. XI of the record has been closed and is now being prepared for the publishers, the expectation being that the copy for same will be in the hands of the printers before the close of this year. This volume contains 5,000 entries, being 500 entries more than for Vol. X.

Vol. XII is now in preparation with quite a large number of applications now on file in the office of the association awaiting further instructions, etc.

The report of the Treasurer will show the amounts that have been paid out on account of special prizes offered by the association.

Your committee would respectfully call your attention to the matter of the duplicating of the prizes at the St. Joseph (Mo.) Fat-Stock Show, held in October, 1889. At the last meeting of this association, as you will doubtless remember, a resolution was adopted authorizing the duplication of the prizes to Hereford and Hereford grades at the St. Joseph (Mo.) Fat-Stock Show. Your Treasurer found, when he came to pay the prizes under this resolution, that this St. Joseph Fat-Stock Show, offered certain prizes in their premium list and paid only about 36 per cent of the amount so offered, so that this feature brought in an element of uncertainty as to what the association meant by its resolution before mentioned authorizing the duplication of prizes, as to whether they meant the prizes offered or the prizes

actually paid, a condition that has not heretofore occurred in the experience of your committee in such matters. Your committee, desiring to keep clearly within the bounds of your instructions and do nothing that was not fully authorized by you, felt that your intentions unmistakably were to duplicate the prizes paid or the prizes offered, and so directed the Treasurer to pay only a duplication of prizes paid by St. Joseph until the matter could be referred to you at this meeting. The amount of the prizes so paid by the Treasurer is \$550. The amount of the prizes offered is \$1,530, so that there is left a balance of \$980 yet to be paid, if you so order it. Your committee would ask for definite instructions from you at this meeting with regard to this matter.

Your committee desires to call your special attention to the coming World's Fair at Chicago, and recommends that you make provision for such special prizes for Herefords and Hereford grades at that show as will bring out an exhibit of Hereford cattle such as the world has never seen. Your committee feels that you should not delay such action longer than this meeting.

### TREASURER'S REPORT TO THE EXECUTIVE COMMITTEE.

#### Receipts.

Cash in Treasurer's hands at last meeting .....	\$ 6,010.08
Cash received since last annual report:	
From entries in record.....	\$6,256.00
From sale of herd books .....	276.00
From membership initiation fees.....	700.00
From sundry accounts, interest, etc.....	669.70
Total cash received .....	\$ 7,901.70
Total cash charged to Treasurer.....	\$13,911.78

#### Disbursements.

Awards at Chicago Fat-Stock Show, 1889 .....	\$ 510.00
Balance of awards at Chicago Fat-Stock Show, 1888.....	150.00
Duplicating awards at St. Joe, Mo., Fat-Stock Show, 1889...	550.80
Awards at Illinois State Fair, 1890.....	240.00
Awards at Minnesota State Fair 1890.....	75.00
Awards at Iowa State Fair, 1890 .....	75.00
Awards at Nebraska State Fair, 1890.....	75.00
Awards at Kansas State Fair, 1890.....	75.00
Awards at the Industrial Exposition, Toronto, Can., 1890. .	65.00
Awards at Eastern Township Agricultural Association, Sher-	
brooke, Can., 1890 .....	60.00
Publishing Vol. X American Hereford Record.....	1,885.00
Freight and drayage on books .....	31.00
Books, stationery and printing.....	142.30
Postal, telegraph and express charges.....	195.60
Insurance.....	62.50
Salary of Secretary.....	1,500.00
Clerical assistance to Secretary.....	547.50
Traveling expenses of Secretary. ....	40.50
Traveling expenses of Executive Committee.....	00.00



Office rent and incidental expenses.....	\$ 353.65
Entry fees refunded to breeders .....	74.75
Premium essay on Hereford cattle, W. C. Dibble.....	50.00
Total disbursements.....	\$ 7,601.50
Balance cash in Treasurer's hand.....	7,153.28
	<hr/> \$13,911.78

*Assets of the Association.*

1,200 four per cent United States Government bonds, cost .....	\$15,041.00
Cash in Treasurer's hands ..	7,153.28
6,454 copies of the American Hereford Record.	

The foregoing reports were accepted and ordered to be printed as a part of the proceedings.

The election of officers was next proceeded with as follows: President, James A. Funkhouser, Plattsburg, Missouri; Vice-president, A. E. Havens, Chicago, Ill.; member of the executive committee for three years, Chas. Gudgell, Independence, Mo.; Board of Directors, Col. B. C. Rhome, Rhome, Texas; Thomas J. Higgins, Council Grove, Kan.; John Savage, Elyria, O.; T. F. B. Sotham, Pontiac, Mich.; C. M. Calbertson, Newman, Ill.

The amendments to the rules governing entries in the record, of which one year's notice had been given, were taken up and discussed at great length, but finally were voted down, so that the rules relating to the calves dropped in America after Jan. 1, 1886, were not amended.

On motion of Mr. T. L. Miller, President Funkhouser was elected a delegate to represent the Hereford Association in conference with the committee of eighteen, and the treasurer directed to pay a pro rata share of the expenses incurred by the committee when called upon to do so.

A brief discussion here ensued as to the advisability of allowing Hereford cattle from England to enter this country free of all restrictions, provided they were brought here for exhibition purposes, in 1893. In this connection Mr. Stuart offered the following resolution, which will come up for final action at the next annual meeting, it being considered an amendment to the by-laws:

*Resolved*, That in view of the World's Fair and for the purpose of offering inducements to breeders of Hereford cattle in England to come here and show their cattle, this meeting directs the secretary to send out the proper notice looking to the repeal of the rule requiring an entry fee of \$100 on imported cattle.

A resolution was offered by Mr. Van Natta, and after amendment was adopted as follows:

WHEREAS, This association desires to encourage a large exhibit of Herefords at the World's Fair in 1893; and,

WHEREAS, This association believes a friendly contest between the various beef breeds at such fair would be highly interesting and desirable; therefore, be it

*Resolved*, That the American Hereford Cattle Breeders' Association appropriate the sum of \$5,000 to be awarded as special premiums at said fair for Hereford and grade Hereford cattle; provided, the management of the World's Fair shall arrange for a contest between the beef breeds; and in case the World's Fair classification does not provide for contests between the beef breeds, then the amount appropriated by this association shall be \$3,500.

As offered by Mr. Van Natta, the resolution provided that animals should be owned by exhibitors at least twelve months before the show. Mr. Elmendorf said that while he was in sympathy with the provisions of the resolution, he was opposed to the adoption of that part of it relating to a twelve months' ownership, that being too long a period; besides, it gave to the large breeders advantages not possessed by those of limited means. While the former would experience little or no trouble in selecting a good herd from their superior numbers it was quite different with the latter, and as a believer in the doctrine of "equal rights to all men," he would be in favor of allowing the small breeder to go out and buy an animal at any time if he needed one to make up a good herd.

Mr. Van Natta replied that any man having a large sum of money, even though he were not a breeder at all, could travel around the country, bringing with him an expert judge, and buy up every good animal he met, then exhibit his picked but recently acquired herds and capture every premium offered unless the time of ownership was taken into account.

This question was earnestly discussed at great length by Messrs. Elmendorf, Clark, Cosgrove, Yeomans, Sotham, Ponting, Gudgell, and others, all of whom were in favor of doing away with the question of ownership for any length of time. Finally Mr. Gudgell moved as an amendment that the period of ownership be stricken from the resolution, which amendment was adopted.

Mr. Carlyle then offered the following resolution, which was adopted:

*Resolved*, That the American Hereford Cattle-Breeders' Association protest against the action of the World's Fair locating committee in locating so many buildings on the Lake Front to the disadvantage of the live-stock interest. We earnestly appeal to the United States Commissioners to refuse to ratify the action of the local committee.

Mr. Stuart offered the following resolution, which was adopted:

*Resolved*, That this association respectfully request and insist upon the prizes offered for live stock at the World's Fair in 1893 shall be payable in cash and of



such amounts as shall bear some proportion to the live-stock interests of Chicago and the United States.

Mr. Culbertson offered the following resolution, which was also adopted:

*Resolved*, That this association would much prefer to see but one sight agreed upon for the World's Fair.

On motion of Mr. Stuart the Secretary was instructed to place copies of the foregoing resolutions in the hands of the chairman of the committee of eighteen.

It will be remembered that at the annual meeting in November, 1888, the association agreed to duplicate all premiums won by Hereford breeders at the St. Joseph, Mo., fair in 1889. Of the amount offered in cash prizes, however, exhibitors received only about 33 per cent from the Missouri management, and the question was now raised whether the amount paid or the premiums offered should be duplicated. A good-natured discussion followed, at the close of which the association voted to pay "100 cents on every dollar offered in the premium list of the St. Joseph fair."

Mr. Miller offered the following resolution:

*Resolved*, That the offices of this association be moved to this city as soon as the President and Board of Directors can find suitable rooms at a rental not exceeding \$600 per annum, including heating.

Mr. Stuart moved that the resolution be laid on the table until the next annual meeting, the members to be notified of its existence in the meantime. This was agreed to.

Mr. Cosgrove moved that \$750 be appropriated for the purpose of duplicating premiums won by Hereford breeders in 1891 — \$500 to be distributed west of the Mississippi River and \$250 to go to Texas.

Mr. Sotham moved to amend by making the amount \$1,250 — \$500 to be spent east of the Mississippi River, \$500 west of it, and \$250 to go to the "Lone Star State."

The amendment was adopted and Messrs. C. H. Elmendorf, Kearney, Neb.; C. N. Cosgrove, LeSueur, Minn., and Claud Makin, Florence, Kan., were selected to act west of the Mississippi; H. H. Clough, Elyria, O.; Thomas Clark, Beecher, Ill., and J. S. Carlyle east of it, the Texas committee not being named.

Mr. Clough moved the duplication of premiums won by Hereford exhibitors at the Chicago Fat-Stock Show of 1891, also at Kansas City, Mo., in the event of a Fat-Stock Show being held there. The motion was adopted, after which the meeting adjourned.

## ANNUAL CONVENTION OF GALLOWAY BREEDERS.

The annual meeting of Galloway breeders, which was held at the Grand Pacific Hotel, Chicago, on Thursday evening, Nov. 13, was both large and representative, quite a number of well known breeders from other States being in attendance. In the absence of President M. R. Platt, of Kansas City, Mo., Mr. E. K. Rea, of Ovid Mo., the Vice President, took the chair. The meeting was no sooner called to order than the usual discussion commenced in reference to the use and abuse of proxy votes at all annual gatherings of this association. A roll-call of the members disclosed the fact that 323 shares of the capital stock had been disposed of, representing just so many votes; but of that number the Secretary, Col. L. P. Muir, Independence, Mo., held no fewer than 154 proxies, while the chairman also had a large number which were sent him by absent members. A committee on credentials—Messrs. McTurk, McKay and Carkenbury, was appointed, and reported that all the proxies held by the presiding officer were void, none of them bearing a date, while 52 of the 154 held by the Secretary were also void, not having been executed within fifteen days of the date of the meeting, as required by the by-laws of the association.

The election of a board of nine directors for the ensuing year resulted as follows: Hon. David McCrae, Guelph, Ont., (chairman); Peter Davy, Monterey, Wis.; S. P. Clarke, Dover, Ill.; Geo. M. Kellum, Cottonwood Falls, Kan.; O. S. Barnum, Mommouth, Ill.; F. Sylvester, Odgen, Iowa; M. R. Platt, Kansas City, Mo.; J. N. Mathes, Mason City, Ill.; H. H. Metcalf, River Bend, Col.; Thos. N. Mastin, Kansas City, Mo.

When the result of the election was announced Mr. David McKay said: Hereafter I would like to have all proxies thrown out so that one or two men cannot continue to run the affairs of this association. To be candid, I am opposed to having a few men come in here and consent to do the dirty work of the members who prefer to remain at home, leaving these few men to run the affairs of our association. At best proxies are a nuisance and ought not be tolerated in the future. I am also opposed to any one man holding more than a single vote, regardless of the number of shares of stock he may own.



Several members, including the chairman, coincided with Mr. McKay, some of these regretting the use to which proxies had been put that evening.

Mr. David McKay then gave notice that at the next annual meeting he would move to amend the by-laws of the association so as to read, "that each shareholder shall be entitled to only one vote, regardless of the amount of stock held by him."

The report of Secretary-Treasurer Muir for the past year was then read as follows:

<i>Debits.</i>	
Balance on hand Nov. 1, 1889.....	\$1,418.67
Unpaid accounts on hand and due.....	634.90
Recording 1,100 pedigrees in Vol. V, 868 paid for.....	1,020.00
Twenty-one memberships sold.....	210.00
464 registration certificates issued.....	116.09
Sale of thirty herd books.....	42.50
Recording 434 transfers.....	118.75
Collected on outstanding accounts.....	270.37
Cash on hand awaiting correction of pedigrees, etc.....	100.60
Total.....	\$3,931.99
<i>Credits.</i>	
Salary of Secretary for year ending Nov. 1, 1890.....	\$1,000.00
Cash paid for blanks, books, etc.....	47.40
Cash paid for postage, ink and pens.....	41.18
Premium paid on insurance for one year.....	10.00
Accounts on hand due and unpaid.....	634.90
Total.....	\$1,733.48
Total cash on hand Nov. 1, 1890.....	\$2,198.51
Accounts due when paid.....	634.90
Grand total.....	\$2,833.41
Belonging to the Association Nov. 1, 1890:	
413 copies of Vol. IV, at \$1.08 per copy.....	\$ 445.00
410 copies of Vol. III, at \$1.11 per copy.....	455.10
368 copies of Vol. II, cost estimated at.....	368.00
114 copies of Vol. I, cost estimated at.....	114.00
Office desks, chairs, etc.....	75.00
Cash on hand, as per statement above.....	2,198.51
Accounts on hand, as per statement.....	634.90
Total.....	\$4,290.51
Number of shares sold to Nov. 1, 1890, 321.....	3,210.00
Net gain.....	\$1,080.51

We have given to stockholders and agricultural papers eighty copies of Vol. IV. We gave the Kansas Agricultural College one set of four volumes. We sold seven copies of Vol. IV, ten of Vol. III, seven of Vol. II, and six of Vol. I, making a total of thirty copies, for which the sum of \$42.50 was received, as per foregoing statement. From Nov. 1st to Nov. 9th, I have received \$105, which, added to \$2,198.51 makes a total to date of \$2,303.51.

L. P. MUIR, *Secretary-Treasurer.*

The report was accepted, the auditing committee having previously vouched for its accuracy.

Messrs. F. W. Stewart and David McKay were appointed a committee of eighteen relative to classifications for the Columbian Exposition. The Association, on vote, agreed to bear its share of the expenses incurred by the committee of eighteen.

It was then ordered that the by-laws of the Association, together with a report of the meeting, be printed in pamphlet form and sent free to all members. It was also agreed to send, free of expense, copies of the herd book to the leading live stock and agricultural papers. Vols. I, II and III are to be sold to members at fifty cents each, the two succeeding volumes to be forwarded free on receipt of eleven cents to defray the expense of postage.

Messrs. D. C. Lorimer, David McKay and Hugh Paul were appointed as a committee to select association judges and recommended them to each of the State Boards where Galloways would be shown at the fairs of 1891.

The Secretary-Treasurer was authorized to collect all moneys now due the Association and loan the amount on hand to parties offering good security either in Missouri or Kansas, after which adjournment for one year was agreed to.

It was ordered that in the future all transactions with the herd book office should be on a cash basis.

#### MEETING OF THE NEW BOARD OF DIRECTORS.

Immediately after the adjournment of the Association a meeting of the new board of directors was held, a majority of those elected being present. Following is a list of officers elected: President, Hon. David McCrae, Guelph, Ont.; first Vice-President, Peter Davy, Monterey, Wis.; second Vice-President, O. S. Barnum, Monmouth, Ill.; third Vice-President, M. R. Platt, Kansas City, Mo.; Executive and Editing Committee, F. Sylvester, Ogden, Ia.; Thomas H. Mastin, Kansas City, Mo.; M. R. Platt, Kansas City, Mo.; Secretary-Treasurer, L. P. Muir, Independence, Mo.



## DEVON CATTLE CLUB MEETING.

The Grand Pacific Hotel, Chicago, was again the host of the American Devon Cattle Club, which organization held its seventh annual meeting in parlor 23 on the 19th ult.

The severe illness of his wife prevented the attendance of President Hicks, and a recent family bereavement made it impossible for Mr. James Buckingham, the Secretary and Treasurer to be present.

Mr. Rumsey of Emporia, Kansas, was made chairman *pro tem.*, and Mr. Newton was chosen temporary Secretary.

Of the routine business we have space only for a synopsis of the report of the Secretary and Treasurer. It shows:

Balance on hand at last report.....	\$ 212.30	
Receipts during year.....	1,418.27	
Expenditures.....		\$1,191.53
Balance on hand.....		439.04
	\$1,630.57	\$1,630.57

Total membership enrolled, 103; losses by death since organization, 6; leaving present number 97.

Total number of registrations made during the year 921 (of which 311 were bulls and 610 cows). To date there have been recorded 5,286 bulls and 9,336 cows—grand total 14,622 animals registered.

Of the routine business transacted we note as of general interest the election of officers for the ensuing year by the new Executive Committee. They are as follows: E. D. Hicks, Nashville, Tenn., President; D. T. Newton, Bridgewater, S. D., Vice-President; L. P. Sisson, Roney Point, Ohio Co., W. Va., Secretary and Treasurer.

Representatives of the dairy interest in connection with the Columbian World's Fair were introduced and addressed the club. On motion of Mr. Sisson a resolution expressive of the determination of the club to secure a creditable exhibit of dairy animals of the breed was adopted without discussion, the club being a unit as to the importance of the measure. During the session the Secretary read a communication from J. H. Pickrell, C. B. Stuart, and T. B. Wales, committee representing the cattle interests of the committee of eighteen appointed to

represent the live-stock industry of the country before the Board of Management of the Columbian Exposition. In response to the request of said committee the club appointed A. E. Baker as delegate to the conference called by the cattle committee. The club also elected a committee of three, consisting of Messrs. Hungerford, Dr. Morris, and Buckingham, to act in conjunction with the Columbian Dairy Association in all matters pertaining to the dairy exhibit at the World's Exposition. The club also, on motion of Mr. Newton, adopted resolutions expressive of its concurrence in the measures taken by the committee of eighteen looking to large cash prizes for live stock, etc.

After extended discussion of the best means for bringing the Devon to the front, adoption of resolutions of condolence with Mr. Buckingham, and of sympathy with President Hicks, and extending thanks to the proprietors of the Grand Pacific Hotel, the club adjourned.

Although the attendance was small, several of the most active members being detained by unavoidable circumstances, the meeting was enthusiastic, and the club evinced a determination to forge ahead and place the Devon in the front line.

## GERMAN COACH-HORSE ASSOCIATION.

The annual meeting of the German, Hanoverian and Oldenburg Coach-Horse Association of America took place at the Commercial Hotel, Chicago, Thursday evening, November 6, the president, Mr. A. B. Holbert of Greeley, Iowa, presiding. Secretary Oltmanns of Watseka, Ill., stated that he had been in communication with the parties chosen to take charge of the live-stock exhibit at the Columbian Exposition to be held in 1893 with a view to obtaining recognition and proper classification for their favorite breed of horses at that great show, and he was gratified to be able to report that the "Committee of Eighteen" had promised to give them the same recognition regarding premiums, etc., as would be accorded to other Associations.

Messrs. G. Oltmanns and U. Popper were re-elected as members of the Board of Directors, the term for which they were elected two years ago expiring at this time.

The secretary said there was a matter of great importance which he was desirous of bringing under notice of the meeting. It was the unscrupulous manner in which some of the American purchasers were imposed on by parties on the other side of the ocean, especially those



who went over without a perfect knowledge of the German language. It should be borne in mind, he said, that business was transacted in foreign countries in a language with which many of the importers on this side of the ocean were unfamiliar, in consequence of which misrepresentation was too frequently resorted to. In order to put an effectual and speedy check to this sort of trickery he would suggest that an application or entry blank be prepared at once, with the necessary questions printed in two separate columns, both in English and German, one to be a correct translation of the other, and the party selling the horse to be obliged to make affidavit to the genuineness of the pedigree before receiving payment for the animal.

The suggestion was promptly acted on, and a motion authorizing the secretary to prepare and have printed such an application blank as he deemed advisable to remedy the existing evil was unanimously adopted, copies of same to be given to importers free of expense.

The report of the Treasurer was then presented, the amount on hand Nov. 5 being \$217.50.

Mr. Graves of Ladoga, Ind., called attention to the fact that up to the present the secretary received no compensation whatever for services rendered to the Association. He then moved that \$100 per annum be allowed that officer in the future. The motion was unanimously adopted.

The secretary thanked the members present for their appreciation of his services, and stated that he would accept no compensation unless the financial condition of the treasury justified such an expenditure one year hence.

The officers of the Association are: President, A. B. Holbert, Greeley, Iowa; first vice-president, M. Graves, Ladoga, Ind.; second vice-president, G. B. Hastings, Elvaston, Ill.; secretary, A. Oltmanns, Watseka, Ill.; treasurer, J. H. Ingwersen, Chicago, Ill. Executive committee, A. B. Holbert, Greeley, Iowa; M. Graves, Ladoga, Ind.; G. B. Hastings, Elvaston, Ind.; A. Oltmanns, Watseka, Ill.; J. H. Ingwersen, Chicago, Ill. Board of directors, H. Meibach, Champaign, Ill.; T. Tollans, Elkhart, Ind.; G. Oltmanns, Watseka, Ill.; U. Popper, German Valley, Ill.

## CLEVELAND BAY ASSOCIATION.

On Thursday, November 6, the Cleveland Bay Horse Association assembled in annual convention at the Sherman House, Chicago, Mr. W. A. Bauks presiding, with Mr. R. P. Stericker discharging the duties of Secretary. After the roll-call of members, the adoption of minutes of last annual meeting, and other routine business, the Treasurer presented his report showing a balance of \$496.75 on hand, with no outstanding debts.

The Secretary said he regretted that the publication of the new volume of the stud book was somewhat delayed, owing to a strike among the compositors in the office where it was being printed, but promised to have it ready for delivery before January next. During the past year 237 stallions and sixty-eight mares had been sent for record and others were still coming in, so that when the book would be issued it would be a neat and handsome volume.

The following gentlemen were admitted as members of the association: George E. McKaig, Troy, Ohio; Hon. W. Cody, North Platte, Neb.; D. M. Clark & Son, New York, Ia.

A portion of the rules governing entries to Vol. II of the stud book, adopted Nov. 14, 1888, were amended so as to read as follows:

**RULE 4.** Cleveland Bay stallions or mare bred in America by sire and out of dam both recorded in Vol. I or II of the American Cleveland Bay Stud Book.

**RULE 5.** Cleveland Bay stallions having *five* and Cleveland Bay mares having *four successive crosses* by sires recorded in either the Cleveland Bay or Yorkshire Coach-Horse Stud Books of Great Britain or The Cleveland Bay Stud Book of America shall be eligible to record.

The Secretary reported that as one of a committee appointed at the last annual meeting to formulate a suitable design for a chart or certificate of registration, he had gone around among some of the leading lithographers of the country and ascertained that the design agreed upon would cost \$100. In addition to that the cost of striking off 1,000 copies would amount to \$100 more, and he asked for information as to whether he should procure the certificates. After a brief discussion he was authorized to procure 1,000 copies, the expense to be defrayed by members purchasing the certificates of registration.

Adjournment was then ordered.



## SHIRE HORSE-BREEDERS MEET.

The annual meeting of the American Shire Horse-Breeders' Association was held at the Sherman House, Chicago, Wednesday evening, November 5, President Alex. Galbraith in the chair. After the calling of the roll and reading the minutes of the last annual meeting by Secretary Burgess the report of the Editing Committee and the financial reports of the Secretary and Treasurer Warren were read. The latter showed a balance on hand at the beginning of the year of \$3,157.49. The receipts of the Secretary's office for twelve months were \$2,673.50. Disbursements, \$1,282.40. Balance on hand, \$4,548.50. A showing which indicates clearly the general prosperity of the Shire horse-breeding interest.

On motion of Mr. W. E. Pritchard the Board of Directors was instructed to take the necessary steps for the increase of the capital stock of the association an additional \$2,000.

On motion the Executive Committee was empowered to expend such sum as it may deem necessary for the furtherance of the interests of the Shires at the World's Fair.

On motion of Mr. Pritchard the Executive Committee was instructed to offer silver medals for Shires at all the different State fair associations which will recognize the Shires by making separate classes for the Shires, if in its opinion it may be considered expedient.

Mr. Ormsby, representing the Canada Shire Horse Society, addressed the meeting in the interest of that association, and urged that the two societies should co-operate and each acknowledge the certificates of the other society. On motion the matter was referred to the Editing Committee to report to the next annual meeting.

## CLYDESDALE HORSE BREEDERS IN ANNUAL SESSION.

The twelfth annual meeting of the members of the American Clydesdale Association was held at the Grand Pacific Hotel, Chicago, on Tuesday evening, Nov. 4, the president, Mr. N. P. Clarke, presiding. The

attendance was not only large but representative, many well-known breeders from the adjoining States being present. At eight o'clock the Secretary, Col. Charles F. Mills, called the roll of membership, after which the president delivered his annual address. It was brief, but to the point. He congratulated the members upon the efficient work done during the past year, and requested that those present would nominate and elect to office the very best men possible for the ensuing year, as on their selection would depend much of the prosperity of the Association in the future. United and harmonious action on the part of the members was also necessary, as without their aid and co-operation officers were almost powerless. He expressed a hope that the exhibit of Clydesdales at the Columbian Exhibition of 1893 would be such as to reflect the highest credit on those who had engaged in the breeding of these now famous horses. He also congratulated the meeting on the very fine exhibit made by Clydesdale breeders at the show then in progress at the Exposition Building of Chicago, and closed his remarks by requesting that the officers to be elected at this meeting would be chosen from the best and most intelligent members of the Association.

The secretary said he had quite a number of proxy votes in his possession, and asked for information as to what disposition should be made of them. This brought out a long and animated discussion in which many members participated. Col. Holloway gave it as his opinion that the use of proxies in the past had not only been a violation of the laws under which the Association was organized, but had been detrimental to the well-being of the organization ever since it came into existence. He said it was time to call a halt to such a dangerous proceeding, claiming that the increase of capital stock, transfers of shares, etc., when accomplished by the votes of absent members—men who did not take sufficient interest in the management of the Association to attend even one meeting in the year—was illegal and should be put an end to at once.

After some further remarks Messrs. William A. Moffat, R. B. Ogilvie, and John C. Huston were appointed as a committee to examine all the proxies received with a view to ascertaining whether the parties sending them were *bona fide* stockholders in the Association; but before the committee had time to act a gentleman moved that all proxies be set aside. This, however, was ruled out of order, Mr. Ogilvie and others asserting that the members present had no right to deprive absent members of what they lawfully possessed—the right of voting by proxy—it being impossible for some of them to attend the meeting, many residing a long distance from Chicago.

Col. Holloway said he hoped his remarks would not be construed as



bearing on the election of officers about to take place. What he wanted was that the business of the Association be transacted in a legal manner, and with that object in view he moved "that the question of proxies be referred to some legal gentleman before taking definite action thereon." The president ruled the motion out of order, from which ruling Col. Holloway took an appeal, but on a vote being taken the decision was sustained.

The secretary then read a letter which had been received by Mr. N. P. Clarke from the Secretary of State relating to the question at issue, which stated that any corporation organized under the laws of Illinois had a right to increase its capital stock by a two-third vote of the members at any regular meeting or a special meeting called for that purpose. This disposed of the question, and the selection of officers for the ensuing two years was then proceeded with, as follows: President, N. P. Clarke, St. Cloud, Minn.; vice-president, John C. Huston, Blandinsville, Ill.; secretary, Col. Charles F. Mills, Springfield, Ill.; treasurer, William Moffat, Paw Paw, Ill.; executive committee, Robert Beith, Bowmansville, Ont., Can.; R. B. Ogilvie, Madison, Wis.; Hon. James M. Turner, Lansing, Mich.—all being elected by a unanimous vote.

The report of the treasurer, Mr. William Moffat, was then read, showing the sum of \$3,143.59 on hand to the credit of the Association Nov. 4, 1890. This was accepted and approved, as was also the report of the executive committee, published in the last issue of the *Gazette*.

Col. Holloway offered the following resolution:

*Resolved*, That whatever premiums are offered by the American Clydesdale Association at the present Horse Show or any subsequent show shall be paid the party winning the same on or before the close of the show for which said premiums are offered.

The resolution was adopted after which adjournment was ordered.

#### AMERICAN SOUTHDOWN BREEDERS' ASSOCIATION.

A meeting of the American Southdown Breeders' Association was held in parlor J of the Sherman House, Chicago, Ill., at 7:30 p. m. on the 20th inst.

A financial statement was made by the secretary showing a balance of \$1,500 in the treasury after paying all expenses to date, including the publication of Vol. III just from the press, a copy of which was

presented by the secretary for inspection. Owing to the many other meetings of live-stock men being held at the same time the attendance of members was too limited for the transaction of business. It was, however, the sense of the meeting that the Association could hereafter afford to reduce the entry fees on animals under one year old to fifty cents and give each member one volume of the record. The suggestion to recommend to the next annual meeting of the Association the repeal of the rule requiring an entry fee of \$5 on each imported sheep met with but little favor from the members present. The most of them felt very confident that the breeders in England would shortly establish a British Record of Southdown sheep, and then by the agreement already made with the American Association the \$5 fee would be reduced to the same as for American-bred animals. All that the American breeders ask is the required evidence of purity of breeding in the Southdowns imported to this country. A certificate of registry in a well-regulated public flock book in England would satisfy breeders on this side the waters. In lieu of this the American Association requires \$5, and then at its own expense undertakes to secure from one or more reputable breeders in England the necessary evidence of purity of breeding in the imported animal offered for registry. If satisfactory evidence cannot be secured the animal is refused admission to the American Record.



## INDEX.

	PAGE.
Introduction.....	7
Constitution.....	9
Letter from O. Mills.....	10
J. M. Rusk.....	10
John Hayes.....	10
W. B. Allison.....	10
Prayer—Rev. Hilton.....	13
Address of Welcome by Hon. G. W. Seevers.....	14
Response by Hon. James Wilson.....	18
President's Address.....	21
The Practical Value of a Reliable Crop and Weather Report, by J. R. Sage.....	29
Discussion on same by Mr. Baker.....	35
Mr. Wilson.....	35
Soil Robbing, by James Wilson.....	35
Discussion on same by Mr. Wallace.....	37, 39, 40
Mr. Sheehan.....	39, 40
Mr. Sage.....	40
Mr. Wilson.....	41, 42
Mr. Young.....	41
Mr. Gabrielson.....	42
Mr. Knowlton.....	42
Mr. Chambers.....	43
Mr. Matthews.....	43
Feeding Corn for Profit, by J. Ward Wilson.....	44
Discussion on same by Mr. Wilson.....	45
Mr. Gove.....	45, 49
Mr. Cook.....	46
Mr. Young.....	46
Mr. Bennett.....	46
Mr. Dickens.....	46, 47
Mr. Moore.....	46
Mr. Chambers.....	46
Mr. Moninger.....	47
Mr. Everett.....	47
Mr. Redman.....	47, 48
Prof. M. Stalker.....	48, 49



	PAGE
Resolutions.....	50
Discussion on same by Mr. Wilson.....	50
Mr. Grinnell.....	52
Mr. Stalker.....	52
The Chester White—America's First Love, by Hon. B. R. Vale.....	55
Discussion on same by Mr. Grinnell.....	57, 61
Mr. Brown.....	58
Mr. Matthews.....	58
Capt. Jordan.....	59
Mr. Sheehan.....	60
Mr. Cook.....	60, 61
The Mortgage Lifter, by W. W. McClung.....	62
Discussion on same by Mr. Van Auken.....	63, 64, 65
Mr. Cook.....	63, 64, 65, 66
Mr. Smith.....	64
Mr. Vale.....	64, 66
Mr. Gove.....	64, 65
Mr. Brown.....	66
Beet Sugar and its Refuse Pulp, by Prof. J. L. Budd.....	67
Grasses for Iowa, by R. P. Speer.....	72
Discussion on same by C. L. Gabrielson.....	77, 78, 81, 82
Mr. Speer.....	78, 81
Mr. Norton.....	78, 82
Capt. Speer.....	79, 80
Mr. Barclay.....	79
Mr. Matthews.....	79, 82
Mr. Wilson.....	80, 81, 82
Mr. Brown.....	80, 81
Mr. Moore.....	83
Mr. Franklin.....	83
Mr. Curtis.....	84
The Horse, by C. F. Curtis.....	84
Discussion on same by Capt. Jordan.....	86
Mr. Gove.....	88
Mr. Brown.....	88
Mr. Willard.....	88
Mr. Hill.....	88
Mr. Gilmore.....	88, 89
Mr. Van Houten.....	89
Mr. Wilson.....	89
Mr. Stubbs.....	89
Sheep—The Downs, by C. L. Gabrielson.....	90
Discussion on same by Mr. Grinnell.....	94
Mr. Franklin.....	94
Mr. Sheehan.....	96
Mr. Van Houten.....	96
Capt. Jordan.....	96, 97, 99
Mr. Donnan.....	97
Mr. Norton.....	97, 100

	PAGE
Discussion on same by Mr. Gabrielson.....	97
Prof. Stalker.....	98
Mr. Young.....	99
How can the Common Farmer Improve his Herd, by Geo. Van Houten.....	101
Discussion on same by Mr. Brown.....	105
Mr. Sheehan.....	105
The Farm and Factory, by Daniel Sheehan.....	106
Discussion on same by James Wilson.....	108
Mr. Van Houten.....	108
Mr. Wallace.....	109
Mr. Stockdale.....	110
Mr. McClung.....	110
Report of committee on officers.....	111
Treasurer's report.....	111
Practical hints on stock raising.....	113
List of members.....	120

## APPENDIX:

Iowa Short-horn Breeders' Association.....	127
Iowa Wool Growers' and Sheep Breeders' Association.....	136
American Short-horn Breeders' Association.....	138
American Cotswold Association.....	144
National Swine Breeders' Association.....	144
National Poland-China Swine Breeders' Association.....	146
Polled Durham Association.....	148
Red Polled Cattle Breeders' Association.....	150
American Jersey Cattle Club.....	152
Aberdeen Angus Breeders.....	153
Hereford Breeders.....	160
Galloway Breeders.....	165
Devon Cattle Club.....	168
German Coach Horse Association.....	169
Cleveland Bay Association.....	171
Shire Horse Breeders' Association.....	172
Clydesdale Horse Breeders' Association.....	172
American Southdown Breeders' Association.....	174